

**NJDOT Bureau of Research
QUARTERLY PROGRESS REPORT**

Project Title: Variability of Travel Times on New Jersey Highways	
RFP Number: 2005-14	NJDOT Research Project Manager: Robert Sasor, NJDOT
Task Order Number/Study Number: TO-67	Principal Investigator: Chien, Steven I-Jy
Project Starting Date: 12/01/2006	Period Starting Date: 10/01/2008
Original Project Ending Date: 05/31/2008	Period Ending Date: 12/31/2008
Modified Completion Date: 2/28/2009	

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Literature Search	5	0	100	5
Comprehensive and Focused Literature Review	5	0	100	5
Identify Suitable Technologies and Methodologies	5	0	100	5
Data Collection	40	0	100	40
Travel Time Estimation	15	20	90	13.5
Average Daily Non-recurrent Delay Estimation	15	20	50	7.5
Identification of Congested Highways with High Variation	10	20	50	5
Final Report	5	15	40	2
TOTAL	100 %			83.0 %

Project Objectives:

- (1) To measure travel times for repetitive day-to-day trips in the AM peak period on 15-20 congested New Jersey highways.
- (2) To study the variability of travel times on these highways and determine good estimates of non-recurring delay from incidents and other sources.
- (3) To identify which of these highways have problems with high variability in day-to-day travel times to work.

Project Abstract:

One of the most significant concerns for drivers going to work is the variability and reliability of their travel time. Travel time loss from unexpected delays results in lost time from work. Frequent but irregular delays make it difficult for drivers to plan when to leave for work. The reliability of travel times is being used as a new performance measure to evaluate traffic congestion and measure non-recurring delay. Reliability of travel times can be measured by the statistical variation and by the percent of time above a given threshold of what is considered normal delay time. Average daily non-recurring delay can be estimated by multiplying VMT from the

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NJCMS by the average time above the threshold time for the sections traveled. The variability of travel times probably has a greater effect on travel than the average or typical travel time.

The variability of travel times needs to be studied for some of New Jersey's congested highways to obtain better estimates of non-recurring delay from incidents and other sources, and to identify problem highways with high variability in day-to-day travel times to work. The findings would guide NJDOT staff in making highway improvements and implementing strategies to reduce congestion and incident delay along these problem roads.

1. Progress this quarter by task:

- Processed and analyzed all kinds of collected data (Co-pilot, Transmit, and ALK)
- Estimated travel time variation and indicating congestion on the links of the study routes
- Determined the threshold of travel time for recurring delay

2. Proposed activities for next quarter by task:

- preparing draft final report

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

none yet

4. Progress on implementation and training activities:

none yet

5. Problems/proposed solutions:

none yet

6. Budget summary:

Total Project Budget	\$299,076.00
Modified Contract Amount	\$0.00
Total Project Expenditure to date	\$237,467.00
% of Total Project Budget Expended	79.40%