10.4 School Zone Signs at Split Campus Schools ................................................................. 35
10.5 Pedestrian Facilities at Split Campus Schools ............................................................. 35
  10.5.1 General .................................................................................................................. 35
  10.5.2 Selection of pedestrian facilities ............................................................................ 35
10.6 Treatments for Four Lane or Larger Roads ................................................................. 36
  10.6.1 General .................................................................................................................. 36
  10.6.2 Lane ‘throttling’ ..................................................................................................... 36
  10.6.3 Grade separation ................................................................................................. 36
10.7 Installation of Pedestrian Facilities ............................................................................ 36
10.8 Warning Signs ............................................................................................................. 37
10.9 Threshold Treatments ................................................................................................. 37
10.10 Crossing Supervision ............................................................................................... 37
10.11 Existing School Zone Signage at Split Campus Schools ............................................ 37
10.12 Split Campus Schools Created after 30 September 2011 ........................................... 37
Glossary .......................................................................................................................... 38
Appendix A ...................................................................................................................... 40
Appendix B ...................................................................................................................... 41
Appendix C ...................................................................................................................... 42

Tables
Table 1 - Guideline for selection of pedestrian facilities based on road classification .......... 7
Table 2 - Warning Signs for Use in Advance of Crossing Facilities .................................... 16
Table 3 - Warning Signs for Different Site Conditions ....................................................... 16
Table 4 - Pavement Messages ............................................................................................ 17
Table 5 - School Zone Speed Limits .................................................................................. 24
Table 6 - School Zone Speed Limit Signs at School Zones on Multi-lane Roads ................... 31

Figures
Figure 1 - Children’s Crossing .......................................................................................... 10
Figure 2 - Children’s crossing combined with an existing pedestrian crossing ..................... 11
Figure 3 - Pedestrian fencing on a median ........................................................................ 13
Figure 4 - Typical threshold treatment for a school zone ................................................... 19
Figure 5 - Standard consistent colour children crossing warning sign ................................ 20
Figure 6 - High visibility strips ......................................................................................... 20
Figure 7 - A typical application of consistent colour treatment within a school zone .......... 21
Figure 8 - Typical school zone signing treatment ................................................................ 23
Figure 9 - School zone signs .............................................................................................. 29
Figure 10 - Typical school zone signing treatment for school zones on multi-lane roads .... 33
Contact for Enquiries and Feedback

For further information on this technical note, or to make comment on the technical nature of this technical note please contact;

Email: roadsafety@tmr.qld.gov.au
List of Principal Amendments

<table>
<thead>
<tr>
<th>No.</th>
<th>Clause</th>
<th>Page</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>4.3</td>
<td>4</td>
<td>Change to the infrastructure requirement for combined pedestrian and children's crossing.</td>
</tr>
<tr>
<td>3</td>
<td>4.4</td>
<td>4</td>
<td>Exception to the display of CHILDREN CROSSING flags outside school zone times.</td>
</tr>
<tr>
<td>4</td>
<td>Figure 1</td>
<td>5</td>
<td>Change to minimum crossing width and use of R5-36-1 sign to prohibit parking.</td>
</tr>
<tr>
<td>5</td>
<td>Figure 2</td>
<td>6</td>
<td>New signage layout for combined pedestrian and children's crossing.</td>
</tr>
<tr>
<td>6</td>
<td>4.6</td>
<td>7</td>
<td>Increase the minimum width of crossing at mid block pedestrian actuated signals to align with new Australian Standards</td>
</tr>
<tr>
<td>7</td>
<td>4.13</td>
<td>9</td>
<td>New section regarding impact at schools due to development.</td>
</tr>
<tr>
<td>8</td>
<td>5</td>
<td>10</td>
<td>Requirement for parking facilities at schools now referenced to: Planning for Safe Transport Infrastructure at Schools.</td>
</tr>
<tr>
<td>9</td>
<td>6</td>
<td>10</td>
<td>Requirement for cyclist facilities at schools now referenced to: Planning for Safe Transport Infrastructure at Schools.</td>
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<tr>
<td>10</td>
<td>Figure 4</td>
<td>15</td>
<td>Signage for SCHOOL ZONE threshold treatment now only required for traffic lanes entering the school zone.</td>
</tr>
<tr>
<td>11</td>
<td>8</td>
<td>18</td>
<td>School zones are now permitted on multi-lane roads.</td>
</tr>
<tr>
<td>12</td>
<td>8.4</td>
<td>20</td>
<td>Mandatory times of operation of school zones for South East Queensland. Consistent school zone times within local government areas in regional Queensland.</td>
</tr>
<tr>
<td>13</td>
<td>8.6</td>
<td>22</td>
<td>New section on how to indicate times on school zone signs.</td>
</tr>
<tr>
<td>14</td>
<td>8.7</td>
<td>23</td>
<td>Types of school zone signs that are approved for use in Queensland. Variable speed limit signs are no longer permitted.</td>
</tr>
<tr>
<td>15</td>
<td>8.7.1</td>
<td>23</td>
<td>Criteria for the use of enhanced school zone signs.</td>
</tr>
<tr>
<td>16</td>
<td>8.7.3</td>
<td>26</td>
<td>Revised technical requirement for enhanced school zone signs.</td>
</tr>
<tr>
<td>17</td>
<td>8.8</td>
<td>26</td>
<td>New clause regarding treatment of speeding within school zones.</td>
</tr>
<tr>
<td>18</td>
<td>9</td>
<td>27</td>
<td>New section on the installation of school zones on multi-lane roads.</td>
</tr>
<tr>
<td>19</td>
<td>10</td>
<td>30</td>
<td>New section on the installation of school zones at split campus schools.</td>
</tr>
<tr>
<td>20</td>
<td>10.1</td>
<td>30</td>
<td>Revised definition of split campus school.</td>
</tr>
<tr>
<td>21</td>
<td>App.A</td>
<td>37</td>
<td>Map showing councils in South East Queensland where mandatory 7 - 9am and 2 - 4pm school zone times apply.</td>
</tr>
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<td>22</td>
<td>App.B</td>
<td>38</td>
<td>Exemption criteria and procedure for amending school zone times for regional Queensland.</td>
</tr>
<tr>
<td>23</td>
<td>App.C</td>
<td>39</td>
<td>Criteria and procedure for extending school zone times.</td>
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1 PURPOSE

Traffic conditions near schools can seriously affect the safety of school children. The traffic environment around schools is one of the most complex road transport environments normally encountered by motorists, and the most complex traffic environment encountered by children. This is because traffic density and pedestrian movements are concentrated in short periods of usually 30 minutes in the morning and 15 minutes in the afternoon.

The guidelines are intended to provide a single point of reference for any organisation or authority involved with, or seeking information about, traffic management and road safety at schools.

2 BACKGROUND

Part 4 of the Manual of Uniform Traffic Control Devices (MUTCD) contains the policy for speed management at schools including the installation of school zones. It also includes requirements for the type of signs for use at school zones, the size of signs, the school zone speed limit and minimum lengths of school zones.

This guideline builds on the requirements of the MUTCD by providing additional information to practitioners to improve road safety by managing traffic and speeds at schools.

3 INTRODUCTION

Drivers need to recognise that children are impulsive, unpredictable and inexperienced, and that caution should be exercised in the vicinity of a school. However, pedestrian/vehicle interaction to improve safety around schools can be managed by means of devices from one or more of the following categories:

a) School Pedestrian Facilities
b) School Parking Facilities
c) School Cyclist Facilities
d) School Warning Facilities
e) School Zones.

4 SCHOOL PEDESTRIAN FACILITIES

4.1 General

The following sections provide guidance on the use of the various mid-block pedestrian crossing facilities at schools. Explanations of these terms can be found in the glossary.

