

# RESEARCH PROGRESS REPORT FOR THE QUARTER ENDING: 1st

Wisconsin Department of Transportation  
DT1241 2009

<b>Research, Development and Technology Transfer</b>	
<b>Program:</b> (Choose One)	
<input type="checkbox"/> <b>Policy Research</b>	<input type="checkbox"/> <b>Pooled Fund TPF #</b>
<input checked="" type="checkbox"/> <b>Wisconsin Highway Research Program</b>	<input type="checkbox"/> <b>Other</b>
<b>Project Title:</b> PERFORMANCE ASSESSMENT OF WISCONSIN'S WHITETOPPING AND ULTRA THIN WHITETOPPING PROJECTS	
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<b>WisDOT Technical Contact/Phone #:</b> Jim Parry	<b>Other Project ID:</b>
<b>Project Investigator/Phone # (agency &amp; contact):</b> Haifang Wen – Washington State University	<b>Approved Starting Date:</b> 10/1/2007
<b>WisDOT Comments:</b>	<b>Original End Date:</b> 9/30/2008
	<b>Current End Date:</b> 3/30/2009
<b>Sponsor:</b> Wisconsin Department of Transportation	<b>Number of Extensions:</b> 1

**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
\$74,867.00	\$0	\$47,601.81	64%	70%

**Project Description:**

Whitotopping pavement is defined as a Portland cement concrete (PCC) overlay over existing hot mix asphalt (HMA) pavement. When the PCC overlay thickness is less or equal to four inches, it is referred to Ultra-thin Whitotopping (UTW). In Wisconsin, the use of whitotopping projects could be dated back to two decades ago. The first whitotopping pavement was built on US 151 between Mineral Point and Dodgeville, Iowa County, Wisconsin in 1983. Since then, a number of Whitotopping (WT) or Ultra-thin whitotopping (UTW) projects have been built in Wisconsin but there has been no specific follow-up regarding their performance to date. Like projects in other states, individual projects in Wisconsin have shown mixed results in terms of performance. Causes for these large discrepancies need to be examined and understood so that they may be appropriately accounted for in design. Furthermore, estimates of service life need to be developed so that each of these rehabilitation activities can be appropriately incorporated in to pavement life cycle cost analysis (LCCA). Establishment of appropriate design procedures and the corresponding service life will allow highway agencies to make informed decisions regarding the appropriate use of these two pavement improvement techniques.

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

Even though the project has not been transferred, the team resumed the work on whitotopping project and assigned a graduate student to work on it. Currently, WHRP is working on the contract to Washington State University.

The results of the Iowa shear test in the laboratory were analyzed. The bond strength between asphalt and concrete were obtained. Typically, the bond strength was around psi, which was close to the bond strength reported by other studies. In addition, the PDI and PCI of the whitotopping projects were determined. The team is currently analyzing the FWD tests results and use the finite element program to analyze the whitotopping pavements.

**Anticipated Work Next Quarter:**

Execute the contract with WHRP and continue working on the data analysis.

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

There is a delay due to contract transfer. The team has requested a non-cost extension. A tentative schedule is provided below.

Gantt Chart:

A new Gantt chart will be built based on the new contract.

Tasks	2007	2008				2009		
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
<b>Task 1:</b> Literature Review	■							
<b>Task 2:</b> Database Development		■	■					
<b>Task 3:</b> Performance Assessment			■	■				
<b>Task 4:</b> Forensic Investigation			■	■				
<b>Task 5:</b> Performance Comparison			■	■	■	■		
<b>Task 6:</b> Estimate Service Life				■	■	■	■	
<b>Task 7:</b> Final Report							■	■