



CAIT

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

QUARTERLY PROGRESS REPORT

Project Title:	Evaluation of the Automated Distress Survey Equipment		
RFP NUMBER: 2008-07	NJDOT RESEARCH PROJECT MANAGER: Vincent Nichnadowicz		
TASK ORDER NUMBER: TO 224 / RU Acct 4-23382	PRINCIPAL INVESTIGATOR: Carl Rascoe		
Project Starting Date: 05/01/2008 Original Project Ending Date: 07/31/2009 Modified Completion Date:	Period Covered: 1st Quarter 2009		

Task #	Task	% of Total	Fixed Budget	% of Task this quarter	Cost this quarter	% of Task to date	Total cost to date
1	Conduct Literature Search	2.11%	\$ 3,000.00	0.00%	\$ -	100.00%	\$ 3,000
2	Prepare Distress Identification Manual	9.27%	\$ 13,170.00	0.00%	\$ -	100.00%	\$ 13,170
3	Select Test Sections	24.71%	\$ 35,100.00	0.00%	\$ -	100.00%	\$ 35,100
4	Vendor Selection	5.29%	\$ 7,518.00	0.00%	\$ -	100.00%	\$ 7,518
5	Field Data Collection and Data Analyses	44.96%	\$ 63,850.00	10.00%	\$ 6,385	70.00%	\$ 44,695
6	Quarterly and Final Reports	13.65%	\$ 19,387.00	15.00%	\$ 2,908	45.00%	\$ 8,724
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	100.0%	\$ 142,025		\$ 9,293		\$ 112,207

Blue text is entered once at the beginning of the project

Green text is updated ever quarter

Black text is automatically updated or static



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Project Objectives:

Since there are multiple vendors with this type of equipment, the Department would like to evaluate and compare these units in a side-by-side pilot for the next generation Pavement Management System data collection vehicle. The evaluation of the Automated Distress Survey Equipment to supplement or replace the current manual visual distress data collection could significantly improve the quality and repeatability of the PMS distress data and help the Department make better pavement rehabilitation decisions. This is especially important in this time of limited financial resources.

The objectives of this research study are to:

- Evaluate the capabilities, limitations, and repeatability of the various automated distress survey equipment technologies on various distress types on different pavement surfaces types at various distress severity levels, lighting conditions and highway speeds.
- Assess the capabilities, limitations, and repeatability of the Department's PMS rater staff on various distress types on different pavement surfaces types at various distress severity levels, lighting conditions and highway speeds.
- Assess the level of effort and time required to process the images from the automated distress survey equipment
- Determine which types of distress are better collected with the automated distress survey equipment and which distress types should continue to be collected by PMS staff.
- Determine how the data collected by the automated distress data collection equipment can be incorporated into the pavement management system.

Project Abstract:

In order to address the research objectives, the research team will conduct a comprehensive literature search to summarize the manufacturer's description of the distress data collection technology and other research conducted to assess the current state-of-the-art in pavement imaging and distress identification and evaluation. The research team will meet with the PMS staff to identify 15 one-mile test sections that have a variety of pavement types (BC, CO, and RC), distress types, severity levels and extents. The team will review the Department's current distress survey protocol and develop distress definitions, and evaluation criteria for use in the research study. Based on the content of the literature search and experience of the research team, a number of automated distress survey equipment vendors representing the various distress collection technologies will be identified. These vendors will be contracted to collect three runs on each test sites in one day and conduct analyses of the image data at NJ DOT.

The PMS staff will also collect distress data using the current protocol. The testing order of the test sites will be randomly assigned. The distress type, severity and extent levels of each site will be documented for comparison between the automated distress survey equipment and the PMS raters.



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Progress this quarter by task:

1. The CAIT team worked with the Dynatest team and Kelvin Wang (Waylink) to prepare the cracking data from the distress data on the test sites. The data will be delivered and analyzed in the next quarter.

2. Proposed activities for next quarter by task:

The CAIT research team will develop a methodology for utilizing the automated distress data into the Department's SDI_m.

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

4. Progress on Implementation and Training Activities:

5. Problems/Proposed Solutions:

Year 1 Budget	\$142,025
Years 1 & 2 Cumulative Budget	
Years 1, 2 & 3 Cumulative Budget	
Total Project Budget	\$142,025
Modified Contract Amount:	
Total Project Expenditure to date	\$112,207
% of Total Project Budget Expended	79%

NJDOT Research Project Manager Concurrence: _____ Date: _____