

Evaluating the Effectiveness of School Zone Flashers

Statement of Problem

With a considerable increase in the number of schools in the State of North Carolina, there have been increasing concerns regarding safety and traffic speeds in school zones. One approach to improve the safety and efficiency of school zones is to increase drivers' compliance to the school zone speed limit by providing more effective traffic control devices. This study will be used to determine if flashing beacons in reduced speed school zones decrease speeds and increase speed compliance.

Project Scope

Project Goals

The goal of this project is as follows:

- Determine if there is greater compliance to speed limits in school zones during
 - (1) reduced speed school zone hours of operation when a flashing beacon and school zone speed limit sign are present,
 - (2) reduced speed school zone hours of operation when only a school zone speed limit sign is present, or
 - (3) non-school zone hours.

Measures of Effectiveness (MOEs)

- Vehicle speeds, percentage of vehicles exceeding the speed limit, and number of total crashes will be the measure of effectiveness for this project.

Data Collection Method

- A Lidar gun will be used to collect speed data at each site. Speed data will be collected at each site for the AM and PM school zones for the entire duration that the reduced speed limit is in effect. At least 100 speed samples or one hour of data collection will also be obtained at each site in the AM and PM during non-school zone hours.
- Speed data will be collected in both directions of travel on a Tuesday, Wednesday, or Thursday when school is in session, but not during a holiday week or teacher workday.
- School zone hours of operation vary by school between the hours of 7:00 AM to 9:00 AM and 2:15 PM to 4:15 PM. Non-school zone data collection must begin (end) at least 30 minutes after (before) the reduced speed school zone hours of operation.
- All attempts will be made to collect data from an inconspicuous spot. Pulling the vehicle off to the shoulder when collecting data may influence drivers to slow down or shy away from certain lanes to avoid the parked car.
- Only unimpeded vehicles will be targeted for speed measurements. This allows us to determine if the traffic control has an effect on the drivers that are selecting their own speeds. Vehicles in platoons will be avoided as they are not actively choosing their own speeds.
- All data collection will be done under similar weather conditions.

Countermeasure Sites:

- A minimum of 15 sites with school zone speed limits and flashing beacons will be selected for this project. At least 15 sites with school zone speed limits without flashing beacons will be used as a control group.
- Flashing beacons may include single or dual flashers and be mounted on pole or span wire.
- Sites may include a mix of geometric features and geographic elements. They may also be located in urban, suburban, or rural areas.
- Congested sites with long queues will be avoided because vehicle speeds will be impeded.

Project Tasks

		Percent of Total Work Est. Completion Date
Task I	Project Management	<u>5%</u>
	• Develop preliminary project Work Plan	11/06
	• Develop detailed project Work Plan and Status Report	1/9/07
	• Develop Status Report	2/27/07
Task II	Identify Sites	<u>10%</u>
	• Compile list of candidate sites	11/06
	• Identify at least 15 treatment sites and 15 control group sites from candidate list	12/06
Task III	Collect Data	<u>65%</u>
	• Collect speed data at each site	3/07
	• Perform crash analysis for each site	3/07
Task IV	Data Analysis	<u>10%</u>
	• Compile data and analyze for statistical significance	4/07
Task V	Document Findings and Recommendations	<u>5%</u>
	• Prepare and present report on findings	5/07