



CAIT

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

QUARTERLY PROGRESS REPORT

Project Title:	Safety Comparison of Roadway Design Elements of Urban Collectors with Access		
RFP NUMBER: 2007-08	NJDOT RESEARCH PROJECT MANAGER: Ed Kondrath		
TASK ORDER NUMBER: TO 202 / RU Acct 4-22775	PRINCIPAL INVESTIGATOR: Dr. Kaan Ozbay/Mr. Bekir Bartin		
Project Starting Date: 01/01/2007 Original Project Ending Date: 12/31/2007 Modified Completion Date: Pending NCE approval until 05/31/08	Period Covered: 3 rd Quarter 2007		

Task #	Task	% of Total	Fixed Budget	% of Task this quarter	Cost this quarter	% of Task to date	Total cost to date
1	Mobilization	19.78%	\$ 30,000	0.00%	\$ -	100.00%	\$ 30,000
2	Literature Search	6.59%	\$ 10,000	10.00%	\$ 1,000	100.00%	\$ 10,000
3	Literature Review	13.19%	\$ 20,000	10.00%	\$ 2,000	100.00%	\$ 20,000
4	Case Studies	34.73%	\$ 52,679	0.00%	\$ -	25.00%	\$ 13,170
5	Review of Existing Strategies	19.12%	\$ 29,000	40.00%	\$ 11,600	40.00%	\$ 11,600
6	Final Report	6.59%	\$ 10,000	10.00%	\$ 1,000	20.00%	\$ 2,000
7		0.00%	\$ -	0.00%	\$ -	0.00%	\$ -
8		0.00%	\$ -	0.00%	\$ -	0.00%	\$ -
9		0.00%	\$ -	0.00%	\$ -	0.00%	\$ -
10		0.00%	\$ -	0.00%	\$ -	0.00%	\$ -
11		0.00%	\$ -	0.00%	\$ -	0.00%	\$ -
12		0.00%	\$ -	0.00%	\$ -	0.00%	\$ -
13		0.00%	\$ -	0.00%	\$ -	0.00%	\$ -
14		0.00%	\$ -	0.00%	\$ -	0.00%	\$ -
15		0.00%	\$ -	0.00%	\$ -	0.00%	\$ -
16		0.00%	\$ -	0.00%	\$ -	0.00%	\$ -
17		0.00%	\$ -	0.00%	\$ -	0.00%	\$ -
18		0.00%	\$ -	0.00%	\$ -	0.00%	\$ -
19		0.00%	\$ -	0.00%	\$ -	0.00%	\$ -
20		0.00%	\$ -	0.00%	\$ -	0.00%	\$ -
	TOTAL	100.00%	\$ 151,679		\$ 15,600		\$ 86,770

Blue text is entered once at the beginning of the project

Green text is updated ever quarter

Black text is automatically updated or static

Project Objectives:

1. Select sites where safety improvements have been implemented.
2. Collect before and after crash data in addition to geometry and traffic data.
3. Use a statistically robust evaluation technique to determine the impact of these treatments.



CAIT

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

4. Translate these results into so-called “Accident Modification Factors” for the representative case studies.
5. Analyze and interpret the results and provide recommendations.

Project Abstract:

The **main goal** of this study identified by NJDOT can be defined as “the quantification of the effects of management treatments on roadway operations and safety on urban collectors with access”.

Since, urban collector road runs through highly diversified areas, various factors have to be considered when before-and-after comparisons of improvements in terms of safety are conducted in this study.

For 25-40 mph urban collectors with access, these are:

1. Increase in lane widths (10' or 11' to 12'),
2. Construction of 4,6,8, or 10 foot shoulders,
3. Removal of trees in median and border areas,
4. Installation of guide rails, and vertical & horizontal geometry changes to improve sight distances.

A number of sites along 25-40 mph urban collectors with access where safety improvements have been implemented will be determined in close collaboration with NJDOT. Special attention will be given to the selection of sites that accurately represent the design elements described above. Once the site selection process is completed, historical crash data for each of these sites will be collected.

NJDOT crash database is the main source of data for this comparative evaluation study. The impact of improvements on safety will be determined by an analysis of this NJDOT crash database for a period of three years before and three years after the implemented roadway treatment. In addition to the crash data, traffic and other relevant data will also be collected because the selection of technique to be implemented will be based on its impact of safety as well traffic performance. Thus, the final determination of the impacts of the potential techniques for future candidate sites will be based on a combined assessment of their impacts on traffic performance and safety are important considerations when deciding.



