

5-7 McDERMOTT AVE & 1 PHILLIP ST,
GOONELLABAH NSW 2480

16TH JANUARY 2024

TRAFFIC IMPACT
ASSESSMENT

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DOCUMENT CONTROL

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CONTENTS

.....	1
Document control	2
Contents	3
Table of figures.....	4
Table of tables.....	4
1. Introduction	5
1.1. Scope	5
1.2. Standards, policies and guidelines.....	5
1.3. Site description.....	5
1.4. Proposed development	7
1.5. Abbreviations and definitions	7
2. Existing conditions	8
2.1. Road network – McDermott Avenue	8
3. Development impact	10
3.1. Trip generation	10
3.2. Off-street parking requirements.....	10
3.3. PWD parking	11
3.4. Services vehicle and bicycles parking	12
3.5. Access driveway (crossover)	12
3.6. Access driveway location	13
3.7. Vehicle sight distances.....	13
3.8. Pedestrian sight lines	14
3.9. Internal circulation	15
4. Conclusions and recommendations	16
References	17

TABLE OF FIGURES

Figure 1 Site location, <i>source of map: Google Maps</i>	6
Figure 2 Aerial image of the subject site, <i>Source: Lismore City Council IntraMaps</i>	6
Figure 3 Proposed development ground floor plan, <i>Source: Raunik Design Group</i>	7
Figure 4 Existing road network – McDermott Ave and Phillip Street, <i>source of map: Lismore City Council IntraMaps</i>	8
Figure 5 Characteristics of road in residential subdivision, <i>source: NRLG Development Specification D1</i>	9
Figure 6 Example of PWD angle parking bay, <i>Source: AS/NZS 2890.6</i>	12
Figure 7 Proposed development layout plan at ground floor / Level 1, <i>source: Raunik Design Group</i>	13
Figure 8 Minimum sight distance for access driveways, <i>Source: AS/NZS 2890.1:2004</i>	14
Figure 9 Vehicle sight distance	14
Figure 10 Safe pedestrian sight triangles	15

TABLE OF TABLES

Table 1 Vehicle trips generation for medium-density residential flat building	10
Table 2 Detailed calculation for parking spaces	11

1. INTRODUCTION

Ingen Consulting P/L has been engaged by David McGrath, care of Social Futures, to prepare a Traffic Impact Assessment (TIA) to accompany a Development Application with Lismore City Council for a social housing development at 5-7 McDermott Ave & 1 Phillip St Goonellabah, NSW.

1.1. Scope

The purpose of this report is to quantify the traffic impact of this development on the surrounding road network. In particular, this report seeks to:

- Demonstrate compliance with relevant chapters requirements of the Lismore City Council Development Control Plans
- Demonstrate compliance with the safety components of the Austroads Guide to Road Design series.
- Address relevant items recommended for a Traffic Impact Study in the 2002 RTA Guide to Traffic Generating Developments (GTTGD)
- Analyse the impact of the through traffic on the surrounding road network.

1.2. Standards, policies and guidelines

This TIA has been prepared in accordance with the following standards, guidelines and policies:

- Lismore Development Control Plans
- New South Wales Development Design Specification D1 – Geometric Road Design (Urban and Rural)
- State Environmental Planning Policy (Housing) 2021 Act (NSW)
- Guide to Traffic Generating Developments (RTA, 2002)
- Guide to Traffic Generating Developments, Updated Surveys (RMS 2013)
- Austroads Guide to Traffic Management
- Austroads Guide to Road Design
- Australian/New Zealand Standard 2890 series

1.3. Site description

The subject site is west of The Village Goonellabah shopping centre and south of Ballina Road. Its address is 5-7 McDermott Avenue and 1 Phillip Street, Goonellabah NSW 2480, with Lot/Plan number registered as Lot 69-71 DP 230448, and the site has an area of 1,821m² in total fronting McDermott Avenue and Phillip Street, as shown in Figure 1 and Figure 2.

The subject site currently has two brick unit blocks containing 7 individual units and an 8-spaced carport leading to McDermott Avenue. The remaining areas are landscaped with concrete footpaths connected to Phillip Street. For more information on the existing conditions may refer to the survey drawing by Newton Denny Chapelle.

