The UMassSafe Traffic Safety Data Warehouse has been developed as a tool for maximizing the use of highway safety data. The data warehouse includes "administrative" datasets collected by state agencies and other organizations; these include crash, citation, roadway inventory, etc. Currently, 14 such datasets are housed in the UMassSafe Traffic Safety Data Warehouse and used for safety analyses.

The analysis also includes the use of linked datasets created using the administrative databases depicted to the left. Crash, citation, hospital, death certificate, and roadway inventory data have been linked using advanced statistical methodologies to create a single dataset that allow analysts to consider the comprehensive crash experience including driver behavior, crash characteristics, roadway environment, and crash outcomes such as injuries and costs.

With fewer resources, highway safety professionals need to be strategic in their approach to crash reduction programming. UMassSafe conducts research, crash data analysis and the mapping of crashes throughout the Commonwealth in order to guide, support, and evaluate highway safety efforts. Understanding where the crashes occurred and what the characteristics of the crashes were has helped shape the responses.

The Equivalent Property Damage Only (EPDO) analysis has been used to identify specific problem areas for crashes involving distracted driving. The conversion of fatal and injury crashes into an EPDO allows for comparison across communities that accounts for the severity of the crash, not just the number of crashes.

Older driver crash analysis was conducted to guide statewide policy and decision making regarding the needs of older drivers. In addition, an assessment of existing alternative transportation options for older persons in Massachusetts was developed with information provided on projected needs for these services.

Crash analysis was performed and crash maps were created to examine high crash locations and utilized to target problem areas, guide enforcement programming and evaluate its success. Statewide analysis was conducted and then broken down by regions of the Massachusetts. The above map is specifically looking at severe injury crashes to help better isolate the most dangerous roadways.

Topical fact sheets were created with the findings on various topics including driver distraction, commercial motor vehicles, pedestrian safety and motorcycle crashes in order to help various highway safety specialists develop programming specific to the problems in Massachusetts.

For more information contact Robin Riessman
(413) 577-1035  •  riessman@ecs.umass.edu

University of Massachusetts Transportation Center
www.ecs.umass.edu/umasssafe

The Commercial Motor Vehicle (CMV) Data Tool is an interactive web-based tool that enables law enforcement personnel (state and local police) to identify trends and pinpoint crash information across the state via a user-friendly information system. The tool has three main features, including a Crash Mapping Tool, a Data Explorer, and a Data Quality Reports feature.

• Crash Mapping - This feature enables police officers to identify crash "hot spots", pinpoint locations with a high incidence of commercial motor vehicle crashes and target law enforcement efforts in these areas.

• Data Explorer - This feature enables police officers to explore and visualize crash data collected at commercial motor vehicle crashes.

• Data Quality – This feature enables users to examine data quality issues specific to CMV crashes by town, troop and Massachusetts as a whole.

The CMV Data Tool enables users to identify and track highway safety problems over a long time period and use this information to guide programming and evaluate its success.

The University of Massachusetts Traffic Safety Research Program (UMassSafe) is a multidisciplinary traffic safety research group housed in the University of Massachusetts Transportation Center in the College of Engineering. As part of the University of Massachusetts, UMassSafe is a public organization whose mission is to reduce crash frequency and severity through a data-driven approach to understanding highway safety problems, identifying countermeasures, and evaluating program effectiveness.

UMassSafe Traffic Safety Data Warehouse has been developed as a tool for maximizing the use of highway safety data. The data warehouse includes "administrative" datasets collected by state agencies and other organizations; these include crash, citation, roadway inventory, etc. Currently, 14 such datasets are housed in the UMassSafe Traffic Safety Data Warehouse and used for safety analyses.

The Equivalent Property Damage Only (EPDO) analysis has been used to identify specific problem areas for crashes involving distracted driving. The conversion of fatal and injury crashes into an EPDO allows for comparison across communities that accounts for the severity of the crash, not just the number of crashes.

Older driver crash analysis was conducted to guide statewide policy and decision making regarding the needs of older drivers. In addition, an assessment of existing alternative transportation options for older persons in Massachusetts was developed with information provided on projected needs for these services.

Crash analysis was performed and crash maps were created to examine high crash locations and utilized to target problem areas, guide enforcement programming and evaluate its success. Statewide analysis was conducted and then broken down by regions of the Massachusetts. The above map is specifically looking at severe injury crashes to help better isolate the most dangerous roadways.

The Massachusetts Commercial Vehicle Enforcement Toolkit was funded by the Massachusetts State Police to provide centralized access to commercial motor vehicle enforcement tools as well as crash data that can be used to target enforcement and evaluate specific projects. It provides information to assist law enforcement with information for traffic stops, crash data and other highway safety issues and includes fact sheets, countermeasures, library, resources and recent news.

The Commercial Vehicle Toolkit assists police officers to identify and track commercial motor vehicle issues within their communities.

TS-TAC Model Process

Safety Belt Campaign

The overarching goal and objective of the project was to improve safety belt usage among commercial motor vehicle (CMV) drivers. Specific attributes of the project included conducting a pre-campaign study to quantify CMV belt usage in Massachusetts by means of a direct observation survey; a public information and education (PI & E) campaign, and high visibility enforcement. Safety belt observation surveys were conducted to determine what areas of the state had the lowest safety belt usage, and programming was targeted to those areas. The program’s success will be evaluated in the upcoming year.

Safety Belt Campaign

The Traffic Safety Technical Assistance Center (TS-TAC) provides analytical support to transportation safety analysts in the Commonwealth of Massachusetts. The developed TS-TAC serves to meet the immediate data analysis needs of safety shareholders with the information provided being useful for problem identification, program evaluation, accountability reporting (including benefit/cost analysis), and analytical comparisons across the United States. The flowchart illustrates the model process.

Safety Belt Campaign

The Traffic Safety Technical Assistance Center (TS-TAC) provides analytical support to transportation safety analysts in the Commonwealth of Massachusetts. The developed TS-TAC serves to meet the immediate data analysis needs of safety shareholders with the information provided being useful for problem identification, program evaluation, accountability reporting (including benefit/cost analysis), and analytical comparisons across the United States. The flowchart illustrates the model process.

Safety Belt Campaign

The Traffic Safety Technical Assistance Center (TS-TAC) provides analytical support to transportation safety analysts in the Commonwealth of Massachusetts. The developed TS-TAC serves to meet the immediate data analysis needs of safety shareholders with the information provided being useful for problem identification, program evaluation, accountability reporting (including benefit/cost analysis), and analytical comparisons across the United States. The flowchart illustrates the model process.