Transportation Pooled Fund Program

Project Title: **"Improving the Quality of Pavement Profiler Measurement"**

Project Manager and Phone Number:	**Project No:**	Project is:
Robert L. Orthmeyer, P.E. **(708) 283-3533** **Robert.orthmeyer@fhwa.dot.gov**	**TPF 5(063)**	____ PLANNING __X__ R&D
Reporting Period: March 31 to June 30, 2004	**Multi Year Project** Four Year	

Description of Work Performed and Progress:

The following list of priorities was reviewed on June 2 by the participating agencies during a video conference meeting and remains the same:

1. Reference Profile Device (development of)
2. Critical Profile Accuracy Requirements (definition)
3. Construction Acceptance and Correction Software (acquisition of existing)
4. Certification / Validation Sites
5. Evaluating Upper Limits of Single Accelerometer and Single Height Sensor
6. Emerging Technology That Enhances Profile Measurement
7. Portable Validation Device Feasibility
8. Lightweight Profilers Unique Problems
9. Portable Validation Device Implementation

A web site has been developed to manage all of the pooled fund study proposals, solicitations and projects. The TPF-5(063) Profile Quality study can be found at:

http://www.pooledfund.org/projectdetails.asp?id=280&status=4.

Priority Two: The "Defining of Critical Profile Accuracy Requirements" project was issued to the University of Michigan Transportation Research Institute (UMTRI) with the Principal Investigators to be Tom Gillespie and Chris Winkler with Steve Karamihas as the primary analyst. Approximately seven percent of the contract amount has been invoiced. The contractor has initiated work on the following tasks:

Task 1: Define the goal of the reference device. It is anticipated that the device must accurately measure a roadway profile and be able to study the distribution of roughness within a profile. From an accurate profile, the common profile-based indexes can be calculated. The IRI, RN, PI, truck dynamic loading, and ride quality over a range of speeds are of paramount interest.

Task 2: Define the relevant waveband of interest. In this task, the Contractor will define the long and short wavelength boundaries that are needed to capture the performance qualities listed above.

Task 3: Define the needed accuracy and precision of the device within the wavelengths of interest addressing phase shift and amplitude. Requirements will be set for the accuracy and precision of profile measurements. Note that this will not be done through direct evaluation of individual elevations. This is because the required accuracy for estimation of vehicle response is sensitive to wavelength.

An interim report is due for Priority Two on August 3, 2004.

Priority Three Part 1: A contract for bump finder software (DTFH61-04-C-00010) was signed April 22, 2004. The study used a sole source procurement to work with Steve M. Karamihas to supply the software that includes grinder simulation capabilities. The first task for this contract is to provide a demonstration of the software to the participating agencies. This was accomplished through a web-casting process that the FHWA has available through the National Highway Institute on Wednesday May 5. The web cast was recorded and can be viewed at:

http://www306.placeware.com/cc/elearn_nhi/view?id=bump-1&pw=683607 . To view just type in your name.

The first task was completed June 28. Software code is scheduled to begin delivery by July 9.

Priority Three Part 2: The contract to provide ProVAL Support was signed with The Transtec Group, Inc. from Austin, TX. This includes tasks to incorporate the Karamihas bumpfinder into ProVAL. BETA testing is scheduled to begin October 1, 2004 with the final version completed by November 12, 2004. A kick-off meeting was held with the contractor on June 23.

Priority One – Reference Device(s): It is anticipated that a Request for Proposals will be finalized by the end of November 2004.

There is currently $638,200.00 of obligated funds from the participating STD's in the pooled fund study account. Of this $98,000 has been awarded to UMTRI for Priority Two. Priority three has $292,450 set aside for funding from the pooled fund study. (Funding from the FHWA HIPT is being used to allow the acquisition of the Bumpfinder software and ProVAL support to proceed.) A total of $1.34 Million has been committed to the project over the four year time frame from the participating SHA's.

A tentative date for the next scheduled meeting of the participating agencies is scheduled for Thursday October 27 to begin at 8:00 A.M. and conclude on by 4:30 P.M. on the same day and will tailgate onto the RPUG annual meeting at State Line, NV.

STATUS AND COMPLETION DATE

Percentage of work completed to date for total project
Project is: 25 %

X on schedule _____ behind schedule, explain:

Expected Completion Date: September 30, 2007

Robert L. Orthmeyer, P.E.
Project Manager