RESEARCH PAYS OFF

USING ACCIDENT RECORDS TO SAVE LIVES

Texas Uses TRASER© To Promote Traffic Safety

How do city officials solve traffic safety problems and prevent crashes? For many police departments and traffic engineering offices, the answer is found using TRA-SER, a microcomputer data base management system that manages traffic records.

Problem

Many traffic safety decisions are made on the basis of motor vehicle accident data, but local agencies do not always have direct and timely access to such data. Historically, cities have had limited methods available to analyze traffic accident data and have had to rely on state agencies to process raw data and supply written reports, use cumbersome mainframe computer programs, or post "pin maps." None of these approaches fully satisfies both enforcement and engineering needs for quick and in-depth analysis.

A city needs real-time traffic data to show exactly when, where, and how accidents are occurring. These data can enhance manpower productivity, track citation violations and traffic-related arrests, and are easily integrated into ongoing traffic enforcement and investigation activities. Immediate access to data is a critical element of a traffic record management system.

Solution

TRASER was developed by the Accident Analysis Division of the Texas Transportation Institute (TTI) under a contract with the Texas Department of Transportation (TxDOT). TxDOT recognizes that successful local traffic safety programs need timely information for effective action by enforcement and engineering agencies. Using Federal Highway Safety funds (Section 402 funds), TxDOT and TTI worked with the city of Dallas to identify local needs for traffic records analysis and reporting. Since its development, more than 75 agencies of all sizes have worked with versions of the software, providing suggestions on their needs and uses. TRASER user seminars, which draw agencies from five states, provide information on new and changing needs for traffic records management.

Each crash, citation, or traffic arrest is entered into the data base through a microcomputer keyboard. Once input, these data are immediately available for analysis. TRASER uses seven basic reporting formats to produce descriptive statistics. A report can be a list, bar chart, histogram, location cluster, one-way frequency table, two-way frequency table, or proxy. Any field in the data base can be a variable in the report.

For example, an agency examining traffic safety problems related to driving under the influence (DUI) can obtain reports on crashes involving alcohol. The reports can show the locations of all such accidents and, if there are clusters of these accidents, indicate locations that may need additional enforcement hours. TRASER can develop a profile of the drivers involved in crashes, providing such information as age, sex, DUI testing and results, and level of injury. Other information can be examined as well--time of day, day of week, manner of collision, weather, lighting and roadway conditions, and accident severity, for example. Reports on nondrivers can provide such information as whether a pedestrian was drinking.

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In addition to the analysis of accident statistics, an agency can examine data on citations issued to determine if a relationship exists between locations of DUI accidents and type of violation. DUI arrests also can be compared with accident and citation locations. An agency can examine TRASER data from many perspectives to build profiles of both existing and potential traffic safety problems.

Applications

Agencies are using the information from TRASER to develop high-hazard location reports for special enforcement action, to monitor selective traffic enforcement programs, to track DUI arrests and involvement in crashes, and to support cooperative problem-solving projects between engineering and enforcement agencies.

TRASER-generated statistics are used to support public awareness campaigns for pedestrians and bicycle riders, to develop police traffic shift and beat assignments, and, in one city, to support a federal funding request for highway exit-ramp improvements.

Traffic engineering departments use TRASER information to monitor construction zones, analyze the need for improved signing and delineators, and study the manner in which vehicles collide. TRASER is currently used by local, county, state, and federal agencies in five states, and is being evaluated by several others. Because TRASER supports ASCII upload and download, TRASER data can be imported directly into state-maintained automatic traffic accident records systems.

Benefits

TRASER can be used by individual cities or agencies, or by counties, districts, or states with multiple-city files to manage. It is a powerful data base that can store and manage up to 2 billion records--the equivalent of 20 years of national traffic records data.

Cost savings have been realized through more productive and efficient assignment of manpower, reduced accident rates, fewer fatalities, more accurate forecasting, and improved engineering applications (e.g., improved signing, intersection redesign). Real-time information from TRASER has identified reckless drivers, which has enabled officers to remove them. Government and societal costs of traffic accidents have thereby been reduced.

The San Antonio Police Department made more than 5,500 arrests for DUI last year as part of a program of traffic enforcement at select locations. The department used up-to-the-minute traffic accident, citation, and arrest data from TRASER to determine exactly where and when to deploy officers to get these drunk drivers off the streets.

The Fort Worth Police Department credits TRASER's data management capabilities with helping to reduce traffic fatalities to the lowest number experienced in 14 years. Safety measures were developed through the department's analysis of data from 19 Interstate and 26 arterial roadways using TRASER. Moreover, on the basis of National Safety Council estimates of the economic cost to society for traffic fatalities, traffic safety analyses using TRASER have saved the Fort Worth community more than $8.1 million since 1987.

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Once data are input to TRASER through a microcomputer keyboard, they are available for analysis. Marlin Crouse, Project Manager at TTI, provides microcomputer training on the use of TRASER.
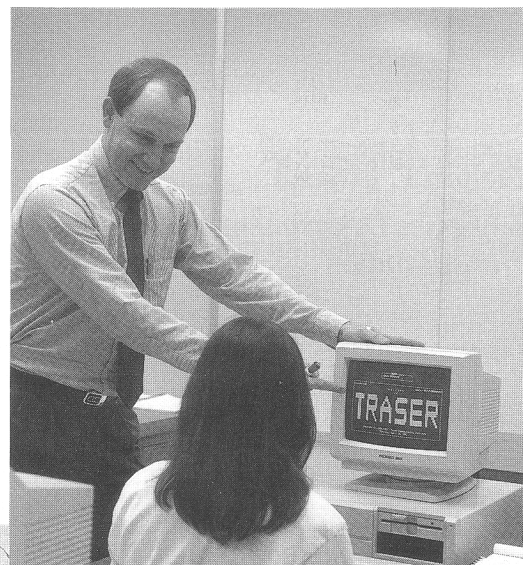
With access to timely accident data using TRASER, information such as vehicle collision manner can be analyzed to solve traffic safety problems.