

Proposed School Crossing adjacent to  
49 Clyde Street, Thornbury

Traffic Assessment

Prepared by

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## 1. INTRODUCTION

### 1.1 Purpose of this report

The traffic assessment involves an assessment of the appropriateness of the proposed flagged school crossing adjacent to 49 Clyde Street, Thornbury and its impact upon the immediately adjacent area.

### 1.2 Referenced documents

This report has been based upon a number of sources. These include:

- Information provided by the applicant;
- Site observations and discussions with the school crossing supervisors and various stakeholders opposite the Wales St Primary School;
- Parking surveys undertaken on Friday 20 February 2015 between 8 am and 9.30 am and between 3 pm and 4 pm;
- City of Darebin/UrbanTrans, Travel Survey and Audit Report, Wales St Primary School, December 2012;
- Various correspondence sent to and received from the City of Darebin regarding the proposed crossing facility;
- Traffic volume and pedestrian flow survey data collected by Mr Ramasamy on 17 and 19 November 2014 between 8.45 am and 9.15 am and between 3.15 pm and 3.45 pm;
- VicRoads Traffic Engineering Manual (Vol 1), Chapter 4, Edition 4, September 2008; and
- Consultation plan of the proposed crossing in Clyde Street prepared by the City of Darebin, Dwg No. 18967, dated 22 October 2014.

## 2. EXISTING CONDITIONS

### 2.1 Location and Land Use

The crossing is proposed to be located on the north side of Clyde Street immediately west of Wales Street.

The location of the proposed school crossing is shown in **Figure 1**.



Source: google maps

**Figure 1: Subject site and surrounding area**

### 2.2 Road Network

Clyde Street is a local road under the care and management of Council. It contains an undivided cross section with one traffic lane and a parking lane in each direction. Unrestricted parking exists along both sides of the Clyde Street and Wales Street in the vicinity of the site.

Photos showing the cross section of Clyde Street looking to the west from Wales Street is shown in **Figure 2**.



Figure 2: Clyde Street looking west from Wales Street

### 2.3 Existing Car Parking Demand

There are a predominance of unrestricted parking spaces in on-street parking areas immediately adjacent to and opposite the primary school along Clyde and Wales Streets.

To establish the existing parking demands in the nearby on-street car parking areas, observations of parking activity were undertaken on Friday 20 February 2015 between 8 am and 9.30 am and between 3 pm and 4 pm.

The observations indicated that, during the survey period, the peak parking demand:

- Typically occurred for a 15 minute period between 8.40 am and 8.55 am and between 3.30 pm and 3.45 pm in the on-street parking areas; and
- Extended to Clyde Street, east of Wales Street and along Wales Street north of Clyde Street.

### 2.4 Existing traffic volume and pedestrian flows

To establish the existing traffic volumes and pedestrian flows along Clyde Street, survey data was collected by Mr Ramasamy on 17 and 19 November 2014 between 8.45 am and 9.15 am and between 3.15 pm and 3.45 pm. The results of the surveys, which are summarised in **Attachment A**, indicated that during the survey period, the peak parking demand:

- There were around 57 to 98 **vehicles** travelling along Clyde Street during the morning survey periods during each of the survey dates;
- There were around 53 to 64 **vehicles** travelling along Clyde Street during the afternoon survey periods during each of the survey dates;
- There were around 41 to 65 **pedestrians** crossing Clyde Street west of Wales Street during the morning survey periods during each of the survey dates; and
- There were around 46 to 83 **pedestrians** crossing Clyde Street west of Wales Street during the afternoon survey periods during each of the survey dates.

### 3. PROPOSED SCHOOL CROSSING

It is proposed to provide a flagged school crossing along Clyde Street immediately adjacent to No. 49 Clyde Street, 10 m west of Wales Street.

A plan of the proposed flagged school crossing is shown in **Attachment B**.