Table 1 provides an overall guide to the selection of particular crossing facilities for various road types.
Table 1 - Guideline for selection of pedestrian facilities based on road classification

<table>
<thead>
<tr>
<th>Facility</th>
<th>Freeway / Motorway</th>
<th>Primary arterial urban / (rural)</th>
<th>Secondary arterial</th>
<th>Collector road</th>
<th>Local street</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refuge/traffic island, median</td>
<td>X</td>
<td>O</td>
<td>O</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Kerb extension</td>
<td>X</td>
<td>X/(O)3</td>
<td>O</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Road narrowing, indented parking</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Pedestrian fencing1</td>
<td>X2</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>X</td>
</tr>
<tr>
<td>Speed control device</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>O</td>
<td>A</td>
</tr>
<tr>
<td>Pedestrian (zebra) crossing</td>
<td>X</td>
<td>X</td>
<td>O</td>
<td>A</td>
<td>X</td>
</tr>
<tr>
<td>Children's crossing</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>O</td>
<td>A</td>
</tr>
<tr>
<td>Pedestrian traffic signals</td>
<td>X</td>
<td>A/(X)</td>
<td>A</td>
<td>O</td>
<td>X</td>
</tr>
<tr>
<td>Grade separated</td>
<td>A</td>
<td>O</td>
<td>O</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Legend
A Most likely to be appropriate
O May be an appropriate treatment
X Inappropriate treatment
X/(O) represents urban/(rural)

Notes:
1. Pedestrian fence in the context of this table is fence provided to guide pedestrians away from an unsafe crossing location.
2. Pedestrian fence located within the road reservation is inappropriate on freeways/motorways because pedestrians are not generally present. However, boundary fences are normally erected along urban freeways/motorways to prevent access between interchanges, including pedestrian access.
3. Kerb extensions are not usually provided on urban primary arterial roads as road capacity and traffic efficiency are most important. However, a kerb extension at an appropriate set back from the edge of traffic lane may be appropriate on the approaches to a rural village as a form of "gateway" treatment, the objective being to encourage drivers to reduce speed.


4.2 Children's Crossings

4.2.1 Definition

A children's crossing is an area of a road:

a) at a place with stop lines marked on the road, and

(i) children crossing flags, or

(ii) children's crossing signs and twin yellow lights, and

b) indicated by:

(i) two red and white posts erected on each side of the road, or

(ii) two parallel continuous or broken lines on the road surface from one side of the road completely or partly across the road, and

c) extending across the road between the posts or lines.

4.2.2 Installation

Children's crossings are usually installed near schools (within 200m) where the requirements for such a facility arise only during specific and limited times of the school day. Where children's crossings are installed, pram ramps should also be installed. Where large numbers of students require crossing a road, adequate safe waiting area should be provided.
A children's crossing at a school may be supervised during the times when it is operational (i.e. when the CHILDREN CROSSING flags are installed), in which case the hand STOP Banner (R6-7) is used.

Children's crossings should not be installed on roads:

a) where the posted speed limit is greater than 70 km/h; or

b) where there is inadequate sight distance to the pavement at the crossing for the motorist from one of the approaches; or

c) on multilane roads with more than 2 through traffic lanes in any one direction of travel.

Children's crossings should not be installed at or close to intersections as the STOP line installed as part of the children's crossing will require drivers to STOP at all times at the intersection.

Wherever possible, the installation of kerb extensions at children's crossings should be considered as this can improve safety for the children and the School Crossing Supervisor by improving visibility to the crossing. It will also reduce the travel distance between the kerbs and reduce the exposure time on the road for the pedestrians.

Where parked vehicles close to the children's crossing obscure the CHILDREN CROSSING flags to approaching traffic, it may be necessary to install CHILDREN CROSSING flags on kerb extensions. CHILDREN CROSSING flags should be installed adjacent to the STOP line marking.

Figure 1 shows the signing, line marking and parking requirements at a children's crossing.

### 4.2.3 Guidelines for installation

Children's crossings are warranted at schools where:

a) numbers of school children cross a roadway, and

b) the crossing can be located within 200m of the school, and

c) an undertaking can be obtained to:

(i) display the CHILDREN CROSSING flags (R3-3) during the period when school children are likely to be crossing the roadway proceeding to or from school (see section 4.4),

(ii) operate and maintain a School Crossing Supervisor during normal crossing periods while displaying CHILDREN CROSSING flags (R3-3) and hand STOP banner (R6-7), see section 4.4),

with the exception that School Crossing Supervisors do not operate on crossings that are used only by high school students, or where the Department of Transport and Main Roads' Road Safety Advisors undertake a risk assessment (using the School Crossing Supervisor Scheme Risk Assessment Report) and determine that a School Crossing Supervisor is not warranted.

A School Crossing Supervisor may be required to operate at crossings of this nature during periods when the CHILDREN CROSSING flags (R3-3) are displayed. This would necessitate the use of a hand STOP banner as in (b) above.

Note: The Department of Transport and Main Roads has developed a tool for assessing the risk at children's crossing using Form F1840. Where the risk is high, a School Crossing Supervisor is provided. Where the risk is low, a School Crossing Supervisor is not provided. Where the risk is medium, a risk threshold is used to determine if a School Crossing Supervisor is provided.
4.3 Installation of combined Children's Crossings with Pedestrian Crossing (Zebra) at Schools.

A pedestrian crossing may be installed within a school zone for use by pedestrians outside of school zone times. This facility is normally installed if there is substantial pedestrian use outside school zone times. Refer to the Pedestrian Crossing Facility Guidelines in Section 3.13 of this manual.

Children's crossings provide a higher level of safety for school children than pedestrian crossings. Where a pedestrian crossing is installed at a school, a children's crossing should also be installed and an undertaking must be obtained to operate and maintain a School Crossing Supervisor during normal school crossing periods while displaying CHILDREN CROSSING flags (R3-3) and hand STOP banner (R6-7).

Figure 2 provides details for signing and marking a combined children's crossing and pedestrian crossing (zebra) at schools.

4.4 Display of CHILDREN CROSSING Flags (R3-3)

CHILDREN CROSSING flags (R3-3) must only be displayed during times when children are likely to use the crossing. If the flags are displayed when students are not likely to use the crossing, motorists will disregard them. This can lead to increased risk to the children at other crossings.

Accordingly, CHILDREN CROSSING flags must be displayed only in accordance with the following requirements:

a) Where there is a school zone, CHILDREN CROSSING flags should be generally displayed during the hours of operation of the school zone. In special circumstances, CHILDREN CROSSING flags may be displayed outside school zone hours when children are required to cross the road as part of their school activity.

b) Where there is no school zone, CHILDREN CROSSING flags should generally be displayed on school days only during the school zone operating hours within that local government jurisdiction.

c) CHILDREN CROSSING flags must be displayed throughout the day at split campus schools, during the school zone operating times. (Refer also to Section 8 on split campus schools).

CHILDREN CROSSING flags must not be displayed outside school hours. If children need to cross the road outside school zone times as part of their school activity, CHILDREN CROSSING flags must be installed only for the period that children need to use the crossing.

Since approach speeds to the children's crossing are higher outside school zone times, children should be marshalled across the crossing by an adult.
Notes:
1. Variations to no-stopping distances may be required where visibility to the crossing is substandard.
2. A yellow line (approximately 100 mm wide) may be painted on the footpath - 0.5 m behind the face of the kerb - to indicate the position where pedestrians should wait until directed to cross the roadway. Where used, this line extends the width of the sealed apron connecting the footpath and kerb or a distance of 2.4 metres, i.e. between the crossing posts (without flags).
3. The W6-3/W8-22 assembly is required if the sight distance to the crossing is substandard.
Figure 2 - Children's crossing combined with an existing pedestrian crossing.

Notes:
1. Times of operation may be specified by use of R5-36-1 sign.
2. Where stationary vehicles near a crossing seriously limit visibility between drivers and pedestrians, an increase in these distances may be required.
3. Warning signs may be supplemented with advance pavement messages (see Section 6 of Part 4 - MUTCD).
4. A yellow line (approximately 100 mm wide) may be painted on the footpath - 0.5 m behind the face of the kerb to indicate the position where pedestrians should wait until directed to cross the roadway. Where used, this line extends the width of the sealed apron connecting the footpath and kerb or a distance of 3-6 metres i.e. between the crossing posts (without flags).
5. Pram/bicycle ramps should be installed.
4.5 Pedestrian Crossing (Zebra) at Schools

Pedestrian crossing (zebra) may be installed at schools where there is substantial pedestrian use other than school children during and outside school hours. Pedestrian crossings are installed in accordance with Clause 6.3 of Part 10 of the MUTCD. Refer to Figure 1 of Part 10 of the MUTCD for line marking and signing arrangement.

4.6 Pedestrian Actuated Traffic Signals (Mid-Block) at Schools

The principles for installation of Pedestrian Actuated Traffic Signals are outlined in Part 14 of the MUTCD. Refer to Figure 5 of Part 10 of the MUTCD for line marking and signing arrangement.

Under special circumstances, for example, where a supervised crossing has been upgraded to pedestrian actuated traffic signals, a signalised crossing may be supervised during the times it is used by school children. This would generally be a transitional arrangement. The hand STOP Banner (R6-7) is NOT used at traffic signals.

