

RESEARCH PROBLEM STATEMENT #TS-512

I – Problem Title

Improve FREQ Macroscopic Freeway Analysis Model (continued) (2004Mob.5)

II – Research Problem Statement

Department users have identified desired improvements to FREQ. Some of these desired improvements have been implemented under a current research project. However, the funding available for the current project can cover only a small portion of all of the desired improvements. The need to implement the remaining desired improvements still remains. Also, ongoing technical support for the FREQ users is needed.

III – Objective

The objective of this project would be to implement additional improvements to the FREQ model. Desired improvements identified by Department users are listed below.

The scope of this effort includes:

- * Consultation with key Traffic Operations district staff to prioritize the desired improvements to determine which improvements are most important for Department users, since the requested funding may not be sufficient to implement all of the desired improvements;
- * Development of an implementation schedule and deployment plan;
- * Implementation of the prioritized improvements;
- * Deployment of revised versions of FREQ to Department users, which will include training to Department users for using the revisions made to FREQ.

IV – Background

FREQ is a freeway operations analysis model developed by ITS Berkeley. The Department has funded a substantial portion of the development of this model. Even with the recent popularity of microscopic simulation models, FREQ continues to be a very useful analysis tool because of its easily verifiable results, relative ease of use, and relatively small data requirements.

Department users have identified a variety of modifications that they would like to see in FREQ to improve its usefulness. A number of these suggested modifications have been implemented under a current research project with work on several more modifications underway.

V – Statement of Urgency and Benefits

Urgent due to ongoing use of the model. A successful outcome of this project would allow the Department to continue to improve the quality of "freeway traffic analysis" results from FREQ.

VI – Related Research

This project would continue current work at UC Berkeley, which ends in June, 2005. FREQ model users statewide benefit from the contractor's technical support of the model,

annual workshops/user group meetings, and software improvements. A list of users, past improvements, and requested improvements can be provided upon request.

VII – Deployment Potential

Immediate.