

RESEARCH PROGRESS REPORT FOR THE QUARTER ENDING: 3rd

Wisconsin Department of Transportation
DT1241 2009

Research, Development and Technology Transfer	
Program: (Choose One)	
<input type="checkbox"/> Policy Research	<input type="checkbox"/> Pooled Fund TPF #
<input checked="" type="checkbox"/> Wisconsin Highway Research Program	<input type="checkbox"/> Other
Project Title: Determination of Resilient Modulus Values for Typical Plastic Soils in Wisconsin	
Administrative Contact/Phone #: Peg Lafky/(608)266-3663	WisDOT Project ID(s): 0092-08-12
WisDOT Technical Contact/Phone #: Bob Arndorfe (608) 246-7940	Other Project ID:
Project Investigator/Phone # (agency & contact): UW-Milwaukee - Hani Titi	Approved Starting Date: 10/1/2007
WisDOT Comments:	Original End Date: 4/1/2009
	Current End Date: 3/31/2010
Sponsor: Wisconsin Department of Transportation	Number of Extensions: 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
\$50,690.00	\$13,891.00	\$35,064.00	69%	65%

Project Description:

The primary objective of this research project is to develop (and/or expand, improve) and validate a methodology for estimating the resilient modulus of various Wisconsin subgrade soils from basic soil properties (Level 2 input parameters in the mechanistic-empirical pavement design). The following specific objectives are identified for successful accomplishment of this research:

1. Conduct repeated load triaxial tests to determine the resilient modulus of Wisconsin soils selected by WisDOT engineers. These soils will also be subjected to different laboratory tests to obtain their physical and compaction properties. The obtained test results will augment and expand the test data conducted during Phase I of the resilient modulus research.
2. Develop/expand/modify resilient modulus correlations (models) that were proposed in Phase I between the resilient modulus constitutive model parameters (k1, k2, & k3) and basic soil properties. The new correlations will be validated for wide range of Wisconsin soils and conditions.

The following tasks will be executed:

- Task 1: review the resilient modulus research conducted on phase I under WHRP project id 0092-03-11
- Task 2: obtain the results of WisDOT analysis & evaluation of resilient modulus research conducted under WHRP project ID 0092-03-11
- Task 3: selection of Wisconsin soils for resilient modulus testing in accordance with phase ii requirements
- Task 4: conduct laboratory testing program to evaluate soil properties and resilient modulus of Wisconsin soils
- Task 5: analyses of test results and development of models to predict resilient modulus
- Task 6: evaluation of the resilient modulus models developed in phase ii in the context of the mechanistic-pavement design
- Task 7: validation of the proposed models through predicting laboratory testing and evaluations against LTPP database
- Task 8: final report

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

Obtained soil samples from Dodge and Winnebago counties.
 Continued comprehensive laboratory testing program on four soils to obtain physical, mechanical, and compaction properties
 Running repeated load triaxial tests on soil samples to determine the resilient modulus values
 Started preliminary analysis

Anticipated Work Next Quarter:

Collect more soil samples that are identified by WisDOT Geotechnical Engineers.
 Continue repeated load triaxial test on the available soils under variety of moisture contents and unit weight
 Continue analysis of test results and consult/meet with the POC to obtain directions

Circumstances Affecting Progress and/or Budget:

Gantt Chart:

Task Number	Year 1				Year 2			
	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Task 1 - Plan	X							
Task 1 - Complete								
Task 2 - Plan	X							
Task 2 - Complete								
Task 3 - Plan	X	X	X	X				
Task 3 - Complete								
Task 4 - Plan	X	X	X	X	X			
Task 4 - Complete								
Task 5 - Plan			X	X	X	X		
Task 5 - Complete								
Task 6 - Plan				X	X	X		
Task 6 - Complete								
Task 7 - Plan					X	X		
Task 7 - Complete								
Task 8 - Plan					X	X		
Task 8 - Complete								