

# Traffic Impact and Parking Assessment

**Corner of Bowman Road & Berrima Road** Prepared for Wingecarribee Shire Council



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### **Revision History**

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С	20/05/2022	JL	DY	Updated Architectural Plan
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The recipient of the latest issue as noted above will be responsible for superseding/destroying all previous documents.

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JONES NICHOLSON PTY LTD ABN 51 003 316 032 BRISBANE GOLD COAST SINGLETON SOUTHERN HIGHLANDS SYDNEY-CBD SUTHERLAND WOLLONGONG GOULBURN



# Contents

1.	Introduction		
2.	Existing Conditions	5	
2.1.	Site Description	5	
2.2.	Existing Road Conditions	5	
2.3.	Existing Road Features	7	
2.4.	Existing Traffic	8	
2.5.	Public Transport	8	
2.6.	Social & Demographic Information	8	
3.	Proposed Development	9	
3.1.	Proposed Development Description	9	
3.2.	Site Access	9	
3.2.1.	Access from Bowman Road	9	
3.2.2.	Sight Distances	9	
3.2.3.	Vehicle Manoeuvring	9	
3.3.	Pedestrian Issues	9	
3.4.	Parking Provisions	9	
4.	Traffic Impact Analysis	11	
4.1.	Traffic Generation	11	
4.2.	Impact Assessment	12	
5.	Conclusions	13	
Appendix A – Swept Paths		14	



### 1. Introduction

JN Engineering has been engaged by Wingecarribee Shire Council to prepare a Traffic Impact & Parking Assessment for the proposed development at the corner of Bowman Road & Berrima Road. The proposed development consists of an Animal Shelter and SES Building with on-site parking.



# 2. Existing Conditions

### 2.1. Site Description

The site is located on the corner of Bowman Road & Berrima Road, Moss Vale 2577, as shown in Figure 1 below.

The subject site falls under the jurisdiction of Wingecaribee Shire Council.



Figure 1. Site Location Map

### 2.2. Existing Road 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 principal 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.

**Berrima Road** is a regional road with serves to connect Argyle St in Moss Vale with Old Hume Hwy in Berrima. Berrima Road has one lane in either direction with varying speed limits and line markings.

**Bowman Avenue** is a local dead-end road with a T-intersection against Berrima. Bowman Avenue has one lane in either direction with lane markings towards the intersection and a turning bay at the dead end.

**Taylor Avenue/ Medway Road** is a local road with serves to connect Berrima Road in the East with Railway Parade in the West. Berrima Road / Medway Road has one lane in either direction with varying speed limits and solid line markings within the vicinity of the site.

**Old Hume Motorway** is a state road which serves to connect Sydney with Melbourne. The Hume Motorway has a speed limit of 80km/h and one lane in either direction and solid marked lines.

**Hume Motorway** is a state road which serves to connect Sydney with Melbourne. The Hume Motorway has a speed limit of 110km/h and two lanes in either direction and a significant space between the 2 directions.



Figure 2. Southbound on Bowman Road (Google, 2016)





Figure 3. Intersection of Bowman Road and Berrima Road (Google, 2016)

#### 2.3. Existing Road Features

The existing road features which apply to the road network in the vicinity of the site are illustrated in Figure 4. These include:

- Berrima and Bowman Roads have solid line markings and a speed limit of 70 km/hr within the vicinity of the site.
- Berrima Road has a shoulder lane for a left turn into Bowman Road for Northbound traffic.
- Berrima Road has a central lane for a right turn into Bowman Road for Southbound traffic.



Figure 4. Local Road Features



### 2.4. Existing Traffic

No recent publicly available traffic count data is available for Bowman Road or Berrima Road.

Bowman Road is a no through road with no major sites and as such it is anticipated that the traffic flows in the area would be minimal.

Berrima Road is a regional road which serves to connect Moss Vale with Berrima and the Hume Motorway.

#### 2.5. Public Transport

Due to the regional setting of the site the public transport in the area is limited. The nearest bus stop to the site is on Berrima Road, approximately 500 m from the site, which connects to several stops in Berrima, Moss Vale and regional locations to the West of the site. Due to the nature of the proposed development, it is not expected that the access to the site via public transport would be required often.

### 2.6. Social & Demographic Information

#### 2016 Census Data

https://quickstats.censusdata.abs.gov.au/census\_services/getproduct/census/2016/quickstat/SSC1 2739?opendocument (refer (accessed 31 March 2022) was used to construct a community profile of the Moss Vale area. 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.

