Pooled Fund Study Project TPF-5(054)
SDDOT Project SD2002 – 18
Development of Maintenance Decision Support System
Phase V
Third QUARTERLY PROGRESS REPORT
July - September, 2008

Progress by Task

Specific accomplishments on the explicit tasks of the Phase V work plan during the third quarter of 2008 follow.

TASK 13: Provide weather forecast support, MDSS configuration support, live MDSS operations, and necessary training for continuing deployment field trials in the participating highway agencies throughout the 2007-2008 and 2008-2009 winter seasons.

During Q3 work was conducted to improve the process of adding and modifying routes within the MDSS. One of these improvements was the development of more concise way for states to add routes to MDSS. This was done through the use of spreadsheet route forms versus the old method of word processing forms. A document was also created to provide a detailed description of each field within the spreadsheets.

Efforts were also made to ensure routes currently in the MDSS are configured correctly. Using the new routes forms (spreadsheet style) each state was provided with information about their current configurations. Subsequent changes were made as corrected information was delivered back to Meridian.

By the end of Q3 training had begun across several of the PFS states. Training continues to be one of the most important parts of deployment for MDSS in each state. Table 1 shows the list of locations, dates, and trainers that conducted MDSS training sessions during Q3.

Table 1: MDSS training dates during Q3 2008.

State	Location	Date	Trainer
Colorado	Colorado Springs	9/12	Gordon Bell
North Dakota	Bismarck	9/22	Ben Hershey
Virginia	Salem	9/25	Steve Gaddy
Colorado	Evans	9/29-30	Gordon Bell

TASK 14: Refine and evaluate techniques for acquiring, managing, using, and reporting information from mobile data collection equipment mounted in winter maintenance vehicles and for providing information to maintenance operators via the same equipment.

Enhanced in-vehicle MDSS software developed during previous quarters (associated with subtask 14.2) is in the process of being implemented. This implementation is expected to be complete by the end of Q4 2008. Additional work on enhancing MDSS' logic for interpreting MDC/AVL data (as per subtasks 14.1 and 14.3) was initiated during Q3.

TASK 15: Refine and evaluate the capability and performance of MDSS software components, including surface condition prediction models and graphical user interface.

Efforts to improve the capability and performance of MDSS are ongoing. Subtasks 15.5 and 15.8 were completed in Q2. Subtask 15.4, the placement of topography on the GUI Map View background, was completed in Q3, as were many other GUI, logic and modeling enhancements consistent with the goals of Task 15. These include the addition of web links to the Map View of the GUI, several enhancements to the content of the Route View tables and graphs, and a significant overhaul of MDSS' treatment decision logic. These efforts fall under the generic subtask 15.10.

TASK 16: Recommend, develop, and evaluate methods for enhancing highway agencies' management through interfaces between MDSS and other management systems, analysis of winter maintenance practices, and extension of MDSS techniques to non-winter applications.

Support of the MDSS cost/benefit study was nearly complete as of the end of Q3. Preliminary datasets associated with simulations of a Colorado Department of Transportation (CDOT) route were nearly ready for provision to the Western Transportation Institute as of September 30. The CDOT simulations presented several new difficulties related primarily to CDOT's maintenance data and the utilization of numerous deicers.

Research into the potential for application of MDSS as a tool for generating a Winter Maintenance Response Index also continued during Q3. Efforts during the quarter focused on developing methods for aggregating and analyzing data (both actual and simulated) and methods for differentiating between trustworthy and questionable data – both in terms of weather observations and maintenance information.

TASK 17: Develop a model MDSS procurement specification suitable for use by public highway agencies.

Three draft MDSS procurement specification documents have been circulated to date. The first specification document, created and circulated in previous quarters, was designed for a procurement situation in which an agency desired weather and maintenance decision support services be provided as a package by a single entity. This document provides specifications for an MDSS and service provision that are similar in nature to what has been provided by Meridian during the MDSS field deployment tests.

Upon review of this first document the MDSS Technical Panel members also expressed a need for two additional specification documents: one for the provision of weather services to support MDSS and another for operation of the MDSS system. A draft MDSS weather services

specification was completed and circulated to the Technical Panel members during Q2. A draft of the specification for operation of the MDSS system was completed and circulated to the Technical Panel members during Q3.

TASK 18: Prepare a final report summarizing methodology, findings in performance, conclusions and recommendations.

No activities have been performed for this task during Q3. A Major Report on the study to date was created during the previous quarter and will eventually serve as the basis for the Final Report as the project winds down.

TASK 19: Make an executive presentation to the project's technical panel and provide electronic copies of the presentation material to participating states.

No activities have been performed for this task during Q3.