

## State Planning and Research Program Quarterly Report

**PROJECT TITLE:** *Understanding the Salt Phase Diagram*

**OBJECTIVES:** The goal of this project is to develop materials to aid winter maintenance practitioners in making informed decisions on the use of road salts, specifically sodium chloride (aka rock salt, solar salt, salt brine, etc.), at varying temperatures and concentration. The end products developed to support winter maintenance practitioners will be a one-page fact sheet and educational video based on information captured in the literature review, lab testing, and the developed salt phase diagram.

**PERIOD COVERED:** July 1, 2021 – September 30, 2021

**PARTICIPATING AGENCIES:** Minnesota Department of Transportation and the Clear Roads Technical Advisory Committee

**PROJECT MANAGER:**

Hafiz Munir / Tom Peters

**SP&R PROJECT NO:**

MnDOT Contract No.  
1044527

**PROJECT IS:**

Planning  
 Research & Development

**LEAD AGENCY:** MnDOT

Federal Project Number:  
TPF-5(353)

**PRINCIPAL INVESTIGATOR:**

Laura Fay, WTI, Montana State University

**ANNUAL BUDGET:** \$100,000

**PROJECT EXPENDITURES TO DATE:** \$40,184

**WORK COMPLETED:**

- Kick off Meeting – the project kick-off meeting was held Jan. 26, 2020. The meeting notes, slides, and meeting follow up items were provided to the TAC Jan. 27, 2020.
- Task 1 Literature Review – The literature search and review of documents was delivered June 1, 2021. A meeting was held June 18, 2021, to review the document and receive feedback from the TAC.
- Task 2 Lab Demonstration – The Task 2a Beaker Test and Task 2b friction/pavement testing Lab Report was submitted September 2, 2021, for review.
- Task 3 One Page Fact Sheet – Draft version was submitted September 29, 2021.
- Task 4 Develop Educational Video – Planning for video is underway. Photos and video of the lab testing will continue to be collected. Animation concepts are being developed.
- Task 5 Final Report and Webinar

**SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:**

- Meet with TAC to discuss Task 2 Lab Report. Revise and submit Task 2 Lab Report for approval.
- Meet with TAC to discuss Task 3 1-Pager. Revise and submit Task 3 1-pager for TAC approval.
- Submit Draft Task 4 Script, story board, and draft video. Meet with TAC to review Task 4, revise and resubmit video for approval.
- Submit Task 5 Final Report, schedule and hold Final Report Webinar.

**STATUS AND COMPLETION DATE:**

The project is currently on time and on budget.