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Traffic Impact Assessment

75-77 Sheppard Street,
Casino NSW 2470

April 2023

traffic engineering and planning

Type of Report: Traffic Impact Assessment

Site Location: 75-77 Sheppard Street, Casino NSW 2470

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1. Introduction

Fernway Engineering has been engaged by Barry Rush and Associates Pty Ltd to provide a traffic impact assessment as a part of the development application for the proposed multi-dwelling residential development (carried out by the Land and Housing Corporation under the Housing SEPP 2021), located at 75-77 Sheppard Street in Casino ('subject site').

The scope of this report is as follows:

- Review the project background along with the existing traffic and parking conditions in the vicinity of the subject site;
- Assess the sufficiency of the proposed on-site car parking provisions, based on the statutory parking provision requirements applicable to the proposal;
- Review the proposed on-site car parking and site access designs with reference to the relevant Australian Standard requirements;
- Identify the anticipated traffic impact likely to be generated from the proposal; and
- Make a conclusion on the proposed development from a traffic and parking perspective, based on the above findings.

2. Background

2.1 Site Context

The subject site is located at 75-77 Sheppard Street in Casino and includes approx. 1,355 sqm of land area across two currently vacant lots. The locality of the subject site is characterised by low-density residential uses, with a golf course located immediately to the east.

The site fronts Sheppard Street which is a collector road that runs in the east-west direction, between Barling Street (to the east) and Rosewood Avenue (to the west). It includes an undivided carriageway that is approx. 12m wide, with on-street parking (unrestricted) permitted on either side. The frontage of the site at 75 Sheppard Street includes a bus stop sign and a bench within the road verge.

Figure 1 provides an aerial view of the subject site.
Figure 2 shows Sheppard Street as seen at the site frontage.

2.2 Public and Active Transport Accessibility

Sheppard Street does not include any formal footpaths on either side.

Bus service 672 (Casino to Northwest Casino via Hospital Loop Service) is accessible on Sheppard Street at the immediate site frontage. This service operates between 6.45am to 12.55pm on weekdays with an hourly frequency. It does not operate on weekends.

Figure 1: Location of the Subject Site

Figure 2: Sheppard Street at the Frontage of the Subject Site

3. Proposed Development

The subject proposal involves the construction of a multi-dwelling residential development (carried out by the Land and Housing Corporation under the Housing SEPP 2021). It includes a total of 6 dwellings (4 x 2 bedroom dwellings and 2 x 3 bedroom dwellings) and provides 7 on-site car spaces (including a single disability-accessible car space). Vehicular access to the site is provided off Sheppard Street, via a driveway that runs along the western boundary of the site. As a part of the proposed development, the existing bus stop sign and the bench within the road verge at 75 Sheppard Street will be relocated.

Figure 3 shows the proposed site layout plan.