### 4. ASSESSMENT OF PROPOSED SCHOOL CROSSING

The assessment of the proposed flagged school crossing involved a review of the documentation distributed to the community, the collection of survey data, discussions with abutting stakeholders including the school crossing supervisors in Speight and Wales Streets and the VicRoads Traffic Engineering manual.

A review of the above references resulted in the identification of the following issues associated with the proposed flagged school crossing.

- Parking congestion
- Rationale for a crossing facility
- Design and location of the crossing facility
- Restricted sight lines
- Speed of vehicles turning into Clyde Street
- Pedestrian Desire Lines

The issues are assessed as follows:

#### 4.1 Parking congestion

The 'Travel Survey and Audit Report - Wales St Primary School' states, on page 10, that an issue identified for Clyde Street adjacent to the school side, is '*Insufficient and potentially dangerous parking usage and manoeuvring by parents*'.

Surveys and site observations undertaken during the school drop off and pick up times indicate that there is localised parking congestion along Clyde Street and Wales Street in the vicinity of the intersection of Wales and Clyde Streets.

It is considered that, due to the prevalence of unrestricted parking spaces on the school side of Wales and Clyde Streets, these parking spaces are predominantly occupied by employees of the abutting retail shops and teachers, thereby displacing a proportion of parents to Clyde Street, east of Wales Street and Wales Street, north of Clyde Street.

This issue has been identified on page 14 of the audit report, which states:

- '*Insufficient abutting parking to school*
- '*All parking on Clyde Street unrestricted so limited capacity for pick up parking*
- '*The 90 degree angled spaces (24) to the east pose sight line issues for children departing school through the adjacent access gate. Parking and departing vehicles also pose safety hazards due to the dangerous manoeuvring required to pull in and out of these spaces.*'

The corresponding recommendations state, amongst other things, that '*Relocate all staff parking to the 90 degree angled spaces (in Clyde Street)*'.

The effect of parents parking a greater distance away from the school effectively results in parents and their children crossing several roads to travel to and from the school.

In principle, the crossing manoeuvres undertaken by parents and children should be minimised. This could involve a review of the kerbside restrictions for the streets immediately abutting the school.

#### 4.2 Rationale for a crossing facility

The 'Travel Survey and Audit Report - Wales St Primary School' states, on page 16, the following issues identified for Clyde/Wales Street:

- *'No formalised crossing in northbound and southbound directions*
- *Large width of intersection given long crossing distance*
- *Clyde Street also very busy during arrival and departure phases'*

Correspondingly, the recommendations stated in the audit report to address these issues are:

*'Refuge islands on both east and west legs to allow children to stage crossings and constrict turning speeds (similar to that observed on the north leg of intersection).'*

The audit report clearly identifies the need for pedestrian refuge islands in Clyde Street at Wales Street, however it is unclear, based upon the above audit report and in a letter distributed by Council to the affected stakeholders (dated 12 December 2014), the basis for the proposed flagged school crossing at this location and the status of the proposed pedestrian refuge islands at this location.

#### 4.3 Design and location of the crossing facility

The proposed flagged school crossing, proposes 'childrens crossing' warning signs immediately adjacent to the proposed crossing.

Reference however to the VicRoads' Traffic Engineering Manual, states that, in Figure 4.2 (shown in an extract on the following page), 'childrens crossing' warning signs are required to be located a minimum distance of 94 m from the crossing stop lines to achieve adequate sight lines between approaching motorists and pedestrians on the crossing facility.