Other measures which may improve safety at a signalised crossing include:-

a) Increasing the width of the crossing. While 2.4m is the minimum width used, the preferred width of crosswalks near schools is 3.5m.

b) Installing kerb extensions to reduce the travel distance across the road.

4.7 Traffic Signals at Intersections

4.7.1 Installation

Traffic signal facilities for pedestrians may be provided at intersections as follows:-

a) installation of new intersection signals on the basis of pedestrian warrants

b) installation of crosswalk facilities at an existing signalised intersection.

4.7.2 Guidelines for intersection signals

Refer to 14 of the MUTCD for the guidelines for the installation of traffic signals at intersections.

4.7.3 Guidelines for crosswalks at existing signalised intersections

Refer to Part 14 of the MUTCD for the guidelines for the installation of crosswalks at signalised intersections.

4.8 Subways and Bridges

Refer to Table 1, Section 4.1 of this document to assess if grade separation is required and Section 5 of Part 10 of the MUTCD for the guidelines for the installation of subways and bridges.

4.9 Pedestrian Refuges, Medians and Kerb Extensions

When designing physical pedestrian aids, it is important to ensure that the device will not create a hazard for other road users. The following issues must be considered:

a) devices must not encroach on the travel routes of other road users, particularly cyclists;
b) devices must be well lit, delineated and appropriately signed to ensure they do not become a hazard at night;

c) bollards, fencing or vegetation installed on these devices must not obscure child pedestrians;

d) appropriate kerbing must be used i.e. semi-mountable where the island is very close to the through lane; and

e) the facilities must be usable by people with disabilities as well as be suitable for prams.

Section 9 of Part 10 of the MUTCD provides guidelines for the installation of pedestrian refuges, medians and kerb extensions. Further information on when to install these facilities is given in Section 3.13 of this manual.

Pedestrian refuges, medians and kerb extensions have the effect of narrowing the road, thereby reducing the time that pedestrians are exposed to traffic when crossing the road. Provision of these devices may also have the added benefit of helping to reduce the speed of passing motorists by providing additional visual cues of the need to reduce speed.

4.10 Pedestrian Fencing

Pedestrian fencing is generally used at schools in association with other pedestrian facilities to direct children to crossing points and prevent crossing at uncontrolled locations nearby. Fencing may also be used on pedestrian refuges or medians to encourage pedestrians to wait in the middle of the road before completing the crossing. Fencing on the kerb line also discourages motorists from parking close to a crossing point.

At some locations it may be possible to avoid installation of pedestrian fencing outside the school grounds by relocating school gates to appropriate locations relative to pedestrian crossings or school transport facilities.

At locations where visibility is not a problem, and where the fencing is intended to direct pedestrians, rather then create an impenetrable barrier; landscaping may be an attractive alternative to mesh or chain fencing. Maintenance issues of this option must be considered. Fence material and construction should also be such as to minimise injuries to road users in the event of a collision, for example horizontal rails must not be used. Fencing on medians at staged crossings should be aligned so that pedestrians will face oncoming traffic, as they are about to leave the median.

Figure 3 - Pedestrian fencing on a median

Particular attention should be given to the height and placement of the fence, and to the material used in its construction to minimise the potential sight obstruction between drivers and children about to cross the road. Fencing should be considered as a last resort because of the restrictions it imposes on pedestrians.
4.11 Yellow Pedestrian Holding Line

Yellow pedestrian holding lines can be used at crossing facilities to encourage school children to wait behind the line before directed to cross the road. This method may be useful at locations where school children tend to encroach onto the roadway while waiting to cross the road.

Part 10 of the MUTCD currently allows a line approximately 100 mm wide to be painted on the footpath, 0.5 m behind the face of the kerb at children’s crossings. It is recommended that this line be yellow, and that the use of the yellow line be extended to any type of crossings at schools where school children are observed standing too close to the edge of the traffic lanes while waiting to cross the road.

Where there is a yellow “no stopping” line extending across the crossing facility, a yellow holding line must be installed to ensure that children do not attempt to stand at the yellow “no stopping” line.

4.12 Placement of Entry/Exit Points

The location of entry and exit points to the school is very important for directing pedestrians, cyclists and vehicles to the desired locations. Gates should be located so that children waiting to be collected by parent/carers can stay inside the school fence. This has benefits in terms of road safety, by preventing children playing near or on the road, well as personal safety.

Further, good placement of gates may remove the need for pedestrian fencing outside the school. Intended routes from inside the school to various transport facilities such as bus stops, car parks and foot and cycle paths should be clearly established to avoid conflicts and maximise efficiency of the other facilities. In particular note that:

a) children should not have to cross the main entry/exit point or walk through the off-street parking in order to access other facilities;

b) gates should be placed at locations that direct children to the designated crossing points; and

c) bicycle racks and access gates should be placed at locations where child cyclists can safely access cycle paths.

Additional guidance on the placement of entry/exit points can be found in Planning for Safe Transport Infrastructure at Schools1.

4.13 Impact on Pedestrian Crossing Infrastructure due to Development

The crossing facility provided at schools is generally based on traffic and road characteristics prevailing at the time the facility was constructed. Over time, traffic and road characteristics change and there is a need to reassess if the facility is still appropriate.

Where traffic and road characteristics change due to development within the vicinity of the school, the road authority should consider conditioning the developer to contribute towards the cost of installing appropriate infrastructure at the school. Local governments may be able to seek funding through the Transport Infrastructure Development Scheme to upgrade any existing school crossing facility.
5 SCHOOL PARKING FACILITIES

Many school children travel to and from school in private motor vehicles and buses. It is important that adequate parking and pick-up and set down facilities are provided to ensure that safety problems do not arise due to conflict between pedestrians and vehicles.

Car and bus parking facilities can be provided on-street or off-street. Off-street facilities are the preferred option where the availability of land and funds permit, particularly where schools are on roads with higher traffic volumes. Whichever option is adopted, bus and car parking facilities should be separated where possible.

Additional guidance on the provision of school parking facilities can be found in Planning for Safe Transport Infrastructure at Schools\(^1\).

6 SCHOOL CYCLIST FACILITIES

Bicycles are a popular mode of transport to and from school, and it is important that adequate provision is made for the cyclists to enter and exit the school grounds safely. Guidance on provision of school cyclist facilities can be found in Planning for Safe Transport Infrastructure at Schools\(^1\).

\(^1\) Planning for Safe Transport Infrastructure at Schools publication is available for download on the Department of Transport and Main Roads' website.


7 SCHOOL WARNING TREATMENTS

7.1 Warning Signs

7.1.1 General

Warning signs that may be used to warn motorists of the likely presence of school children on or crossing the road near schools include:

a) Children (W6-3)
b) Pedestrians (W6-1)
c) Bicycles (W6-7)

These signs may be used with one of the following supplementary plates, where appropriate:

a) SCHOOL (W8-14)
b) BLIND (W8-19)
c) PRESCHOOL (W8-24)
d) DISABLED (W8-20)
e) CROSSING AHEAD (W8-22)
7.1.2 Guidelines for installation

Warning signs are installed in accordance with the requirements of Part 2 of the MUTCD. Tables 2 and 3 are designed to assist in the selection of appropriate warning signs at schools.

<table>
<thead>
<tr>
<th>Crossing Facility</th>
<th>Warning Sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian Crossing (Zebra)</td>
<td>Pedestrian Crossing Ahead sign (W6-2) with a SCHOOL supplementary plate (W8-14)</td>
</tr>
<tr>
<td>Children’s Crossing</td>
<td>Children sign (W6-3) with a Crossing Ahead supplementary plate (W8-22)</td>
</tr>
<tr>
<td>Pedestrian Actuated Signals</td>
<td>Signals Ahead sign (W3-3) if warranted</td>
</tr>
</tbody>
</table>

Table 2 - Warning Signs for Use in Advance of Crossing Facilities

Other than in advance of a crossing facility, warning signs should generally only be used where:

a) a number of children (or children and adults) cross the road but the numbers are insufficient to justify a specific pedestrian facility; or

b) there is significant pedestrian use at nights; or

c) the presence of pedestrians might be unexpected; or

d) the pedestrian demand extends over a length of road

<table>
<thead>
<tr>
<th>Site Conditions</th>
<th>Warning Sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant number of pedestrians throughout the day, not only associated with the school</td>
<td>Pedestrians sign (W6-1)</td>
</tr>
<tr>
<td>At schools without pedestrian crossing facilities</td>
<td>Children sign (W6-3) with a SCHOOL supplementary plate (W8-14)</td>
</tr>
</tbody>
</table>

Table 3 - Warning Signs for Different Site Conditions

Care must be taken to avoid overuse of warning signs. Signs should only be installed where warranted. School communities often request additional signs in the belief that they will reduce vehicle speeds or improve safety. However, this is not necessarily the case. Improperly used or unnecessary warning signs lose effectiveness and can lead to disregard of signs by motorists. Sign clutter should also be avoided.

