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

# QUARTERLY PROGRESS REPORT

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|---|---|
| Project Title: | Rut Testing of Hot Mix Asphalt |
| RFP NUMBER: | NJDOT RESEARCH PROJECT MANAGER:<br>Mr. Nicholas Vitillo |
| TASK ORDER NUMBER/Study Number:<br>Task Order No. 98 / 4-26677 | PRINCIPAL INVESTIGATOR:<br>Dr. Ali Maher |
| Study Start Date: 01/01/2001<br>Study End Date: 3/31/2003 | Period Covered: 2nd Quarter 2003 |

| 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% | 15% | 80% | 20% |
| Lab Testing for SUPERPAVE vs Marshall | 20% | 10% | 70% | 14% |
| Field Calibration/Evaluation | 10% | 10% | 35% | 3.5% |
| Final Report | 10% | 10% | 45% | 4.5% |
| TOTAL | 100% | | | 77% |

1. Progress this quarter by task:
   A. The final report for the APA Rutting Criteria was completed and given to the NJDOT. It was returned with needed corrections and these corrections are being finished for final submission.
   B. The Low Volume road section of the project is currently working on the fourth mix design. The first mix was just used as a "learning curve" mix due to the extreme fluctuations in aggregate gravities from the source quarry. The second mix design resulted in the Superpave and Marshall design methods indicating the same optimum asphalt content, while the third design should a difference of 0.4% binder. Gyratory samples were being made of this mix when problems occurred with the gyratory compactor. Currently, the compactor is being fixed at Interlaken Technologies (in Minnesota) because the device required a new gyration loading piston. Troxler will be providing RAPL with a loaner gyratory machine for the next year until their new model comes out. RAPL was in the midst of looking to purchase a new gyratory machine, with the Troxler model being less expensive than the Pine, however, the current Troxler model can not compact a sample of needed height for the dynamic modulus test. Troxler agreed to provide RAPL with another gyratory machine for free until their newer model comes out later this year. However, the Marshall design verification has started on the fourth job mix formula. Marshall samples are being made at 5.0, 5.5, 6.0, and 6.5% binder content, as well as at the optimum binder content of 5.7%. This allows for the comparison the job mix formula (JMF) Marshall volumetrics, as well as providing data to conduct a new mix design if the JMF parameters are not obtained.

2. Proposed activities for next quarter by task:
   A. The final reviewed report for the APA Rutting Criteria will be finished and submitted.
   B. The fourth Low Volume Road mix should be completed and the fifth mix started. The comparisons between the Marshall design and the Superpave designs will continue.

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

4. Progress on Implementation and Training Activities:

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N/A

5. Problems/Proposed Solutions:

N/A

6. Budget Summary*

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|---|---|---|
| Total Project Budget(# of years) | 2 Years | $321,867.00 |
| Total Project Expenditure to date | | $270,402 |
| % of Total Project Budget Expended | | 84% |
| | | |
| 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 | | $270,402 |
| % of current task order budget expended | | 84% |

* 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.