

**State of Wisconsin/Department of Transportation**  
RESEARCH PROGRESS REPORT FOR THE QUARTER ENDING: March 31, 2007

<b>Program: SPR-0010(36) FFY99</b>	<b>Part: II Research and Development</b>
<b>Project Title: WHRP Administrative Contract</b>	<b>Project ID: 0092-05-11</b>
<b>Administrative Contact: Jim McDonnell</b>	<b>Sponsor: WHRP</b>
<b>WisDOT Technical Contact: Hussain Bahia</b>	<b>Approved Starting Date: November 1, 2005</b>
<b>Approved by COR/Steering Committee: \$143,430</b>	<b>Approved Ending Date: March 31, 2007</b>
<b>Project Investigator (agency &amp; contact): Hussain Bahia, UW-Madison.</b>	

**Percent Complete:** 100% (Original Contract – End Date 3/31/2007)

**Project Description:**

This project is for the administration of the Wisconsin Highway Research Program (WHRP) by the staff at UW-Madison assigned to perform the duties/tasks detailed below. The tasks listed are those that are to be completed over the length of the entire contract, which is scheduled to close on 3/31/07.

- Task 1: Development and Implementation of WHRP's Strategic Plan
- Task 2: Management of All Areas of WHRP Activities
- Task 3: Development of WHRP Operating Budget and Research Contracts
- Task 4: Research Project Management and Oversight
- Task 5: Develop Written Procedures for WHRP, HRSC and TOC Activities
- Task 6: WHRP Marketing and Outreach
- Task 7: Measuring Program Performance
- Task 8: Travel Funding

**Progress This Quarter:**

(Includes project committee mtgs, work plan status, contract status, significant progress, etc.)

Task 1:

Under **1.a.ii** of the strategic plan, WHRP is developing a survey of research needs developed from WisDOT's Guidance Documents (Standard Specifications, Construction Materials Manual, and Facilities Development Manual). This survey has been completed and reviewed for the Flex TOC the Rigid TOC. The Flexible Survey has been distributed to industry, academia, and WisDOT. Efforts have now been focused on developing distribution lists. This is being accomplished through solicitation for participation. At a higher level regional visits and discussion at a meeting of the PDS/TSS Chiefs to discuss how to get the correct people approved for participation in the survey and how to get more input from regions for research needs.

Under **1.b.i**, All four TOCs have also selected implementation projects for FFY 2007. Workplans for the projects have been submitted for one project. WHRP has given a deadline of May 1<sup>st</sup> for submittal of workplans to ensure timely execution of the contracts. Have also discussed how better to integrate regional personnel into implementation plans and ideas.

Under **1.b.ii**, WHRP has analyzed the implementation forms and plans to present the data to the TOCs in the summer meetings. WHRP has also prepared templates or Research Impact Forms for all past research projects. WHRP will attempt to use the implementation forms to complete the impact forms and work with the TOCs to refine them.

Under **1.c**, WHRP has discussed participation in the Research Pays Off Conference in Summer of 2008.

Under **2.a.i**, WHRP worked with ARA to provide past research reports and raw data for past WHRP projects related to ME Design for use in their efforts to help WisDOT implement the design guide.

Under **2.a.ii.** WHRP is funding a two phase project involving instrumentation of the perpetual pavement on the Marquette Interchange to better understand the strains experienced throughout the pavement structure under traffic. WHPR has also solicited the regions for research opportunities on their major projects.

Under **2.a.iii.** WHRP has developed a contracting policy to minimize work load on WisDOT Staff while also eliminating the extra overhead inherent to the use of a master contract with UW. The Steering Committee had no comments on this policy, it will be subject to vote in the August meeting.

Under **2.b.** WHRP continues to work with many academic and private institutions to complete research projects and distribute final reports to the appropriate entities.

Under **2.b.ii.** The Frozen Four sent a letter of support for a Michigan Tech Proposal to the EPA evaluating the use of recycled materials in construction. This involvement will benefit the Frozen Four.

Under **3.a.i.** WHRP has continued working with the North Central Pavement Research Partnership, "Frozen Four." A fifth meeting of the representatives of the member states occurred on March 28, 2007. For further details please refer to the meeting minutes on ([www.frozenfour.us](http://www.frozenfour.us)).

