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LOW COST LOCAL ROAD SAFETY SOLUTIONS

Studies show that speed displays can significantly improve speed limit compliance by reducing vehicle speeds by approximately 10 mph.

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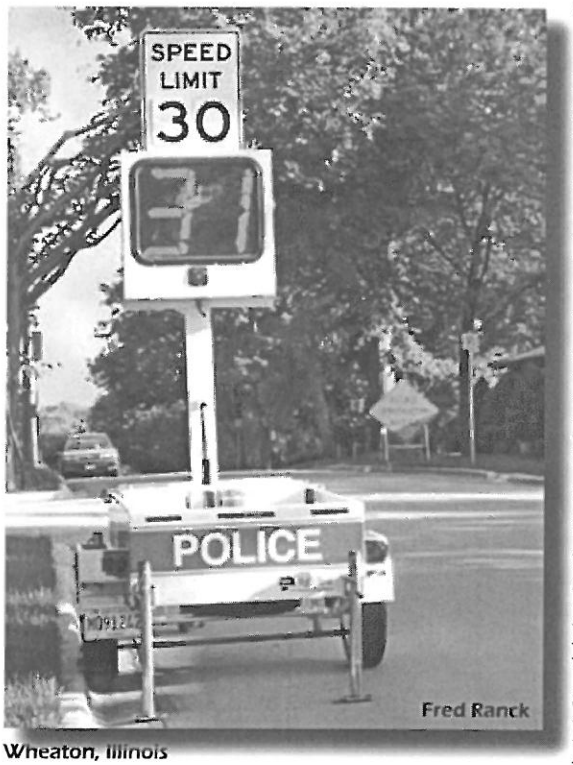
Speed Displays Reduce Traffic Speeds and Increase Speed Limit Compliance

According to the National Highway Traffic Safety Administration, in 2003 approximately 86 percent of all speeding-related fatalities occurred on roads that were not interstate highways. Statistics also show that speeding was involved in 36 percent of the fatal crashes in work zones.

Speed displays are dynamic message signs that use radar to measure and record the speed of approaching vehicles. This measured speed is then displayed to passing drivers in an effort to decrease speeds. The two main types of speed displays are speed display trailers and mounted speed displays. Speed display trailers are portable and thus can be deployed at any roadside location that provides sufficient room. Mounted speed displays can be attached to speed limit signs, telephone poles, police vehicles, or metal stands. Speed display trailers are typically used on a temporary basis, while mounted speed displays are typically more permanent applications. An advantage of the speed display trailer is that a legal speed limit sign can easily be mounted on the trailer, whereas the mounted speed display must be near a current speed limit sign or have one mounted with it. Speed display trailers typically cost $5,500 to $20,000, but can be rented for approximately $50 a week. Mounted speed displays typically cost $2,500 to $7,000.