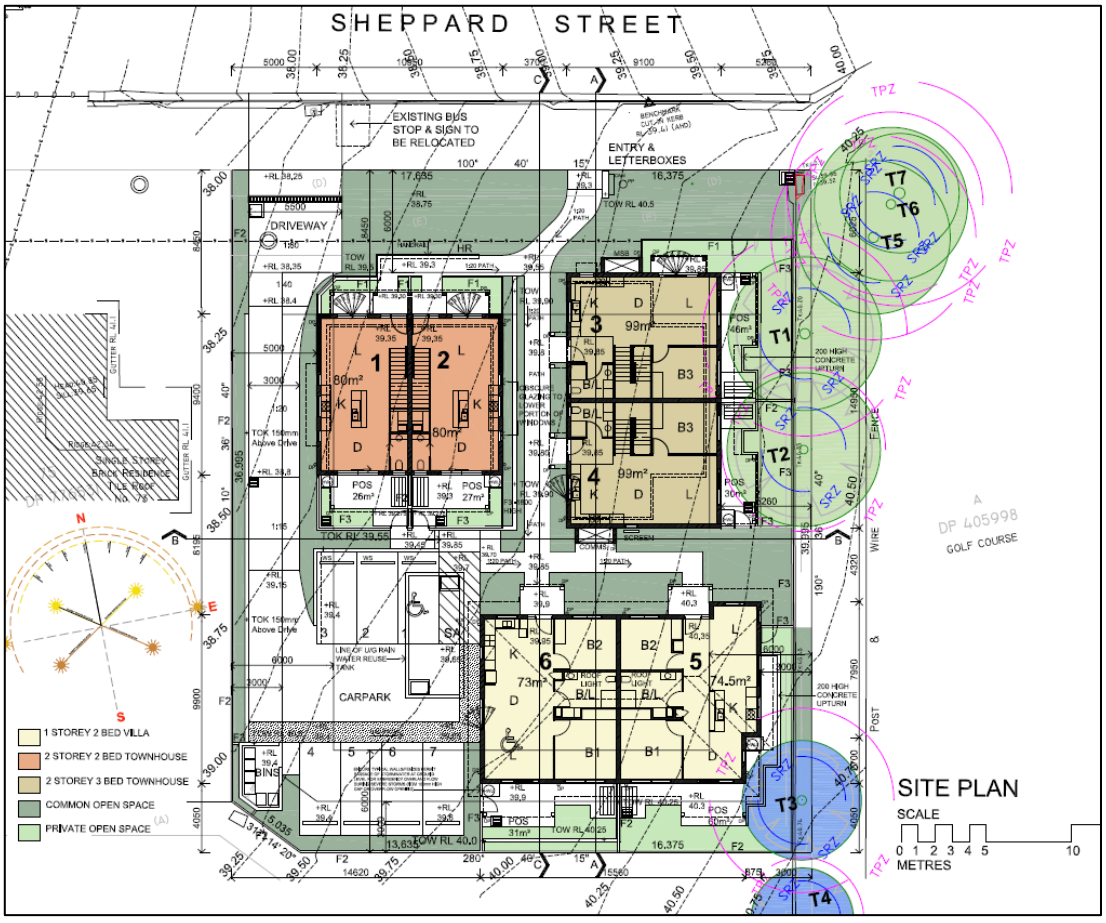

Figure 3: Proposed Site Layout Plan

4. Parking Requirements

4.1 Car Parking

In relation to residential developments by the Land and Housing Corporation, Division 6, Clause 40(1)(a) of the State Environmental Planning Policy (Housing) 2021 provides the following car parking requirements:

- For development on land in an accessible area – 0.4 parking spaces for each dwelling containing 1 bedroom, 0.5 parking spaces for each dwelling containing 2 bedrooms and 1 parking space for each dwelling containing 3 or more bedrooms; or
- For development that is not in an accessible area – 0.5 parking spaces for each dwelling containing 1 bedroom, 1 parking space for each dwelling containing 2 bedrooms and 1.5 parking spaces for each dwelling containing 3 or more bedrooms.

State Environmental Planning Policy (Housing) 2021 defines an accessible area as land that is within:

(a) 800m walking distance of a public entrance to—

(i) a railway station, or

(ii) a wharf from which a Sydney Ferries ferry service operates, or

(b) 400m walking distance of—

(i) a public entrance to a light rail station, or

(ii) for a light rail station with no entrance—a platform of the light rail station, or

(c) 400m walking distance of a bus stop used by a regular bus service, within the meaning of the Passenger Transport Act 1990, that has at least 1 bus per hour servicing the bus stop between—

(i) 6am and 9pm each day from Monday to Friday, both days inclusive, and

(ii) 8am and 6pm on each Saturday and Sunday.

As per the discussion in **Section 2.2**, it is evident that the subject site is not within an accessible area. Although the site is accessible by a single bus service, it does not meet the serviceability criteria in Clause (c) above.

As such, applying the non accessible area parking rate to the proposed development which includes 4 x 2 bedroom dwellings and 2 x 3 bedroom dwellings, a parking requirement of 7 car parking spaces is obtained.

The proposed development includes provision for a total of 7 car spaces, which includes a single disability-accessible car space. Therefore, the proposed development satisfies the relevant minimum car parking requirement.

4.2 Bicycle Parking

Based on Objective 2.4N-2 of the Low Rise Housing Diversity Design Guide (July 2020, Department of Planning, Industry and Environment), covered space is to be provided for the secure storage of at least 1 bicycle per dwelling within multi-dwelling housing developments. The proposal seeks to accommodate bicycle parking requirements for each dwelling within the private open space of that dwelling.

5. Parking and Access Design Review

Figure 4 illustrates the layouts of the proposed on-site car parking area, with the key dimensions outlined.

