

## 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:** Oct. 1, 2021 – Dec. 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:**

\$60,040

**WORK COMPLETED:**

*Project Management*

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

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

Task 2. Interim Report (90% complete). 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 revised Interim Report was updated in Oct. 2021. The changes were minor. In the last quarter, with approval by the project panel, we have coordinated with peer labs and started a 2<sup>nd</sup> round of round robin test with the revised test protocol and the updated testing plan.

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.

**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 finishing the 2<sup>nd</sup> round of round robin tests with the selected peer labs and analyzing the results.

**STATUS AND COMPLETION DATE:**

We are now about eight months behind schedule. In the last quarter, the PI submitted a request for no-cost time extension and the updated schedule is provided as follows (which is waiting on the approval by MnDOT).

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	05/31/2021	02/01/2020	01/30/2022	02/28/2022
2	11/01/2020	06/30/2021	11/01/2020	01/30/2022	02/28/2022
3	10/01/2020	07/31/2021	02/01/2021	02/28/2022	04/30/2022
4	10/01/2020	11/30/2021	05/01/2022	08/31/2022	09/30/2022
5	12/01/2020	12/31/2021	09/01/2022	11/30/2022	12/31/2022
6	04/01/2021	03/31/2022	08/01/2021	12/31/2022	02/28/2023