



CAIT

Center for Advanced Infrastructure & Transportation
Rutgers, The State University of New Jersey

NJDOT Bureau of Research
QUARTERLY PROGRESS REPORT

Project Title:	Material Characterization and Seasonal Variation in Material Properties		
RFP NUMBER:	NJDOT RESEARCH PROJECT MANAGER: Mr. Tony Chmiel		
TASK ORDER NUMBER: Task Order No. 100 / 4-26701	PRINCIPAL INVESTIGATOR: Dr. Nenad Gucunski		
Project Starting Date: 01/01/2001 Original Project Ending Date: 12/31/2004 Modified Completion Date:	Period Covered: 4 th Quarter 2004		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Selection of Test Sections	5	0	100	5
Field Testing & Instrumentation	50	0	100	50
Analysis	35	5	95	33.2
Reporting	10	15	85	8.5
TOTAL	100%			96.7

Project Objectives:

The main objective of this study is to calibrate the AASHTO temperature and seasonal adjustment models, or to develop new models. These models will be based on New Jersey conditions and will be used in network and project level FWD analysis.

Project Abstract:

This study is being conducted to calibrate the AASHTO models, or to develop new models, for temperature and seasonal adjustment to suit New Jersey conditions. These models will be used in the network and project level FWD analysis. To achieve the objective of study, twenty-four pavement sections were instrumented and nondestructive testing (NDT) program is being conducted for a period of two years. The main task of the instrumentation is to monitor environmental parameters: air and pavement temperature, moisture, frost/thaw depth and rainfall. Seismic Pavement Analyzer (SPA) and Falling Weight Deflectometer (FWD) are used to evaluate the pavement structural response and its properties on a monthly basis, except during the spring thaw period when it is on a bi-monthly basis. The models will be developed by performing statistical analyses, such as analysis of variance (ANOVA) and regression analysis.

1. Progress this quarter by task:

Two years of FWD, SPA and instrumentation data downloads have been completed. The data analysis is ongoing - preliminary models to account of seasonal changes in pavement performance based on FWD deflections and SPA data have been developed.

- Analysis/model development ongoing.
- Field tests completed, since April.
- Some of the SPA data reprocessed.
- A correlation analysis of the SPA is being carried out.



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2. Proposed activities for next quarter by task:

- Continued model development.
- Correlation analysis of FWD and SPA data.
- Reporting

3. List of deliverables provided in this quarter by task (product date):

4. Progress on Implementation and Training Activities:

N/A

5. Problems/Proposed Solutions:

N/A

Total Project Budget	\$1,779,642.00
Modified Contract Amount:	
Total Project Expenditure to date	\$1,689,127
% of Total Project Budget Expended	95%

* These are approximate expended amounts for the project; these estimates are for reference only and should not be used for official accounting purposes. For a more accurate project accounting please review the quarterly invoice for this project.