Reduced Posted Speeds in School Zones – Are They Working?

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November, 2019

The speed of vehicles in London's school zones was examined in two studies by Gorski Consulting on August 4, 2017 and September 6, 2019. Both studies occurred on Tweedsmuir Ave in the school zone at St Bernadette's Elementary School.

In the August 4th study multiple video cameras were set up at 100 metre distances east and west of a posted "40 km/h" speed sign. This sign marked the western start of the reduced speed zone . A similar camera was also set up at the sign. Thus two zones were created, one zone for the 100 metres leading up the reduced speed, and a second zone in the 100 metres where the reduced speed was in effect. The speed sign is shown in Figure 1 below.

Figure 1: View looking east along Tweedsmuir Ave on August 4, 2017. A video camera at the right of the view is typical of several that were set up to observe the speed of eastbound traffic.

The school zone was also equipped with newly installed in-lane, speed markers as shown in Figure 3.

The purpose of the testing was to evaluate whether vehicles slowed down as they entered into the reduced speed zone. Seventy-five vehicles were documented in approximately a half hour of observation. Those observations with interference were removed reducing the number of valid observations to 20. It was observed that the average speed of eastbound vehicles approaching the "40 km/h" sign was 49.2 km/h and only one vehicle travelled at a speed below 40 km/h. In contrast the average speed of vehicles travelling within the first 100 metres where the speed limit was reduced was 51.3 km/h and no vehicle was observed to travel below 40 km/h. While this study contained few observations it seemed to show that, rather than slowing down, vehicles actually sped up as they entered the reduced speed zone.

Figure 2: This shows a typical camera located 100 meters east of the Speed sign. As vehicles passed the orange cone their time was noted and compared to the time when the same vehicle passed a previous cone thus establishing an average speed over the noted distance.

Figure 3: The school zone was also equipped with in-lane speed markers as shown in the eastward view on Tweedsmuir Ave.

In the second study of September 6, 2019, a similar set of multiple video cameras was placed along Tweedsmuir Ave in front of and west of St Bernadette School. At this time the City of London had installed a speed display board positioned in front of the school to advise passing drivers of their speed. Part of the study was to determine if there was a difference in the speed reported on the board versus the average speeds determined from video analysis. The cameras were set-up at 25-metre intervals

commencing from 125 metres west of the speed display board. Thus four average speeds could be obtained as vehicles moved toward the sign.

