

State Planning and Research Program Quarterly Report

PROJECT TITLE: *Effects of Additives in Deicing Salts at Lower Temperatures*

OBJECTIVES: The goal of this project is to evaluate the impact additives to solid rock salt have on the eutectic temperature of the product through laboratory testing. From this testing, determine if the additives lower the eutectic temperature of the product, and if so by how much. The end goal is to determine if the additives improve performance.

PERIOD COVERED: April 1 – June 30, 2024

PARTICIPATING AGENCIES: Minnesota Department of Transportation, Clear Roads Technical Advisory Committee, and the Western Transportation Institute at Montana State University.

PROJECT MANAGER:

Hafiz Munir / Tom Peters

SP&R PROJECT NO:

MnDOT Contract No.

1051718

PROJECT IS:

☐ Planning

☒ Research & Development

LEAD AGENCY: MnDOT

PRINCIPAL INVESTIGATOR:

Laura Fay, WTI, MSU

Federal Project Number:

TPF-5(479)

ANNUAL BUDGET: \$149,993

PROJECT EXPENDITURES TO DATE: \$136,592

WORK COMPLETED:

- Task 1 Kick off meeting was held March 22, 2023. Meeting slides and notes were submitted April 5, 2023.
- Task 2 Literature Review was submitted August 14, 2023. A meeting was held to review the document August 31, 2023. The meeting minutes and slide deck were submitted September 5, 2023.
- Task 3 draft Survey questionnaire was submitted August 14, 2023, this was revised and resubmitted September 5, 2023. Additional comments were received, and it was revised and finalized September 20, 2023. The survey did not require MSU IRB approval or exemption. Survey Results were submitted November 27, 2023. Meeting to review survey results was held December 18, 2023. The revised survey results and meeting notes were submitted December 27, 2023.
- Task 4 draft Lab Plan was submitted December 12, 2023. Revised Lab Testing Plan was submitted January 17, 2024. All deicing additives and brines were acquired or purchased.
- Task 4 lab work was conducted at both the MSU Subzero lab and at WSU.

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

- Task 4 Lab Test Results will be submitted for review and comment.
- Schedule a meeting to review the Task 4 Lab Test Results.
- Task 5 Final Report will be submitted for review and comment.
- Schedule the Final Report meeting and webinar.

STATUS AND COMPLETION DATE: We plan to discuss the project timeline with the project panel in the Task 4 meeting. We anticipate the project ending on time.