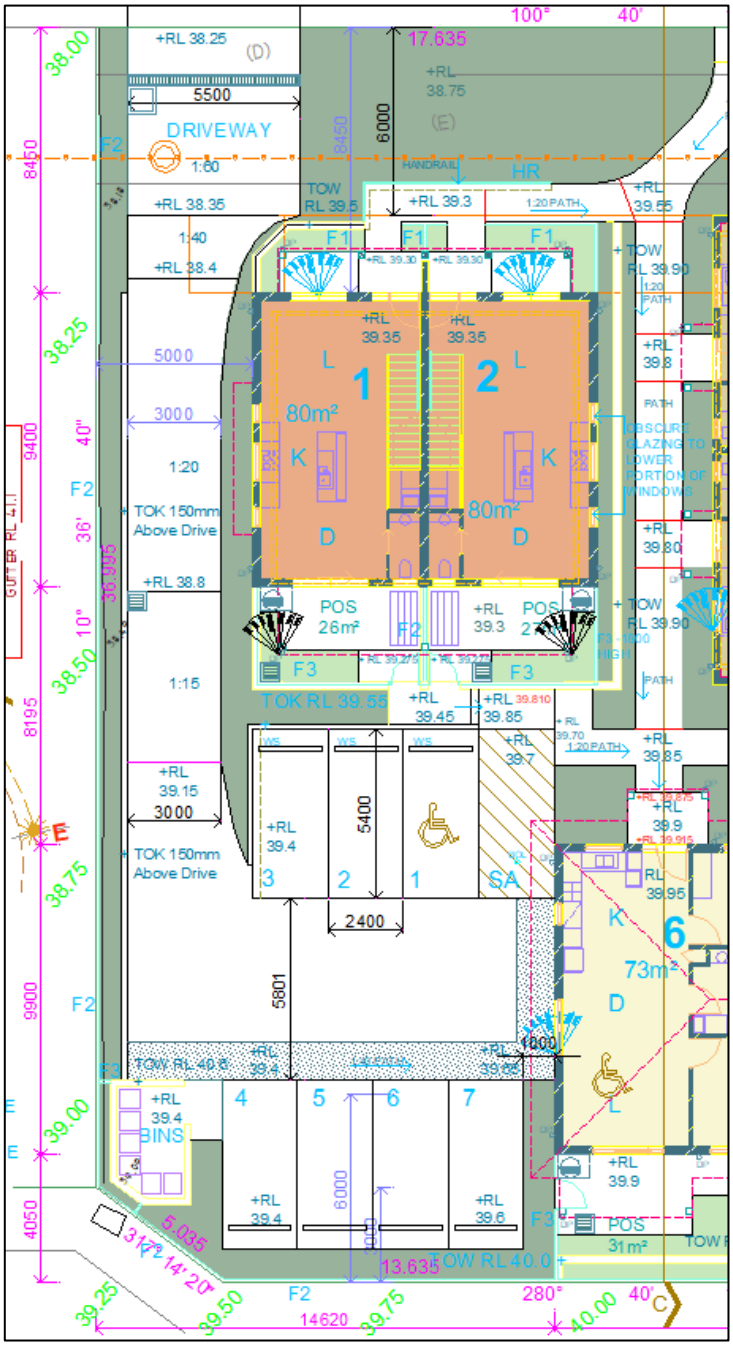

Figure 4: Proposed On-Site Car Parking Layout

5.1 Car Space Dimensions

Regular Parking Spaces

The proposed regular 90-degree car parking spaces can be categorized under user class 1A (residential parking) in AS 2890.1:2004. The minimum car bay and aisle requirements provided in AS 2890.1:2004 for user class 1A spaces are 2.4m width, 5.4m length and 5.8m aisle width. The proposed regular car spaces comply with the above dimensional requirements.

Disability Accessible Parking Space

The proposed disability-accessible parking space has been designed in accordance with AS 2890.6:2009, as follows:

- The disability-accessible car parking space is designed at 2.4m width and 5.4m length (with a minimum of 5.8m aisle width);
- A shared space of equal dimensions has been provided adjacent to the car parking space; and
- Both the car parking space and the shared space indicate appropriate line-markings. The shared space includes a bollard to prevent motorists from parking at this location.

5.2 Blind Aisle Clearance

When car spaces are located adjacent to a blind aisle (end of the aisle), AS 2890.1 requires the aisle to be extended by an additional 1m in order to allow reverse exit maneuvers by the vehicles parked in these spaces. This requirement has been satisfied at the relevant location within the proposed car park (i.e. adjacent to car space 7).

5.3 Gradients within Parking Modules

AS 2890.1 stipulates that parking modules, at maximum, should have a grade of 1 in 16 (measured in any direction other than parallel to the angle of parking). In addition, AS 2890.6 stipulates that the disability-accessible car parking spaces and the shared areas shall not exceed the grade of 1 in 40 in any direction. The proposed parking modules are capable of complying with the above-identified grade requirements.

