

Cedar Rapids uses speed-monitoring trailer in its safety program

Speed-display trailers, especially when used in combination with enforcement, can be effective tools for short-term reduction of traffic speeds in urban areas with chronic speeding problems. This is the conclusion of Bill Meeks, Cedar Rapids traffic engineering project administrator.

A school zone study

In 2000, Cedar Rapids received a Traffic Safety Improvement Program (TSIP) grant from the Iowa DOT, Office of Traffic and Safety, to purchase a speed-monitoring trailer as part of a research project.

To determine the trailer's value as a tool for improving safety, the city selected six speed-study sites, five in school zones and one residential location. City staff performed before-and-after speed studies as part of a recommended methodology for monitoring and evaluating vehicle speeds at selected locations.

During the weeklong speed studies, the following protocol was used at each location:

- First day: No speed display, no enforcement. Baseline 85th percentile speeds were determined.
- Second day: Speed display only, no enforcement. 85th percentile speeds were evaluated.
- Third day: Speed display plus enforcement. 85th percentile speeds were evaluated.
- Fourth day: Speed display only, no enforcement. 85th percentile speeds again evaluated.
- Fifth day: Follow-up 85th percentile speeds evaluation; no visual speed display or enforcement involved.

Observations

During both the “before” and “after” studies, the 85th percentile speeds decreased on the second day in about 90 percent of the studies. Likewise, during both the before and after studies, the 85th percentile speeds decreased on the third day in about 90 percent of the studies. This led to the conclusion that both the display and enforcement

portions of the study had a positive impact on speed reduction.

However, the fact that the 85th percentile speeds decreased steadily every day of the weeklong study in only about 15 percent of both the before and after studies was evidence that motorists were not adopting a permanent speed reduction mentality.

Conclusions

The speed-monitoring trailer was generally an effective speed deterrent when the display was used in combination with enforcement. However, its effectiveness peaked with enforcement and typically declined the longer it was deployed at one location.

In addition, 85th percentile speeds measured on the first day of the after study were generally about the same as or higher than those measured on the first day of the before study. In other words, motorists adjusted their speeds only in the short term.

To provide long-term benefits, the city must periodically deploy the speed monitoring display, accompanied by increased enforcement.

Still, Meeks believes the trailer is a useful safety tool. “If more frequent reminders to slow down are required,” he says, “and even if it is necessary to write a few more speeding citations in the process, we feel it's worth it if we can achieve our bottom line of increased safety.”

Using the technology

Meeks made the following observations about the equipment purchased by Cedar Rapids:

- The speed trailer is quick and easy to set up and remove.
- Data collection and download are relatively simple.
- There is a fairly stiff learning curve for using the software to read and interpret data, but the software supplier provides excellent customer support.
- With this particular equipment, the data recorder can be used as a stand-alone unit, without the display trailer, to collect speed data and record traffic

volumes using pneumatic hoses. This allows the city to deploy the speed display in one location and collect speed or traffic volume data at another location.

Suggestions

Meeks provides the following suggestions for using speed-display trailers in urban school zones:

- Notify the general public, school staff, parents, and neighborhood residents in advance of a project using the speed trailer. Use the media extensively to advertise the upcoming project. The more buy-in you have from affected parties, the more effective your campaign will be.
- Conduct speed studies in school zones during non-dropoff and pickup times.
- Locate the speed trailer carefully. This is important both for obtaining accurate data and for providing good visibility of the unit. Good unit visibility improves public relations and provides better protection for motorists and the unit itself.
- For enforcement purposes, use supporting data, like that obtained with handheld lasers.

For more information

Since this initial project, the city of Cedar Rapids has continued to use the speed-display trailer as part of its ongoing speed enforcement efforts. In addition, the city has used the trailer in a variety of special situations.

For more information, or for a copy of the Cedar Rapids Traffic Engineering Department's school zone study and conclusions, contact Meeks, 319-286-5176, billme@cedar-rapids.org. ■