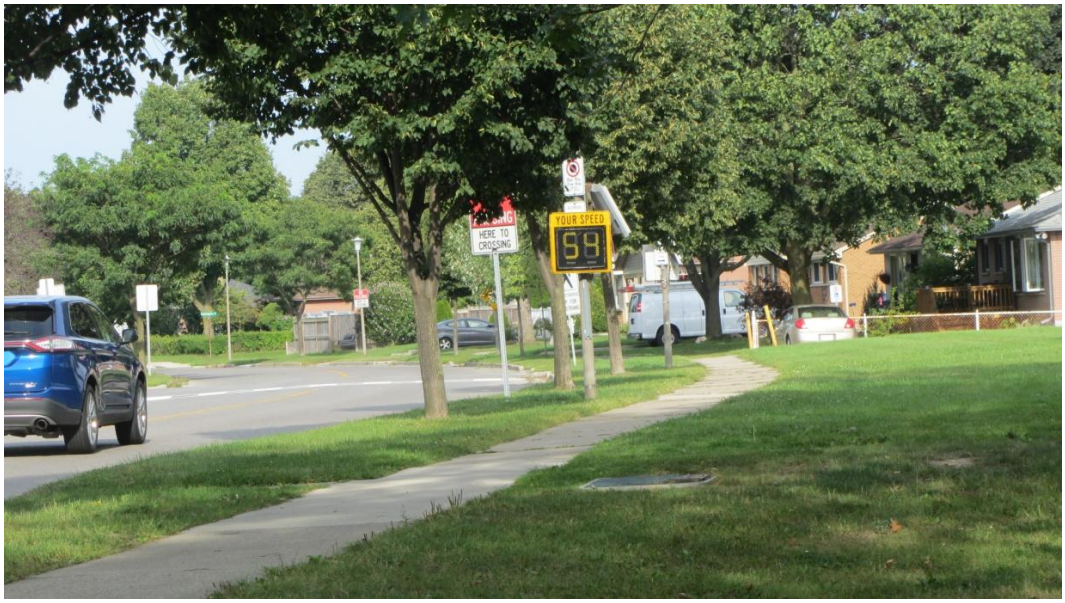

Figure 4: Eastward view of speed display board installed in front of St Bernadette's school.

Figure 5: View, looking east along Tweedsmuir Ave toward St Bernadette's School and the speed display board located in the distant background. The effectiveness of the board was reduced because it was partially blocked by trees on the right roadside.

Figure 6: The effectiveness of the speed display board was reduced because it was partially blocked by trees as shown in this view looking east.

Over a time of about 40 minutes 70 vehicles were documented. Removing observations due to interference reduced the number of valid observations to 30. The average speed of these eastbound vehicles is shown below.

125 to 100 metres	100 to 75 metres	75 to 50 metres	50 to 25 metres
49.0	48.6	50.1	45.1

As a comparison, the speed shown on the speed display board was documented at each of the five discrete points where the cameras were set up providing an instantaneous speed at that precise point. The results are shown below.

125 metres	100 metres	75 metres	50 metres	25 metres
47.6	47.7	47.3	46.7	44.9

It should be emphasized that the 125-metre location in these tables was located about 100 metres east of the beginning of the “40 km/h” reduced speed zone. In other words the eastbound vehicles were already traveling through the reduced speed zone for 100 metres before their speed was noted in this study.

It needs to be noted that a reduction in average speed may not be the goal in achieving a safe environment. As most drivers are law-abiding and will reduce their speeds to a reasonable value, the true measure of safety must examine the small percentage of unsafe drivers who do not obey posted speeds and/or are not driving with due attention. Although distraction and lack of attention are more

difficult to detect, it is possible to note how many drivers are travelling at unreasonably high speeds, at 20 km/h over the speed limit for example.

In our study, our video analysis showed that 7 of the 30 eastbound vehicles travelled at an average speed of 60 km/h or higher within at least one of the 25-metre intervals leading to the speed display board. Analysis of the speed board data showed that only 3 of the 30 vehicles were travelling 60 km/h or higher as they passed each discrete point.

A further study was undertaken to explore the speed of westbound vehicles. The observations were made commencing at the speed display board so this was an indication of what drivers did in the 125 metres after they passed the board. A total of 63 vehicles were observed and this was reduced to 47 once interference was taken into account. The results from the video analysis are shown below.

25 to 50 metres	50 to 75 metres	75 to 100 metres	100 to 125 metres
51.6	48.3	48.2	53.0

It was also noted that 10 of the 47 vehicles were observed to be travelling over 60 km/h in at least one of the four distances, or 21.3 per cent.

These data would appear to show that the average speed of westbound vehicles was well above the posted maximum speed of 40 km/h. The analysis suggests that about 21 to 23 per cent of vehicles could be traveling at 20 km/h or faster than the posted “40 km/h” speed in this school zone. That is not surprising as it is consistent with other studies performed throughout Southern Ontario. Obviously, a larger study with more observations is needed to verify these preliminary observations.

In my view, drivers who habitually ignore posted speeds will continue to ignore them as they have done for as long as I have been conducting such studies. While average speeds may be reduced due to the effect of the many law-abiding citizens, it is important to focus on the small segment of drivers who ignore posted speeds and are likely to be those who will cause collisions in school zones. Additionally we should be examining the road segments which, from a though understanding of collision causation, are likely to produce incidents or conflicts. A safety audit that relies principally upon police reports and statistics can fail to recognize that a vast number of incidents never become reported in official police data. And the vast number of incidents that become reported are not investigated to the essential detail that is required to be useful in a proper safety audit.