



QUARTERLY PROGRESS REPORT

Project Title:	Rut Testing of Hot Mix Asphalt		
RFP NUMBER:	NJDOT RESEARCH PROJECT MANAGER: Mr. Nicholas Vitillo		
TASK ORDER NUMBER/Study Number: Task Order No. 98 / 4-26677	PRINCIPAL INVESTIGATOR: Dr. Ali Maher		
Study Start Date: 01/01/2001 Study End Date: 12/31/2002	Period Covered: 2 nd Quarter 2002		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Literature Search/Local Agency Survey	10%	25%	100%	10%
Lab Testing for Rutting Criteria	25%	20%	100%	25%
Lab Testing for NJ HMA Characterization	25%	10%	20%	5%
Lab Testing for SUPERPAVE vs Marshall	20%	10%	35%	7%
Field Calibration/Evaluation	10%	0%	0%	0%
Final Report	10%	0%	0%	0%
TOTAL	100%			47%

1. Progress this quarter by task:

- A. All laboratory prepared samples for varying traffic levels were manufactured and tested in the Asphalt Pavement Analyzer (APA). The results provided the basis for the rutting criteria in the APA. Currently, the APA Rutting Criteria is separated by three traffic levels; Very high (V), High (H), and Medium to Low (ML). Also, extra samples were made so Repeated Shear at Constant Height (RSCH) tests could be conducted on the same mixes. Although the APA has proven to be a very powerful tool in evaluating rut susceptible mixes, the test does require that the sample be approximately 77mm tall. If samples were to be taken from the field and evaluated, special considerations would have to be made to increase the height of the sample within the APA sample mold. However, if a correlation could be made between the RSCH and APA test, then field cores could also be used with a rutting criteria context. The samples for the RSCH have been cut and the bulk gravities and air voids are determined. The RSCH samples have been placed in "zip-lock" bags and stored at constant room temperature for future testing next quarter.
- B. After meeting with local aid representatives, two locations were chosen for sampling. Samples will be cored from the locations. The cores will be analyzed for bulk gravities, air voids, asphalt content, and gradation. The samples will then be compacted in the laboratory based on the job mix formula and the field results. A Superpave design will also be conducted on the materials to see the difference between the Marshall and Superpave properties. APA testing, and possibly fatigue testing, will be conducted on the laboratory compacted samples for performance evaluation.

2. Proposed activities for next quarter by task:

- A. RSCH tests for the Rutting Criteria will be tested. A correlation will be made between the results of the RSCH and the APA. Based on the correlation and the APA criteria, a rutting criteria based on the RSCH test will be proposed.
- B. The job mix formulas for the two locations will be used to prepare laboratory samples for evaluation. The laboratory samples will be prepared using the Marshall design and Superpave design. The volumetric properties will be compared. APA testing may also begin, depending on the

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

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CAIT

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

N/A

4. Progress on Implementation and Training Activities:

N/A

5. Problems/Proposed Solutions:

N/A

6. Budget Summary*

Total Project Budget(# of years)	2 Years	\$321,867.00
Total Project Expenditure to date		\$72,478
% of Total Project Budget Expended		23%
Task Order Number/Study Number:		98 / 4-26677
Current Task Order Budget (# of years)	Year 1 and 2	\$321,867.00
Actual Expenditure to date against current task order		\$72,478
% of current task order budget expended		23%

* 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.

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