



# Traffic Impact and Parking Assessment

10-14 Munmurra Road and 5 Bernadotte Street

# Revision History

REVISION	DATE	BY	CHECKED	COMMENTS
A	18.08.2023	DJA	WW	Issued for Review
B	22.11.2023	DJA	WW	Issued for Review

The recipient of the latest issue as noted above will be responsible for superseding/destroying all previous documents.

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# 1. Introduction

JN has been engaged by Custance Associates Australia Pty Ltd to prepare a Traffic Impact & Parking Assessment for the proposed seniors development at 10-14 Munmurra Road & 5 Bernadotte Street, Riverwood. The proposed development comprises of a two-storey apartment building accommodating 16 residential units for senior living with a shared vehicle access carpark from Bernadotte Street.

## 2. Conditions

### 2.1. Description

The site is located in the suburb of Riverwood. The site has the address 10-14 Munmurra Road & 5 Bernadotte Street, Riverwood. This is shown in Figure 1 following.

Munmurra Road is a local road with a 50km/h limited speed zone, currently one lane two way with no marked centreline. Bernadotte Street is a local road with a 50km/h limited speed zone, currently one lane two way with no marked centreline.

The subject site falls under the jurisdiction of Georges River Council.



Figure 1: Site Location (Nearmap, 2023)

## 2.2. Conditions

The Roads & Maritime Services (RMS, formally RTA) broadly classifies all roads into three administrative classes: state, regional and local. A detailed description of each administrative class is provided in “NSW Road Management Arrangements” (December 2008), however in general:

**State Roads** are the major arterial links throughout NSW and within major urban areas. They are the principle traffic carrying and linking routes for the movement of people and goods within the Sydney, Newcastle, Wollongong and Central Coast urban areas and which connect between these urban centers, the major regional towns, the major regions of the State and the major connections interstate.

**Regional Roads** are routes of secondary importance between State Roads and Local Roads which together with the State Roads, provide the main connections to and between smaller towns and districts and perform a sub arterial function in major urban areas.

**Local Roads** comprise the remaining Council controlled roads which provide for local circulation and access.

**Munmurra Road** is a Local Road. It has one lane of traffic in either direction and a speed limit of 50km/h with unrestricted on-street parking. Munmurra Road is not line-marked.

**Bernadotte Street** is a Local Road. It has one lane of traffic in either direction and a speed limit of 50km/h with unrestricted on-street parking. Akuna Street is not linemarked.

**Broadarrow Road** is a Regional Road. It has one lane of traffic in either direction and a speed limit of 50km/h with unrestricted on-street parking. Broadarrow Road is not line-marked and sign posted in the vicinity of site.

**Bonds Road** is a Regional Road. It has one lane of traffic in either direction and a speed limit of 50km/h with unrestricted on-street parking. Bonds Road is line-marked and sign posted in the vicinity of site.

**Forest Road** is a State Road. It has three lanes of traffic in either direction in the vicinity of site with a speed limit of 60km/h. Forest Road is line-marked and sign posted in the vicinity of site.



Figure 2: Munmurra Road facing Westbound (Google Maps, 2021)



Figure 3: Munmurra Road facing Eastbound (Google Maps, 2021)



Figure 4: Bernadotte Street facing Northbound (Google Maps, 2021)

## 2.3. Features

The existing road features which apply to the road network in the vicinity of the site include:

- Munmurra Road has a speed limit of 50km/h.
- Bernadotte Street has a speed limit of 50km/h.
- Unrestricted parallel parking is available along both sides of Munmurra Road.
- Unrestricted parallel parking is available along both sides of Bernadotte Street.

## 2.4. Transport

The subject site is serviced by the following Public Transport:

- Bus Stop approximately 200m North of the site along Broadarrow Road - Route 940 servicing routes from Bankstown to Hurstville via Riverwood.

Riverwood train station is located approximately 1.1km to the West of the site which is about a 3-minute drive or a 13-minute walk.

Narwee train station is also located approximately 1.3km to the East of the site which is about a 3-minute drive or a 14-minute walk.

## 2.5. Information

2021 Census Data (refer [www.censusdata.abs.gov.au](http://www.censusdata.abs.gov.au)) was used to construct a community profile of the suburb of Riverwood. The most relevant census data categories are reproduced in Table 1; we have also provided values for NSW to allow general comparisons to be made.

