

## State Planning and Research Program Quarterly Report

**PROJECT TITLE:** *Snow Removal Performance Metrics*

**OBJECTIVES:** • The goal of this research is to “*identify effective performance metrics for snow and ice maintenance operations*”.

**PERIOD COVERED:**

Apr. 1, 2016– June 30, 2016

**PARTICIPATING AGENCIES:**

Washington State University – Prime  
The Narwhal Group – Subcontractor  
Monte Vista Associates LLC - Subcontractor

**PROJECT MANAGER:** Tom Peters

**SP&R PROJECT NO:**  
MnDOT No. 06910

**PROJECT IS:**

**LEAD AGENCY:** Mn/DOT

Federal Project No.  
TPF-5(218)

Planning  
 Research & Development

**PRINCIPAL INVESTIGATOR:**

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

**ANNUAL BUDGET:**

\$74,640

**PROJECT EXPENDITURES TO DATE:**

\$59,853

**WORK COMPLETED:**

*Project Management*

Project management activities during the quarter were focused on budget and timeline maintenance as well as management of subcontracts. A six-month no-cost time extension was requested and the paperwork is being reviewed by the sponsor. This request, if approved, would extend the current project end date in the contract for three months, from July 31, 2016 to October 30, 2016.

Task 1. Literature review (100% completed)

The WSU team conducted a comprehensive literature review and prepared a draft literature review for the project panel to review. During the fall of 2015, a revised literature review document was submitted to the project panel again, with all the previous review comments addressed. We completed this task by adding the new references published recently and became available in the last quarter.

Task 2. Survey (100% completed)

During the fall of 2015, a revised survey instrument was submitted to the project panel again, with the review comments addressed. The approved survey was then implemented online and distributed out to the snow/ice control community to gather information. During the last quarter, The Narwhal Group assisted the WSU team in this task, further reaching out to state DOTs, city and county public works departments, Canadian ministry of transportation and other international government agencies, and private maintenance firms. A total of 51 valid responses were received.

Task 3. Analysis and Matrix Development (95% completed)

With the assistance from the Norwhal Group, the WSU team completed a draft analysis of the survey responses and submitted these to the project panel for review and some review comments have been received in the last quarter.

Task 4. Recommendations (80% completed)

With the assistance from Monte Vista Associates, the WSU team has completed a draft deliverable on the recommendations and also submitted a draft project final report to the project panel for review. A final webinar was conducted on June 30, 2016.

**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 3 and Task 4. Specifically, a teleconference has been scheduled to discuss the draft project final report in early July. There may be the need to follow up on some survey responses and reformat the project final report to focus on the key questions to be addressed by this project.

**STATUS AND COMPLETION DATE:**

On budget but about four months behind schedule.

<b>Task</b>	<b>Current Task Start Date</b>	<b>Current End Date for Task Approval</b>	<b>Revised Task Start Date</b>	<b>Revised Due Date to Submit Draft Deliverables</b>	<b>Revised End Date for Task Approval</b>
<b>1</b>	<b>05/01/2015</b>	<b>06/30/2015</b>	<b>05/01/2015</b>	<b>06/30/2015</b>	<b>09/30/2015</b>
<b>2</b>	<b>07/01/2015</b>	<b>10/31/2015</b>	<b>07/01/2015</b>	<b>Not Applicable</b>	<b>12/31/2015</b>
<b>3</b>	<b>11/01/2015</b>	<b>01/31/2016</b>	<b>01/01/2016</b>	<b>03/31/2016</b>	<b>04/30/2016</b>
<b>4</b>	<b>02/01/2016</b>	<b>04/30/2016</b>	<b>05/01/2016</b>	<b>06/30/2016</b>	<b>07/31/2016</b>