

Traffic Safety Facts

Traffic Tech – Technology Transfer Series

Automated Speed Enforcement in School Zones in Portland, Oregon

Automated Speed Enforcement (ASE) combines speed measurement and imaging of speeding vehicles to provide for automatic ticketing of vehicles exceeding a preset threshold. ASE has the potential to deter speeding over a specific location if drivers are aware of the presence of ASE systems. Many communities that have used ASE report a reduction in speeds, and some have reported a reduction in crashes following implementation of ASE programs (e.g., Cunningham, Hummer, & Moon, 2005; Retting & Farmer, 2003; Cities of Beaverton & Portland, 1997; Elvik, 1997).

Since 1995, 170 school-age pedestrians (younger than 19) have died in school-transportation-related crashes. While 70 percent of these children were killed by school buses (or by vehicles functioning as school buses), 30 percent were killed by other vehicles involved in the crashes. Due to their lower awareness of risk and impulsive behavior, child pedestrians are particularly vulnerable. Nearly half of all school-age pedestrians killed in school transportation-related crashes were age 5 to 7.

ASE technology provides a highly visible speed enforcement presence with minimal disruption of traffic flow, and is well suited to speed enforcement in school zones. NHTSA contracted with Westat, Inc., to conduct a demonstration of ASE in school zones in Portland, Oregon, and to evaluate the program's effects on reducing traffic speeds along with the public attitudes and perceptions toward ASE.

Method

ASE was deployed two to three times per week at five school zones in Portland, Oregon, during a three-month period from March through May 2005. Five additional school zones, located in north, northeast, and southwest Portland, served as comparison sites without ASE.

In Portland, school zones have a 20 mph speed limit 24 hours a day. All of the demonstration school zones (and four of the comparison schools) also had flashing beacons, activated during school hours, signifying higher fines for speeding.

The Portland Police Bureau Traffic Division, using two ASE unit vans, deployed ASE two to three times per week at each of the five demonstration school zones. ASE was in place for a total of 331 hours across all sites.

To maximize deterrence, a publicity campaign including a press conference that attracted citywide media attention was held prior to the deployment of ASE. The campaign targeted the neighborhoods of the five demonstration school zones. Road signs were also installed stating "Photo Enforced" to supplement existing "School Speed 20" signs in the demonstration school zones.

Public perceptions and awareness of the ASE program were surveyed on a sample of 400 residents both prior to and during the demonstration program. Traffic volume and speeds were measured by means of JAMAR TRAX RD pneumatic road tube traffic counters for at least 24 hours prior to, during, and following the ASE deployment program.

Findings

When ASE was present and the flashing beacon was off, 85th percentile speeds at demonstration school zones were reduced by approximately 5 mph compared to before the ASE demonstration. Eighty-fifth percentile speeds decreased from 32.4 mph to 27.8 mph. When ASE was present and the flashing beacon was on, 85th percentile speeds were approximately 8-9 mph lower in the demonstration zones than when neither ASE nor the beacon was present (see Figure 1).

Figure 1. 85th Percentile Speeds for Demonstration Sites by Beacon and Test Condition

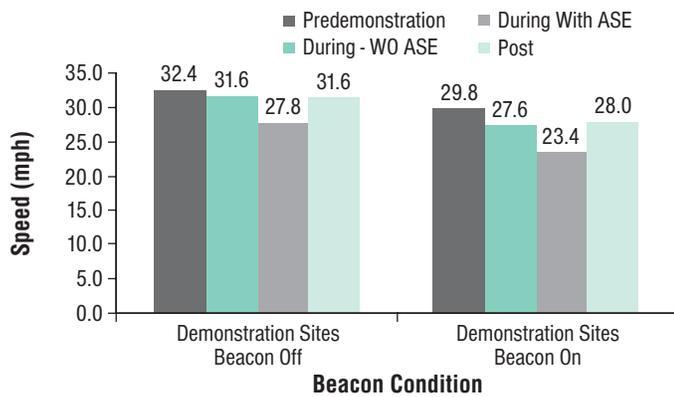


Figure 2. Percentile Speeds for Comparison Sites by Beacon & Test Condition

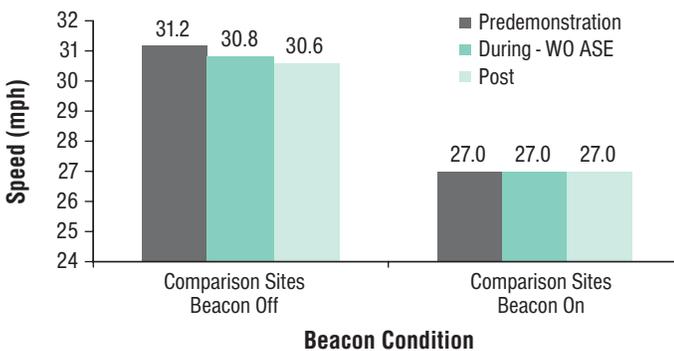


Figure 2 shows the data for comparison sites. In the comparison school zones, no difference in speeds was observed between the pre-demonstration period, demonstration period, and post-demonstration period when the flashing beacon was on. A small decrease in the 85th percentile speeds of 0.6 mph was observed from the pre-demonstration to post-demonstration with the beacon off, similar to the decrease of 0.8 mph at the demonstration school zones.

One notable finding was that speed reduction effects achieved at the demonstration school zones lasted for at least a full month after ASE ceased.

Implications

ASE can be used to reduce speeds in school zones. ASE was shown to be most effective in this application when combined with a flashing beacon.

How to Order

For a copy of *Automated Speed Enforcement in School Zones in Portland, Oregon* (45 pages plus appendices), prepared by Westat, write to the Office of Behavioral Safety Research, NHTSA, NTI-130, 1200 New Jersey Avenue SE., Washington, DC 20590, send a fax to 202-366-7096, or download from www.nhtsa.dot.gov. Paul J. Tremont, Ph.D., was the project officer.



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