NJDOT Bureau of Research
QUARTERLY PROGRESS REPORT

Project Title:	Analysis of Fatal Accidents
RFP NUMBER: 2007-05	NJDOT RESEARCH PROJECT MANAGER: Edward S. Kondrath
TASK ORDER NUMBER:	PRINCIPAL INVESTIGATOR: Yusuf Mehta, Ph.D., P.E. Rowan University
Project Starting Date: 1/1/2007 **Original** Project Ending Date: 12/31/2007 **Modified Completion Date: 12/31/2007**	Period Starting Date: January 1, 2007 Period Ending Date: March 31, 2007

Task	**% of Total**	**% of Task this quarter**	**% of Task to date**	**% of Total Complete**
1. Literature Search	10	50	50	5
2. Identify Existing Fatality-Related Databases and Fatality Data Sets in New Jersey	10	80	80	8
3. Determine Current Practices for Maintaining Fatal Accident Records at Other Agencies	10	20	20	2
4. Develop and Report Recommendations for an Integrated System of Crash Data	10			
5. Conduct Pilot Studies using the Prototype Integrated Database	40			
Final Report	10			
TOTAL	100			15

ANALYSIS OF FATAL ACCIDENTS

Quarterly Progress Report – March 2007

Project Objectives:

The goal of this study is to determine the feasibility of an integrated database for the analysis of fatal accidents in New Jersey. The specific objectives are to:

1) Determine how New Jersey fatal accident datasets can be integrated.

2) Demonstrate the value of this integrated database by the system in a series of pilot case studies

Project Abstract:

In 2005 there were 691 fatal crashes and 748 fatalities in New Jersey. Each of these tragic events occurred despite the millions of dollars expended by New Jersey each year on redesigned intersections, aggressive traffic law enforcement, driver education programs, EMS funding, and numerous other safety initiatives. Despite the success of these programs, the belief is that even greater fatality reductions are possible. If there was better data describing the driver-vehicle-road interactions which lead to fatal crashes, highway safety funds could be better targeted to reduce traffic fatalities.

Unfortunately, the data to adequately understand fatal crashes are simply not readily available to New Jersey policy makers. The encouraging fact is that New Jersey has extensive crash databases, exemplified by the New Jersey Crash Record system which contains summary records of over 300,000 police reported accidents each year. In addition, several state agencies in New Jersey maintain datasets which describe additional concerns to incompatible data formats, these datasets are seldom linked for a comprehensive perspective of highway safety.

The research program will develop a pilot system which links fatal crash data with other associated state data files. By linking these databases, there is an opportunity to investigate the root causes of fatalities in ways that are not possible through analysis of a single database. The following five databases will be considered in this research project:

- NJ Crash Records
- MVC Database
- EMS Records
- Fatal Analysis Reporting System (FARS)
- NJ State Police Fatal Investigations Division

For reasons ranging from privacy concerns to incompatible data formats, fatality databases and datasets are seldom linked for comprehensive studies of highway safety. Issues to be addressed include a) data ownership, b) data confidentiality, c) incompatible data formats, d) incompatible data elements, e) incompatible linkage identifiers and f) public acceptability

Progress this quarter by task:

Task 1 –Literature Survey

A preliminary literature survey has been completed drawing on the January 2007 issue Transportation Research Circular "Integrating Roadway, Traffic, and Crash Data", and the CODES system documentation. An expanded literature survey which will also incorporate international data linking experience is currently underway.

Task 2 – Identify Existing Fatality – Related Databases and Fatality Data Sets in New Jersey.

- The Rowan University Institutional Review Board (IRB) has reviewed and approved the research team's plan for maintaining the confidentiality of fatality data. Likewise, the co-PI has received Human Research Participant Protections certification from the Virginia Tech Institutional Review Board.

- A survey instrument has been developed to gain information on motor vehicle fatality databases maintained by New Jersey state agencies. The survey questions were selected to determine the contents of fatality databases, privacy concerns and policies, data collection procedures, and the availability of the data from the agencies surveyed.

- The survey has been administered to the New Jersey State Police Fatal Accident Unit and the New Jersey Motor Vehicle Commission Fatal Accident Unit. The results are presented in the appendices.

- Our project team has secured documentation on four of the five fatal accident datasets. These are the Fatal Accident Reporting System (FARS), New Jersey Crash Records, Motor Vehicle Commission, and New Jersey State Police Fatal investigation Division.

- In a February 2007 conference call, the Project Panel informed the PI and co-PI that the research team would not be given access to the EMS database. The EMS database is being developed in a separate project between Rutgers and NJDOT.

- The PI participated in a "Statewide Traffic Records Coordinating Committee (STRCC) Data Integration" Meeting with NJDOT on March 27th 2007. Participating agencies at the meeting included EMS, NJSP, Office of Instructional Technology

- In January 2007, the MVC fatal unit provided the research team with a copy of their electronic database. The database was in Excel format. The research team has completed documentation of the database, and has begun conversion of the

database into Access format. Documentation of the MVC database is provided in the appendices.

- In March 2007, the NJSP fatal accident unit provided the research team with a copy of their electronic database. The database is currently being analyzed to determine database contents and format.

- The 2005 NJ Crash Records have been ported to SAS format. SAS is a statistical program widely used by both NHTSA and state DOTs to analyze crash data sets. Preliminary analysis of the 2005 NJ Crash datasets is underway.

Task 3 – Determine Current Practices for maintaining Fatal Accident Records at other agencies.

- Task 3.3. Determine current U.S. national practices in the use of linked crash data. The January 2007 issue Transportation Research Circular "Integrating Roadway, Traffic, and Crash Data", and the CODES system documentation are being examined to determine current data linkage practices among U.S. state transportation agencies.

2. Proposed activities for next quarter by task

- Continue development of a Microsoft Access database for NJMVC
- Document contents of the NJSP database
- Explore ways of linking the NJCrash, NJSP, MVC, and FARS databases
- Develop a survey instrument to interview fatal crash data users
- Develop a plan to establish a Governing Board to promote data sharing and research collaboration.

3. List of deliverables provided in this quarter by task

- Created a Microsoft Access database using MVC data.

4. Progress on Implementation and Training Activities

- None Scheduled

5. Problems/Proposed Solutions

- Virginia Tech subcontract is still not in place. Work is underway at Rowan to set up subcontract.

Total Project Budget	144,527.83
Modified Contract Amount:	
Total Project Expenditure to date	1445.28
% of Total Project Budget Expended	1