7.2 Pavement Markings

7.2.1 General

Pavement markings and threshold treatments may be used to highlight road facilities at schools. All pavement markings associated with pedestrian crossing facilities shall be white and be reflectorised.

7.2.2 Pavement messages

Pavement markings may be used in association with school zone signs at sites where driver awareness of the school zone may be reduced by the alignment of the road or by the volume or type of traffic.
The use of pavement messages in advance of pedestrian facilities at schools should be restricted to sites where driver awareness of the facility may be reduced by the horizontal or vertical alignment of the road or by volume of traffic, particularly during the peak periods when children are likely to be present on the road.

Word messages for use on road pavements near crossings at schools are as follows:

a) SCHOOL ZONE
b) PED X
c) SCHOOL X
d) SCHOOL

SCHOOL ZONE is the only pavement message approved for use with a school zone sign. Pavement markings indicating the speed limit or the times of operation of a school zone speed limit are not approved for use in Queensland. The school zone pavement message may be incorporated with a threshold treatment for added emphasis at the discretion of the local government. Refer to Section 7.4 Threshold Treatments.

Pavement markings indicating the school zone speed limit or times of operation are not permitted as the school zone speed limit only applies during the school zone times and the pavement marking may confuse motorists.

The following table provides guidance on use of pavement messages at schools.

<table>
<thead>
<tr>
<th>Sign</th>
<th>Associated Pavement Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>School zone sign (R4-Q01 and TC1783)</td>
<td>SCHOOL ZONE</td>
</tr>
<tr>
<td>Pedestrian Crossing Ahead sign (W6-2) with or without a SCHOOL supplementary plate (W8-14)</td>
<td>PED X with or without AHEAD</td>
</tr>
<tr>
<td>Children sign (W6-3) with a CROSSING AHEAD supplementary plate (W8-22)</td>
<td>SCHOOL X with or without AHEAD</td>
</tr>
<tr>
<td>Children sign (W6-3) with a SCHOOL supplementary plate (W8-14), or</td>
<td>SCHOOL</td>
</tr>
</tbody>
</table>

Table 4 - Pavement Messages

7.3 Flashing Lights (Wig Wags) on Warning Signs

7.3.1 General

The MUTCD provides for the use of two alternately flashing lights (wig wags) installed above warning signs when the message being conveyed on the warning sign is one of extreme severity of hazard, or there is a lack of adequate stopping sight distance to the hazard.

Trials conducted at school zones throughout Queensland, showed that flashing lights of this type were effective in better compliance of speeds in school zones. However, these studies also concluded that widespread use of such flashing lights at low risk locations is highly likely to reduce the effectiveness of these devices where used at other high risk road locations.

Flashing lights (wig wags) installed above warning signs may therefore be used at schools only in accordance with the following guidelines.
The use of smaller in-built flashing lights on enhanced school zone signs is discussed in Section 8.7.2.

7.3.2 Guidelines for installation

Flashing lights (wig wags) may be used on warning signs at schools only where:

a) there is a children's or pedestrian crossing, and
b) where driver sight distance to the crossing is less than the stopping distance, and
c) enhanced school zone signs (see Section 8.7.2) have not been installed, and
d) the flashing lights are programmed to flash (wig wag) only during the hours of operation of the School Crossing Supervisor, or if Crossing Supervisor is not present, for the times when children are likely to be using the crossing on school days.

The 85th percentile speed should be used to calculate the stopping distance. Engineering treatment should also be considered to increase compliance with the speed limit. Treatments could include, but not be limited to, the following:

a) removal of centreline marking on local streets;
b) narrowing of through traffic lanes;
c) installation of additional repeater school zone signs;
d) installation of threshold treatment at the start of the school zone;
e) installation of nodal traffic calming devices.

7.4 Threshold Treatments

7.4.1 General

Threshold treatments may be provided at entrances to school zones to create a change in driver perception of the speed environment. In the absence of a school zone, threshold treatments may be used to define the school precinct.

7.4.2 Guidelines for installation

Threshold treatments similar to those used at the perimeter of Local Area Traffic Management (LATM) areas may be used to define the start and end of school precincts. However, threshold treatments for school precincts shall not include any vertical displacement device, unless the school precinct is located within an LATM area.

The purpose of threshold treatments is to inform road users that they are entering a school environment and that they should modify their driving behaviour, and reduce their speed where required.

Threshold treatments around schools will provide the greatest benefits at school zones where it is difficult for drivers to identify the need to reduce speed, for example, on wide, open straight roads or where the school is set back from the edge of the road.

Where used at school zones, threshold treatments shall be located adjacent to the school zone signs. Where used at schools without a school zone, threshold treatments shall be located adjacent to the Pedestrian Crossing Ahead (W6-2) or Children (W6-3) warning signs.

Where used at school zones, threshold treatments shall include the words SCHOOL ZONE. Where used at schools without a school zone, threshold treatments shall include the word SCHOOL.

A typical threshold treatment for a school zone is shown on Figure 4.
Figure 4 - Typical threshold treatment for a school zone.

Note:
The word SCHOOL is used where a threshold treatment is installed at a school without a school zone.
7.5 Consistent Colour Scheme

7.5.1 General

Road safety around a school can be improved if motorists' awareness of the presence of the school is increased. To help to draw motorists' attention to the presence of schools, a unique colour scheme, called consistent colour, has been developed for use on regulatory and warning signs used at schools.

Consistent colour signs have a fluorescent yellow/green sign face with a fluorescent orange target board of the same shape as the sign it highlights. The consistent colour scheme is applied to the following signs:

a) Children (W6-3)
b) Pedestrian Crossing Ahead (W6-2)
c) Pedestrian Crossing (R3-1).

Supplementary plates used with these signs are fluorescent yellow/green but without a target board.

The standard school zone sign, (R4-Q01 - Section 8.7.1), has a fluorescent orange target board a fluorescent yellow/green sign face with the words SCHOOL ZONE, the Speed Restriction and indicating the Times of Operation of the school zone all on one sign.

Figure 5 - Standard consistent colour children crossing warning sign.

7.5.2 Guidelines for installation

Use of the consistent colour scheme is restricted to school areas. Consistent colour should be applied to all relevant signs in a school area when introducing the scheme.

A typical consistent colour scheme application is shown in Figure 5.

7.5.3 Consistent Colour Scheme for School Buses

The Consistent Colour Scheme can also be applied to school buses at locations where visibility of the buses is likely to be restricted frequently, or for extended periods, by fog or rain (see Figure 6).

High visibility strips are attached to the front, back and each side of the bus. The strips consist of alternating bands of fluorescent yellow/green and fluorescent orange with a black border.

Figure 6 - High visibility strips
Figure 7 - A typical application of consistent colour treatment within a school zone

Notes:
1. The SCHOOL ZONE sign (R4-Q01) should be located not less than 0.6V (V=85th percentile speed in km/h) in advance of any advance crossing signs e.g. W6-3/W8-22.
2. The Children (W6-3)/CROSSING AHEAD (W8-22) sign assembly should be located 80-100m in advance of the crossing. This distance may be reduced to 30m minimum in very low speed environments.
8 SCHOOL ZONES

8.1 General

A school zone is a time based linear speed zone that is installed to regulate vehicle speeds in the vicinity of schools.

While school zones would generally be installed to support facilities such as children's or pedestrian crossings, the absence of such facilities at a school would not preclude installation of a school zone.

The use of additional engineering treatments such as pavement messages and threshold treatments, while not essential to the installation of a school zone, may improve driver compliance with the reduced speed limit.

In Queensland, school zone signs apply as a linear speed zone and not an AREA speed zone. Where an intersecting road terminates within the school zone, the sign R4-Q04 may be installed opposite a terminating T intersection within the school zone on a through road. Where there is a cross intersection within the school zone, R4-Q01 repeater signs should be installed within the school zone for the benefit of turning traffic.

Under the Queensland Road Rules, a school zone is defined as:

a) if there is a school zone sign and a speed limit sign with a different number on the sign, on a road - that length of road; or

b) if there is a school zone sign on a road that ends in a dead end and there is no sign mentioned in paragraph (a), on the length of road beginning at the sign and ending at the dead end-that length of road.

In rural areas where there is no school related activity on the road, a school zone may be installed to increase safety for traffic entering or exiting the school property. (see Table 5).

