

**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:** October 1, 2016 – December 31, 2016

**PARTICIPATING AGENCIES:**

Western Transportation Institute, Montana State University – Bozeman

**PROJECT MANAGER:**

Tom Peters and Deborah Sinclair

**SP&R PROJECT NO:**

TPF-5(218)  
MnDOT Contract No.99006

**PROJECT IS:**

Planning  
 Research & Development

**LEAD AGENCY:**

Minnesota Department of Transportation

**PRINCIPAL INVESTIGATOR:**

Michelle Akin

**PROJECT BUDGET:**

\$185,000

**PROJECT EXPENDITURES TO DATE:**

\$180,457

**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

**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**

- 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 #15

**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**

- draft and submit *Field Testing Recommendations*

**Task 9 – Reporting**

- write Quarterly Report #17
- draft and submit *Draft Final Report*

**STATUS:**

The project is currently behind schedule; the *White Paper* will be submitted as soon as possible.

Work Tasks	2016												2017			
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	
1 – Project Management																
2 – Literature Search																
3 – List and Categorize Pavement and Overlay Types																
4 – Interviews																
5 – Lab Testing																
6 – Analyze Chemical & Mechanical Interactions									★		★					
7 – Synthesize Best Management Practices										★		★				
8 – Recommend a Plan of Study											★		★			
9 – Reporting													★			★

★ Deliverable	Draft Due	Final Due
★ Literature Search Submittal	completed	
★ Categorized List of Porous/Permeable Pavements	completed	
★ Synthesis of Interview Results	completed	
★ White Paper on Chemical and Mechanical Interactions	31-Aug-16	31-Oct-16
★ Synthesis of Best Practices	31-Oct-16	31-Dec-16
★ Field Testing Recommendations	30-Nov-16	31-Jan-17
★ Final Report	31-Jan-17	31-Mar-17