

AN ABSTRACT OF A THESIS

EVALUATING THE EFFECT OF ADVANCED WARNING FLASHING LIGHTS ON DRIVER SPEED COMPLIANCE IN SCHOOL ZONES

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The purpose of this study was to evaluate the effect of advance warning flashing lights on drivers' speed compliance in school zones. The evaluation was primarily based on the analysis of vehicular speeds in school zones during flashing and non-flashing periods, with/out crossing guard at one site, with/out enforcement at the other, and with only flashers for the third site. Drivers' speed behavior was also examined at 1500 feet 'upstream' and 'downstream' from the school zone during flashing periods.

Three study sites were selected among 14 schools in the City of Cookeville, Tennessee, that have flashers before the school zone. These sites were selected because they were on heavily traveled roadways and also on tangent sections. The vehicular speed data were collected over a period of one week at each site, both during flashing and non-flashing periods in the fall of 2003. These flashers were in operation only during school starting and dismissal times. The process of data collection also involved watching for two other factors that may influence speeds in the school zone: first, the crossing guard/enforcement and second, children walking to school. The student t-test and proportion test were performed to check for the difference in mean speeds and percent compliance, respectively.

The results of the study found that flashers produce a statistically significant reduction in mean speeds. However the reductions were greater in the school zone with enforcement followed by school zone with crossing guard. Conversely the reductions were least in school zone that did not have enforcement or crossing guard. Although the mean speeds and the 85th percentile speeds decreased considerably during the flashing operation, still they were far from complying with the school speed limit. The compliance rate ranged from as low as 5 % to a maximum of 45%.