

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

Program: SPR-0010(36) FFY99		Part: II Research and Development	
Project Title: Construction Vibration Attenuation with Distance and Effect on Quality of Early-Age Concrete		Project ID: 0092-06-04	
Administrative Contact: Nikki Hatch		Sponsor: Wisconsin Department of Transportation	
WisDOT Technical Contact: Robert Arndorfer and Dr. Hussein Bahia		Approved Starting Date: 10/20/05	
Approved by COR/Steering Committee: \$230,805		Original End Date: 10/20/08	
Project Investigator (agency & contact): HNTB Corporation, John M. Siwula		Current End Date: To be determined once WisDOT determines field test locations	
		Number of Extensions:	

Percent Complete: 28 %

Request a No Cost Time Extension (Please Select One): YES NO

Reason for No Cost Time Extension: Marquette Interchange pile contractor is not allowing research team to access site for data collection. Therefore, the DOT is investigating other possible field test locations.

Project Description: : Research of construction vibrations and attenuation with distance from the vibration source. Also determine effects of vibration and cure time on the quality of recently placed concrete. Noise generated by pile driving will also be measured. The Department wants to use the research to reduce the distance between pile driving and concrete placement operations in order to reduce construction periods and/or costs.

Progress This Quarter:

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

WisDOT is reviewing potential alternate projects where field pile vibration data may be able to be obtained. WisDOT offered to perform PDA testing for HNTB once a location is selected. Dr. Sam Helwany, the coinvestigator from UWM has finished the first phase of laboratory testing in which ninety concrete cylinders were constructed, vibrated and broken. The second phase of laboratory testing started this quarter. Thirty six concrete beams are in the process of being vibrated and broken. An internal report was prepared on tests that have been completed along with initial finite element modeling of vibrations caused by pile driving. UWM purchased the seismographs that will be used to field monitor pile driving vibrations.

Work Next Quarter: Lab testing of concrete beams will continue. Plan on having field pile driving locations identified by WisDOT.

Circumstances Affecting Progress/Budget: Lack of field pile driving locations has not allowed vibration attenuation monitoring to start.

Gantt Chart: Not at this time.