
ParkTransit

TRAFFIC IMPACT ASSESSMENT – SENIORS HOUSING

3 Cooke Avenue, 1, 3 & 5 Deegan Drive, Alstonville

06th September 2023

ParkTransit Pty Ltd
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Traffic Impact Assessment Report for
Seniors Housing
3 Cooke Avenue, 1, 3 & 5 Deegan Drive, Alstonville
For: DTA Architects
Date: 06th September 2023

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Abbreviations

Proposal: Construction of a Seniors Housing Development

RMS: Road and Maritime Services

DCP: Ballina Shire Council Development Control Plan– 2012

SEPP (Housing): State Environmental Planning Policy (Housing) 2021

RMS Guide: RMS Guide to Traffic Generating Development 2002

AS2890.1: Australian Standard for Off-Street Parking Facilities AS2890.1-2004

AS2890.6: Australian Standard for Off-Street Parking for people with Disabilities AS2890.6

1. Introduction

ParkTransit have been engaged by DTA Architects to assist with the Part 5 Activity Application process for the construction of a Seniors Housing development located at 3 Cooke Avenue, 1, 3 & 5 Deegan Drive, Alstonville, within the Ballina Shire Council LGA.

The proposed development will accommodate a total of 16 residential units with associated parking provided within the at-grade level car park within the site boundary.

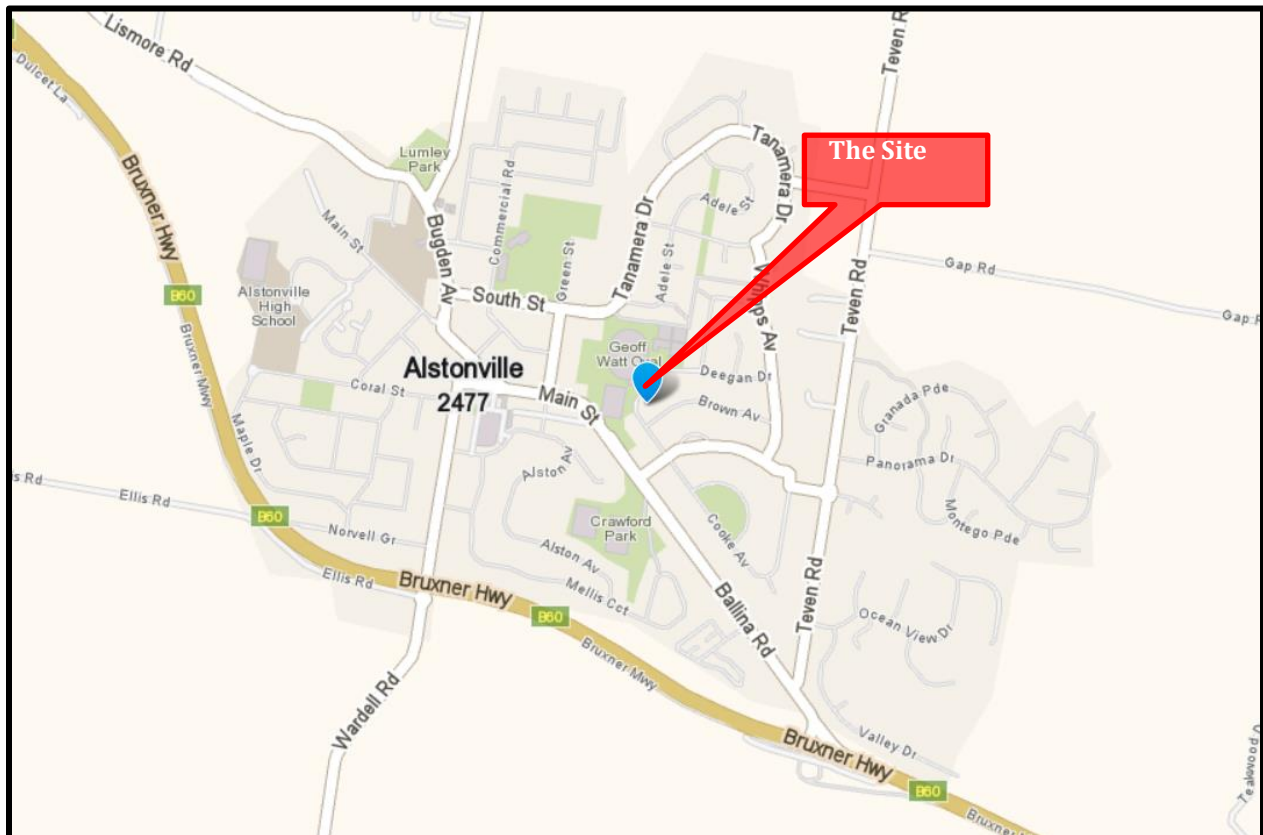


Figure 1-Site Location (Source Whereis Maps)