Under **3.a.ii.** WHRP has discussed the WisDOT pooled fund solicitation schedule with RCSS in hopes of making TOCs aware of the solicitation and allowing them to submit their ideas to WisDOT for prioritization. The TOCs also have an interest in pooled fund participation with some of their FFY 2008 research dollars.

Under **3.b.i.** WHRP is involved in the project oversight committees for all three of the projects selected. WHRP has also been working to coordinate discussions between CFIRE and the Structures TOC regarding possibly funding a project in FFY 2008.

Task 2: WHRP worked with the TOCs to finalize budgets and select FFY 2008 presentation to the Steering Committee approval for FFY 2008 projects. Coordinated with TOCs to complete research projects, start implementation projects, get invoices paid, and to review quarterly reports.

WHRP Coordinated with RCSS on research administration activities on a regular basis. The decision has been made to hold bi-weekly meetings between RCSS and WHRP.

Task 3: WHRP worked with TOC's to prepare a tentative operating budget for FFY 2008. RFPs were posted, proposals collected, and distributed to the TOCs.

Task 4: Coordinated the submission of quarterly reports that resulted in **29 of 34** reports being submitted on time. This works out to a **85%** submission rate. Late quarterly reports have since been received.

Completed 3 project this quarter – Harold Von Quintus' 0092-05-07: Guidance, Parameters, and Recommendations for Rubbilized Pavements, Bob Schmitt's 0092-06-02: In Place Permeability Criteria for Pavement, 0092-06-08: Rigid Pavement TOC Implementation Project Mauricio Ruiz.

Task 5: WHRP has identified Researcher Selection, Policy, contracting and phasing as policies that need to be rewritten in the policy manual.

Task 6: Distributed the completed final reports (70 copies of each) to the appropriate agencies. Had an exhibition booth at the WCPA Conference on January 26-27 and gave a presentation at the PDS Conference on March 6,7 to market the program. Also went on 3 of six visits to the regions to raise awareness of the program and solicit participation.

Coordinated with CTC & Associates, to create research briefs for soon-to-be-completed research projects. Also coordinated with CTC & Associates to provide Transportation Literature Searches for FFY 07 projects and for FFY 2008 RFPs.

Continued updating and adding more information to the WHRP website.

Task 7: Used a variety of indicators to measure the performance of various WHRP activities such as submission rate of quarterly reports, number of projects closed out, and number of projects delayed or extended. Also provided updates on status of contracting, budgets and status of invoices.

Task 8: Continued to provide funding for WisDOT and WHRP staff travel. Committed to the funding for travel to TRB for Laura Fenley. Also funded transportation, lodging, and meals for regional visits.

**Work Next Quarter:**

Task 1: Will continue to implement the various components of the strategic plan with special emphasis on coordination of various research funding and opportunities to leverage funds through various other WisDOT sponsored programs or pooled funds.

Task 2: Will coordinate meetings of the TOC Chairs as well as the Steering Committee. Will continue to work with RCSS on numerous activities.

Task 3: Will ensure that FFY 2007 implementation contracts are executed in a timely fashion so that the PI may start at their scheduled time.

Task 4: Will continue to manage quarterly reports, invoices, final reports, and to support the implementation process. Expect completion of projects: 0092-05-12, 0092-06-01, 0092-04-07, 0092-00-08, 0092-00-11, 0092-05-08, 0092-05-09.

Task 5: Work with TOCs to fill outstanding implementation forms and impact forms.

Task 6: Will continue to work to put implementation and research projects under contract. Will continue to complete and distribute final research reports. Will continue to work with CTC & Assoc. to market the WHRP. Will continue to make updates to the website as necessary.

Task 7: Will continue to measure the performance of WHRP activities.

Task 8: Will continue to fund the travel of WisDOT personnel and WHRP staff.

**Circumstances Affecting Progress/Budget:**

None.

### WHRP “Snapshot” for the quarter ending 3/31/07

<b>TOC</b>	<b># active projects at end of quarter</b>	<b># QPRs submitted on time</b>	<b>% QPRs submitted</b>	<b>Projects Closed Out</b>	<b># of projects beyond their end date</b>
<b>Flexible</b>	6	5	83%	2	0 – delayed 5 (02-13; 03-13; 04-07; 05-12; 06-01) – conventional extensions
<b>Geotech</b>	10	10	100%	0	0 – delayed 4 – (04-10; 05-08; 05-09; 00-13) conventional extensions
<b>Rigid</b>	9	6	67%	1	0 - delayed 5 (00-08; 00-11; 03-16; 04-12; 05-05) – conventional extensions
<b>Structures</b>	9	8	89%	0	0 – delayed 3 (04-15; 05-03; 06-07) – conventional extensions
<b>Total</b>	<b>34</b>	<b>29</b>	<b>85%</b>	<b>3</b>	<b>0</b> – delayed <b>17</b> – conventional extensions

**Delayed:** Projects that are beyond their original end date that probably could have been avoided (no one is being faulted).