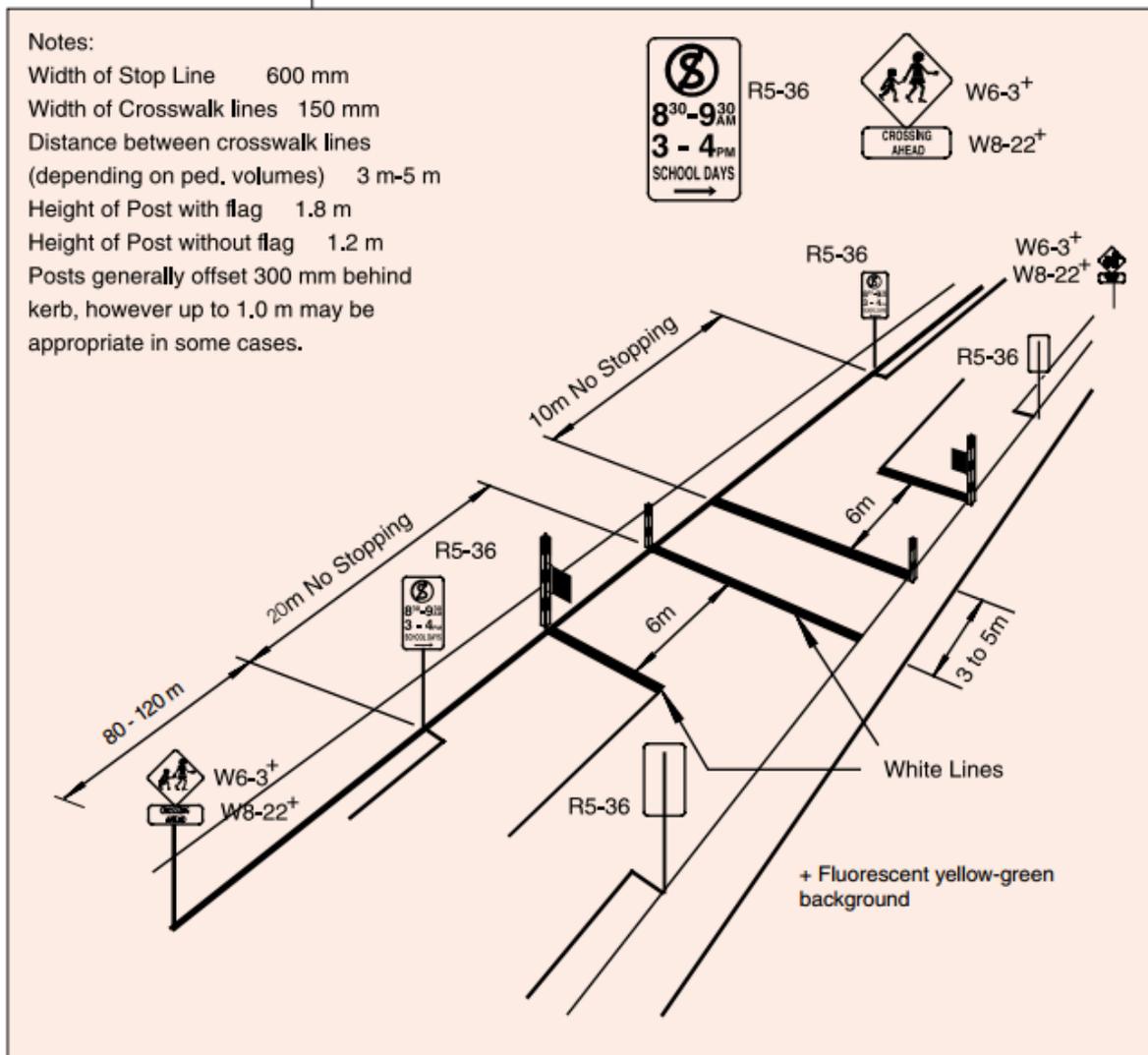
The proposed 'childrens crossing' warning signs for the proposed crossing have not therefore been installed in accordance with Figure 4.2 of the VicRoads Traffic Engineering Manual. As a result, insufficient advance warning and sight lines would be provided between approaching motorists and pedestrians, potentially creating a dangerous situation.

Further, reference to the design of the proposed crossing in **Attachment B**, indicates that there is a vehicle queuing distance of 10 m from the crossing stop line on the east side of the crossing. This effectively provides storage for one and a half vehicles.