CAIT

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

1. Progress this quarter by task:

Task 2. Literature Search: This task is completed. .

Task 3. Literature Review: This task is completed.

Task 4. Case Studies: In the first quarterly report meeting, NJDOT agreed to identify at least 3 case studies and maximum of 6 case study sites for the type of roadways and countermeasures described in the project RFP. We received one case study from NJDOT. However, this case study was built in 2006 and there was no after data for obvious reasons

We have conducted additional search and identified 6 more cases from the Delaware Valley Regional Planning Commission Transportation Improvement Program, Fiscal year reports. <http://www.dvrpc.org/transportation/capital/tip.htm>. We have also contacted other State agencies such as NJTPA, FHWA NJ division and various divisions at NJDOT to obtain similar kind of project based descriptions. The main problem with this data is that it does not specify if the specific project is ever built or not. A table that shows the reports obtained from NJDOT we obtained is below.

Fiscal Year	Title	Publication Year
1993	NJDOT – NJ Transit Capital Program	
1994	NJDOT – NJ Transit Capital Program	July 1, 1993
1997-1998	Transportation New Jersey – Blue Print Actions	
2000	Transportation Capital Program	July 1, 1999
2001	Transportation Capital Program	November 30, 2000
2001-2003	NJDOT Statewide Transportation Improvement Program	September 1, 2000
2002	Transportation Capital Program	July 1, 2001
2002-2004	New Jersey Statewide Transportation Improvement Program	October 1, 2001
2003-2005	New Jersey Statewide Transportation Improvement Program	October 1, 2002

Summary of Meetings and Efforts for the Identification of Case Studies:

- In the beginnig of July 2007, TIP reports from NJTAP were obtained.
- On July 11th 2007, a meeting was held in Trenton with Thomas Saylor, Evens Marcellus Sansevalin Kumaresan. After a presentation of the data identified so far, possible data sources were discussed. Data problems discussed above were explained. Reports of projects before 1999 were searched and requested at the NJDOT library.
- On August 2nd 2007 three reports were given to the PI by Evens Marcellus. These reports are listed in the above table.



CAIT

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

- On August 6th 2007, a list of candidate projects identified from the published reports were emailed to project contacts for their review.
- On August 9th, a document that contains a description of projects identified as possible candidates was also provide to local FHWA to possibly get feedback.

- On August 28th 2007, PI also met with NJDOT librarian, Ms. Carol Paszamant to identify possible information about safety completed between 2002 and 2004. Ms. Paszamant identified Engineering Documents section as a possible source for the information we are looking for. She contacted Jim Browne at NJDOT Engineering Documents and Mr. Browne asked her to ask the PI to meet with him.
- Dr. Ozbay met with Mr. Jim Browne and found out that there are two possible information sources we can use:
 - As-built database they maintain. Database contains information about the NJDOT projects and pointers to the as-built archives. Mr. Browne told me that you or somebody in your office should send him an email and request a copy of this database for me to have it. Then he will burn it in a DVD.
 - CPM project reporting system.
- A follow-up meeting was held on August 28th, 2007in Trenton with Evens Marcellus to go over the project list provided to them on the and the information obtained in the previous meetings same day
- On the 29th of August 2007, as-built database (just the project information) was obtained and is being studied for possible projects that can be used as case studies.

In addition to New Jersey data, we identified three other states namely, Ohio, California, and Washington, where useful data can be available. We obtained multiple year accident data from HSIS in the beginning of May, 2007. We also received additional project data dealing with safety improvement data from Ohio. Finally, we have also obtained similar data from California for at least one of the safety treatments described in the original RFP.

2. Proposed activities for next quarter by task:

We will continue to work on Tasks 4 and 5.

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

1. Updated draft report of literature review.
2. Updated draft report of available data and its description.

4. Progress on Implementation and Training Activities:

5. Problems/Proposed Solutions:

We will request a separate meeting to go over the data issues.

In July we requested a no cost extension (NCE) to be able to have sufficient time to resolve the issue of finding useful New Jersey specific data for case studies. The issue of NCE was also discussed and



CAIT

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

verbally agreed during our last QR meeting in June 2007. However, we have not yet received the approval for this request.

On May 5th 2007 we received the fully executed contract from NJDOT and we are now in the process of issuing contracts to consultants, which play an integral role in this project.

Total Project Budget	\$151,679
Modified Contract Amount:	
Total Project Expenditure to date	\$86,770
% of Total Project Budget Expended	57.20%

NJDOT Research Project Manager Concurrence: _____ Date: _____