5.4 Gradient of Access Driveway

In relation to the gradient of the access driveway, AS 2890.1 requires the first 6m into the car park to include a maximum grade of 5% (1 in 20). The proposed driveway is graded at 1.7% (1:60) for the first 6m from the site boundary, which complies with the maximum allowable grade limit.

5.5 Driveway Ramp Gradient

AS 2890.1-2004 states the grade requirements for straight ramps at private or residential car parks as follows:
(i) Longer than 20 m—1 in 5 (20%) maximum.
(ii) Up to 20 m long—1 in 4 (25%) maximum. The allowable 20 m maximum length shall include any parts of grade change transitions at each end that exceed 1 in 5 (20%).
(iii) A stepped ramp comprising a series of lengths each exceeding 1 in 5 (20%) grade shall have each two lengths separated by a grade of not more than 1 in 8 (12½%) and at least 10 m long.

Furthermore, where the difference in grade between two sections of ramp or floor is greater than 1:8 (12.5 percent) for a summit grade change, or greater than 1:6.7 (15 percent) for a sag grade change, the ramp must include a transition section of at least 2 metres to prevent vehicles scraping or bottoming.

The length of the proposed ramp is more than 20m and it includes a maximum grade of 6.7% - thus complying with the AS 2890.1 requirements in relation to the maximum allowable ramp grade. The summit and sag grade transitions on the ramp do not exceed 12.5% and 15%, respectively.

5.6 Driveway Width

Since the proposed driveway is longer than 30m, a passing bay is provided at the boundary – i.e. the first 6m into the site has been designed at 5.5m width + 300mm clearance on either side, in accordance with passing bay design requirements in AS 2890.1:2004. This passing bay will enable a vehicle entering the site to wait and give way to another vehicle simultaneously exiting the site along the driveway, without waiting on the frontage road.

The remaining length of the driveway is designed to cater for one-way movements, at a with of 3m (with 300mm clearance on either side – noting that the kerbline along the sides of the driveway is <150mm in height). This arrangement complies with the relevant AS 2890.1 requirement.

5.7 Headroom Requirements

AS 2890.6 requires a minimum headroom clearance of 2.5m above the disability-accessible car space and the shared space. This requirement can be satisfied at the proposed disability-accessible car space and the shared space - while there is some encroachment by the eave of Unit 6 into the shared area, there is >2.5m headroom clearance above the shared space at this location.

5.8 Pedestrian Sight Distance Provision

AS 2890.1 requires sight triangles of 2.5m length by 2m width, to be provided at the vehicle egress location, in order to ensure sufficient sight distance availability for pedestrians. This requirement is illustrated below in **Figure 5**.

