



TaylorThomsonWhitting

18 March 2015

121204

Health Infrastructure
Level 6
77 Pacific Highway
North Sydney NSW 2060

Attention: Geoff Ong

LISMORE HOSPITAL

Multi-storey Car park and Pedestrian Access Review

Dear Geoff

(1) Introduction

This statement is in response to the Road and Maritime Services (RMS) request for the review the possible inclusion of a signalised mid-block pedestrian crossing across Uralba Street, Lismore following the construction of the multi-storey car park.

(2) Site

The proposed car park works is to be located on the southern side of Uralba Street, opposite the existing Lismore Hospital and west of Dibbs Street. The car park is to be constructed in two stages. Stage 1 is to consist of 270 spaces, while at the completion of Stage 2 a total of 562 spaces are proposed to be provided. The car park will reduce the on street car parking demand on the surrounding local street parking network including Dibbs, Dalziell and Hunter Streets located south of the Hospital.

Currently, Uralba Street consists of angled and parallel parking with a pedestrian refuge and crossing providing a pedestrian facility across Uralba Street.

The estimated post car park development peak in the afternoon in Uralba Street is 932 vehicles per hour (vph) eastbound and 676 vph westbound.

(3) Pedestrian Facility Options

The following options have been considered for the provision of a pedestrian crossing facility across Uralba Street:

- Installation of signalised mid-block marked foot crossing
- Maintain the existing pedestrian "Zebra" crossing with pedestrian refuge

Structural

Civil

Traffic

Facade

Engineers

TTW Group

Directors

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M King BE Hons MIEAust
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Manager Facade

N McClelland BSc BE Hons MBA MIEAust

Consideration has been given to the potential pedestrian movements from the proposed car park. At the completion of Stage 2 of the car park there is a total of 562 spaces. To estimate a potential “worse case” scenario, an assumed vehicle turnover of 80% of the car park (450 vehicles) would occur within a peak hour with an average vehicle occupancy of 1.2 people. Therefore a maximum anticipated pedestrian movement will be in the order of some 540 people during peak hour. It is however anticipated that lower volumes of both pedestrian and traffic movements would occur generally throughout the day.

It is also noted that much of the parking that is provided for this car park is to remove the on street parking demand in the local streets south of the Hospital. Therefore, it is anticipated that a pedestrian movement crossing Uralba Street would remain fairly consistent with the existing environment.

Nevertheless, consideration was also given to the RMS warrants on the installation of signalised mid-block foot crossing as an option to upgrade the existing pedestrian “Zebra” crossing that includes a pedestrian refuge.

RMS Traffic Signal Design Section 2 “Warrants” outlines the following typical guide for warrants for signalised mid-block marked foot crossings:

- (a) *For each of four one hour periods of an average day*
 - i) *The pedestrian flow crossing the road exceeds 250 persons/hour; and*
 - ii) *The vehicle flow exceeds 600 vehicles/hour in each direction, or where there is a central medium of at least 1.2m wide, 1000 vehicles/hour in each direction.*

Given the estimated “worse case” peak hour pedestrian flow is in the order of 540 and the estimated peak hourly flows of 932 eastbound and 676 westbound, it is not anticipated that the above warrants would be achieved on four separate occasions throughout an average day. In addition, when considering there is an existing central medium item ii) is not achieved.

- (b) *For each of eight one hour periods of an average day*
 - i) *The pedestrian flow crossing the road exceeds 175 persons/hour; and*
 - ii) *The vehicle flow exceeds 600 vehicles/hour in each direction, or where there is a central medium of at least 1.2m wide, 1000 vehicles/hour in each direction*
 - iii) *There is no other pedestrian crossing or signalised marked foot crossing within a reasonable distance.*

Given the estimated “worse case” peak hour pedestrian flow is in the order of 540 and the estimated peak hourly flows of 932 eastbound and 676 westbound, it is not anticipated that the above warrants would be achieved on eight separate occasions throughout an average day. In addition, when considering there is an existing central medium item ii) is not achieved.

Further, there is an existing pedestrian crossing within a reasonable distance and as such the above warrant is not achieved.

The guidelines then state the warrants may be reduced if the site is used predominately by children, the elderly or people with disabilities.

As advised, it is not anticipated that the 50% parameter for elderly/people with disabilities usage will be met as:

- i) *The car park will be used by staff and other general users (ie visitors/carers)*
- ii) *There is only limited disabled parking provided within the car park*
- iii) *elderly/disabled users can be dropped off directly at the Main Entry with the carer then using the car park.*

The Traffic Signal Design document lists a number of other warrants such when there are predominately children crossing and certain other special situations. At this site, these warrants are not applicable.

(4) Conclusion

Consideration has been given to:

- estimated “worse case” pedestrian and vehicle movements along Uralba Street
- RMS warrants for signalised mid-block foot crossing
- the anticipation that much of the parking that is provided for this car park is to remove the on street parking demand therefore pedestrian movements crossing Uralba Street would remain fairly consistent with the existing environment.

It is therefore considered that the existing pedestrian “Zebra” crossing with pedestrian refuge is an appropriate pedestrian crossing facility to service pedestrians crossing Uralba Street between the Hospital and the proposed car park facility.

Yours faithfully

TAYLOR THOMSON WHITTING (NSW) PTY LTD

A handwritten signature in black ink, appearing to read 'P. Yannooulatos', written over a large, stylized circular flourish.

PAUL YANNOULATOS
Technical Director

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