**Conventional Extension:** Projects that are beyond their original end date for reasons common to the research process.

**Summary of In-Progress Projects 2007 Quarter 1: Flex TOC**

Project ID	Title	TOC	Tech Progress (%) 9/30/06	Tech Progress (%) 12/31/06	Financial Progress (%)	Start Date	Expected End Date	Extension	QPR Received on Time
0092-02-13	Evaluation of Interlayer Bonding	Flex	70%	85%	73%	10/29/2002	3/30/2007	No Cost Time Extension	X
0092-03-13	Field Validation of Wisconsin Modified Binder Selection Guidelines	Flex	81%	91%	95%	1/31/2003	7/31/2007	No Cost Time Extension	X
0092-04-07	Testing Wisconsin Asphalt Mixtures for the AASHTO 2002 Mechanistic Design Procedure	Flex	85%	95%	89%	4/2/2004	2/9/2007	Extension	X
0092-05-07	Guidance, Parameters, and Recommendations for Rubbilized Pavements	Flex	99%	100%	90%	10/1/2004	6/30/2006	No Cost Time Extension	NA
0092-05-12	Test Method to Determine Aggregate/Asphalt Adhesion Properties as an Indication of Potential Susceptibility to Moisture Damage	Flex	94%	98%	98%	12/20/2004	3/31/2006	No Cost Time Extension	X
0092-06-01	Perpetual Pavement Instrumentation For the Marquette Interchange Project	Flex	98%	99%	2%	10/20/2005	1/20/2007	No Cost Time Extension	
0092-06-02	In-Place Permeability Criteria for HMA Pavement	Flex	99%	100%	91%	10/1/2005	3/1/2007	No Cost Time Extension	NA
0092-06-08	Implementation Project: Flex TOC	Flex	25%	40%	0%	8/10/2006	8/11/2007		X



Completed During Quarter  
Draft Final Report Received

<b>SUMMARY</b>	<b>Projects Extended</b>	<b>QPR's Submitted</b>
	88%	88%

**Summary of In-Progress Projects 2007 Q1: Rigid**

Project ID	Title	TOC	Tech Progress (%) 12/31/06	Tech Progress (%) 3/31/07	Financial Progress (%)	Start Date	Expected End Date	Extension	QPR Received on Time
0092-00-08	Wet Pavements Crash Study of Longitudnal and Transverse Tined Pavements	Rigid	99%	99%	????	12/15/1999	12/31/2006	Extended	
0092-00-11	Portland Cement Concrete Pavement Over Rubbilized PCC	Rigid	90%	96%	100%	3/28/2000	12/31/2006	No Cost Time Extension	
0092-03-16	Evaluation of Methods for Characterizing Air Void Systems in Wisconsin Paving Concrete	Rigid	99%	99%	84%	3/3/2003	12/31/2006	No Cost Time Extension	
0092-04-12	Expanded Study on the Effects of Aggregate Coatings and Films on Concrete Performance	Rigid	64%	75%	81%	10/1/2003	8/31/2007	No Cost Time Extension	X
0092-05-01	Effects of Ground Granulated Blast Furnace Slag in Portland Cement Concrete - Expanded Study	Rigid	94%	95%	61%	7/14/2004	6/30/2007		X
0092-05-05	Analysis of Concrete Pavement Joints to Predict Distress	Rigid	30%	45%	26%	12/31/2006	7/31/2007	No Cost Time Extension	X
0092-06-08	Implemenation Project-Rigid	Rigid	1.0%	100.0%	0%	8/10/2006	3/31/2007		NA
0092-07-02	Detecting Deleterious Fine Particles in Concrete Aggregates and Defining Their Effects	Rigid	1.0%	11.0%	NA	10/1/2006	10/1/2008		X
0092-07-03	Improving Full Depth Concrete Repair	Rigid	3%	10%	NA	10/1/2006	10/1/2007		X