Based upon observations of the childrens crossing installed on Speight Street immediately west of Wales Street, which is set back a similar distance to that proposed in Clyde Street, a second vehicle often queues on the east approach to the crossing, which results in part of the second vehicle extending back into the northbound carriageway of Wales Street.

This is considered potentially dangerous at present and likely to also be the case for the proposed crossing in Clyde Street.

This issue will be exacerbated at Clyde Street, which does not have a roundabout at its intersection with Wales Street to slow vehicles entering Clyde Street. In addition, the design includes a raised platform. It is unclear as to whether this has been incorporated into the design to address an existing or anticipated speed issue at this location?



Source: VicRoads Traffic Engineering Manual (Figure 4.2)

#### 4.4 Restricted sight lines

Site observations indicate that, unlike the corner of Speight Street and Wales Street, there are street trees with ground vegetation on the north west and south west corners of the intersection of Wales Street and Clyde Street.

The vegetation would be considered to impact upon the ability for motorists travelling along Wales Street to clearly sight to pedestrians on the proposed crossing in Clyde Street immediately west of Wales Street.

#### 4.5 Speed of vehicles turning into Clyde Street

Site observations indicate that a number of motorists currently turn at speed from Wales Street into Clyde Street as well as motorists travelling west along Clyde Street crossing Wales Street. This is also a current issue for motorists turning left into Speight Street from Wales Street, based upon feedback provided by the crossing supervisor at this location.

At Speight Street however, the presence of a roundabout is effective in reducing east bound speeds along Speight Street and motorists turning right from the north into Speight Street towards the crossing.

Given the lack of a traffic management treatment at the intersection of Wales and Clyde Streets to regulate speeds in this location, there is concern regarding the speed of approaching motorists particularly from the north and south along Wales Street to the location of the proposed crossing in Clyde Street, as well as motorists travelling west bound along Clyde Street crossing Wales Street.

#### 4.6 Pedestrian Desire Lines

Site observations note that a pedestrian gate is located along Wales Street approximately midway between Speight and Clyde Streets. At this location, there is a flagged school crossing.

In Clyde Street, pedestrian gates are located 30 m to the west of the proposed crossing location. Given the presence of a school gate in this location in Clyde Street, consideration should be given to the placement of a crossing facility in this location and refuge islands, as recommended in the audit report for Clyde Street at Wales Street.

Site observations indicate that pedestrians walking along the west side of Wales Street, north of Clyde Street predominantly use the pram crossings (at Clyde Street) to walk up to the pedestrian gates in Wales Street and to a lesser extent the school's pedestrian gate along Clyde Street.

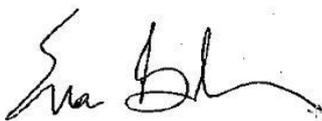
Having regard to the pedestrian desire lines, it is considered that the majority of pedestrians travelling along the west side of Wales Street will use the existing pram crossings rather than a crossing facility located 6 m west of the pram crossing.

## 5. FINDINGS AND CONCLUSIONS

Having regard to the above, it is concluded that:

- It is unclear, based upon the above audit report and in a letter distributed by Council to the affected stakeholders (dated 12 December 2014), the basis for the proposed flagged school crossing and raised platform at this location and the status of the proposed pedestrian refuge islands at this location.
- The proposed 'childrens crossing' warning signs for the proposed crossing have not therefore been installed in accordance with Figure 4.2 of the VicRoads Traffic Engineering Manual, thereby resulting in a lack of advance warning and insufficient sight lines between approaching motorists and pedestrians at the crossing facility.
- The proposed crossing has a vehicle queuing distance of 10 m from the crossing stop line on the east side of the crossing, which would result in a second queued vehicle extending back into the northbound carriageway of Wales Street - this is considered potentially dangerous.
- The vegetation on the corner of Clyde and Wales Street would be considered to impact upon the ability for motorists travelling along Wales Street to clearly sight to pedestrians on the proposed crossing in Clyde Street immediately west of Wales Street.
- Given the lack of a traffic management treatment at the intersection of Wales and Clyde Streets to regulate speeds in this location, there is concern regarding the speed of approaching motorists particularly from the north and south along Wales Street to the location of the proposed crossing in Clyde Street.
- The majority of pedestrians travelling along the west side of Wales Street will use the existing pram crossings rather than a crossing facility located 6 m west of the pram crossing.