Moss Vale residents have employment rates similar to those of NSW as a whole, however the average number of vehicles per house is much higher than the NSW average due to the regional setting, limited public transport within the area and the distance from the town center to the train station.

Category	Moss Vale %	NSW%		
Employment				
Worked Full-time	57.9	59.2		
Worked Part-time	33.8	29.7		
Away from work	4.6	4.8		
Unemployed	3.8	6.3		
Travel to Work				
By car (as driver or passenger)	75.1	64.6		
By public transport	2.2	16.0		
Other	22.7	19.4		
Number of registered motor vehicles per dwelling				
0	5.8	9.2		
1	37	36.3		
2	35.1	34.1		
3	18.3	16.7		
Not Stated	3.8	3.7		

Table 1. 2016 Census Data (ABS, 2017)

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



# 3. Proposed Development

#### 3.1. Proposed Development Description

The proposed development is comprised of an animal shelter and SES building. The animal shelter contains indoor animal housing, various rooms, multiple outdoor yards and 9 external car spaces, including 2 disabled parking spaces and an associated shared zone. The SES building contains indoor carparking with attached meeting, changing rooms and 13 external parking spaces, including 2 disabled parking spaces and an associated shared zone.

#### 3.2. Site Access

#### 3.2.1. Access from Bowman Road

Site access and exit from the proposed carpark will be from Bowman Road. Swept path analysis of the site access point has been undertaken (refer to Appendix A)

#### 3.2.2. Sight Distances

Adequate sight distance can be achieved for vehicles entering the site from Bowman Road. JN are also satisfied that adequate sight distance is in place for vehicles to exit onto Bowman Road in either direction in a safe manner.

#### 3.2.3. Vehicle Manoeuvring

Internal vehicle movements have been modelled using a swept path analysis to demonstrate that vehicles are able to travel freely within the site with adequate turning space. Swept paths through the site have been completed for the largest anticipated vehicles – a 3 axle rigid truck. These swept paths can be found in Appendix A.

#### 3.2.4. Access ramp to SES Training Area

The ramp provided from the parking area adjacent to the SES building to the grassed training area has been designed in accordance with AS2890.1.

#### 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 is 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 Bowman Road is to be maintained.

Provided that adequate site distances are provided at the site entrance as per AS2890.1, JN generally do not foresee problematic pedestrian issues at the subject site.

#### 3.4. Parking Provisions

The proposed development consists of a series of police training facilities. Acting in accordance with advice from Council and information provided in Wingecaribee Council's Industrial Land DCP Part D Appendices Appendix 1 Schedule of Car Parking Requirements, JN has completed the parking analysis for the animal shelter and SES building with the site assessed as two separate



Community Facilities, Public Administration Building. The relevant requirements of Wingecaribee Council's Industrial Land DCP's Car Parking Requirements are shown in Figure 7 below.

Community Facilities, Public	1 space per 30 m <sup>2</sup> of nett floor space (minimum
Administration Building	3 spaces)

Figure 7- Wingecaribee Council's Industrial Land DCP Part D Appendix 1

The expected required number of spaces has been calculated based on information provided to JN. The results are shown in **Table 2** below.

	Number of Individuals	Required Spaces	Provided Spaces
Animal Shelter	5 + customers	9	9
SES Building	24-30	8	13
Total	29 – 35 + customers	17	22

Table 2. - Spaces required vs Spaces provided

As per the latest DA architectural drawings there are 9 proposed parking spaces for the animal shelter and there are 13 proposed parking spaces for the SES Building. Therefore, JN confirm that both sections of the comply with Wingecaribee Council's DCP.

It is to be noted that a similar animal shelter development in the area has 6 total spaces, with 2 provided for staff and four allocated for visitors. The proposed development has surplus to this requirement. Additionally, during night-time training sessions at the SES building, the parking for the animal shelter will be utilised at will be outside operation hours.

A detailed review of carpark has determined that the proposed carparking layout complies with AS2890.1 in terms of aisle widths, car space dimensions, clearances from obstructions, grades, transitions and other related carparking features.