Completed During Quarter
Draft Final Report Received

Completed During Quarter  
Draft Final Report Received

<b>SUMMARY</b>	<b>Projects Extended</b>	<b>QPR's Submitted</b>
	56%	67%

### Summary of In-Progress Projects 2007 Q1: Structures TOC

Project ID	Title	TOC	Tech Progress (%) 9/30/06	Tech Progress (%) 12/31/2006	Financial Progress (%)	Start Date	Expected End Date	Extension	QPR Recieved
0092-04-15	Bridge Integrated Analysis And Decision Support: Case Histories	Struct.	92%	95%	56%	10/1/2004	8/31/2007	No Cost Time Extension	X
0092-05-02	In-Situ Monitoring and Testing of IBRC Bridges in Wisconsin	Struct.	40%	45%	77%	11/4/2004	11/4/2009		X
0092-05-03	Electronic Automation of LRFD Design Programs	Struct.	87%	90%	57%	11/4/2004	5/4/2007	No Cost Time Extension	X
0092-06-06	Evaluation of Methods of Rebar Protection, Spall Prevention, and Repair Techniques on Concrete Girders	Struct.	26%	40%	32%	10/3/2005	10/3/2007		
0092-06-07	Specification and Design of Fiber Reinforced Bridge Deck Forms for use on Wide Flange T-Girders	Struct.	76%	85%	38%	10/3/2005	10/3/2007	No Cost Time Extension	X
0092-06-08	Implementation Project: Structures	Struct.	5%	10%	0%	8/11/2006	8/11/2007		X
0092-07-07	Evaluation of Fiberglass Wrapped Concrete Bridge Columns	Struct.	5%	10%	0%	10/1/2006	10/1/2007		X
0092-07-08	Rapid Bridge Construction Technology: Precast Elements for Substructures	Struct.	10%	15%	NA	10/1/2006	10/1/2008		X
0092-07-09	Monitoring and Load Distribution Study for the Land Bridge	Struct.	5%	20%	NA	10/1/2006	1/1/2009		X



Completed During Quarter  
Draft Final Report Received

<b>SUMMARY</b>	<b>Projects Extended</b>	<b>QPR's Submitted</b>
	33%	89%

**Summary of In-Progress Projects Q4: Geotech TOC**

Project ID	Title	TOC	Tech Progress (%) 9/30/06	Tech Progress 12/31/2006 (%)	Financial Progress (%)	Start Date	Expected End Date	Extension	QPR Received
0092-00-13	Investigation of Bridge Approach Settlement	Geo	98%	98%	95%	3/3/2000	3/1/2007	No Cost Time Extension	X
0092-04-10	Monitoring and Evaluation of Fly Ash Stabilized Subgrade Constructed by the WisDOT	Geo	92%	95%	89%	7/31/2003	8/31/2007	No Cost Time Extension to	X
0092-05-08	Determination of Shear Strength Values for Granular Backfill Material Used by the Wisconsin Department of Transportation	Geo	99%	99%	65%	9/1/2004	3/31/2007	No Cost Time Extension	X
0092-05-09	Investigation of Vertical Members to Resist Surficial Slope Instabilities	Geo	85%	95%	63%	11/4/2004	2/4/2007	No Cost Time Extension	X
0092-06-04	Construction Vibration Attenuation with Distance and Effect on Quality of Early-Age Concrete	Geo	10%	12%	2%	10/20/2005	10/20/2008		X
0092-06-05	Comparison of Basic Lab Test Results with More Sophisticated Lab and In-Situ Test Methods on Soils IN SE WI	Geo	24%	35%	20%	11/18/2005	5/18/2007		X
0092-06-08	Implementation-Geotech	Geo	10%	20%	NA	8/10/2006	8/10/2007		X
0092-07-04	Comparison of Three Different Methods for Determining Pile Bearing Capacities	Geo	1%	16%	NA	10/1/2006	4/1/2008		X
0092-07-05	Development of a Testing Method to Determine Interaction of Geo-grid Reinforced Material for Mechanistic Pavement Design	Geo	5%	15%	NA	10/1/2006	10/1/2008		X
0092-07-06	of an Alternative Foundation System for Post and Panel	Geo	2%	15%	NA	10/1/2006	10/1/2008		
						<b>SUMMARY</b>	<b>Projects Extended</b>	<b>QPR's Submitted</b>	
							Completed During Quarter	44%	100%
								Draft Final Report Received	