

**TRANSPORTATION POOLED FUND PROGRAM  
QUARTERLY PROGRESS REPORT**

Date: 11-24-2015

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.*

<b>Transportation Pooled Fund Program Project #</b> <i>(i.e., SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX))</i>  TPF-5(054)		<b>Transportation Pooled Fund Program - Report Period:</b> <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)	
<b>Project Title:</b> Development of a Maintenance Decision Support System			
<b>Name of Project Manager(s):</b> Dave Huft		<b>Phone Number:</b> 605-773-3358	<b>E-Mail</b> Dave.Huft@state.sd.us
<b>Lead Agency Project ID:</b> SD2002-18		<b>Other Project ID (i.e., contract #)</b> 310814	<b>Project Start Date:</b> October 14, 2002
<b>Original Project End Date:</b> April 30, 2003		<b>Current Project End Date:</b> September 30, 2015	<b>Number of Extensions:</b> 32

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
\$8,670,210.00	\$8,531,970.28	98.41%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
\$111,108.84 (1.28%)	\$111,108.84	100%

**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 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.):**

- The MDSS Dashboard remained functional and operational during Q3. Iteris made changes to the MDSS GUI to improve performance of the dashboard.

- The process of temporarily spinning up an end-to-end MDSS instance on external hardware, independent of Iteris' infrastructure, drew to a close during Q2 – as all of the different facets of the MDSS system are now operable in this environment. This effort is being undertaken in order to comply with the provisions of the recently-finalized MDSS IP Agreement with the PFS member agencies. Work on creating and sharing 'images' of these computer systems with the PFS MDSS member agencies is ongoing.

- During Q3, internal to Iteris, several versions of the MDSS GUI were being tested for deployment at the end of Q3. V11.99 was released to the states late in Q3. Similar to previous years this version is referred to the "training" version and will be used to make sure all new features work properly in each agencies deployment environment.

- Phase VIII of the project came to a close during Q3. Effort was put into developing a work plan for Phase IX. This work plan was reviewed by the PFS members and a final work plan was provided to SDDOT at the end of Q3. The four main research areas included: development of a web-based MDSS solution, updates to the MDSS mobile application to include reporting, development of standard management reports, and standardization of information to be used in ATIS applications.

- Operational costs were provided to agencies for the upcoming winter, 2015-16 winter. This information was developed using feedback from the individual agencies regarding their deployment efforts anticipated during the upcoming winter.

- An Assessment of Recommendation plan for the upcoming winter was developed internally with plans to present to the MDSS Technical Panel group.

**Anticipated work next quarter:**

- Continued refinements on the MDSS Dashboard will be accomplished over the next quarter. This includes the finalizing of the truck panel and exploring ways to incorporate WMRI type data into a panel.
- Implementation of an import function in the WMRI tool so as to permit direct comparison of agency data against WMRI data in the WMRI toolset.
- Operations will begin during Q4 on October 1<sup>st</sup> or 15<sup>th</sup> depending on the agency.
- An Assessment of Recommendations plan will be presented to the MDSS Technical Panel. Iteris will be looking for individuals within the field to help provide feedback during storm events throughout the 2015-16 winter season.
- During Q4 the MDSS training videos will be finalized and posted to the MDSS web site.
- Provide MDSS software documentation and 'images' to the PFS MDSS member agencies, based on the MDSS instance that has been spun up in Amazon Web Services' EC2 infrastructure. Work with the PFS member agencies thereafter to define the process for software provision and maintenance going forward (under the newly-signed IP agreement).
- Work will begin on all Phase IX activities including the development of a web-based MDSS solution, assessment of recommendations, integration of MDSS into ATIS datasets, and development of a mobile reporting interface.

**Significant Results:**

- While the seasonal simulations carried out in Q2 and Q3 2014 appear to be providing a lot of very useful information, this process has not yet come to a conclusion where the final results of that activity are clear yet. The primary holdup is in getting equivalent data from the member agencies to permit comparison.
- The deployment of the MDSS Dashboard has been met with positive feedback and constructive comments for changes. This feature allows the most basic users to get information in a quick view.

**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.)**

- None this quarter.

**Potential Implementation:**

- The MDSS research program is now well into its 8<sup>th</sup> 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. An initial suite of "Management Tools" has been implemented within the past several years, starting first with a WMRI tool to aid managers in quantifying winter severity across their jurisdiction from a winter maintenance perspective, followed up more recently by a complementary suite of MDC/AVL-oriented tools analyzing and visualizing maintenance being performed by the agency's MDC/AVL-equipped snowplow fleet. During Phase VII, MDSS applications for iOS and Android mobile platforms were designed, developed and made available to PFS member agencies. New features and capabilities continue to be added in the present phase of work.