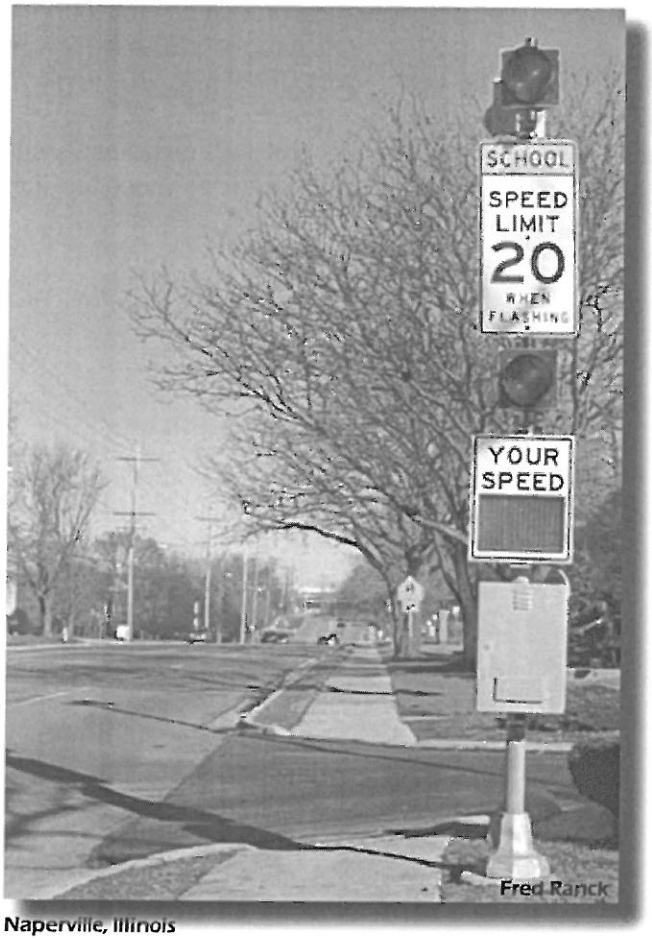


Wheaton, Illinois

Speed displays are currently used by many cities and counties in school zones. Speed display trailers placed in school zones in El Paso, Texas, resulted in a speed reduction of 8.5 mph.[1] Before speed display trailers were placed in school zones in Del Rio, Texas, 81 percent of drivers exceeded the speed limit.[1] After the placement of the speed display trailers, only 18 percent of drivers were traveling above the speed limit (a 78 percent reduction). The San Diego County Sheriff's Department also found a speed display trailer to be extremely effective.[1] Before placement, 77 percent of the drivers exceeded a 20 mph school zone speed limit. When a speed trailer was installed, only 20 percent of drivers were traveling above the speed limit (a 74 percent reduction). In Houston, Texas, 90 percent of drivers exceeded a 20 mph school zone speed limit before placement of a mounted speed display.[1] After placement, the proportion of drivers exceeding the

speed limit decreased to 15 percent (an 83 percent reduction).

The City of Phoenix found that a speed display in a school zone with a 15 mph speed limit substantially reduced the 85th percentile speed from approximately 48 mph to approximately 15 mph (a 33 mph reduction).[1] At a second site, the 85th percentile speed was reduced from 32 mph to 25 mph (a 7 mph reduction). A study in Santa Barbara, California found that speeds alongside the speed display trailer were reduced by 10 percent and by 7 percent downstream for a distance up to 0.5 mile.[2]



Naperville, Illinois

In a recent study by the Texas Transportation Institute (TTI), researchers evaluated the effectiveness of a mounted speed display at a school zone on a two-lane roadway in Forney, Texas.[3] The normal speed limit was 55 mph and the school zone speed limit was 35 mph. The average speed at the beginning of the school speed zone dropped from 44.5 mph in the before period to 35.3 mph shortly after the speed display was installed (a 9.2 mph reduction). Four months later (speed display still active), the average speed was 35.7 mph, still 8.8 mph below the average speed in the before period.

The 85th percentile speed indicated similar trends – dropping from 50 mph in the before period to 40 mph shortly after the speed display was installed (a 10 mph reduction) and remaining around 42 mph four months later (an 8 mph reduction). The percent of drivers exceeding the school zone speed limit decreased dramatically from 95 percent in the before period to 34 percent shortly after the installation of the mounted speed display (a 64 percent reduction) and was still around 44 percent four months later (a 54 percent reduction).

In another recent study by TTI, researchers evaluated the effectiveness of a speed display trailer at two rural high speed work zones.[4] The speed display trailer reduced speeds by 2 to 10 mph. In addition, the speed display reduced the percent of vehicles exceeding the posted speed limit.

Overall, evidence suggests that speed displays are a low cost safety improvement that reduces speeds and the proportion of drivers exceeding the speed limit.

[1] Fors, C. Controlling Community Speeds with Radar Displays. In *Police and Security News*, Vol. 18, No. 5, 2002. http://www.policeandsecuritynews.com/septoct02/contollingSpeed.htm.

[2] Bloch, S.A. *A Comparative Study of the Speed Reduction Effects of Photo-Radar and Speed Display Boards*. Paper presented at the Transportation Research Board 78th Annual Meeting, Washington, D.C., January 1998.

[3] Rose, E.R. and G.L. Ullman. *Evaluation of Dynamic Speed Display Signs (DSDS)*. Report 0-4475-1. Texas Transportation Institute, College Station, Texas, September 2003. http://tti.tamu.edu/documents/0-4475-1.pdf.

[4] Fontaine, M.D., P.J. Carlson, and H.G. Hawkins, Jr. *Evaluation of Traffic Control Devices for Rural High-Speed Maintenance Work Zones: Second Year Activities and Final Recommendations.* Report 0-1879-2. Texas Transportation Institute, College Station, Texas, October 2000. http://tti.tamu.edu/documents/1879-2.pdf.