Given the presence of a school gate 30 m to the west of the proposed crossing in Clyde Street, consideration should be given to the placement of a crossing facility in this location and refuge islands, as recommended in the audit report, for Clyde Street at Wales Street.



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**ATTACHEMENT A**  
**SUMMARY OF VEHICLE AND PEDESTRIAN SURVEY RESULTS**

**Clyde Street School Start and End Pedestrian & Motor Vehicle Count**

Date	17/11/14				
Time	Pedestrians crossing Clyde St (East Side)	Pedestrians crossing Clyde St (West Side)	Vehicles travelling on Clyde St East -> West	Vehicles travelling on Clyde St West -> East	Vehicles Parking to Drop Off
8:45 - 8:50	3	0	14	7	6
8:50 - 8:55	13	15	13	3	5
8:55 - 9:00	3	19	5	5	7
9:00 - 9:05	6	1	2	0	2
9:05 - 9:10	2	5	1	2	1
9:10 - 9:15		1	0	5	0
<b>Totals</b>	<b>27</b>	<b>41</b>	<b>35</b>	<b>22</b>	<b>21</b>

Date	19/11/14				
Time	Pedestrians crossing Clyde St (East Side)	Pedestrians crossing Clyde St (West Side)	Vehicles travelling on Clyde St East -> West	Vehicles travelling on Clyde St West -> East	Vehicles Parking to Drop Off
8:45 - 8:50	17	13	12	9	8
8:50 - 8:55	17	16	17	10	1
8:55 - 9:00	26	19	21	16	3
9:00 - 9:05	18	13	3	5	0
9:05 - 9:10	2	2	2	3	1
9:10 - 9:15	1	2	0	0	1
<b>Totals</b>	<b>81</b>	<b>65</b>	<b>55</b>	<b>43</b>	<b>14</b>

Date	17/11/14				
Time	Pedestrians crossing Clyde St (East Side)	Pedestrians crossing Clyde St (West Side)	Vehicles travelling on Clyde St East -> West	Vehicles travelling on Clyde St West -> East	Vehicles Parking to Pick-Up
3:15 - 3:20	2	0	2	1	1
3:20 - 3:25	2	4	2	1	4
3:25 - 3:30	6	5	8	3	3
3:30 - 3:35	12	11	12	5	1
3:35 - 3:40	24	17	5	4	1
3:40 - 3:45	5	9	5	5	0
<b>Totals</b>	<b>51</b>	<b>46</b>	<b>34</b>	<b>19</b>	<b>10</b>

Date	19/11/14				
Time	Pedestrians crossing Clyde St (East Side)	Pedestrians crossing Clyde St (West Side)	Vehicles travelling on Clyde St East -> West	Vehicles travelling on Clyde St West -> East	Vehicles Parking to Pick-Up
3:15 - 3:20	3	0	2	5	1
3:20 - 3:25	4	13	5	5	0
3:25 - 3:30	5	18	9	8	0
3:30 - 3:35	3	31	17	6	1
3:35 - 3:40	22	21	2	4	0
3:40 - 3:45	8		1	0	0
<b>Totals</b>	<b>45</b>	<b>83</b>	<b>36</b>	<b>28</b>	<b>2</b>

**ATTACHEMENT B**  
**LAYOUT OF PROPOSED SCHOOL CROSSING**

