

State of Wisconsin/Department of Transportation
RESEARCH PROGRESS REPORT FOR THE QUARTER ENDING: MARCH 31, 2008

Program: SPR-0010(36) FFY99	Part: II Research and Development
Project Title: Materials Characterization and Analysis of the Marquette Interchange Project	Project ID: MRUTC 08-08 (0092-07-13)
Administrative Contact: Jason Bittner	Sponsor: MRUTC
WisDOT Technical Contact: Leonard Makowski	Approved Starting Date: May 1, 2007
Approved by COR/Steering Committee: \$60,000	Approved Ending Date: August 31, 2008
Project Investigator (agency & contact): Marquette University, Dr. James A. Crovetti	

Description: The objectives of this study are to characterize the materials used to construct the HMA perpetual pavement within the Marquette Interchange project and to analyze the collected pavement response data to investigate the interactions between materials, environment, and traffic loadings. This study will require a detailed examination of the predictive equations and sub-routines which are part of the mechanistic-empirical design procedures developed under NCHRP Project 1-37A to determine how well these reflect the actual response measures. The conclusions of this study should provide guidance for the Wisconsin Department of Transportation to perform mechanistic-empirical pavement designs which are validated for local conditions.

Total study budget	Current FFY budget	Expenditures for current quarter	Total Expenditures to date	Percent Complete
\$60,000	\$45,000	\$19,142.03	\$32,915.87	60%

Progress This Quarter:

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

Work during this quarter included laboratory testing of unbound aggregate materials completed at UW-Milwaukee. Dr. Hani Titi expressed reservations that the results of these tests were not reliable and requested that additional tests be conducted to verify the accuracy of the original test results. Additional traffic data was obtained and analyzed to develop/refine inputs for the ME Design Analysis. Traffic data from additional WIM stations throughout Wisconsin were also analyzed to help determine the sensitivity of traffic variations to locations across the State. This analysis will help in the development of regional default input values and in the determination of the need for site-specific traffic data.

Work Next Quarter:

Laboratory testing of unbound aggregate materials will be completed at UW-Milwaukee. Performance predictions for the perpetual HMA pavement along I-43 will be finalized using the MEPDG software. Separate analyses will be completed for the general HMA pavement conditions and for specific pavement conditions existing within the instrumented section of I-43. Additional analyses will be finalized using stand-alone software such as EVERSTRESS and KENLAYER. The software packages allow for the determination of specific pavement outputs, such as HMA strain and subgrade compressive stresses, which can be compared directly to actual field measurements obtained with on-site instrumentation. The draft final project report will be prepared and submitted for review prior to June 30, 2008. This will provide a one-month review period after which time a project close-out presentation will be provided and a revised final report will be prepared and submitted.

Circumstances affecting progress/budget:

The laboratory testing at UW-Milwaukee has taken longer than originally anticipated. Every effort is being made to finalize testing prior to April 30, 2008 to ensure a project completion by the approved ending date of August 31, 2008.

