

# RESEARCH PROGRESS REPORT FOR THE QUARTER ENDING: 2nd

Wisconsin Department of Transportation  
DT1241 2009

Research, Development and Technology Transfer	
<b>Program:</b> (Choose One)	
<input type="checkbox"/> <b>Policy Research</b>	<input checked="" type="checkbox"/> <b>Pooled Fund</b> TPF # 5(092) Clear Roads
<input type="checkbox"/> <b>Wisconsin Highway Research Program</b>	<input type="checkbox"/> <b>Other</b>
<b>Project Title:</b> Development of a Toolkit for Cost-benefit Analysis of Specific Winter Maintenance Practices, Equipment and Operations	
<b>Administrative Contact/Phone #:</b> Colleen Bos/ (608) 577-4805	<b>WisDOT Project ID(s):</b> 0092-09-08
<b>WisDOT Technical Contact/Phone #:</b> Michael Sproul/ (608) 266-8680	<b>Other Project ID:</b> Clear Roads 08-02
<b>Project Investigator/Phone # (agency &amp; contact):</b> Xianming Shi, PhD, PE, Western Transportation Institute (WTI) Montana State University (406) 994-6486	<b>Approved Starting Date:</b> 12/17/2008
<b>WisDOT Comments:</b>	<b>Original End Date:</b> 8/31/2010
	<b>Current End Date:</b> 8/31/2010
<b>Sponsor:</b> Wisconsin Department of Transportation	<b>Number of Extensions:</b> 0

**Schedule Status:**

- On schedule                       Ahead of schedule  
 On revised schedule             Behind schedule (Please explain below)

Total Project Budget	Expenditures Current Quarter	Total Expenditures	% Funds Expended	% Work Completed
\$149,500.00	\$18,219.00	\$140,164.00	94%	90%

**Project Description:**

This project is the development of a toolkit that will provide winter maintenance managers a means by which to evaluate and justify expenditures on a variety of practices, equipment and operations. Specifically, this research aims to establish a practical toolkit that can be employed by maintenance managers not only to understand the expected costs and benefits of specific practices, equipment, or operations, and convey those expectations to decision-makers outside the maintenance community. The toolkit will include guidance related to the costs and benefits of practices, equipment, and operations, as well as provide a means to be expandable in the future to include additional winter maintenance elements as needed.

**Progress This Quarter:** (Includes project committee meetings, work plan status, contract status, significant progress, etc.)

**Task 0. Project Management (90% completed)**

This task involved periodic communications within the research team (e.g. weekly meetings) as well as between the research team and the sponsor

**Task 1. Comprehensive Literature Review (98% completed)**

The literature review of the costs, benefits and effectiveness of winter maintenance practices, equipment and operations was not significantly changed during the quarter.

**Task 2. Survey of Best Practices (100% completed)**

The researchers obtained to the best of their ability the remaining data needs for the toolkit. Additionally, three test states were identified and contacted to obtain sample input data for use and demonstration of the completed toolkit. These states included Indiana, Iowa and Washington. As of July 6<sup>th</sup>, data had been obtained from Indiana and Iowa, with Washington targeting completion of their data compilation by July 9<sup>th</sup>.

**Task 3. Tool and Methodology Development (90% completed)**

The subcontractor has finalized work on the initial website. Based on this, internal testing has begun to ensure that calculations are being made correctly under different scenarios and that the website is functioning without any glitches. Based on this testing, any necessary modifications will be made by the subcontractor as needed.

**Task 4. Pilot Training Session (10% completed)**

Concurrent with the testing and debugging of the toolkit, documentation and preparation of training materials has begun. This work is in its early stages, with a target completion date of mid-July.

**Anticipated Work Next Quarter:**

Work in the coming quarter will consist of four tracks. First, work will focus on testing and debugging of the toolkit website. Second, necessary changes will be made to the website as needed based on the results of testing and debugging. Third, user documentation of the toolkit, as well as report documentation will be made. Finally, the contractor will develop and present a training session to the TAC and the entire Clear Roads board during the course of the quarter (including the trip to the August Clear Roads meeting). User documentation and the final report will be provided to the project technical panel so that they may complete review and feedback. Once feedback has been received, changes will be made to these documents as needed.

**Circumstances Affecting Progress and/or Budget:**

In light of the tight budget constraints, WTI has internally planned some cost-sharing on the project (up to \$10,000) to ensure its success, which is still in the approval process by the University Transportation Center grant.

**Gantt Chart:**

		Calendar Year / Month																							
		2008	2009												2010										
Tasks	Milestones	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8			
<b>Task 0. Project Management</b>		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Project kickoff	<i>Dec-08</i>	X																							
Quarterly progress reports	<i>End of each quarter</i>		X	X	X	X			X			X		X				X							
<b>Task 1. Comprehensive Literature Review</b>			X	X	X	X	X																		
Interim Report: Synopsis of Findings and Recommended Toolkit Elements						X																			
Interim Conference Call Meeting/Presentation	<i>Apr-09</i>					X																			
<b>Task 2. Survey of Best Practices</b>			X	X	X	X	X	X																	
Initial Survey - develop and distribute						X																			
Survey Analysis - Identify priority items						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Follow-up Survey - Obtain specifics on priority items						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Summary of Results	<i>May-09</i>					X																			
<b>Task 3. Tool and Methodology Development</b>								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
<b>Task 4. Pilot Training Session</b>																									
<b>Task 5. Training for TAC</b>	<i>Aug-10</i>																								
<b>Task 6. Recommendations for Implementation</b>																		X	X	X					
Draft final report	<i>Jul-10</i>																								
Final report	<i>Aug-10</i>																								

Boxes with an X indicate completion of work to date