

TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Date: *January 24, 2014*

Lead Agency: *Montana 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>TPF-5(251)</i>	Transportation Pooled Fund Program – Report Period: <input type="checkbox"/> Quarter 1 (January 1 – March 31) <input type="checkbox"/> Quarter 2 (April 1 – June 30) <input type="checkbox"/> Quarter 3 (July 1 – September 30) <input checked="" type="checkbox"/> Quarter 4 (October 1 – December 31)	
Project Title: <i>Relative Operational Performance of Geosynthetics Used as Subgrade Stabilization</i>		
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Lead Agency Project ID: <i>MDT Project #7712</i>	Other Project ID: <i>MSU/OSP: 4W3850</i>	Project Start Date: <i>December 1, 2011</i>
Original Project End Date: <i>November 30, 2013</i>	Current Project End Date: <i>February 28, 2014</i>	Number of Extensions: <i>1</i>

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
<i>\$600,969</i>	<i>\$580,388</i>	<i>96%</i>

Quarterly Project Statistics:

Total Project Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
<i>3%</i>	<i>\$19,601</i>	<i>93%</i>

Project Description:

State departments of transportation (DOTs) routinely use geosynthetics for subgrade stabilization. This construction practice involves placing an appropriately specified geosynthetic on a weak subgrade prior to placement of roadway subbase. The geosynthetic provides stabilization of the subgrade by increasing the load-carrying capacity of the system and maintaining separation between the soft subgrade and subbase materials. Subgrade stabilization allows for a firm construction platform to be built with less aggregate and less construction time as compared to construction without the stabilization geosynthetic. There is a general consensus concerning the effectiveness of geosynthetics in this application; however, there is a lack of understanding and agreement on the material's properties needed for performance. Those properties should be specified in order to ensure its beneficial use and to allow a broad range of products to be considered. In order to provide for the most economical geosynthetic selection while minimizing conflicts and promoting competitiveness, MDT and other states are conducting a study to examine the performance of various geosynthetics for subgrade stabilization. The aim of the study is to relate this performance to material properties that can be incorporated into standard specifications to allow for broad and economical use of geosynthetic products for a specific application.

Progress this quarter:

Task 1 – Material Characterization – COMPLETED

Task 2 – Setup Monitoring Equipment – COMPLETED

Task 3 – Planning and Construction – COMPLETED

Task 4 – Install Instrumentation – COMPLETED

Task 5 – Trafficking and Data Collection – COMPLETED

Task 6 – Forensic Investigations – COMPLETED

Task 7 – Data Analysis

- *analysis of pore-water pressure, displacement, strain and rut data was completed this quarter*

Task 8 – Reporting

- *Progress Report #8 was written*
- *Task Report #4 was written*
- *Draft final report was written*

Anticipated work next quarter:

Task 1 – Material Characterization – COMPLETED

Task 2 – Setup Monitoring Equipment – COMPLETED

Task 3 – Planning and Construction – COMPLETED

Task 4 – Install Instrumentation – COMPLETED

Task 5 – Trafficking and Data Collection – COMPLETED

Task 6 – Forensic Investigations – COMPLETED

Task 7 – Data Analysis – COMPLETED

Task 8 – Reporting

- *Address comment on the draft final report from technical panel*
- *Submit information for Project Summary Report to MDT*
- *Deliver final presentation in Helena, MT*

Significant Results:

Significant results are summarized in the draft final report for this project.

Circumstances Affecting Project or Budget:

The draft final report was submitted to the technical panel in early January 2014, and review comments are due in early February. It is anticipated that additional time will be needed to address comments, revise the final report and deliver the final presentation prior to the February 28, 2014 end date.

Potential Implementation:

It is anticipated that the information from this project will be useful to departments of transportation seeking to improve their specification of and use of geosynthetics for subgrade stabilization.