The purpose of this report is to present the traffic and parking assessment associated with the proposal, and to determine the implications of the projected change in traffic activity on the surrounding road network. The report is structured as follows:

Section 2:	Site Description
Section 3:	Overview of Existing Traffic Conditions
Section 4:	Description of the Proposed Development
Section 5:	Traffic Impact Assessment
Section 6:	Parking Provision
Section 7:	Access Arrangements
Section 8:	Conclusions and Recommendations
Section 9:	Attachments

The following documents were referenced for the preparation of this report:

- Ballina Shire Council Development Control Plan (DCP 2012);
- The Road and Maritime Services Guide to Traffic Generating Development;
- NSW State Environmental Planning Policy (Housing) 2021;
- Australian Standard for Parking Facilities Part 1: Off-Street Car Parking (AS2890.1-2004); and
- Australian Standard for Parking Facilities Part 6: Off-Street Parking for People with Disabilities (AS2890.6-2009).

2. Site Description

The site is located at 3 Cooke Avenue, 1, 3 & 5 Deegan Drive, Alstonville in a predominantly residential area and forms part of the Ballina Shire Council LGA. The site is located on the north-eastern corner of the intersection of Brown Avenue and Deegan Drive. It occupies an area of 2687.37m².

The site occupies Lot 150, 151, 152 & 153 of DP243997 and has frontages located along Brown Avenue, Cooke Avenue and Deegan Drive. The site is bordered by Deegan Drive to the North, Cooke Avenue to the West, Brown Avenue to the South and residential developments to the East.

The site is occupied by four single storey dwelling houses. Each of the dwelling houses is serviced by a dedicated driveway resulting in a total of four driveways servicing the subject site.



Figure 2 The Site (Source NSW Imagery-Six Maps)

A site visit was undertaken to observe the operation of the existing road network and the site photographs are presented overleaf:

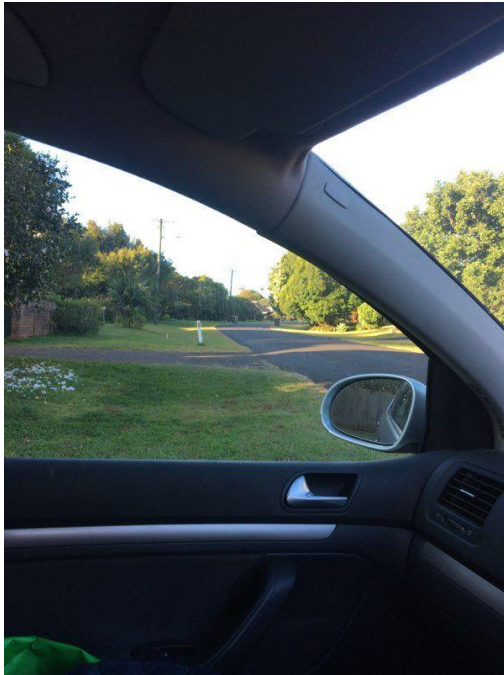


Photo taken looking towards the Driveway Servicing 5 Deegan Drive



Photo taken on Brown Avenue Looking towards Cooke Avenue

The following map shows the hierarchy of the surrounding road network as classified by Transport for NSW (TfNSW).