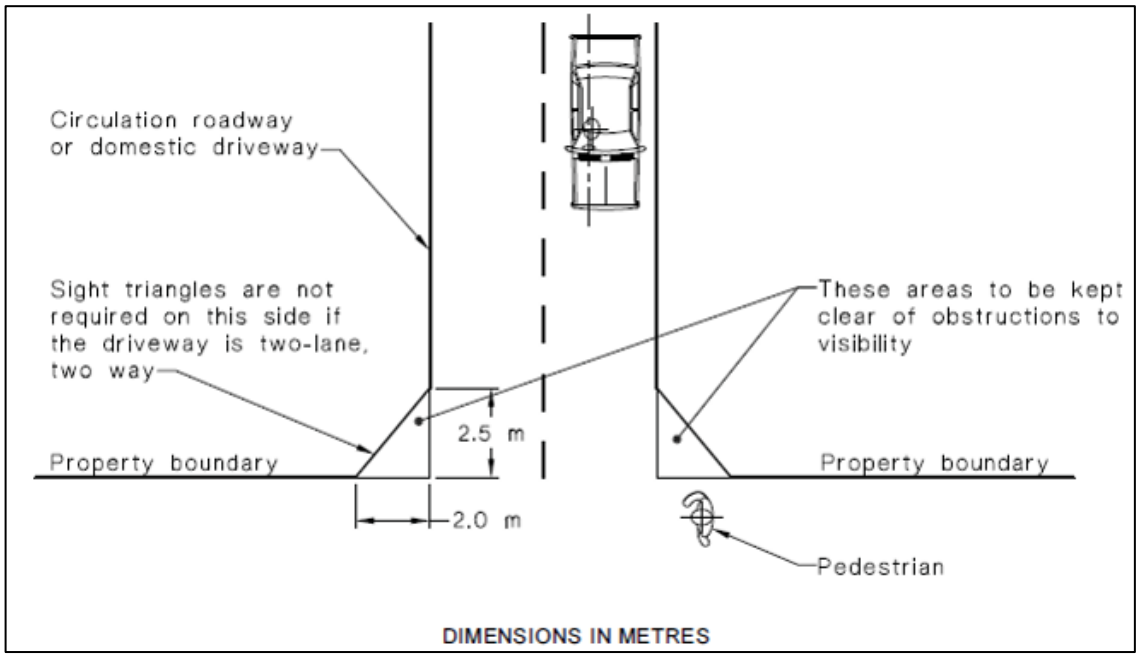

Figure 5: Pedestrian Sight Distance Requirement (AS 2890.1)

While there is no formal footpath at the site frontage, it is considered important to preserve the pedestrian sight distance given the proximity to the bus stop (that will be relocated from its current location) from the site's vehicular access point. It is noted that since the driveway is two-way for the first 6m from the site boundary, the sight triangle to the right-hand side of a driver exiting the site is not required (note that the existing bus stop, sign and the bench at the site frontage will be relocated as a part of this development – therefore this bus stop will not have any impact on driver sight distance). The sight triangle to the left-hand side of a driver exiting the car park should be preserved, as shown in **Figure 6**. AS 2890.1 states a driver eye height of 1.15m – as such, any boundary fencing within this pedestrian sight triangle (approx. 1.4m into the site along the western boundary) should be constructed at a height <1.15m.

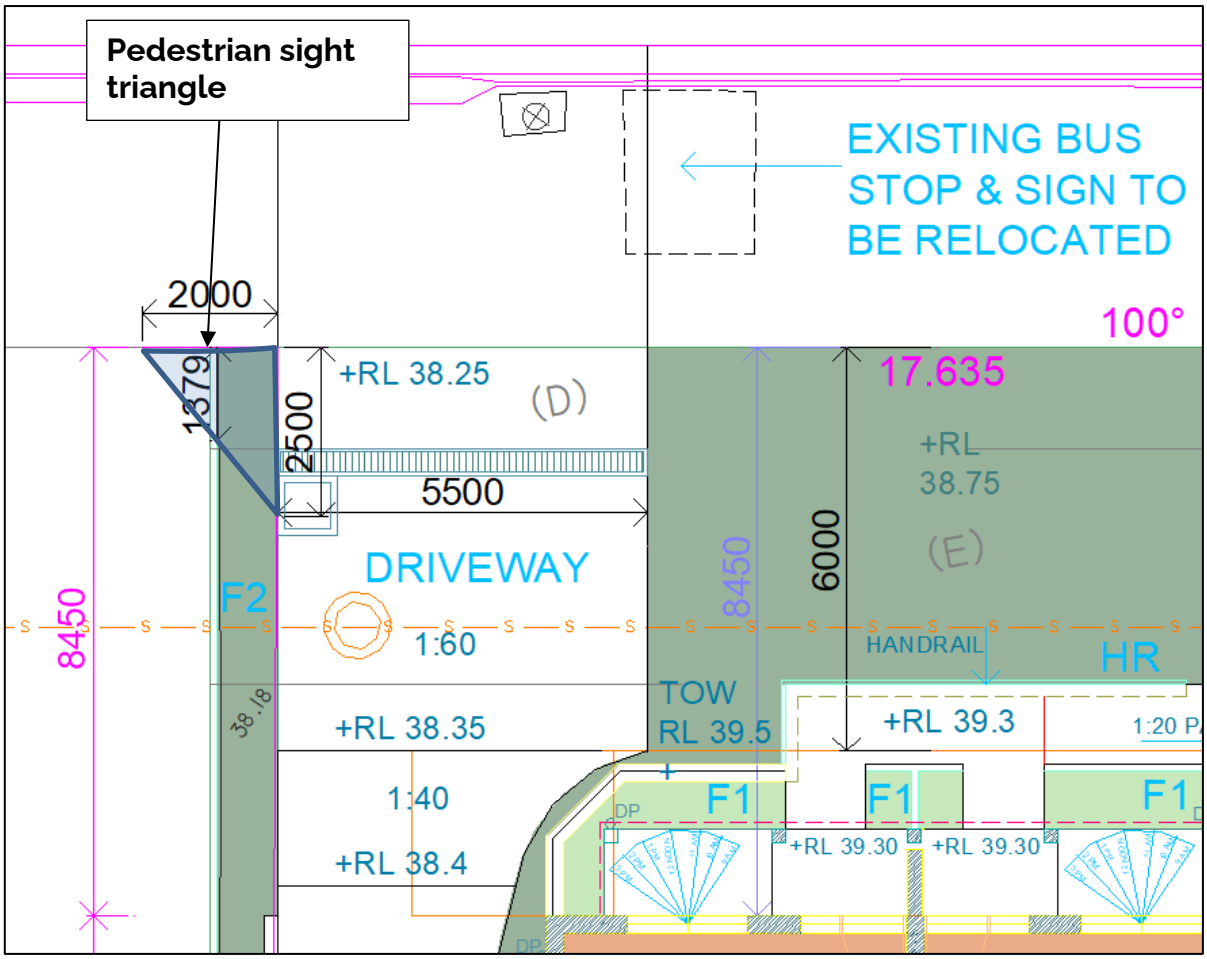

Figure 6: Pedestrian Sight Triangle at the Vehicle Egress Point

6. Traffic Impact

The anticipated traffic generation potential of the proposed development was determined using the trip rates presented in the *Guide to Traffic Generating Developments (RMS 2002)* document in relation to residential dwelling houses:

- *Daily vehicle trips = 9.0 per dwelling*
- *Weekday peak hour vehicle trips = 0.85 per dwelling*

It is noted that the RMS Guide states that *the above rates are based on surveys conducted in areas where new residential subdivisions are being built. Public transport accessibility in such areas is often limited.* Accordingly, the above-adopted trip rates are deemed suitable for the proposed multi-dwelling residential development which does not have good access to public transport.

Applying the above-identified trip rates to the proposed 6 residential dwellings leads to the following daily and peak-hour trips:

- Daily Trips: **54 vehicles (in and out)**
- Peak Hour Trips: **6 vehicles (in and out)**

The above trips will be realised into/out of the subject site as midblock turning movements on Sheppard Street. Vehicles accessing Casino town centre can either take the Sheppard Street-Hotham Street route to the west or the Sheppard Street-Barling Street route to the east. Based on the above, the vehicles will have multiple route options into and out of the subject site towards the broader external areas - this will minimise the accumulation of traffic impacts at a single intersection within the immediate site locality.

The above-determined level of daily and peak period trip generation level is not considered significant and is not expected to have any material impacts on the existing traffic conditions of the local road network which mainly cater for low-density residential uses.

7. Conclusions

Based on this assessment, the following can be concluded in relation to the proposed development:

- The site locality, including Sheppard Street, does not include any formal footpaths. Bus service 672 (Casino to Northwest Casino via Hospital Loop Service) is accessible on Sheppard Street at the immediate site frontage. This service operates between 6.45am to 12.55pm on weekdays with an hourly frequency. It does not operate on weekends.
- Under Division 6, Clause 40(1)(a) of the State Environmental Planning Policy (Housing) 2021, the proposed development has a statutory parking requirement of 7 car spaces (based on the non-accessible area parking rate).
- The proposed development includes provision for a total of 7 car spaces, which includes a single disability-accessible car space. Therefore, the proposed development satisfies the relevant minimum car parking requirement.
- Based on Objective 2.4N-2 of the Low Rise Housing Diversity Design Guide (July 2020, Department of Planning, Industry and Environment), covered space is to be provided for the secure storage of at least 1 bicycle per dwelling within multi-dwelling housing developments. The proposal seeks to accommodate bicycle parking requirements for each dwelling within the private open space of that dwelling.
- The proposed car parking design is generally in accordance with the AS 2890.1 and AS 2890.6 requirements.
- Any boundary fencing within the pedestrian sight triangle (approx. 1.4m into the site along the western boundary) should be constructed at a height <1.15m to ensure that sight distance to pedestrians is preserved at the vehicle egress point.

- The existing bus stop, sign and the bench at the site frontage will be relocated as a part of this development – therefore this bus stop will not have any impact on driver sight distance
- The proposed development is expected to generate some 54 daily vehicle trips and 6 peak-hour vehicle trips. The vehicles accessing the site will have multiple route options to/from the broader external areas - this will minimise the accumulation of traffic impacts at a single intersection within the immediate site locality. This level of peak period trip generation is not considered significant and is not expected to have any material impacts on the existing traffic conditions of the local road network which mainly cater for low-density residential uses.

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