School zones are not permitted at tertiary institutions, kindergartens or day care centres. An exception would be where one of these facilities is next to an eligible school, in which case the school zone may be extended to include the facility. However, the times of operation of the school zone shall not be extended beyond the times required for the eligible school.

At the excluded locations other traffic engineering treatments such as consistent colour signs, threshold treatments, kerb extensions and pedestrian refuges, are considered more effective in improving safety of school children.

8.2 Application of School Zones on Two Lane Roads

School zones are only permitted on roads adjacent to schools where the school is readily visible to motorists and there is significant school related activity on and beside the road. School related activity includes the picking up and dropping off of children on kerbside. However, a school zone may be permitted on a road from which the school is not readily visible if:

a) the school has direct access to the road; and

b) the access is a main student entry to the school; and

c) there is significant school related activity on and beside the road.

A typical school zone is shown in Figure 8.
Notes:
1. For appropriate school zone speed limit see Section 8.3.
2. For times of operation refer to section 8.4.
3. The double ended arrow is added to the SCHOOL ZONE sign (R4-Q04) when used opposite a terminating road. Refer to Section 8.7.1.
4. SCHOOL ZONE signs (R4-Q01) are not installed on side roads within a school zone.
8.3 School Zone Speed Limits

Speed limits of 40 km/h, 60 km/h and 80 km/h apply in school zones. These speed limits are dependent on the speed limit of the road outside school zone times and the amount of school related activity for the higher speed zones. Table 5 shows the speed limits for use at school zones in Queensland.

<table>
<thead>
<tr>
<th>Posted Speed Limit(^4) (km/h)</th>
<th>Site conditions</th>
<th>School Zone Speed Limit (km/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 and 60</td>
<td>All</td>
<td>40</td>
</tr>
<tr>
<td>70</td>
<td>All</td>
<td>40 (see Notes 1 &amp; 2)</td>
</tr>
<tr>
<td>80</td>
<td>All</td>
<td>60 (see Notes 1 &amp; 2)</td>
</tr>
<tr>
<td>90 and 100</td>
<td>Where the road authority perceives there is sufficient risk associated with student pedestrian activity on or near the road.</td>
<td>60 (see Notes 2 &amp; 3)</td>
</tr>
<tr>
<td>90 and 100</td>
<td>Where the road authority perceives there is insufficient risk associated with pedestrian activity on or near the road, but a lower speed limit is considered necessary due to the presence of school buses or other school associated vehicular activity.</td>
<td>80 (see Notes 2 &amp; 3)</td>
</tr>
<tr>
<td>110</td>
<td>All</td>
<td>80 (see Notes 2, 3 &amp; 5)</td>
</tr>
</tbody>
</table>

Table 5 - School Zone Speed Limits

Notes:
1. In 70km/h or 80km/h speed zone, the SCHOOL ZONE signs (R4-Q01) must be at least size B.
2. In speed zones of 70km/h and above, the minimum length of a school zone should be 300m.
3. In 90 km/h to 110km/h speed zones, the following requirements must apply:
   - a SCHOOL ZONE AHEAD sign (R4-Q03) must be installed at least 300m in advance of the school zone on each approach; and
   - the SCHOOL ZONE signs (R4-Q01) must be size C. In some situations it may be necessary to install these signs (R4-Q01 and R4-Q03) on both sides of the road.
4. This is the posted speed limit that applies outside the school zone hours of operation.
5. In 110 km/h speed zones, there should not be any school pedestrian related activity on the road. Children should be picked up and dropped off in off-road parking facilities.

8.4 Times of Operation

8.4.1 General

The mandatory times of operation of school zones in Queensland are between 7 - 9am and 2 - 4pm on school days, unless exemptions are approved by the Department of Transport and Main Roads for local governments in Regional Queensland. For exemptions refer to Sections 8.4.2 and 8.4.3 and Appendix B.

Where exemptions are approved by the Department of Transport and Main Roads, school zone times must be extended in multiples of half an hour. School zone start and finish times must start and finish at the hour or half hour. School zone times must not start or finish at the quarter hour.

Where school zone times at individual schools within a local government jurisdiction are extended beyond the mandatory times (or approved times through exemptions) for that local government, enhanced school zone speed limit signs (TC1783) must be installed to flash for the full duration of the school zone.
Where school zone times differ from the mandatory school zone times, the school zone must commence and finish either on the hour or half hour. School zone times must not commence or finish on the quarter hour.

8.4.2 School Zone Times in South East Queensland

This section applies only to the following local governments:

1. Brisbane City Council
2. Gold Coast City Council
3. Ipswich City Council
4. Logan City Council
5. Moreton Bay Regional Council
6. Redland City Council
7. Scenic Rim Regional Council
8. Sunshine Coast Regional Council

School zones must operate for a minimum of 2 hours in the morning and 2 hours in the afternoon. In the morning, school zones must not start after 7am or finish before 9am. In the afternoon school zones must not start after 2pm or finish before 4pm.

However, there may be instances when individual schools need school zones to operate outside these times. In such a case, if there is a genuine need to extend a school zone beyond the mandatory times to suit a school's requirements, the school must make a formal request to the relevant road authority (local government or Transport and Main Roads) in writing of its requirements. The road authority must apply to the Department of Transport and Main Roads using Form F4935 for approval to extend the school zone times for that particular school. This form is available to download from the Transport and Main Roads website at: www.tmr.qld.gov.au/schoolzones

Each school that requires approval to extend the school zone times must make a separate request to the relevant road authority. The school zone operation times must only be increased upon approval in writing by the Department of Transport and Main Roads.

Refer to Appendix C for criteria and process for obtaining approval to extend school zone operating times.

8.4.3 School Zone Times in Regional Queensland

Although the mandatory times of operation of school zones are 7 - 9am and 2 - 4pm, where a local government considers that the mandatory school zone times are not consistent with the times that school children are likely to be present on the road or travel to school, the local government may, after consultation with all schools within its jurisdiction, apply to the Department of Transport and Main Roads for an exemption to change the start or finish times to suit a majority of schools within its jurisdiction using Form F4936. The form is available to download from the Transport and Main Roads website at: www.tmr.qld.gov.au/schoolzones

Any exemption to the school zone times for a local government outside south east Queensland from 7 - 9am and 2 - 4pm must apply to all schools in the local government area, except where extended school zone times has been approved by the Department of Transport and Main Roads or where an all day school zone applies.
The school zone times cannot be reduced. However, if there is a need to extend a school zone time beyond the approved school zone times to suit a school's requirements, the school must discuss their needs with the relevant road authority (local government or the Department of Transport and Main Roads). The road authority must apply to the Department of Transport and Main Roads (Road Safety Strategy - Safer Roads Unit) for approval to extend the school zone time for that particular school, using Form F4935.

Each school that requires an extension to the school zone times must make a separate request to the relevant road authority. The school zone operation times must only be increased upon approval in writing by the Department of Transport and Main Roads.

Refer to Appendix B for exemption criteria and process for obtaining approval.

8.4.4 All Day School Zones

Extended, "all day" times of operation for school zones, generally within the hours of 7am to 4pm, must be installed at all split campus schools. (see Section 10). These times may be extended to suit a school's requirement. All day school zone start and finish times must align with the start and finish times of other schools within a local government jurisdiction.

Enhanced (flashing light) school zone signs (see Section 8.7.2) must be installed at "all day" school zones to draw motorists' attention to the reduced speed limit with the exception that enhanced signs are not required at schools where traffic calming is installed or school zones installed in a cul-de-sac less than 500m in length.

8.5 Length of a School Zone

The minimum length of a school zone in 50km/h and 60km/h speed zones should be 200m and the school zone should not extend more than 100m beyond the limits of the school frontage in either direction. In speed zones of 70km/h and greater and on multi-lane roads, the minimum length of a school zone should be 300m. Where the school is located on a short block (less than 200m), the school zone should encompass the full block.

Where possible, the school zone on the main school frontage should be installed to ensure that the point where most children cross is centred within the school zone.

