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: July 1, 2013 – September 30, 2013

PARTICIPATING AGENCIES:
Western Transportation Institute, Montana State University – Bozeman

PROJECT MANAGER:	**SP&R PROJECT NO**:	**PROJECT IS:**
Tom Peters and Ashley Duran **LEAD AGENCY**: Minnesota Department of Transportation **PRINCIPAL INVESTIGATOR**: Michelle Akin	TPF-5(218) MnDOT Contract No.99006	____ Planning _X_ Research & Development

PROJECT BUDGET:	**PROJECT EXPENDITURES TO DATE**:
$185,000	$38,685

WORK COMPLETED:

Task 0 – Project Management
- Check-in teleconference on July 15, 2013 to discuss submitted literature search and goals for interviews
- Check-in teleconference on August 26, 2013 to discuss status of interviews and pavement samples for lab experiments

Task 1 – Literature Search - *COMPLETE*

Task 2 –List and Categorize Pavement and Overlay Types
- Determined pavement categories

Task 3 – Interviews
- Interviewed DOT personnel (winter maintenance and/or pavement areas) from the following states: Colorado, Kansas, Minnesota, Missouri, Virginia, New Jersey, New York, Rhode Island, Wyoming, and Washington

Task 4 – Lab Testing
- Coordinated collection of samples of pavement mix from paving jobs in New York and Missouri to be shipped to University of Massachusetts Dartmouth where specimens will be made
- Began designing device to "traffic" samples

Task 5 – Analyze Chemical and Mechanical Interactions – no progress during this period

Task 6 – Synthesize Best Maintenance Practices – no progress during this period

Task 7 – Recommend a Plan of Study – no progress during this period

Task 8 – Reporting – no progress during this period

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

Task 0 – Project Management

- Teleconference to discuss trafficking device in October
- Teleconference to discuss lab testing around late November or December

Task 1 – Literature Search – *completed*

Task 2 – List and Categorize Pavement and Overlay Types

- Compile a categorized list of pavement surfaces identified in Task 1 with a description of unique properties for each category

Task 3 – Interviews

- Prepare a synthesis of interview results

Task 4 – Lab Testing

- Prepare lab testing plan based on proposal and information gathered during previous tasks
- Coordinate with University of Massachusetts Dartmouth to have pavement samples produced
- Build trafficking device
- Preliminary CT scans of pavements with potential tracers to track movement of deicers (e.g., iodine or barium contrast media are used in medical CT scans and may be applicable)
- Begin lab testing

Task 5 – Analyze Chemical and Mechanical Interactions – no progress anticipated during this period

Task 6 – Synthesize Best Maintenance Practices – no progress anticipated during this period

Task 7 – Recommend a Plan of Study – no progress anticipated during this period

Task 8 – Reporting

- Write Progress Report 4
- Write and submit Task 2 Deliverable: Categorized List of Porous/Permeable Pavements
- Write and submit Task 3 Deliverable: Synthesis of Interview Results

STATUS: