

TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Date: *January 4, 2012*

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>November 30, 2013</i>	Number of Extensions: <i>0</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>\$581,726</i>	<i>\$4425.28</i>	<i>1%</i>

Quarterly Project Statistics:

Total Project Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
<i>1%</i>	<i>4425.28</i>	<i>4%</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 interested in conducting a study to examine the performance of various geosynthetics for subgrade stabilization with the aim of relating this performance to material properties that can be incorporated into their standard specification to allow for a broad and economical use of geosynthetic products for a specific application.

Progress this Quarter:

Task 0 – Project Management

- *project commenced December 1, 2011*
- *kick-off teleconference meeting with technical panel on December 19, 2011*
- *sent teleconference minutes to project manager at MDT for distribution*
- *sent written request to project manager at MDT to alert of changes in project personnel; personnel changes were approved*

Task 1 – Material Characterization

- *collected subgrade for laboratory testing*
- *collected base course for laboratory testing and for cyclic plate load tests*

Task 2 – Setup Monitoring Equipment – *no progress on this task during this period*

Task 3 – Planning and Construction

- *met with campus facilities services to initiate contractor bidding process*
- *began preparation of construction bid documents*

Task 4 – Install Instrumentation – *no progress on this task during this period*

Task 5 – Trafficking and Data Collection

- *initial attempts to obtain truck for trafficking*

Task 6 – Forensic Investigations – *no progress on this task during this period*

Task 7 – Data Analysis – *no progress on this task during this period*

Task 8 – Reporting

- *Progress Report #1 was written*

Anticipated work next quarter:

Task 0 – Project Management

- *general management of project in terms of contractual compliance, budget and schedule, administrative tasks, and communication with the Technical Panel*

Task 1 – Material Characterization

- *laboratory tests of subgrade and base course to evaluate strength properties and behavior*
- *purchase LWD, vane shear, DCP and CBR testing devices and peripheral accessories*
- *obtain geosynthetics and begin testing*
 - *cyclic plate load test*
 - *resilient interface shear modulus*
 - *wide-width tension tests*
 - *cyclic tension tests*

Task 2 – Setup Monitoring Equipment

- *design rut measuring device/equipment*
- *purchase instrumentation sensors and peripheral accessories and begin setting up data acquisition system*
 - *LVDTs*
 - *strain gages*
 - *pore-water pressure sensors*

Task 3 – Planning and Construction

- *finalize construction bid documents and initiate bidding process*

Task 4 – Install Instrumentation – no progress anticipated on this task during this period

Task 5 – Trafficking and Data Collection

- *obtain truck for trafficking*

Task 6 – Forensic Investigations – no progress anticipated on this task during this period

Task 7 – Data Analysis – no progress anticipated on this task during this period

Task 8 – Reporting

- *Task Report 1 will be written to summarize construction plans prior to construction*
- *Progress Report #2 will be written*

Significant Results:

The project is progressing as planned, with no significant results to be shown at this point.

Circumstance Affecting Project or Budget:

There are no known issues that will negatively impact the quality of the project, its timeline or budget at this time.

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 as subgrade stabilization.