8.6 Indicating Times of Operation on School Zones Signs

To achieve the highest levels of voluntary compliance by motorists, it is essential that motorists are not confused by the times that school zones operate. Although school zone operating hours have now been standardised in South-east Queensland and within local government jurisdictions in regional Queensland, some school zones will start earlier or finish later than the standard hours. The following signing principles must be followed in indicating the times of operation on school zone signs:

a) when the school zone starts or finishes on the hour, only the hour numerals are indicated on the sign. The minute numerals are not shown

b) when the school zone starts and finishes before 12 NOON, AM is indicated on the finish time only

c) when the school zone starts and finishes after 12 NOON, PM is indicated on the finish time only

d) when the school zone starts before 12 NOON and finishes after 12 NOON, such as at split campus schools, AM is indicated with the start time and PM is indicated with the finish time.
8.7 Types of School Zone Signs

8.7.1 Standard school zone sign (R4-Q01 and R4-Q04)

A standard school zone sign (R4-Q01) designates the start of a school zone. At most schools, the standard school zone sign will be installed to regulate the speed of traffic during the school zone times. This sign should be sufficient to achieve compliance with the school zone speed limit.

Where a school zone begins at an intersection and the normal speed limit on the road is 60km/h or higher, a Speed Restriction sign (R4-1) generally need not be installed in advance of the school zone sign. However, at major intersections or where a significant volume of non-local traffic is expected, a Speed Restriction (R4-1) sign should be installed.

Where the length of a school zone is greater than 200m, or where there are intersections within the school zone, repeater school zone signs should be installed at appropriate locations through the zone to remind drivers of the school zone speed limit. Where enhanced school zone signs are installed at the start of the school zone, standard school zone signs may be installed as repeater signs.

The end of a school zone is indicated by a Speed Restriction (R4-1) sign showing the speed limit applying beyond the zone, unless the road ends at a T intersection or in a cul-de-sac, in which case a Speed Restriction (R4-1) sign is not installed.

For school zones in 90 to 110km/h zones only, a SCHOOL ZONE AHEAD sign (R4-Q03) must be installed at least 300m in advance of the school zone on each approach. In situations where the sign is not clearly visible these signs (R4-Q01 and R4-Q03) should be installed on both sides of the road.

Where a side road intersects within a school zone, a school zone sign is not installed on the side road on the approach to the school zone (see Note 4 on Figure 8). Instead the R4-Q04 sign is installed opposite the terminating street for the benefit of vehicles that are turning into the school zone. If infrastructure such as driveways precludes the installation of the R4-Q04 sign, repeater R4-Q01 signs should be installed.

Figure 9 shows the school zone signs approved for use in Queensland.

8.7.2 Enhanced (flashing light) school zone sign at school zones (TC1783)

An enhanced school zone sign consists of a standard school zone sign incorporating a flashing inner annulus and twin yellow alternate flashing lights mounted above the SCHOOL ZONE plate that can be controlled to operate only during the times of operation shown on the sign. Externally mounted flashing lights are not permitted for use with the school zone sign.

Externally mounted wig wag signs can only be installed to supplement warning signs in accordance with Section 7.3.

Enhanced school zone signs must only be installed on roads which satisfy one of the following conditions:

a) at split campus schools where school zones operate throughout the day generally between 7am and 4pm;

b) at school zones on multi-lane roads;

c) where a risk assessment that encompasses factors such as crash history, car and pedestrian volumes, speed limit, speed compliance and road environment characteristics identifies that the site would potentially benefit from a more conspicuous signage treatment;
d) where the school zone times are extended to operate outside the standard school zone times for a particular local government.

Enhanced school zone signs would generally not be utilised where:

a) traffic calming has been installed to create a self-enforcing low speed environment of 40 km/h or less within the school zone; or

b) the school zone is installed on a cul-de-sac not exceeding 500m in length and the road services residential properties only.

For more details on school zones at split campus schools, refer to Section 10. The start and finish times of all day school zones should be aligned with the morning start time and afternoon finish time of the majority of schools in the local government jurisdiction, although in some instances, these times may differ.

Section 8.7.3 outlines the technical requirements for enhanced school zone signs.

*The Department of Transport and Main Roads has developed a risk assessment tool to assess road safety risk at schools. This risk assessment tool is used by the Department to prioritise the installation of enhanced school zone signs under the Queensland Government School Safety Program.
School Zones

Figure 9 - School zone signs.

Note:
Signs are continuously being updated. Please refer to the Department of Transport and Main Roads signs database (available online) for the latest sign design.
8.7.3 Technical requirements for enhanced school zone signs

Enhanced school zone signs must comply with all relevant Transport and Main Roads technical requirements, including:

a) colour and luminance of LEDs
b) flash rates
c) accuracy of timing and control devices
d) electrical standards
e) maintenance requirements
f) fault reporting and logging protocol
g) event logging
h) requirement for back up battery
i) internal clock and calendar requirements
j) remote fault diagnostic capability.

Enhanced school zone signs may be mains powered, solar powered or battery powered. However, mains powered and solar powered signs must incorporate a battery back-up so that, in the event of a power failure, the school zone speed limit is still displayed during the school zone hours of operation.

The inbuilt flashing lights in the enhanced school zone sign shall be 100mm diameter for "A" size signs, 150mm diameter for "B" size signs and 200mm diameter for "C" size signs.

The technical requirements for enhanced school zone signs can be found in the Department of Transport and Main Roads Technical Standards:

- MRTS201 - General Equipment Requirements
- MRTS222 - Electronic school zone signs

8.8 Speeding in School Zones

Speeding through school zones greatly increases the risk to pedestrians as the faster a vehicle travels, the longer it will take to stop and the greater the severity of impact. The installation of appropriate signs and infrastructure should ensure that motorists slow down to the school zone speed limit. However, this may not always be the case.

The change to make school zone times consistent throughout south east Queensland and across local government areas in regional Queensland is intended to remove any confusion about school zone times so that motorists do not encounter different school zone times at different schools. Where compliance with school zone speed limit is low, the following measures should be considered:

a) upgrade all signs (regulatory and warning) to consistent colour signs
b) install additional school zone signs as repeater signs
c) install threshold treatment with the words SCHOOL ZONE
d) change the road environment by installing edge lines
e) on local streets with a centreline, remove the centreline marking

Where the above treatments have been implemented and found to be ineffective in improving compliance with the school zone speed limit, the risk assessment tool should be used to determine if enhanced school zone signs should be installed
9 SCHOOL ZONES ON MULTI-LANE ROADS

9.1 General

School zones may be installed on multi-lane roads where:

a) there is a mid-block crossing facility for the children to cross the road, or
b) where children are required to cross in large numbers at an intersection, and

c) there is direct access to the school from the multi-lane road, or

d) there is school related activity on the road such as picking up and dropping off school children on the kerbside parking lane.

Some multi-lane roads adjacent to the school may have kerbside parking facilities where children are picked up and dropped off even if there is no direct access to the school from that road. In such cases, a school zone may be installed to increase safety for the children and through traffic if children are required to cross the road and a crossing facility is provided.

On multi-lane arterial roads where grade separated facilities have been installed, school zones may be considered to improve safety for children walking and cycling to school or arriving by public transport.

The decision to install or not to install a school zone should be made by the road authority in consultation with the school community, Road Safety Advisors from the Department of Transport and Main Roads, the School SafeST Committee, other road authorities and stakeholders including the Queensland Police Service.

9.2 Signage Requirements for School Zones on Multi-lane Roads

Enhanced School Zone signs (TC1783) must be installed to indicate the start of a school zone on multi-lane roads (refer to Figure 9). The signs must be programmed to flash during the times of operation indicated on the school zone sign and should be installed as outlined in Table 6.

<table>
<thead>
<tr>
<th></th>
<th>Undivided or Divided (median width &lt; 1.5m)</th>
<th>Divided (median width &gt; 1.5m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start of school zone - kerb-side</td>
<td>Enhanced</td>
<td>Static</td>
</tr>
<tr>
<td>Start of school zone - median</td>
<td>Not applicable</td>
<td>Enhanced</td>
</tr>
<tr>
<td>Repeater signs within school zone (school zone &lt; than 500m in length)</td>
<td>Static</td>
<td>Static</td>
</tr>
<tr>
<td>Repeater signs within school zone (school zone &gt; than 500m in length)</td>
<td>Enhanced</td>
<td>Enhanced</td>
</tr>
</tbody>
</table>

Table 6 -School Zone Speed Limit Signs at School Zones on Multi-lane Roads

B size school zone signs must be installed at school zones on multi-lane roads.
9.3 Length of School Zone on Multi-lane Roads

Refer to Section 8.5 for length of school zones.

9.4 Times of Operation of School Zone

School zones on multi-lane roads shall operate the same hours as school zones on two lane roads within each local government jurisdiction. Refer to Section 8.4 for times of operation of school zones in Queensland.

9.5 Pedestrian Facilities for School Zones on Multi-lane Roads

Table 1 in Section 4.1 provides guidance in determining appropriate pedestrian crossing facilities. The Pedestrian Crossing Facility Guidelines and Prioritisation System User Guide (TRUM Note 3.13) also provide guidance in selecting an appropriate crossing facility at schools.