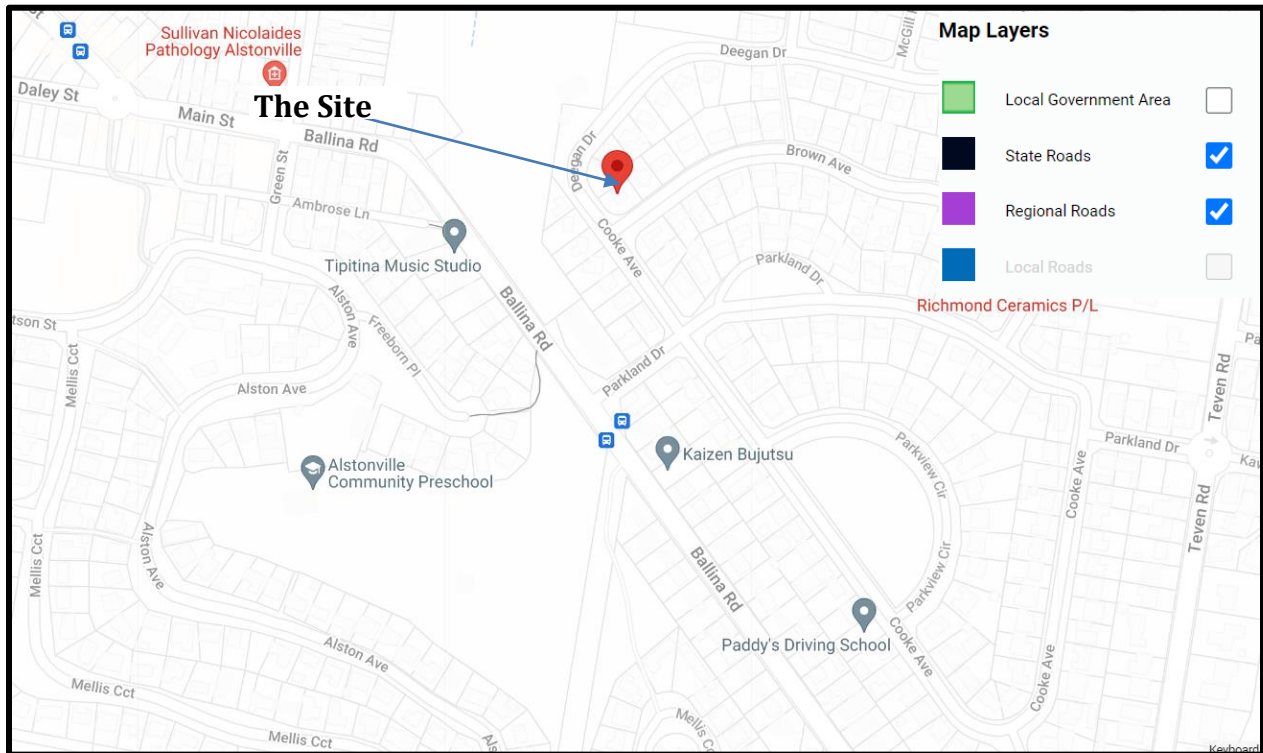


Figure 3-Surrounding Road Network (Source Transport for NSW Website)

3. Overview of the Existing Traffic Conditions

The site accessible via the connection of Ballina Road, Parkland Drive, Cooke Avenue, Deegan Drive and Brown Avenue

3.1. Description of Road Environment

Ballina Road is classified as a Local Road and follows a North-South alignment. The carriageway is undivided and comprises one traffic lane in each direction with on-street parking permitted. A paved footpath is available on both sides of the carriageway. Ballina Road has a posted speed limit of 60kph. A number of residential properties have their frontages located along the Ballina Road and these properties are accessible via the driveways located along the Ballina Road. Within the vicinity of the subject site, a number of buses operate along Ballina Road.

Parkland Drive is classified as a Local Road and connects Teven Road with Ballina Road. Parkland Drive follows an East-West alignment, and the carriageway is undivided and comprises one traffic lane in each direction with on-street parking permitted. Parkland Drive has the provision of informal footpath on both sides of the carriageway, and it has a posted speed limit of 50kph. The intersection of Parkland Drive with Ballina Road operates as a priority-controlled intersection with motorists on Ballina Road having priority over vehicles on Parkland Drive

Cooke Avenue is classified as a Local Road and follows a North west-South east alignment. The carriageway is undivided and comprises one traffic lane in each direction with on-street parking permitted. The intersection

of Parkland Drive with Cooke Avenue operates as a priority-controlled intersection with motorists on Parkland Drive having priority over vehicles on Cooke Avenue.

Brown Avenue is classified as a Local Road and follows an East-West alignment. The carriageway is undivided and comprises one traffic lane in each direction with on-street parking permitted. The intersection of Brown Avenue with Cooke Avenue operates as a priority-controlled intersection with motorists travelling on Cooke Avenue having priority over vehicles on Brown Avenue. Brown Avenue has a posted speed limit of 50kph. The proposed development will be accessible via a new driveway on the Brown Avenue frontage.

Deegan Drive is classified as a Local Road and follows an East-West alignment. The carriageway is undivided and comprises one traffic lane in each direction with on-street parking permitted. Deegan Drive has a posted speed limit of 50kph. The proposed development will be accessible via an existing driveway on Deegan Drive frontage.

3.2. Public Transport

The site is serviced by bus services operated by Ballina Buslines. The nearest bus stop is located on Ballina Road – located approximately 270m southwest of the subject site.

Route No 661 is a regular bus service operating daily between Lismore to Ballina. It operates from 07:00am to 7:00pm (mid night), with a frequency of one service every hour.