JN have also assessed the compliance of the proposed site with AS2890.6- Parking for people with disabilities (2009). As the animal shelter section of the site is required to have 9 parking spaces (with the same number provided on latest drawing), JN believe the 2 provided disabled parking spaces and associated shared zone are sufficient. As the SES building section of the site is required to have 8 parking spaces (13 provided on latest drawing), JN believe the two provided disabled parking spaces are sufficient.



# 4. Traffic Impact Analysis

### 4.1. Traffic Generation

Currently there is no information available through either Wingecaribee Council or RMS regarding the traffic generated by either SES buildings or animal shelters. Due to the proposed use of the site and the available traffic generation estimations, the site is to be assessed following:

- The animal shelter is to be assessed as a community facility. The anticipated daily trips generated for this class of building is difficult to estimate with the results generally varying between 0.1.-6.4 vehicles per hour per 100m<sup>2</sup>, with our estimate to be conservatively at 5 vehicles per hour per 100m<sup>2</sup>. There is an anticipated increase in daily trips on weekends within the range of 0.7-16.9 vehicles per hour per 100m<sup>2</sup>, with our estimate to be conservatively at 15 vehicles per hour per 100m<sup>2</sup>.
- The SES animal shelter is to be assessed as a community facility. The anticipated daily trips generated for this class of building is to be 10 vehicles per 100m<sup>2</sup>, with gross floor area of the SES building at 235m<sup>2</sup>. See a summary of the required spaces for the site in the table below.

	Gross Floor Area (m²)	Daily Trips Generated (During Week)	Daily Trips Generated (During Weekends)	Evening Peak Hour Trips Generated	
Animal Shelter	590	30	89	-	
SES Building	240	24	24	5	
Total	830	54	113	5	



Adding a further contingency to the anticipated daily trips generated from the site, there is to be 60 during weekdays and 120 on weekends.

Through analysis of traffic pattern for existing similar developments in the area, general traffic generation characteristics can be expected and are summarized below:

Animal Shelter	SES Building
- There are anticipated to be 10 visitors per day (from a 10am to 4pm period)	<ul> <li>There is anticipated to be minimal traffic activity during the day</li> </ul>
- There are expected to be 2-3 walk in visitors per day (potentially more once the new facility has opened)	<ul> <li>When rescue incident occur, there will be 2-3 SES staff required and 4-5 for a storm incident</li> </ul>
- There are expected to be 4-5 booked visitors per day	<ul> <li>During special events (i.e. combined training with other units) the maximum anticipated turnout will be 40 people</li> </ul>

Table 4. Traffic characteristics of existing developments in the area



The daily trips anticipated from analysing the existing developments is significantly less than the calculated values, and therefore, the higher values should be taken as a conservative assessment.

### 4.2. Impact Assessment

There are no recent traffic counts available for any of the roadways surrounding the immediate site, with the most recent a traffic count performed on Berrima Road in 2008. Results from that traffic count have been used, with calculations made to account for the population growth of the area. The calculation to estimate the current daily traffic count for Berrima Road are in the table below.

	2008	Resource	Current	Resource
Moss Vale Population	6 850	https://www.citypopulation.de/en/austr alia/newsouthwales/ /114021 moss val e/ (accessed May 12 2022)	9 800	https://profile.id.com.au/win gecarribee/population- estimate?WebID=160 (accessed May 12 2022)
Traffic Count for Berrima Road	3 252	https://roads- waterways.transport.nsw.gov.au/about/ corporate-publications/statistics/traffic- volumes/aadt-map/index.html/ (accessed May 12 2022)	4 660	

 Table 5.
 Current traffic count estimation

The estimated daily traffic count for Berrima Road is 4 660, with an approximately even mix of Northbound and Southbound traffic.

Due to the traffic experienced currently in the roads surrounding the site, an additional 60 daily vehicle trips during the week and 120 daily trips on weekends, will have a minor impact to the traffic network.



# 5. Conclusions

We conclude that:

- The design provides sufficient parking for the nature of the proposed development.
- Adequate site access provisions, including vehicle access and maneuvering and sight distances have been met for the proposed access to and from Bowman Road. Modelling demonstrating this has been provided in Appendices A.
- Traffic generation from the proposed development is minor in nature and will have no measurable impact on the existing local traffic network.

For and on behalf of JN,

Prepared by:

John Lynch Civil/Structural Design Engineer

Reviewed by:

Derek Yang Senior Civil Design Engineer



# Appendix A – Swept Paths



### APPENDIX B – ARCHITECTURAL PLANS