9.6 Threshold Treatment

Where the enhanced flashing school zone signs alone are not effective in reducing vehicle speeds within the school zone threshold treatment, in accordance with Section 7.4, may be installed at the start of the school zone on the lanes of traffic entering the school zone.

9.7 School Zones on Multi-lane Roads Installed Prior to 30 September 2011

Where school zone signs have been installed on multi-lane roads prior to 30 September 2011, the school zone signs shall be upgraded to comply with these guidelines. It is not expected that the signage at pre-existing sites be upgraded to comply with these requirements immediately following the release of these guidelines. However, all pre-existing signage shall be upgraded by 30 June 2014.

9.8 Duplication of School Zone Signs on Undivided Multilane Roads

At some school zones on undivided multilane roads, the installation of an enhanced school zone sign alone at the start of the school zone may not be effective in achieving compliance. Other measures such as threshold treatment or duplication of the school zone (R4-Q01) on the right hand side of the road should be considered.

9.9 Installation of Repeater School Zone Signs on Multilane Roads

Where a school zone has intersections within the school zone or the environment does not give sufficient cues to the driver that they have already entered a school zone, considerations should be given to installing repeater signs to reduce the risk of speeding through the school zone.
Figure 10 - Typical school zone signing treatment for school zones on multi-lane roads.

Notes:
1. The SCHOOL ZONE sign TC1783 should be located not less than 0.6V (V=85th percentile speed in km/h) in advance of any advance crossing signs e.g. W6-3/W8-22.
2. The (W3-3)/(W8-14) sign assembly should be located 80-100m in advance of the crossing.
10 SPLIT CAMPUS SCHOOLS

10.1 General

A split campus school has facilities* that are separated by a road and children are required to cross that road throughout the day to access the facilities.

*These include, but are not limited to, buildings, sports grounds, swimming pools or other facilities that are used as part of the school curriculum. Children should frequently cross the road that divides the facilities throughout the day and throughout the school year, on each school day.

Two or more schools that share facilities which require school children to cross a road throughout the day may also be treated as split campus schools provided school children are required to cross the road at intervals throughout the school day.

Where split campuses exist, the road safety risk to the school children is increased. However, this risk can be minimised by implementing a number of engineering treatments to supplement each other, including the installation of traffic calming and permanent 40 km/h speed limit.

10.2 Minimum Infrastructure Requirements

It is essential that motorists are aware of the presence of a school and to expect children crossing the road. The installation of adequate infrastructure is therefore necessary to ensure the safety of school children at split campus schools. The following minimum infrastructure must be provided at split campus schools:

a) School zone (unless a permanent speed limit of 40 km/h applies);

b) Pedestrian crossing facility;

c) Warning signs.

10.3 School Zones at Split Campus Schools

It may not be necessary to install a school zone at a split campus school where a grade separated pedestrian facility is provided. It is desirable that all school related activity is confined to other lower order roads and a school zone may be installed on those roads, if required. However, if a school zone is installed, the times of operation must be consistent with school zone times at other schools within the local government jurisdiction.

At split campus schools where a grade separated pedestrian facility is not installed, school zones must be installed and must operate throughout the day, generally between the hours of 7am and 4pm. These times may be amended to cater for local and regional requirements by the relevant road authority in consultation with the Department of Transport and Main Roads’ Regional Officers, the Department of Education and Training, the school community, Queensland Police Service and other members of a school's Safe School Travel Committee.

Where traffic calming has been installed and vehicle speeds can be regulated to 40 km/h, a school zone is not required at a split campus school. This practice may be preferred where the community accepts traffic calming (such as local streets or low volume traffic carrying roads with speed limit of 60 km/h) as there will not be a need to install enhanced school zone signs.
10.4 School Zone Signs at Split Campus Schools

Enhanced school zone signs (TC1783) must be installed at all split campus schools. However, enhanced school zone signs would generally not be utilised where:

a) traffic calming has been installed to create a self-enforcing low speed environment of 40 km/h or less within the school zone; or

b) the school zone is installed on a cul-de-sac not exceeding 500m in length and the road services residential properties only.

10.5 Pedestrian Facilities at Split Campus Schools

10.5.1 General

The highest risk to children travelling to and from school is the conflict between pedestrian and vehicular traffic. This risk can be reduced by separating pedestrians from vehicles through grade separation.

However, a grade separated facility may not always be the best option as pedestrians may not use it if it is installed on roads with relatively low risk.

The risk to children crossing the road at a split campus school can be minimised by implementing traffic engineering measures including the installation of appropriate pedestrian crossing facilities and traffic calming.

10.5.2 Selection of pedestrian facilities

A number of factors need to be considered when determining the appropriate type of pedestrian facility. These include:

a) the function of the road, including traffic characteristics (volumes, type of traffic, number of lanes)

b) pedestrian characteristics (volume, age of pedestrians, crossing frequency)

c) speed limit on the approach to the facility

d) sight distance and stopping distance

e) roadside activity

f) safety of other road users

g) road environment, including the presence of traffic calming devices

h) construction and maintenance costs of the facility

i) whether the facility will be used by the intended road users.

Table 1 in Section 4.1 provides guidance in determining appropriate pedestrian crossing facilities. The Pedestrian Crossing Facility Guidelines and Prioritisation System User Guide (TRUM Note 3.13) also provide guidance in selecting an appropriate crossing facility at schools.

Where a grade separated facility is installed, other treatment that may be necessary to ensure that intended users do not cross the road at-grade level.
10.6 Treatments for Four Lane or Larger Roads

10.6.1 General

Four lane roads usually carry around 10,000 vehicles per day or higher. The level of risk is dependent on the signage, control and infrastructure measures in place and generally increases with traffic volume.

In the 10,000 - 20,000 vehicles per day range there is an increased risk to children crossing the road. Enhanced at-grade facilities are generally likely to provide appropriate measures to manage this risk and should be considered.

Where there are concerns regarding performance of crossings the following treatments can be considered.

10.6.2 Lane ‘throttling’

On arterial roads with four through traffic lanes, where the traffic volumes are in the range of 10,000 to 15,000 vehicles per day, consideration should be given to throttling from four to two lanes. Lane throttling involves reducing the number of through traffic lanes (for example from four to two) where the lanes are not required for traffic capacity reasons. Lane throttling provides a number of benefits, including:

a) Reduced crossing distance, with a resultant reduction in risk due to shorter exposure times
b) Reduced red time at the pedestrian crossing
c) Better speed compliance due to the changed road environment.

When throttling lanes, the minimum length requirement for merge lanes and tapers should be provided.

10.6.3 Grade separation

At split campus schools on arterial roads with four through traffic lanes where traffic volumes are above 15,000 vehicles per day and other lower cost treatments are not expected to provide appropriate performance, consideration should be given to providing a grade separated pedestrian facility.

At split campus schools on arterial roads with six or more through lanes pedestrian crossing must be grade separated.

Where a grade separated facility has been provided across an arterial road, there should not be any direct access to the school from that road. Access for students to enter the school premises should be provided from other lower order roads.

If this is not practical then direct access to the school should be closed off during school hours, except in the morning and afternoon when children arrive to school and leave school.

10.7 Installation of Pedestrian Facilities

Section 4 provides further guidelines for the installation of various types of pedestrian facilities.
10.8 Warning Signs

Advance warning signs should be installed to warn motorists of the presence of the school and pedestrian crossing facility. The following warning signs may be used to warn motorists of the likely presence of school, children on or crossing the road:

a) Children (W6-3)

b) Pedestrians (W6-1)

c) Bicycles (W6-7).

Appropriate supplementary plates may be installed to these warning signs. All warning signs shall be consistent colour signs.

Where the installation of a warning sign does not have the desired effect on driver behaviour, the installation of flashing wig wag lights above the warning sign may be considered. (see Section 7.3).

10.9 Threshold Treatments

Threshold treatments may be installed at all split campus schools to increase driver awareness of the start of the school zone. Where a school zone is installed, threshold treatments shall be installed adjacent to the school zone sign and incorporate the words “SCHOOL ZONE” in white lettering on a red background with a yellow border.

10.10 Crossing Supervision

A split campus that does not meet the risk assessment criteria for a supervised crossing under the School Crossing Supervisor Scheme could consider alternative options to supervise children crossing roads. Options include Traffic Monitors, school paid School Crossings Supervisors and volunteer School Crossing Supervisors. Options should be discussed with Department of Transport and Main Roads Regional Road Safety Advisors and representatives from the relevant road authority and local government.

