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

QUARTERLY PROGRESS REPORT

Project Title:	Development of Uniform Standards for Allowable Lane Closure/Web Interface
RFP NUMBER: 2007-06	NJDOT RESEARCH PROJECT MANAGER: **W. M. Szalaj**
TASK ORDER NUMBER: TO 197 / RU Acct 4-22774	PRINCIPAL INVESTIGATOR: Dr. Kaan Ozbay/Dr. Bekir Bartin
Project Starting Date: 01/01/2007 **Original** Project Ending Date: 12/31/2007 **Modified Completion Date: 08/31/2008**	Period Covered: 3rd Quarter 2008-FINAL

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Task #	Task	% of Total	Fixed Budget	% of Task this quarter	Cost this quarter	% of Task to date	Total cost to date
1	Mobilization	16.22%	$ 30,000	0.00%	$ -	100.00%	$ 30,000
2	Literature Search	5.41%	$ 10,000	0.00%	$ -	100.00%	$ 10,000
3	Literature Review	8.11%	$ 15,000	0.00%	$ -	100.00%	$ 15,000
4	Assemble Technical Panel	5.79%	$ 10,704	65.00%	$ 6,958	100.00%	$ 10,704
5	Review of Current Practice	8.65%	$ 16,000	0.00%	$ -	100.00%	$ 16,000
6	Lane Closure Software	41.07%	$ 76,000	20.00%	$ 15,200	100.00%	$ 76,000
7	Final Report	3.94%	$ 7,296	50.00%	$ 3,648	100.00%	$ 7,296
8	Training	10.81%	$ 20,000	25.00%	$ 5,000	100.00%	$ 20,000
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%	$ 185,000		$ 30,806		$ 185,000

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:

Objective 1: *Estimate delays caused by lane closures*

- Develop an algorithm utilizing existing software or development of a software for determining allowable lane closure hours.
- Develop a simple application based on the cost/benefit guideline for traffic delays vs. contractor productivity (This objective is added by the research team because it is important to allow the decision makers to easily calculate costs and benefits based on the delays calculated by the above delay estimation algorithm. This will definitely improve the efficiency of the overall decision-making process).
- Develop data requirements for proper and accurate modeling.

Objective 2: *Develop a computer implementation of the developed delay estimation approach*

- Develop a data interface for streamlining existing Department traffic data into the modeling software.
- Develop a web interface for the product.

Objective 3: *Develop uniform and well-accepted lane closure guidelines*

- Develop performance standards for acceptable delay for planned lane closures.
- Develop a cost/benefit guideline for traffic delays vs. contractor productivity.
- Develop a process for modifying lane closure hours.

Objective 4: Conduct training

- Develop a training program and manual for use of the software process.
- Train NJDOT personnel who will be involved in lane closure decision making

Project Abstract:

According to the RFP issued by NJDOT, "requests for allowable lane closure hours to perform maintenance, construction, resurfacing, regional permit, and major access permit on the state highway system are currently being evaluated using a time consuming and inconsistent process". According to the same problem statement, "the current process involves *the collection of traffic volumes, consultation with local authorities* and *the reliance on previous knowledge of the roadway to develop allowable lane closing hours*". It is clear that this is an ad-hoc process that is not uniform and does not make use of traffic engineering basics to assess the impacts of lane closures. Thus, there is a need "*to develop a process for determining and modifying lane closures* that will have **uniformity** and take into account effects on **productivity and traffic delay**. Major two goals of this problem statement are then:

1. Develop a *uniform process* for lane closures that takes into account the impact of lane closure on traffic and productivity
2. Adopt this uniform process throughout the NJDOT

1. Progress this quarter by task:

Task 2. Literature Search: This task is complete.

Task 3. Literature Review: This task is complete.

Task 4. Assemble / Coordinate with Technical Panel: This task is complete.

Task 5: Review of Current Practice: This task is complete.
Task 6. Lane Closure Software:

1. We installed RILCA on several regular users' computers in Trenton Headquarters, operations north and operations south offices for further testing. Based on the users' comments and feedback, we will then modify the tool to fit their needs. This step is also crucial to detect any bugs in the software. We will conduct short surveys with the users to get their feedback and suggestions about RILCA.

   The names of the users that have RILCA on their computers and the installation dates are shown in the table below.

Name	Date
Tiberiu Tajts	07/25/2008
Tim Bourne	07/25/2008
Maged Gabriel	07/25/2008
Mark Smith	07/28/2008
Mark Hauske	08/01/2008
Kantilal Patel	08/01/2008

2. Rutgers team in cooperation with Noblis held a second training for Quick Zone in July 2008. As requested by the NJDOT staff this training session was more NJ specific and a real-world project oriented, hands-on training. The training was held in the computer lab at NJDOT headquarters. Tim Bourne was the coordinator of this event on the NJDOT side. Dennis Motiani opened the training session.

   Additional half-day hands-on RILCA workshop on NJ specific lane closure projects will be given to the NJDOT personnel. The training will be held in NJDOT headquarters. We expect to organize this training in September 2008.

Task 7:
We continued to work on the final report. The work on the final report is being assisted by Professor Ukkusuri at RPI. We plan to complete the final report by the QR meeting in September 2008 and deliver it then for a review.

Task 8: **Training**

2. Progress on Implementation and Training Activities:

- We continued to work with the technical panel in terms of holding two more training sessions for QuickZone and RILCA and getting their feedback. As part of this efforts:
  1. Noblis held another QuickZone training session in July 30 and 31, 2008. As requested by the NJDOT staff this training session was more NJ specific and a real-world project oriented, hands-on training.

The attendees for the QuickZone training were Jagdish Rana, Tiberiu Tajts, Eddy Exantus, Kelvin Dickens, Stan Worosz, Kantilal Patel, Rich Casmer, Mark Hauske, Mark Smith, Dennis Caltagirone, Rajni Shu, Paul Hartle.

- We will also deliver a user's manual with step-by-step examples that will make it easier for the new users to learn the software. We will work with RPI (Professor Ukkusuri) in finalizing this manual.

3. Problems/Proposed Solutions:

Year 1 Budget	$185,000
Years 1 & 2 Cumulative Budget	
Years 1, 2 & 3 Cumulative Budget	
Total Project Budget	$185,000
Modified Contract Amount:	
Total Project Expenditure to date	$185,000
% of Total Project Budget Expended	100%

NJDOT Research Project Manager Concurrence: _____ Date: _____