Table 1. 2021 Census Data (ABS, 2021)

Category	RIVERWOOD%	NSW%
<b>Employment</b>		
Worked Full-time	47.7	55.2
Worked Part-time	26.4	29.7
Unemployed (incl retired)	7.8	4.9
Other	18.1	10.2
<b>Travel to Work</b>		
By car (as driver or passenger)	37.8	47.2
By public transport	10.1	4.0
Worked at home	30.9	31.0
Other	21.2	17.8
<b>Number of registered motor vehicles per dwelling</b>		
0	21.7	9.0
1	43.0	37.8
2	23.7	34.1
3+	9.2	17.5
Not Stated	2.4	1.5

\*Note "Travel to Work" is based on "One Method" of transport in Census Data

# 3. Development

## 3.1. Description

The proposed development comprises of two-storey apartment building accommodating 16 residential units for Senior living with a shared vehicle access car park from Bernadotte Street. The existing 4 residential houses on the lots will be demolished before the construction of the proposed works.

Car parking spaces (as shown on the current drawings) are as follows:

- 11 residential spaces (including 4 accessible spaces) in an open-air car park;
- 1 residential space in a separate open-air driveway.

## 3.2. Access

### 3.2.1. Street

Site access to the proposed carpark will be from two separate laybacks on Bernadotte Street as depicted in Figure 5. As this is a local access road, a Category 1 driveway under AS2890.1 (2004) is utilised meaning a combined entry and exit width is to be 3.0 to 5.5 metres. Swept path analysis of the entry and exit points has been undertaken demonstrating a B99 design vehicle will be able to always enter and exit the site whilst driving in a forward direction at all times (refer to Appendix A).



Figure 5: Proposed Site Plan

### 3.3. Pedestrian Issues

Pedestrian access will remain along the site frontage during the demolition, excavation and construction stage of the works. A construction fence around the site will be provided to delineate the pedestrians from the works within the site.

When work is to be performed in the road frontage area, pedestrian access along Munmurra Road and Bernadotte Street is to be maintained. Required signage will be documented on the corresponding construction Traffic Control Plan and implemented on site prior to the commencement of construction works.

Pedestrian sight triangles have been provided on both sides of the carpark access driveways in accordance with Figure 3.3 AS 2890.1 (2004).

### 3.4. Parking Provisions

Onsite parking is to be provided in accordance with State Environmental Planning Policy (Housing) 2021. Clause 108-(2)-(j) of the Housing SEPP specifies that for independent living units for a development application made by, or made by a person jointly with, a social housing provider – at least 1 parking space for every 5 dwellings.

Table 2: Housing SEPP Parking Rates and Provision

Type	Number	Rate	Spaces Required	Spaces Provided
Independent Living Units	16 Units	1 parking space for every 5 dwellings	3.2	12
		<b>TOTAL CAR SPACES REQUIRED/PROVIDED</b>	<b>4</b>	<b>12</b>

The development has a requirement for 4 parking spaces to comply with the parking requirements for independent living units in the Housing SEPP 2021. The proposed development provides 12 parking spaces including 4 accessible spaces.

JN believes that the provided car spaces are therefore sufficient.

A detailed review of carpark has determined that the proposed carparking layout complies with AS2890.1. Aisle widths, car space dimensions, clearances from obstructions, grades, transitions and other related carparking features are all compliant with industry standards.

## 4. Traffic Impact Analysis

### 4.1. Traffic Generation

The traffic to be generated by the proposed development has been estimated using the RTA Guide to Traffic Generating Developments, 2002, Section 3 – Land Use Generation (Section 3.3.1) with addition to the updated Technical Direction (TDT 2013/04a) generation rates. The traffic generation for dwelling houses are as follows:

Dwelling Houses                      0.99 peak hour trips per dwelling. 9 daily vehicle trips per dwelling.

Housing for Seniors                0.4 peak hour trips per dwelling. 2.1 daily vehicle trips per dwelling.

The traffic calculated to be generated by the proposed development is shown in Table 3 below.

In order to calculate the net impact of the development, we have calculated the traffic generated by the existing 4 dwellings using the above rates.

Table 3: Traffic Generation

	Daily vehicle trips	Weekday peak hour vehicle trips
Existing (Residential)	4 Dwelling 4 * 9= 36 vt	4 Dwellings 4 * 0.99= 4.0 vt
<b>Sub-Total (Existing)</b>	36 vt	4.0 vt
Proposed (Housing for Seniors)	[16 units] 16*2.1 = 33.6 vt	[16 units] 16*0.4 = 6.4 vt
<b>Sub-Total (Proposed)</b>	33.6 vt	6.4 vt
<b>Net Change</b>	<b>-2.4 vt</b>	<b>+2.4 vt</b>

### 4.2. Impact Assessment

Using the RMS guidelines to calculate weekday peak hour vehicle trips, it has been determined that for the proposed development, an additional approximately 2.4 vehicle movements will occur in the peak hour period. It is also shown that a decrease of 2.4 daily vehicle trips will be generated by the development. These can be considered a very minor impact on the surrounding traffic network and the surrounding local roads have sufficient capacity to absorb this negligible increase in traffic load.

