

Now You See It – Now You Don't A trial of flashing lights in 40km/h school zones in NSW

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Biography

Maureen Elliott is the Manager of School and Youth Programs for the Roads and Traffic Authority, NSW. She has worked specifically in the area of health promotion and child injury prevention. She holds a Masters degree in community health, nursing and in education.

Since her appointment to the RTA in 1998, Maureen has been responsible for the overall management of such programs as Safer Routes to School, the Road Safety Education Program, the Youth Program and most recently the Safety Around Schools Program.

Abstract

40km/h school zones have been installed at all access points at NSW schools. These zones are complemented with large yellow road pavement patches showing "40" at the start of each school zone.

Despite an extensive media campaign alerting motorists to the rationale for school speed zones, there remain a percentage of motorists who fail to comply with these zones and subsequently place school children at risk.

It is recognised that there are two potential motorist problems at school zones. The first is those motorists who chose not to comply with 40km/h school zones. This is ultimately an enforcement issue and strategies are being identified in consultation with the police to negate this problem. The second problem relates to motorists who fail to see the school zone sign. In some instances, this is as a result of schools whose visibility to the motorists is not optimal i.e. schools set back from the road or located on a blind bend. For a selection of these schools, a trial of flashing signs has been commenced to ascertain whether additional enhancements such as flashing signs, at the commencement of the school zone, can result in a greater awareness of the school zone and thus a sustainable reduction of speed in school zones.

This trial has been in place for 3 terms of the 2003 school year. Interim results indicate that these signs have limited benefit when used over time.

DISCUSSION

The NSW Government has, for many years given an absolute commitment to ensure the safety of children, particularly in their travel to and from school.

Since 1994 one of the safety strategies has been the installation of school zones around the school environment, in an attempt to slow the speed of traffic, at times when the combination of high pedestrian and traffic activity is greatest.

These zones, when first introduced included both 40 and 60 km/h school zones depending on the prevailing speed of the road:

- i.e. roads < 70km/h received 40 km/h zones
- roads > 80km/h received 60km/h zones

The times of these zones also varied according to the start and finish times of the school involved.

As it is with many other states and countries, motorist awareness and compliance with school zones has been less than optimal although deaths and serious injuries to children in school zones have been decreasing.

A review by STAYSAFE and the RTA in 2000 resulted in some significant changes to the location, speed and times of school zones. Specifically, the Minister for Roads requested the following main changes:

All school access points would have a school zone installed

All school zones would be 40km/h irrespective of the prevailing road speed

All school zones times would be standardised to 8-9:30 and 2:30 – 4pm to facilitate better compliance by motorists.

With 3,300 schools to zone and/or retrofit with new signage, this task was significant in terms of cost and human resource needs.

The installation of the 40km/h school zones was complimented with extensive media advertising campaign to inform the community.

The current description of a school zone is a school zone sign located 200 metres from the approach to school access point and 200 metres on the departure side of the school entrance. The school zone is bi-directional. The sign indicates the speed (40km/h) and the times this speed applies.

These signs are enhanced with yellow 40km road patches at the start of the school zone.

The size of the school zone sign is dependant on the type of road, eg multilane, visibility of the school and other confounding issues such as roadside furniture.

Where a 40km/h school zone is located on a high speed or multilane road, oversized signs as well as advanced warning signs and mast arms are used to increase conspicuity of the school zones.

Despite these enhancements to school zones, many motorists still fail to respond either intentionally or unintentionally to school zones in many locations.

Historically, flashing lights to increase motorists' awareness of the presence of school zones were used very sparingly in locations across NSW. Examples of such use have included high fog areas or lack of the visible presence of a school.

Research both nationally and internationally has questioned the effectiveness of flashing lights over a period of time.

In February 2003, the RTA commenced a trial of flashing lights/signs at 11 primary school zones locations in NSW, to again evaluate the long term effectiveness of such devices.

The specific differences of the trial compared to others previously undertaken is that 3 different types of flashing signs are being trialed, against control school sites, to determine whether any of the types used can demonstrate a sustainable impact on speed reduction in school zones, compared with the control site.

Through a selective tender process, the following criteria was sought from providers of flashing lights / signs:

The device must be solar powered with battery backup
The life expectancy of the battery back up must be sufficient to last at least 3 weeks (after one year of service life)
Automatic change to daylight saving hours
Test button and manual button for emergency use
Batteries must have capacity to solar charge.
Provision against globe /LED failure
The time accuracy of the lights must be assured to +/- 1 second per day
Sign / light luminosity must meet RTA technical specifications for daylight hours
The capacity to vary the maximum brilliance of the lights must be available
Battery buffer must be included
“Back to Base” networking to notify of failure must be available
18-month warranty including any maintenance required. This maintenance must be onsite.

The criteria used in selecting the 11 sites included the following measurements:

High traffic volume
High pedestrian volume
Poor visibility of the school from the road
History of accident/fatality at the school zone site
Recordable high speeds at the site during school travel time.

An important factor with the trial of these flashing lights/signs, was the intention of the lights to increase motorists' compliance in school zones in areas where the zones are not being recognised by motorists as opposed to those motorists who choose to disregard these signs.

(Fixed speed cameras are being trailed at 10 primary school zone sites to address this issue)

The three types of trial signs can be seen in the following slides.

Light A



Light B



Light C



As you will see, the signs used increase in complexity from simple wig-wag lights to the flashing red annulus.

The cost of these units has varied from \$1,200 per unit to \$5,000. Additional costs have been incurred for a back-to base monitoring system that alerts the operator to failures in the system.

Each of the lights are pre-programmed to operate at the designated school zone times. A back-to-base monitoring system is operational to report any failure of the lights.

The trial is proceeding and will continue until the end of the 2003 school year. During this time further data will be collected and the results analysed. Relevant information from overseas and interstate will also be considered.

The RTA continues to approach the issue of flashing lights with an open mind, acknowledging that whilst there have been no school child fatalities in school zones, school children remain the most vulnerable of road users. As well, there is a high level of public interest in the issue of flashing lights at school zones.

There are continued calls for better marking of school zones as well as a range of other possible treatments which are being considered.

A Government decision regarding the further installation of flashing lights in school zones will be made after proper analysis of the data and consideration of all the available research.

Keywords

School zones, flashing lights, trial