TRANSPORTATION POOLED FUND PROGRAM
QUARTERLY PROGRESS REPORT

Date: 5-4-2016

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.e, SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX)* TPF-5(054)	**Transportation Pooled Fund Program - Report Period:** X Quarter 1 (January 1 – March 31) ☐ Quarter 2 (April 1 – June 30) ☐ Quarter 3 (July 1 – September 30) ☐ 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, 2016**	**Number of Extensions:** 33

Project schedule status:

X 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
$9,472,752.00	$9,015,779.47	95.18%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
$254,992.62 (2.69%)	$254,992.62	96.43%

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.):

- A full MDSS Technical Panel meeting was hosted in Sioux Falls, SD on Feb. 1st through 3rd. Information was presented on the current progress of Phase 9 activities. Following the meeting all presentations were posted to the projects webpage along with actions items to be completed over the next 3-4 months. A teleconference was held March 14 to update all members on action items developed during the Feb. MDSS Technical Panel Meeting.

- Work continued on the Web-Based MDSS interface. A document was developed to help identify items from the MDSS GUI that need to be included into the MDSS web-based interface. This document was presented in February. Both Iteris and MDSS Member states were able to add information to this document and make changes as necessary. The main effort was to include routes colored based on conditions, a detailed route panel with information, and did work on the backend to incorporate tables and graph views of routes, RWIS and METAR observations.

-v12.2 was released to the technical panel member during early Q1.

- Work was completed on the design and development of the reporting functionality available from the MDSS mobile applications. This includes both the iOS and Android devices. Users from each state were identified and allowed to test the mobile applications. This feedback was used to make adjustments to the app. At the end of Q1 there were final adjustments being made to make a final release to users.

- Iteris personnel communicated routinely with 3 DOT representatives who participated in the interactive Assessment of Recommendations program. The Iteris participant was able to find that configuration settings in MDSS caused MDSS to compute recommendations based upon maintenance practices that were different than those used by the users.

- Operations continued for all agencies. This included dedicated weather forecasting services, operational MDSS support, and AVL/MDC information (where applicable).

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 addressing minor issues within the interface.

- Continued operations for all agencies through the beginning of Q2.

- Iteris will report on the results of the enhanced assessment of recommendations approach and prepare the plan for the 2016/17 year.

- Provide updated MDSS software documentation and 'images' to the PFS, based on the MDSS instance that has been spun up in Amazon Web Services' EC2 infrastructure, but with problems noted by MnDOT in their internal rollout of the MDSS software addressed. Iteris will work with the PFS member agencies thereafter to define the process for software provision and maintenance going forward (under the newly-signed IP agreement).

- Continued work will begin on all Phase IX activities including the development of a web-based MDSS solution, canned reports for management, assessment of recommendations, integration of MDSS into ATIS datasets, and development of a mobile reporting interface.

- Conduct a face to face meeting and at least one conference call with the Technical Panel members.

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 8th 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.