

**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: April 1, 2021 – June 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, WT/MSU

ANNUAL BUDGET: \$100,000

PROJECT EXPENDITURES TO DATE: \$15,309

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 was completed in late May and the Task 2b friction/pavement testing has begun. The Task 2b friction/pavement testing will be completed in the next quarter, and the Task 2 Lab Report for Tasks 2a and 2b will be submitted in the next quarter.
- Task 3 One Page Fact Sheet – Work has begun on the 1-page fact sheet and a draft will be submitted to the TAC for review in the next quarter.
- Task 4 Develop Educational Video – Planning for video is underway. Photos and video of the lab testing will continue to be collected. Preliminary animation concepts are being developed.
- Task 5 Final Report and Webinar

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

- Finish the Task 2 Lab Testing and submit the Lab Report to the TAC.
- Submit a draft Task 3 1-pager for the TAC to review.
- Set up a meeting to review the Task 2 deliverable, Task 3 draft 1-pager, and discuss the Task 4 education video.

STATUS AND COMPLETION DATE:

The project is currently on time and on budget.