

State Planning and Research Program Quarterly Report

PROJECT TITLE: *Standardized Test Procedures for Ice Melting Capacity of Deicers*

OBJECTIVES: The goal of this research is to evaluate the suitability of the mechanical rocker test as a standardized laboratory test that can realistically and robustly assess the performance of deicers is needed to allow DOTs to make data-driven procurement decisions.

PERIOD COVERED: July 1, 2021 – October 31, 2021

PARTICIPATING AGENCIES:

Washington State University – Prime
Monte Vista Associates LLC – Subcontractor
Roadtech, Inc. - Subcontractor

PROJECT MANAGER:

Hafiz Munir / Tom Peters

SP&R PROJECT NO:

MnDOT No. 1033080

PROJECT IS:

Planning
 Research & Development

LEAD AGENCY: MnDOT

Federal Project No.
TPF-5(353)

PRINCIPAL INVESTIGATOR:

Xianming Shi, Ph.D., P.E., WSU

ANNUAL BUDGET:

\$74,086

PROJECT EXPENDITURES TO DATE:

\$50,040

WORK COMPLETED:

Project Management

The PI has maintained regular communication with peer labs and with team members. Also submitted the Quarterly Progress Report in July 2021.

Task 1. Mechanical Rocker Test Procedure Evaluation (100% complete).

Task 2. Interim Report (100% complete). During the last quarter, we received some additional feedback on the revised Interim Report and will finalize this Task deliverable in Oct. 2021. The changes are minor.

Task 3 Standard Test Procedure Development (15% complete). During the last quarter, the team has started the refinement of the existing test protocol in order to fully develop it into a Standard Test Procedure for the ice melting capacity (IMC) of roadway deicer products, for potential consideration by AASHTO. The PI presented the related data analysis to the project panel on August 2, 2021, which evaluated the existing test protocol in terms of precision, bias, and ruggedness (following ASTM standards) and revisions to the existing test protocol for minimization of inter-laboratory variability of test results. The PI proposed to conduct a 2nd round of round robin test with the revised test protocol and updated the testing plan for the panel's review and approval.

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

The work in the coming quarter will consist of project management as well as continuation of Task 3 (Standard Test Procedure Development), with the focus on finalizing the updated testing plan and coordinating the 2nd round of round robin tests with the selected peer labs.

STATUS AND COMPLETION DATE:

We are now about eight months behind schedule, based on the most up-to-date schedule as follows. The PI will submit a request for no-cost time extension in the next quarter.

Task	Current Task Start Date	Current End Date for Task Approval	Revised Task Start Date	Revised Due Date to Submit Draft Deliverables	Revised End Date for Task Approval
1	02/01/2020	08/31/2020	02/01/2020	03/31/2021	05/31/2021
2	07/01/2020	10/31/2020	11/01/2020	04/30/2021	06/30/2021
3	10/01/2020	12/31/2020	02/01/2021	05/31/2021	07/30/2021
4	10/01/2020	03/31/2021	02/01/2021	09/30/2021	11/30/2021
5	12/01/2020	04/30/2021	05/01/2021	10/31/2021	12/31/2021
6	04/01/2021	07/31/2021	08/01/2021	01/31/2022	03/31/2022
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