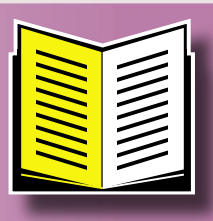
Lessons Learned

1. Crash Statistics Overview

2. Identification of Hazardous Locations

3. Traffic Engineering Tool Box



4. Lessons Learned

5. Traffic Safety Resources

Crash Characteristics

- Crashes tend to be random occurrences, but decisions made every day by traffic engineers about access, road design, and intersection traffic control can have an impact on traffic crashes and overall safety.

- Crash frequencies tend to increase with increased access to a roadway.

- Roadways that serve only one function, either access or mobility, tend to have the lowest crash frequencies and roadways that must serve both functions (like most urban arterials) have the highest crash frequencies.

- Increasing amounts of intersection traffic control does not usually result in lower crash frequencies. The least amount of intersection traffic control that works – is best.

Identification of Hazardous Locations

- Crashes tend to be randomly distributed around a roadway system, with the exception of a few locations with clusters of crashes that are usually associated with some type of adverse geometric or traffic control condition.
- Road authorities should have a hazard identification system that includes a periodic inventory to identify those locations with safety deficiencies.
- The best method for identifying hazardous locations is the **CRITICAL CRASH RATE**, but this is also the most data intensive. However, the use of any method to identify hazardous locations is better than not conducting a periodic safety inventory.
- The best description of potentially unsafe locations – locations with an **ACTUAL** crash experience greater than the **EXPECTED** crash experience.
- After identifying hazardous locations, a more detailed understanding of the problem is necessary to develop countermeasures because there is currently no expert system in place that allows mapping from a high crash rate to the recommended safety solution.
- The basic supplemental analysis involves comparing actual crash characteristics to expected characteristics and then looking for differences.
- Roadways that are similar in design, with similar volumes should operate in a similar manner and have similar crash characteristics.

Traffic Engineer's Tool Box

- The results of recent research efforts suggest that traffic engineers should reconsider the contents of their safety "tool box".
- The research indicates:
    - Traffic signals are rarely a safety device.
    - Overhead flashers and rumble strips on rural intersections have not reduced crashes.
    - Streetlights at rural intersections have improved safety.
    - Crash rates on all categories of both rural and urban roads are a function of access density.
    - Left turn lanes on urban arterials are almost always safety strategies.
- If you are going to invest your time, effort, and money to mitigate safety deficiencies, invest in strategies that have been proven to reduce crash frequency/severity.
- Match the magnitude of the solution to the magnitude of the problem.
- Consider interim measures when implementation of the ultimate solution would take years.
- The most effective safety strategies usually include elements from each of the 4 E's:

Education, Enforcement, Engineering, and Emergency Services