

## APPENDIX D

### Accident History Assessment Overview

Accident study techniques have improved dramatically in recent years due to technological advancements and continued research into improved study methods. This appendix highlights some of the steps in evaluating accident reports. It is highly recommended that the Town seek assistance in this process from the New York State Department of Transportation (NYSDOT) or a Professional Traffic Engineering consultant. Some steps and techniques are not mentioned in this appendix because they require expertise, effort, and/or equipment not readily available to most jurisdictions.

Accident data used by traffic engineers are primarily recorded by law enforcement on report forms soon after an accident. New York State has a standard accident form that requests information on the drivers and passengers, the vehicles, the roadway, and the conditions at the time of the accident. Most forms require a sketch of the accident showing vehicle paths and objects struck and a narrative describing the accident.

Some studies will require retrieval of accident data from hard copies or computer filing systems. For instance, NYSDOT keeps accident reports in computerized files. These files are developed from the police accident reports. Accident information can be obtained by street name or highway being investigated and the distance from a point of reference intersection or milepost.

#### Reducing Accident Data

Accident assessments normally review the last three years of information available. The three-year time frame represents a compromise between the desire for larger sample sizes and the desire for a time frame within which conditions were unlikely to have changed a great deal. The specific time frame of the investigation can be requested and the reports will be filtered to reflect that time frame. It is good practice to review the accident data to insure that specific accident locations have not been biased by construction and/or other major, but temporary, traffic events during the time frame selected.

The data provided should be sorted to reflect the focus areas of the accident investigation. Analysts usually summarize accidents into those that occurred at spots and those that occurred in roadway sections. A spot can be an intersection or a short segment of highway that helps identify problem “point” locations in the Town. Spot lengths of 0.2 – 0.3 miles and section lengths of 1 to 2 miles are recommended.

There are numerous limitations to the accident data. It is important to recognize that the number of accidents occurring at a particular location does not necessarily reflect the relative safety of that location. Since accidents are rare and somewhat random events, high-accident locations or accident-prone drivers may be unlucky rather than unsafe. Also, there are a great number of unreported accidents. Non-reportable accidents are those where property damage is below \$1,000 and the law enforcement agency declines to investigate further. Some motorists do not report minor accidents in order to minimize their insurance costs, thereby further limiting the comprehensiveness of the

database. There are other limitations to the accident data as well, including reporting errors incurred along every step of processing.

### Analyzing Accident Data

Engineers, policymakers, news media, and others often want to know the number of accidents of some type that occurred at a particular location or set of locations during a given timeframe. Such summaries are useful for a number of reasons, including: comparing highway safety with other competing modes, noting trends with time, or grasping the magnitude of the problem. Analysts preparing summaries of the number or trend of accidents should provide the audience with more than just a number. Summaries of accident data must emphasize whether the statistics presented are injury, fatal or property damage accidents.

Due to limited budgets, it is essential that agencies making highway safety improvements direct their resources to real problem locations. Good litigation risk management also demands that agencies identify accident-prone locations through a logical process. Thus engineers have developed procedures to identify accident-prone locations using accident data. This data and the related procedures look at spot areas, accident frequency, and accident rates, accounting for severity of the accident types.

Agencies can identify accident-prone locations by ranking locations by accident rate. Highway section accident rates are usually computed in terms of accidents per 100 million vehicle miles. Intersection accident rates are computed in terms of accidents per million entering vehicles. Statewide rates are available for various facility types for comparison.

For the purposes of transportation planning at a rural community level, the accident analysis does not need to be greatly detailed. The evaluation should primarily review the number, severity and patterns of accidents as well as identify if further review is recommended should the accident rates exceed the statewide rates. Further accident investigations can be undertaken to determine the cause of the accident trends occurring at any given location. Professional consultants or the jurisdictional agency should undertake this task. Normally, more detailed information is required including obtaining the actual police reports, developing collision diagrams to show the cause and effect of each accident, identifying and selecting countermeasures, and evaluating countermeasures.