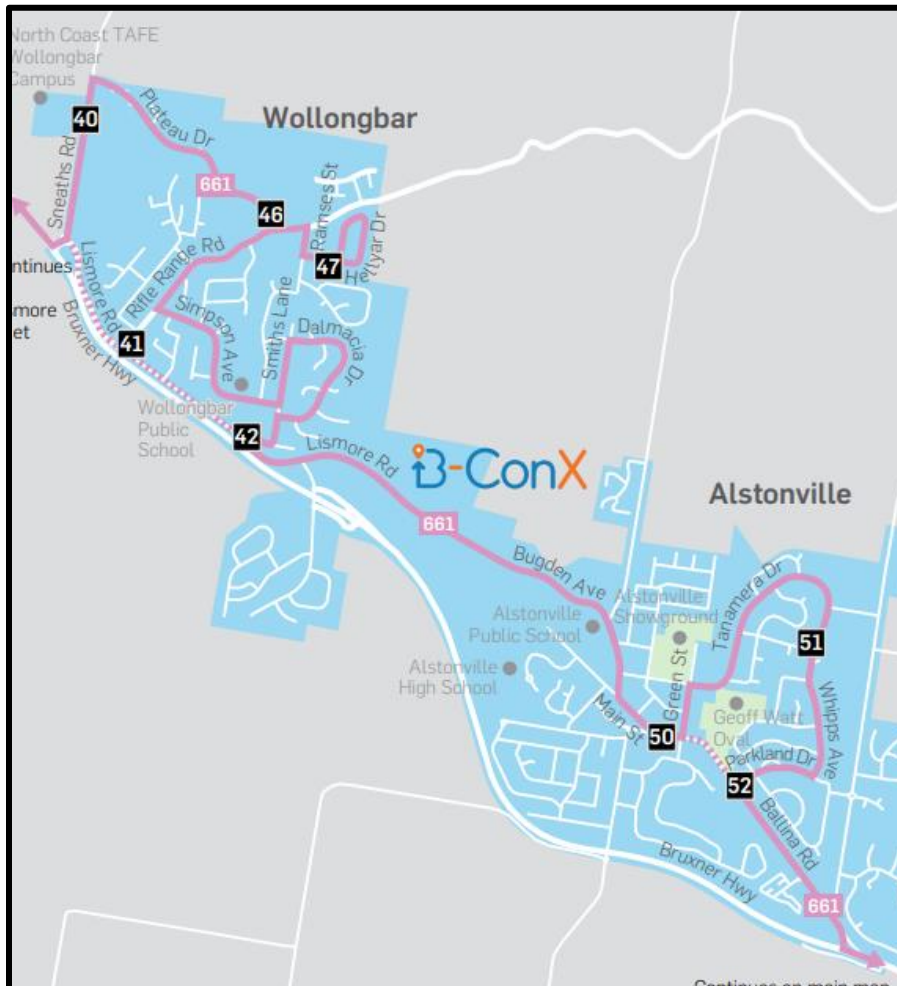


Figure 4- Route Map –Bus Route 758 (Source NSW Transport Info Website)

3.3. Existing Traffic Generation of the Site

The subject site is located within a predominantly residential area and is currently occupied by two single-storey residential buildings. The traffic activity associated with the existing development was determined with reference to the RMS Guide to Traffic Generating Development (The Guide). In relation to the existing uses, the Guide classifies the existing residential use as a “Dwelling House” and recommends the following trip generation rates:

Weekday peak hour vehicle trips = 0.85 per dwelling

Application of the above trip generation rate to the four (4) existing dwelling houses results in the 3.4 (say 4) vehicle trip per hour during peak period.

3.4. Crash Data

The NSW Centre for Road Safety collects crash and casualty data on a periodic basis which is publicly available. A review of the latest crash data from 2017-2021 indicates, that a limited number of crashes, predominantly non-casualty in nature, were recorded in the surrounding road network - indicating the local

road is operating relatively safely. The Figure below provides the crash location and severity of these crashes recorded in the area.

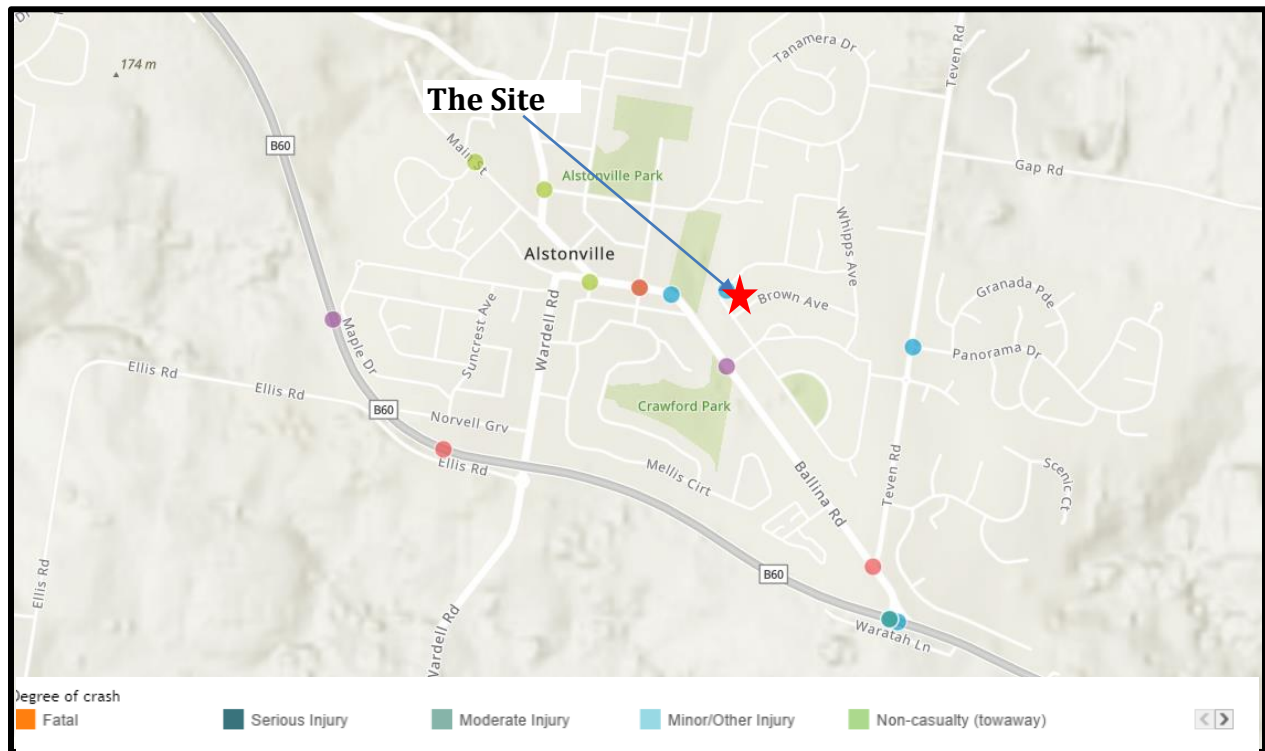


Figure 5- Crash data (Source NSW Centre for Road Safety)

4. Description of the Proposed Development

The development proposal involves the construction of a double storey Seniors Housing that will accommodate a total of 16 residential units comprising the following:

- 8 x one-bedroom units; and
- 8 x two-bedroom units.

As part of the proposal, an on-site parking provision of 12 car spaces, including four (4) disabled car spaces. Vehicular access will be provided via two combined entry and exit driveways located on the Deegan Drive and Brown Avenue frontages. The proposed Seniors Housing development is being constructed by a social housing provider.

Architectural plans associated with the proposal have been prepared by DTA Architects, and the plans indicating the car park are presented as **Attachment A**.



Figure 6– Proposed Ground Floor Plan (Source DTA Architects)

5. Traffic Impact Assessment

5.1. Trip Generation

The traffic activity associated with the proposal has been calculated with reference to the 'RMS Guide to Traffic Generation Developments'. The proposal involves the construction of a double-storey Seniors Housing that will accommodate a total of 16 residential units.

In relation to the residential component, the RMS has recently published a Technical Direction for traffic, safety and transport practitioners. This document serves to update the existing Section 3 of the RMS Guide which was originally published in October 2002. The TDT classifies Seniors Housing as Housing for aged and disabled persons and specifies the following traffic generation rates:

Daily vehicle trips = 2.1 per dwelling

Peak hour vehicle trips = 0.4 per dwelling

Application of the above trip generation rates to the proposed development results in approximately 6.4 (say 7) vehicle trips, during both morning and evening peak hour.

5.2. Impact Assessment

The development is proposed on a site that currently has a peak hour traffic generation of 4.0 vehicle trips (please refer to Section 3.4 of this report for further details).

The projected traffic activity associated with the proposal indicates the site is likely to generate a peak hour traffic flow of 7 vehicle trips- representing a trip every eight and a half minutes or so. A comparison of the existing traffic activity with the projected traffic activity indicates that the new development will result in a negligible increase in traffic activity within the surrounding road network.

The minimal increase in traffic activity is likely to be less than the typical daily variation, which is usually 10% of the peak hourly flow. Additionally, the minimal increased traffic activity will not impact existing, and post development intersection modelling. Therefore, no formal Sidra intersection analysis has been undertaken as part of this project.

In conclusion, the proposal is likely to generate a maximum of 7.0 vehicle trips an hour - which represents an increase of 3.0 vehicle trips an hour. This increase is highly unlikely to have any detrimental impact on the operation of the surrounding road network.

6. Parking Provision

6.1. Planning Requirements

Typically, the on-site parking provision is calculated with reference to the Council's planning controls (i.e., Development Control Plan and Local Environmental Plan). However, in this instance, the proposed development represents a Seniors Housing project and therefore, the on-site parking requirements are determined with reference to the NSW State Environmental Planning Policy (SEPP) (SEPP Housing 2021).

In relation to Self-contained dwellings, Clause 108(j) of the SEPP (Housing 2021) specifies the following parking provision rates (for sites developed by a social housing provider):

Table 1 – SEPP Recommended On-Site Parking Provision

Description	Car Park Provision
Dwellings	1 car space for each 5 dwelling

The proposed development will accommodate 16 units comprising the following:

- 8 x one-bedroom units; and
- 8 x two-bedroom units.

Application of the above on-site parking provision rate to the proposed development would result in four (4) car spaces.

6.2. Proposed Parking Provision

The proposed on-site provision of 12 car spaces, including four disabled spaces is compliant with the requirement recommended within the SEPP (housing 2021). Therefore, the proposed on-site parking provision is considered suitable to service the proposed development and is unlikely to result in increased on-street parking.

7. Access Arrangements

The proposed car parking arrangement has been assessed according to the requirements listed in AS2890.1 (2004). Table 1.1 of AS2890.1 provides a classification of the off-street parking facilities based on various land uses, which is essential in determining the associated parking space dimensions. The development is proposed to be occupied by residential use. Therefore, the proposed parking provision has been assessed against the 'Type 1A' user class with a 90-degree parking space configuration (which is associated with Residential and Employee Parking). In relation to the Type 1A user class, Figure 2.2 of the AS2890.1 specifies the following parking dimensions:

- Space width – 2.4 metres
- Space length – 5.4 metres
- Aisle width – 5.8 metres

The proposed car park accommodates a total of 12 parking spaces, including four (4) disabled car spaces located with the at-grade car park. The space dimensions were measured at a minimum of 2.4 metres wide and 5.4 metres long, with an associated aisle width exceeding 5.8 metres, thereby meeting the minimum requirements stipulated by AS2890.1.

In relation to disabled car spaces, the Australian Standard for Off-street Parking for People with Disabilities – AS2890.6 -2009. The standard recommends disabled bays should be accompanied by a shared zone (same dimensions as a standard space). The dimensions of a standard space are the following:

- Space width – 2.4 metres
- Space length – 5.4 metres

The disabled space dimensions were measured at a minimum of 2.4 metres wide and 5.4 metres long, with an associated shared zone of 2.4 metres wide and 5.4 metres, thereby meeting the minimum requirements stipulated by AS2890.6-2009.

In this regard, the proposed car parking arrangement has been designed in accordance with the Australian Standard.

7.1. Driveway Arrangement

As part of the proposal, all vehicular access to the site will be provided via the following two driveways located along the site frontage:

- Driveway 1 - located along the Brown Street frontage and servicing six car spaces; and
- Driveway 2 is located along the Deegan Drive frontage and servicing six car spaces.

The figure below presents the location of the above two driveways:

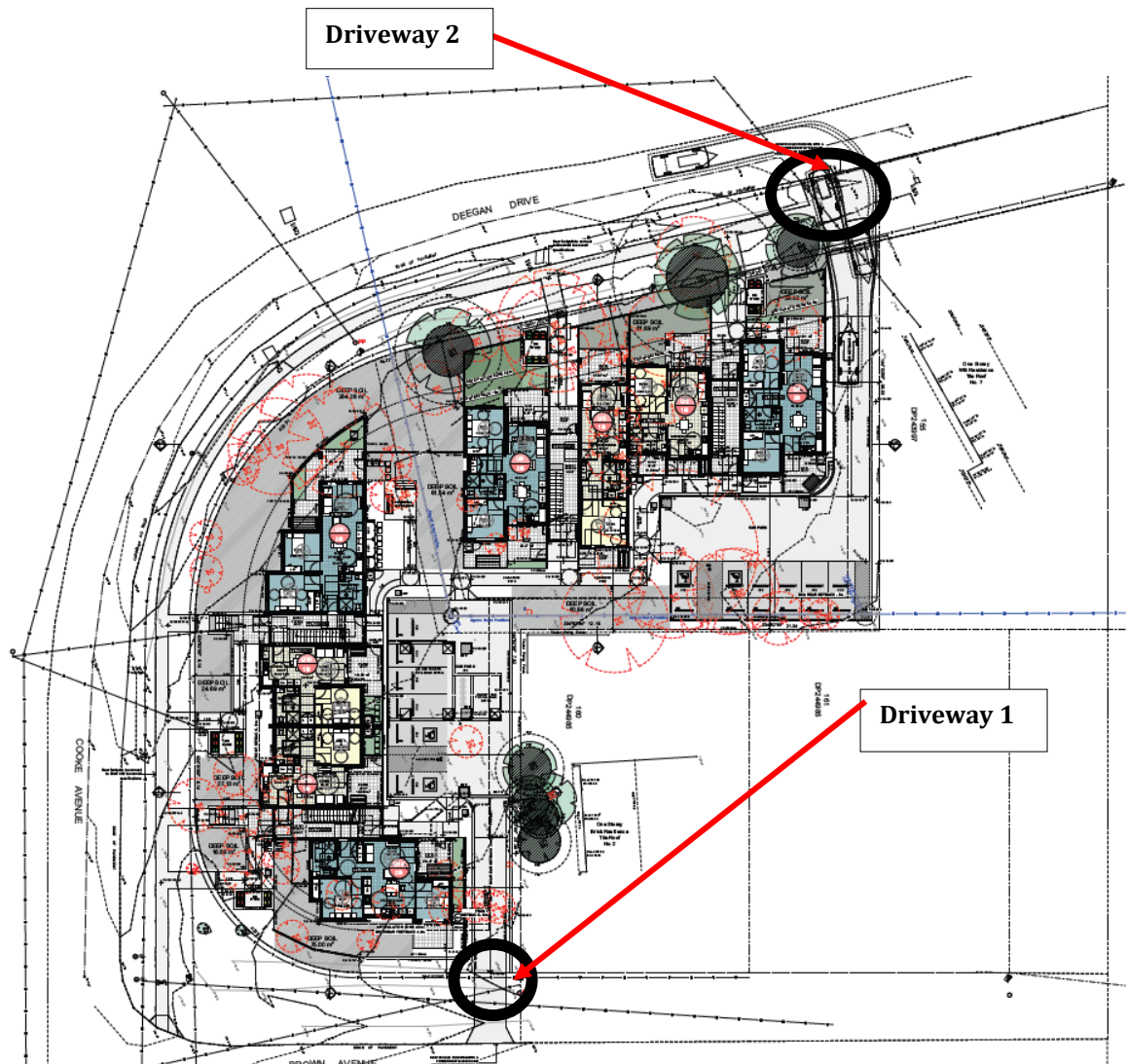


Figure 7 – Proposed Driveway location plan (Source DTA Architects)

Driveway 1 services the at-grade car park accommodating six (6) spaces. Table 3.1 & Table 3.2 of AS2890.1 specify the width of the access driveway, which is directly proportional to the on-site parking provision and also the type of frontage road.

Taking into account the proposed driveway is located on Brown Avenue (which is classified as a Local Road) and the car park has a capacity of 6 parking spaces, Table 3.1 classifies the proposed driveway as 'Category 1'. Table 3.2 subsequently recommends the driveway width should be within a range of 3.0-5.5 metres, as a combined entry and exit. The width of the proposed driveway is in excess of 3.0 metres and is therefore considered compliant with the Standard.

Driveway 2 services the at-grade car park accommodating six (6) spaces. Table 3.1 & Table 3.2 of AS2890.1 specifies the width of the access driveway, which is directly proportional to the on-site parking provision and also the type of frontage road.

Taking into account the proposed driveway is located on Deegan Drive (which is classified as a Local Road) and the car park has a capacity of 6 parking spaces, Table 3.1 classifies the proposed driveway as 'Category 1'. Table 3.2 subsequently recommends the driveway width should be within a range of 3.0-5.5 metres, as a combined entry and exit. The width of the proposed driveway is in excess of 3.0 metres and is therefore considered compliant with the Standard.

In order to access the driveway configuration, ParkTransit have undertaken Swept Path Analysis utilising the AutoTrack simulation software. The Swept Path Analysis was undertaken utilising the recommended vehicle type and is presented as **Attachment B**.

The swept path assessment concluded the driveway arrangement is suitable to service the Seniors Housing facility.

7.2. Vehicle Access

The proposal involves the provision of two driveways to service the development. The width of the proposed driveway was measured to be 3.2 metres wide which is suitable to accommodate one-way flow.

