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TYLER STREET PEDESTRIAN CROSSING

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Background

Pedestrian crossing provide a safer and less expensive treatment to allow pedestrian to cross the road compared to signalised crossing or crossing at grade. However, pedestrian are often faced with higher risk of accidents if signage are not installed correctly, insufficient sight distance and vehicles not following the speed limit.

A pedestrian crossing belonging to Southern Grampian Shire is located along Tyler Street next to Dorevitch Pathology Services. An officer from Western District Health Service (WDHS) stated that the pedestrian crossing is dangerous as vehicles are not giving way to pedestrians.

Scope of Study

The purpose of this report is to evaluate the pedestrian crossing and its appurtenance.

Exclusion

This study does not cover

a. Street lighting at the pedestrian crossing
b. Pedestrian count
c. Public consultation
d. Vicroad consultation

Background Data

VicRoads which is the road and traffic authority in the state of Victoria has provided crash data within the vicinity of the pedestrian crossing. The data indicated that there are no crashes within the vicinity to the pedestrian crossing.

Traffic count was conducted by council 280 metres east and 180m west of the crossing (see appendix 2). The purpose of the traffic count was to collect relevant traffic data such as:

a. Vehicle speed
b. Vehicle number
c. Vehicle type

An engineering officer did a site inspection and determined the following:

a. Sight distance from the pedestrian crossings looking eastward is 200m+
b. Sight distance from the pedestrian crossing looking westward is 200m+

In order to gain more insight on the issue, the WHDS officer was contacted by the engineering officer however these attempts was proven unsuccessful.

Discussion

The following are ascertained from traffic count and site visit:

a. 85 percentile speed vehicles traveling eastward is 42.8 km/h;
b. 85 percentile speed vehicles traveling westward is 59.0 km/h;
c. Class 1 vehicle dominantly uses this road (88.2% - 94.9%);
d. There are approximately 96 vehicles per hour using Tylers Street;
e. Sight distance from the pedestrian crossing looking eastward is: 200m+;
f. Sight distance from the pedestrian crossing looking westward is: 200m+;
g. Vehicle travelling eastward sight distance on pedestrian crossing is: 200m+; and
h. Vehicle travelling westward sight distance on pedestrian crossing is: 200m+.

A typical pedestrian crossing layout was extracted from Manual of Uniform Traffic Control Part 10 (AS1742.10) (Figure 1)

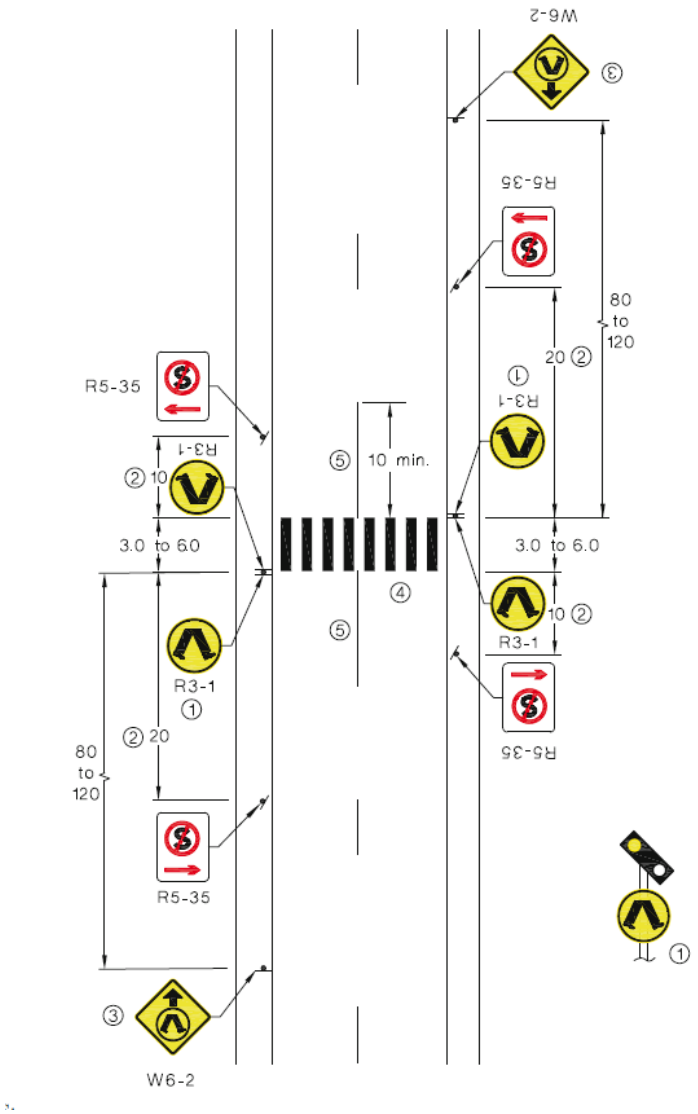

Figure 1: Typical Layout for Pedestrian Zebra Crossing

Signage

Type of signs and location are shown in Appendix 1. The signage installed are in accordance to AS1742.10.

Stopping Sight Distance (SSD)

The calculated stopping sight distance (SSD) is 62 metres. The site sight distance is approximately 200m thus the SSD for the pedestrian crossing is sufficient. However, there is a lack of visual cues on the exact location of the zebra crossing and the pedestrian refuge. The SSD is calculated based on the following parameters:

a. Coefficient of deceleration: 0.36 (90 percentile value braking on wet, sealed roads)
b. Reaction Time: 2.5 seconds (general minimum reaction time 2.0 seconds)
c. Vehicle speed: 50km/h
d. Grade: 2

Vehicle Speed

The speed limit on approach to the crossing must be 50km/h or lower and the 85th percentile speed must not exceed 60km/h. However, the traffic count indicated that vehicles traveling westward are traveling approximately 59km/h at 85th percentile. This may be due to lack of linear speed sign eastward of the pedestrian crossing.

Recommendation

The following are recommendation sorted in accordance to cost and installation difficulty:

a. Install a 50km/h linear speed sign east of the pedestrian crossing; or
b. Install 2 frangible pedestrian handrails as per Vicroads Chapter 4 Pedestrian Facilities Figure 4.11 (Figure 2). Since the crossing is on a crest, there is a lack of visual cues as to the exact location of the zebra crossing and pedestrian refuge; or

Figure 2: Sample Refuge Bollards

c. Increase the size of all signs within the vicinity of the pedestrian crossing to size C.

It is recommended that a 50km/h linear speed sign to be installed east of the pedestrian crossing. It is important that council consistently examine as to whether the initial recommendation work. If not council may be required to execute recommendation B and finally C.

Appendix 1: Drawing

DRAWING.pdf

PEDESTRIAN CROSSING
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REPORTING

Not to Scale

Appendix 2: Traffic Count

East of crossing.pdf West of crossing.pdf