10.11 Existing School Zone Signage at Split Campus Schools

Where school zone signs have been installed at split campus schools prior to these guidelines being issued, the school zone signs shall be upgraded to comply with these guidelines. It is not expected that the signage at pre-existing sites be upgraded to comply with these requirements immediately following the release of these guidelines. However, all pre-existing signage shall be upgraded by 30 June 2014.

10.12 Split Campus Schools Created after 30 September 2011

The Department of Transport and Main Roads does not encourage the construction of school facilities that create a split campus school as the frequent crossing of the road between campuses increases the risk to the children attending that school.

The road authority assessing any development application that creates a split campus school should condition developers to provide appropriate pedestrian crossing facilities. Further information on planning for schools can be found in the document Planning for Safe School Transport Infrastructure at Schools. The document can be found at:

Glossary

All day school zone: A school zone at a split campus school that operates all day generally between 7am and 4pm. The start and finish times can be changed to suit a schools individual requirement. Enhanced school zone signs are installed to designate all day school zones.

Children's crossing: A roadway crossing intended for part time use, mainly by school children, indicated by the use of CHILDREN CROSSING flags, red and white posts, and stop lines on the road.

Collector road: A road whose main function is the distribution of traffic between sub-arterial roads and local streets within suburbs, and which can also provide access to adjacent property.

Combined Children's and pedestrian crossing at schools: A pedestrian crossing (zebra) where a children's crossing is also installed with red and white posts, and flags are displayed at times when school children cross the roadway.

Enhanced school zone sign: A school zone sign that incorporates a flashing annulus and twin flashing lights that flashing during the operation of the school zone. These signs are intended to draw motorists' attention to the operation of the school zone.

Footpath: Along a roadway, the strip of land between the property boundary and the kerb of the roadway. There may be a concrete, paved or sealed path within the footpath.

Kerb or Kerbing: A raised border of rigid material along the edge of a roadway. Used to separate the roadway from an adjacent footpath or median.

Kerb extension: A local widening of the footpath, which reduces the width of roadway to be crossed by pedestrians.

Local street: The main function of a local street is to provide access to an adjacent property.


Median or Median strip: A strip of road, not normally intended for use by traffic, which separates roadways carrying traffic in opposite directions. A median can be bounded by kerbing.

Multi-lane road: A one-way road, or a two-way road, with two or more marked lanes (except bicycle lanes) that are -

a) on the side of the dividing line or median strip where the driver is driving, and

b) for the use of vehicles travelling in the same direction.

Pedestrian: Includes any walking, running standing, sitting or being otherwise in or upon a road.

Note: Persons in a toy vehicle or in a pram or an invalid in a wheel chair not capable of exceeding 10 km/h are also treated as pedestrians.

Pedestrian actuated traffic signals (mid block): A signal installation, (other than at an intersection), at which changes of aspect are initiated by a pedestrian, usually by pressing a button.

Pedestrian crossing (zebra) or zebra crossing: A roadway crossing indicated by a series of white stripes parallel to the centre of the roadway and by the display of Pedestrian Crossing (R3-1) signs.
Pedestrian interval: A time interval during which pedestrians are given the opportunity to cross the road at a traffic signal or an intersection signal.

Pedestrian refuge: An island installed in the roadway to allow pedestrians to cross the roadway in two stages.

Pick-up/set-down facilities: Short-term parking areas designed for safely picking up and dropping off children.

Arterial road or primary arterial road: A road whose main function is to carry traffic across metropolitan areas or from one region to another.

Roadway: That part of a road or street normally used for vehicular traffic, including bicycles.

School crossing supervisor: An authorised person, appropriately trained, who controls vehicle and pedestrian movements at children's crossings or at other crossings where children cross roads.

School zone: A section of roadway, adjacent to or in the vicinity of a school, along which a reduced speed limit applies during specified times.

Secondary arterial or sub-arterial road: A road whose main function is to carry traffic between suburbs and between arterial roads.

Sight distance: The distance at which a driver/pedestrian/cyclist has an unobstructed view of other road users, road side hazards and traffic control devices.

Speed zone or linear speed zone: A length of roadway on which the speed limit is defined by speed limit signs.

Split campus school: A split campus school has facilities that are separated by a road and children are required to cross that road throughout the day to access the facilities.

Stop line: A transverse line marked on a roadway at a traffic control device, at which vehicles are required to stop in accordance with relevant regulations.

Stopping distance: The distance travelled by a vehicle between the time when the driver receives a stimulus signifying a need to stop and the time when the vehicle comes to rest.

Subway: With regard to pedestrians and cyclists, a structure, or tunnel, taking a footpath or cycle path under a road or railway.

Threshold treatment: At a school, a broad coloured band across the traffic lane in the direction of travel, on which the words SCHOOL ZONE or SCHOOL are painted.

Traffic control device: Any sign, signal, pavement marking or other installation installed for the purpose regulating, warning or guiding road users.

Visibility: See sight distance.

Wheeled recreational devices (WRD): Includes rollerblades, roller skates, scooters and skateboards.

Wheeled toy: Includes a child's pedal car, scooter, tricycle or similar toy used by a child under 12 years old.
Appendix A: Local governments in South-east Queensland where school zones operate between 7-9am and 2-4pm.

Councils where mandatory 7-9am and 2-4pm school zone times apply:

Brisbane City Council, Gold Coast City Council, Ipswich City Council, Logan City Council, Moreton Bay Regional Council, Redland City Council, Scenic Rim City Council, Sunshine Coast Regional Council.
Appendix B - Exemption criteria for school zone operating hours for regional queensland

It is mandatory for local governments to implement uniform school zones times that apply to all schools within their jurisdiction. This change in policy is to increase compliance with the school zone speed limits and improve safety for school children in the vicinity of schools.

Other local governments not listed in Section 8.4.2, may either adopt the mandatory times of 7 - 9am and 2 - 4pm or seek approval from the Department of Transport and Main Roads for an exemption to apply to school zone times to all schools throughout their local government area. Applications must be made using the Form F4936 which is available on the department's website.

Local governments must consult with schools and the Department of Transport and Main Roads region (for schools on state controlled roads) before seeking exemption to the school zone times.

School zone times at any school within a jurisdiction must not be less than the standard school zone times approved for that jurisdiction. For example, if a local government has adopted the school zone times as 7:30 - 9am and 2:30 to 4pm, then no other school within that jurisdiction can have a school zone time that is less than these times. That is; a school in that jurisdiction cannot have school zone times as 8-9am and 2:30-4pm.

Applications for exemptions must be submitted to the Director (Road Safety) at the address listed in Section C2.
C1 Criteria to extend school zone times at individual schools (applies to all local governments)

It is recognised that some schools may require extended school zone times to cater for different start or finish times to other schools. Section C2 provides exemption criteria for extended hours for individual schools. Section C3 provides the procedure that road authorities must follow to seek approval for extending the school zone operating times within their jurisdiction.

C2 Criteria to extend school zone times at individual schools (applies to schools in all local government areas)

School zone times may be extended beyond the mandatory times for local governments listed in Section 8.4.2 or beyond the standard school zone times for other local governments, if the following conditions are met on any school day:

a) school commences before or after the standard school zone time for that local government area in the morning;

b) school finishes before or after the standard school zone time for that local government in the afternoon;

c) school provides either before or after care and children arrive or depart outside the standard school zone times.

C3 Procedure for seeking approval to extend school zone times at individual schools

The following procedure will apply to road authorities seeking approval to extend the school zone operating times at individual schools:

a) the school Principal or delegate should contact the road authority (Council or Transport and Main Roads Regional office) and provide justification for seeking the extension;

b) the road authority must make a decision to either support or reject the request;

c) if the road authority supports the request of the school, it must complete the prescribed Form (Form F4935) and submit to:

   The Director (Road Safety)
   Department of Transport and Main Roads
   P O Box 673
   Fortitude Valley QLD 4006

   or email the form to: roadsafety@tmr.qld.gov.au

   (a) all prescribed forms must be duly completed and signed as required;

   (b) the Director (Road Safety) or his delegate will assess the request for an extension to the school zone operating time and advise the road authority in writing of his decision.
C4 Signage requirements for schools with extended school zone times

At schools where extended school zone times apply, enhanced (flashing light) school zone signs (TC1783) must be installed to flash for the full duration of the school zone time that is extended. Where a school zone operates extended time in the morning but operates the same time as other schools in that jurisdiction in the afternoon, the school zone sign should flash only during the morning school zone time.