

State Planning and Research Program Quarterly Report

PROJECT TITLE: Understanding the Chemical and Mechanical Performance of Snow and Ice Control Agents on Porous or Permeable Pavements

OBJECTIVES: The objectives of this research are to identify the primary chemical and mechanical interactions that occur when deicers are applied to textured or porous pavements before, during and after a winter storm to determine optimal winter maintenance strategies and application rates for treating these types of pavements.

PERIOD COVERED: January 1, 2017 – March 31, 2017

PARTICIPATING AGENCIES:

Western Transportation Institute, Montana State University – Bozeman

PROJECT MANAGER:

Tom Peters and Deborah Sinclair

SP&R PROJECT NO:

MnDOT Contract No.
99006; WO 2

PROJECT IS:

Planning
 Research & Development

LEAD AGENCY:

Minnesota Department of Transportation

Federal Project No.
TPF-5(218)

PRINCIPAL INVESTIGATOR:

Michelle Akin

PROJECT BUDGET:

\$185,000

PROJECT EXPENDITURES TO DATE:

\$184,681

WORK COMPLETED:

Task 1 – Project Management

- general management of project in terms of contractual compliance, budget and schedule, administrative tasks, and communication with technical panel
- submitted contract amendment request for a no-cost time extension

Task 2 – Literature Search - COMPLETE

Task 3 – List and Categorize Pavement and Overlay Types - COMPLETE

Task 4 – Interviews - COMPLETE

Task 5 – Lab Testing - COMPLETE

Task 6 – Analyze Chemical and Mechanical Interactions

- modified data grouping, identified outliers, and conducted statistical comparisons to identify and quantify differences between PPPs and DGPs
- drafted *White Paper on Chemical and Mechanical Interactions* to near completion

Task 7 – Synthesize Best Maintenance Practices

- continued working on summary of recommendations based on literature review, interviews and lab testing

Task 8 – Recommend a Plan of Study – no progress during this period

Task 9 – Reporting

- submitted Quarterly Report #16

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

Task 1 – Project Management

- general management of project in terms of contractual compliance, budget and schedule, administrative tasks, and communication with technical panel

Task 2 – Literature Search – completed

Task 3 – List and Categorize Pavement and Overlay Types - completed

Task 4 – Interviews - completed

Task 5 – Lab Testing - completed

Task 6 – Analyze Chemical and Mechanical Interactions

- finish and submit draft of *White Paper on Chemical and Mechanical Interactions*

Task 7 – Synthesize Best Maintenance Practices

- finish and submit draft of *Synthesis of Best Practices*

Task 8 – Recommend a Plan of Study

- formulate and begin writing memo with *Field Testing Recommendations*

Task 9 – Reporting

- write Quarterly Report #18

STATUS:

The project is currently on schedule and the *White Paper* will be submitted on time.

Work Tasks	2017												2018		Task Completion Date
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	
1 – Project Management															31-Dec-16
2 – Literature Search															18-Jun-13
3 – List and Categorize Pavement and Overlay Types															7-Jan-14
4 – Interviews															7-Jan-14
5 – Lab Testing															3-Feb-15
6 – Analyze Chemical & Mechanical Interactions					★		★								3-Jul-17
7 – Synthesize Best Management Practices						★		★							17-Aug-17
8 – Recommend a Plan of Study							★		★						12-Sep-17
9 – Reporting										★			★		31-Dec-17

- ★ Deliverable
 - ★ Literature Search Submittal
 - ★ Categorized List of Porous/Permeable Pavements
 - ★ Synthesis of Interview Results
 - ★ White Paper on Chemical and Mechanical Interaction
 - ★ Synthesis of Best Practices
 - ★ Field Testing Recommendations
 - ★ Final Report
- Draft Due Final Due
- completed
- completed
- completed
- 3-May-17 3-Jul-17
- 7-Jun-17 7-Aug-17
- 12-Jul-17 12-Sep-17
- 31-Oct-17 31-Dec-17