During the morning peak hour, the proposal is likely to generate a total of 7 vehicle movements (for details please refer to Section 5.1 of this report) and would involve most of the commuting drivers exiting the site. Typically, during the morning peak period, it is standard engineering practice to assume that 80% of the total traffic generated from the residential development will exit the site and the remaining 20% will arrive at the site. Application of the above to the projected traffic activity associated with the subject development will result in 4 vehicles exiting the site and 1 vehicle entering the site and vice versa during the evening peak period.

In this regard, the driveway generally operates as a one-way driveway and therefore in accordance with the Australian Standard (Section 3.2 of AS2890.1), a recommended minimum width of 3.0 metres is required to accommodate a one-way driveway. The proposal includes the provision of a passing bay at the site entry and exit to the car park - thus minimising the need for motorists to reverse onto Deegan Drive.

In this regard, the proposed accessway configuration is considered adequate to service the proposed Seniors Housing development.

7.3. Sight Distance

Section 3.2 of AS2890.1 specifies the recommended sight distance associated with the driveway. The sight distance requirement is prescribed in accordance with the posted speed limit along the frontage road.

The proposed residential development will be accessible via two driveways located along the Brown Avenue and Deegan Drive frontages; both these streets have a posted speed limit of 50kph.

Section 3.2 of the Standard specifies a desirable visibility distance of 69 metres, and a minimum distance of 45 metres for streets having a posted speed limit of 50kph. The proposed driveway is located on a straight section of local road with unobstructed visibility. In this regard, the driveway arrangement is considered safe and appropriate to service the proposed senior development.

7.4. Driveway Location

Figure 3.1 of the Standard shown below, specifies the prohibited location for the introduction of a Category 1 driveway.

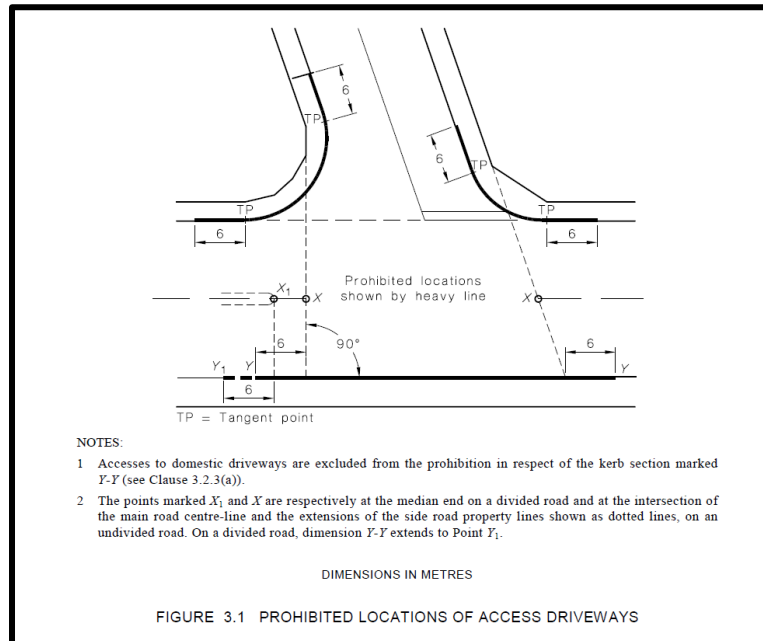


Figure 8- Prohibited Locations of Access Driveway (Source AS2890.1-2004)

A review of the proposed driveways indicates it is located well outside the prohibition zone and therefore, the proposal is considered compliant with the Standard.

7.5. Servicing

As part of the proposal, all deliveries (including furniture removalists) will utilize the existing on-street parking provision available along the site frontage. This procedure is considered typical for a development of this size. The subject site is located within a predominantly residential area where on-street parking is permitted along all the local streets servicing the site. Therefore, the occasional delivery vehicle utilising on-street parking to service the development is highly unlikely to result in any detrimental impact on the overall on-street parking provision.

8. Conclusions and Recommendations

- The provision of 12 car parking spaces, including four (4) disabled spaces, for the proposed senior residential development is considered sufficient to handle the project parking demand.
- Based on the information provided, the proposal does not generate any increase in safety risk to pedestrians or drivers as a result of the access and parking configuration;
- The proposed development will not negatively impact the current traffic conditions; and
- An assessment of the car park layout, including the proposed parking spaces and associated aisle width, indicates the car park layout is compliant with the relevant applicable Standards (AS2890.1-2004).

9. Attachments

Attachment A - Architectural Plan indicating Access and Car Park Arrangement

Attachment B - Swept Path Assessment Demonstrating a Standard B85th Vehicle Type Accessing the Car Park