

State Planning and Research Program Quarterly Report

PROJECT TITLE: Synthesis of Material Application Methodologies for Winter Operations

OBJECTIVES: The goal of this research is to “create a synthesis of best management practices for application rates, material application methodologies and material usage, including chloride brines applied directly or as additives to abrasives and rock salts”.

PERIOD COVERED: July 1, 2017 to September 30, 2017

PARTICIPATING AGENCIES:

Minnesota Department of Transportation and the Clear Roads Technical Advisory Committee

PROJECT MANAGER:

Debra Fick/ Tom Peters

SP&R PROJECT NO:

MnDOT Contract No.

1001326

PROJECT IS:

Planning

Research & Development

LEAD AGENCY: Mn/DOT

Federal Project Number:

TPF-5(218)

PRINCIPAL INVESTIGATOR:

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

ANNUAL BUDGET: \$ 117,658

PROJECT EXPENDITURES TO DATE: \$ 83,765

WORK COMPLETED:

- Project Management: This includes the submission of quarterly progress report by the project PI to the Clear Roads program in July 2017 and some communications between the PI and the Clear Roads coordinator, as well as between the PI and the consultant.
- Task 1. Literature review (100% completed)
A revised literature review was submitted for panel review again in December 2016. It highlights current practices, innovative practices, and trends related to materials used, their application rates, and the application methodologies and equipment under various road weather scenarios (temperature ranges, storm conditions, and other climate and operating conditions). It will be updated as new literature becomes available.
- Task 2. Interview Plan (100% completed)
In December 2016, an updated interview plan was submitted to the panel for review.
- Task 3. Interviews (100% completed)
The interviews were conducted with more than 35 agencies and an interview memo was submitted in Sept. 2017. The detailed notes of the interviews are also available upon request by the panel.
- Task 4. Guidebook (75% completed)
The research team has drafted not only the outline but also the Guidebook, based on the information from Task 1 (Literature review) and Task 3 (Interviews). The goal is to synthesize, analyze, and organize the data into a brief, instructive, and professionally created handbook, similar to the Snowfighters’ Handbook available at <http://www.saltinstitute.org/road/snowfighting/>. The draft Guidebook was submitted to the project panel in Sept. 2017; once the review comments are received, the Guidebook will be further improved both in terms of contents and in terms of graphics/look-and-feel.
- Task 5. Final report (14% completed)
- Task 6. Final presentation (0% completed)

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

- Work in the coming quarter will consist of project management as well as the completion of Task 4 and continued work on Task 5.

STATUS AND COMPLETION DATE:

Another no-cost time extension was submitted and approved in early 2017, with the modified timeline as follows.

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	05/25/2016	12/15/2016	05/25/2016	10/15/2016	12/15/2016
2	05/25/2016	07/30/2016	05/25/2016	Not Applicable	07/30/2016
3	07/15/2016	03/15/2017	07/15/2016	07/15/2017	09/15/2017
4	12/01/2016	06/15/2017	12/01/2016	10/15/2017	12/15/2017
5	04/01/2017	08/31/2017	04/01/2017	12/30/2017	02/28/2018
6	07/01/2017	09/30/2017	07/01/2017	01/30/2018	03/31/2018