## 5. Conclusions

We conclude that:

- The proposed development generally complies with the parking demand requirements set out in the State Environmental Planning Policy (Housing) 2021.
- Adequate site access provisions, including vehicle access, manoeuvring and sight distances have been met for both of the proposed access points from Bernadotte Street. Modelling demonstrating this has been provided in Appendices A.
- Traffic generation from the proposed development is minor in nature and will have a minimal impact on the existing local traffic network.

For and on behalf of JN,

**Prepared by:**

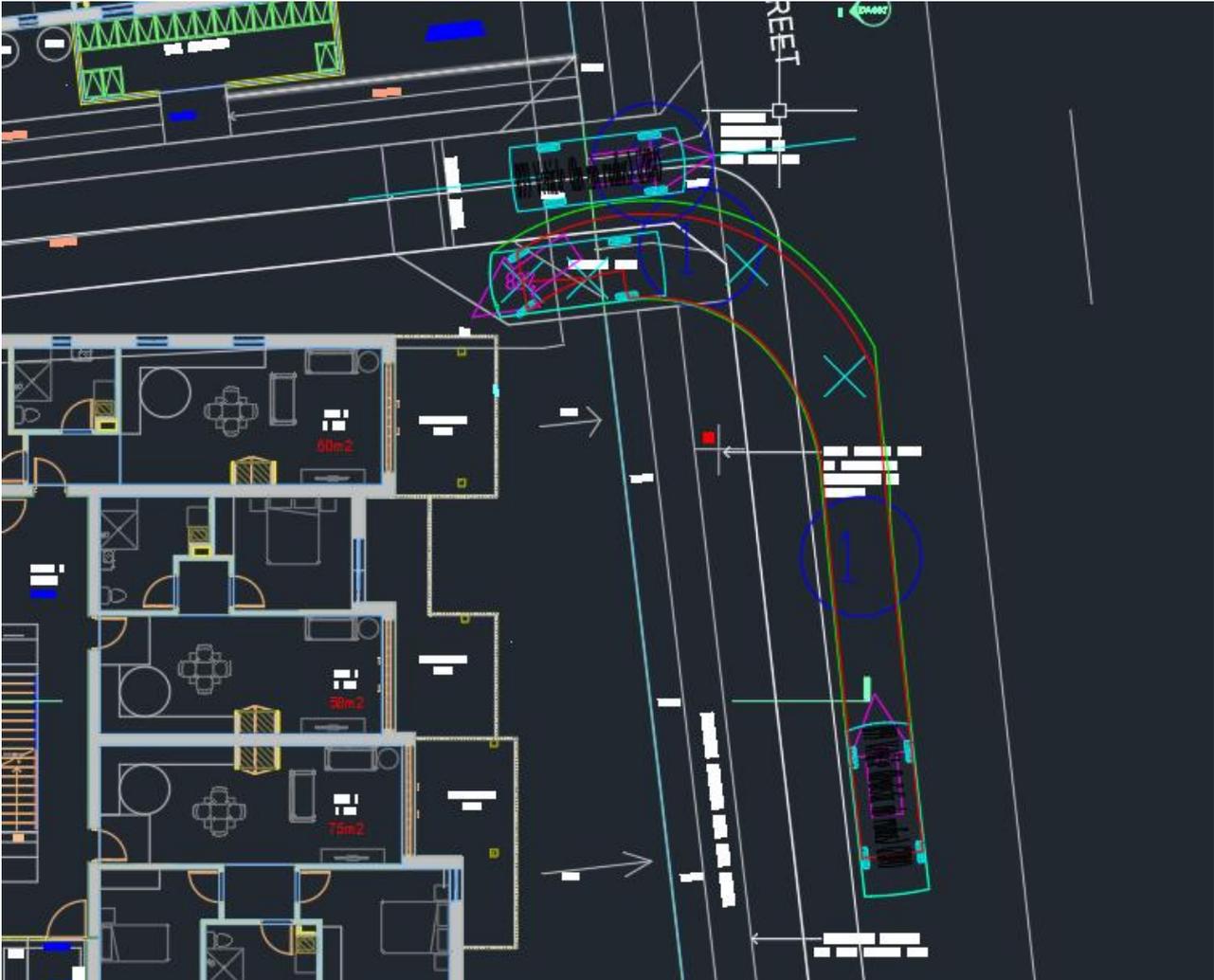
A handwritten signature in black ink that reads "D. Alexander". The signature is written in a cursive, slightly slanted style.

Dylan Alexander  
Civil Design Engineer

# Appendix A – Swept Paths

**B99 Vehicle Entering Site Driveways + Passing Lane:**





**B99 Vehicle Exiting Site Driveways:**



### B99 Vehicle using Carpark:

