

## State Planning and Research Program Quarterly Report

**PROJECT TITLE:** *Comprehensive Guide to Pre-Wetting Application Rates and Methods*

**OBJECTIVES:** To develop recommendations for pre-wetting rates and evaluate the difference between applying pre-wet in the chute vs. on the chain flight or in a mix chamber.

**PERIOD COVERED:** April 1 – June 30, 2024

**PARTICIPATING AGENCIES:** Minnesota Department of Transportation, Clear Roads Technical Advisory Committee, Washington State University – Prime, Wilfrid A. Nixon and Associates, LLC – Subcontractor, Monte Vista Associates LLC – Subcontractor, and Roadtech, Inc. - Subcontractor

**PROJECT MANAGER:**

Hafiz Munir / Tom Peters

**SP&R PROJECT NO:**

MnDOT Contract No.  
1051125

**PROJECT IS:**

       Planning  
  X   Research & Development

**LEAD AGENCY:** MnDOT

**PRINCIPAL INVESTIGATOR:**

Xianming Shi, WSU

Federal Project Number:  
TPF-5(479)

**ANNUAL BUDGET:** \$28,522 (FY23);  
\$165,530 (FY24); \$5,923 (FY25)

**TOTAL BUDGET:** \$199,975

**PROJECT EXPENDITURES TO DATE:** \$62,002

### WORK COMPLETED:

Held the kickoff meeting on Feb. 24, 2023. Submitted a Quarterly progress report in Jan. 2024.

**Task 1** (Literature Search): 100% complete. The draft literature review was submitted to the project TAC for review in June 2023 and the revised document was submitted in August 2023 and approved.

**Task 2** (Survey): 100% complete. The final survey questionnaire was implemented in both PDF and in Qualtrics online and we secured a total of 30 valid responses from winter road maintenance professionals.

**Task 3** (Initial Synthesis): 100% complete. The initial synthesis was submitted on March 15, 2024 and reviewed by the project TAC. The revised version is approved.

**Task 4** (Experimental Design): 90% complete. The draft experimental design was submitted in May 2024 and in review by the project TAC. A project progress report meeting has been scheduled to occur on July 12 for the PI to go over the draft Experimental Design with the TAC and seek suggestions and participation from state DOTs.

### SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

Project management activities.

Task 4 (Experimental Design): to complete.

Task 5 (Testing): to initiate.

### STATUS AND COMPLETION DATE:

The revised timeline is as follows. This project is a few months behind schedule but there is a high likelihood to catch up on the schedule in Task 5. Since the Project PI Dr. Xianming Shi is leaving WSU for the University of Miami, he is proposing to transfer the PI role to Dr. Jialuo He at WSU. A no-cost time extension request will be needed once the PI transition occurs in July 2024.

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	02/01/2023	04/30/2023	No change		
2	02/01/2023	05/31/2023	05/01/2023	10/31/2023	11/30/2023
3	03/01/2023	06/30/2023	06/01/2023	12/31/2023	01/31/2024
4	07/01/2023	08/31/2023	11/01/2023	01/31/2024	02/28/2024
5	07/01/2023	06/30/2024	03/01/2024	11/30/2024	12/31/2024
6	05/01/2024	07/31/2024	11/01/2024	01/31/2025	02/28/2025
7	07/01/2024	09/30/2024	11/01/2024	01/31/2025	03/31/2025