

TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Date: Nov 22, 2011

Lead Agency (FHWA or State DOT): South Dakota 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 # <i>(i.e., SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX))</i> TPF-5(054)	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 checked="" type="checkbox"/> Quarter 3 (July 1 – September 30) <input type="checkbox"/> Quarter 4 (October 1 – December 31)	
Project Title: Development of a Maintenance Decision Support System		
Name of Project Manager(s): Dave Huft	Phone Number: 605-773-3358	E-Mail: Dave.Huft@state.sd.us
Lead Agency Project ID: SD2002-18	Other Project ID (i.e., contract #): 310814	Project Start Date: October 14, 2002
Original Project End Date: April 30, 2003	Current Project End Date: September 30, 2012	Number of Extensions: 29

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
\$5,476,937.00	\$4,579,550.12	83.62%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
\$202,391.95 (3.70%)	\$202,391.95	90%

Project Description:

- The Maintenance Decision Support System research program is responsible for research and development related to the implementation of new information technologies to support transportation maintenance decisions, including both winter and summer decision support tools. The program also performs substantial research and development into parallel applications for the transportation industry that may either share data with MDSS, or benefit by leveraging technologies developed under the program (for instance, sharing of data between MDSS and other agency systems, or the development of management-oriented tools that leverage MDSS' capabilities).

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

- Completed the initial design and development of a prototype MDSS application for Android smartphone and tablet devices.
- All MDC/AVL data processing was migrated to a new hub developed under Task 16. This hub will both serve data to MDSS and provide the groundwork for a suite of management-oriented tools permitting agencies to make better use of data collected by their MDC/AVL units.
- Upgrades were made to the blowing snow prediction tool to improve the response to forecasted snowfall and wind values. Additional routes were added to the blowing snow database to account for changes within various states.
- Evaluation of regions for potential study of lake-effect snowfall was conducted to create a short-list of candidates for further study during the upcoming winter season.
- A version 8.0 training release was issued, including new features such as a "heads-up" display (providing Route View access to cross-sectional profiles of moisture atop the road, chemical/abrasive residual information, and depth profiles of pavement temperature) and overview maps such as observed or forecast precipitation totals.
- Each agency received their current operational route configuration to make necessary changes, additions or deletions before winter operations begin.
- Compiled and distributed a Phase VI Final Report.

Anticipated work next quarter:

- Continue development of an MDSS application for Android smartphone and tablet devices, with release of a functional application to the MDSS Technical Panel members expected to occur before the end of the quarter.
- Develop a suite of Management Tools for accessing and applying MDC/AVL information to the benefit of PFS member agencies. These tools are expected to provide spatial, tabular and exportable presentations, reports and/or data regarding the activities of MDC/AVL-equipped trucks within the agency fleets. An initial toolset is expected to be released to the Technical Panel members before the end of the quarter.
- Continue the process of identifying and resolving bugs and other shortcomings in MDSS or other underlying processes.
- Develop and implement a plan for assessment of MDSS recommendations during the 2011/2012 winter season.
- Develop a plan and focus group to evaluate the potential for improving of fine-scale weather modeling to improve MDSS resolution of local phenomena. Initiate data collection for focus study events. Configuration of the current data data assimilation system and the WRF mesoscale model to support post-event execution.
- Initiate background literature review toward the development of an improved mobility index for MDSS.
- Begin winter operations October 15th, including weather forecasting support, customer support, and operational maintenance forecasts.
- Provide MDSS operations training as necessary for agencies as requested and agreed upon.
- Install any necessary MDSS route changes as directed by each agency.

Significant Results:

- Significant results this quarter include the release of the 'training release' of version 8.00 of the MDSS GUI, the initial design and development of a prototype MDSS application for devices running the Android operating system, and the operational implementation of a new database hub and server infrastructure for processing MDC/AVL data for use in both MDSS as well as new management-oriented tools being developed under the MDSS research program.

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).

-Project was extended 1 year to continue work on the states research priorities and conduct operational field deployment trials.

Potential Implementation:

- The MDSS research program is presently entering its 7th phase of work. The core MDSS software / services have been operational within numerous state transportation agencies for several years or more, depending upon the agency.
- Meridian expects that both an operational Android MDSS application, and a new management tool aiding evaluation of agency maintenance operations through interpretation of agency MDC/AVL data, will be made available to Technical Panel members during Q4 of 2011.