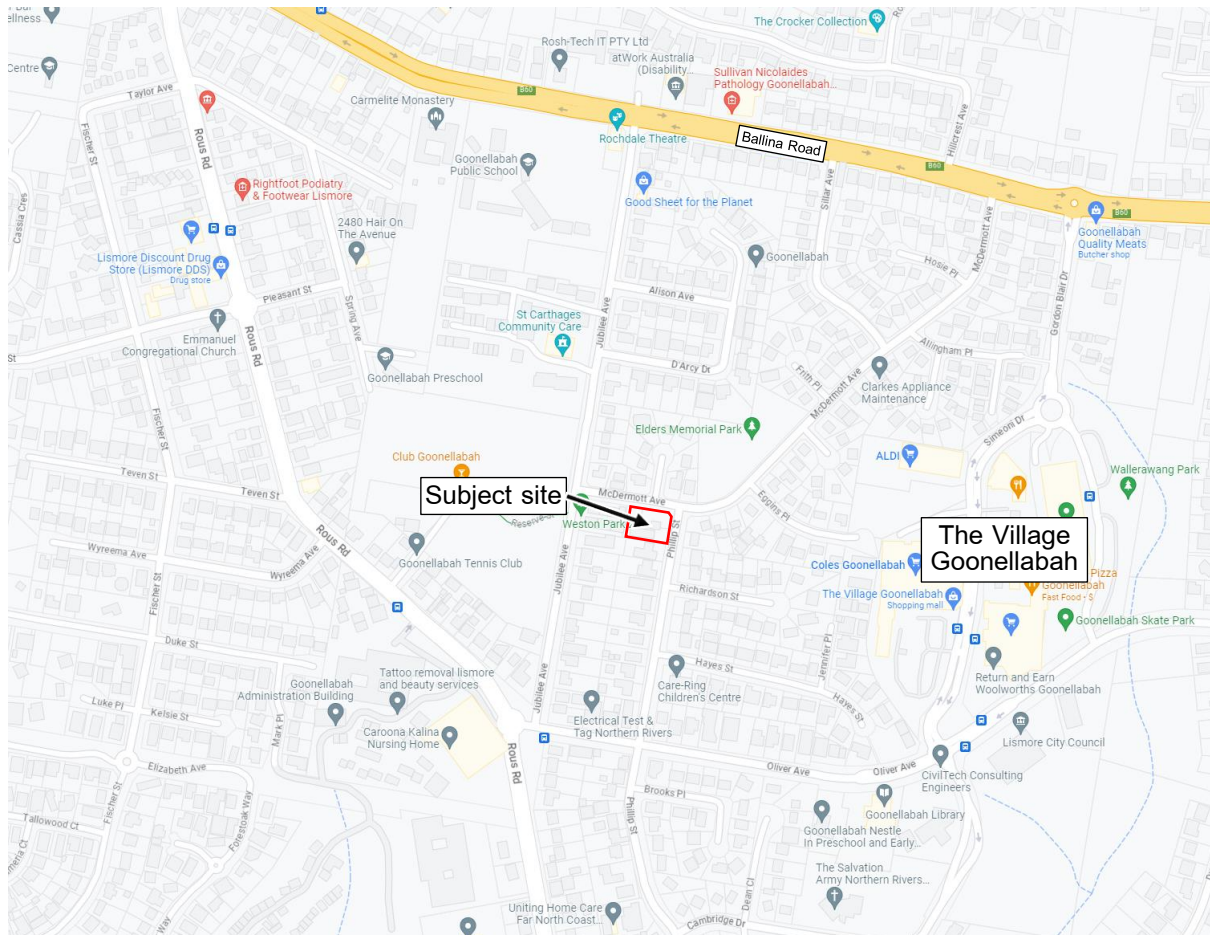


Figure 1 | Site location, source of map: Google Maps



Figure 2 | Aerial image of the subject site, Source: Lismore City Council IntraMaps

1.4. Proposed development

The proposed development is a 3-storey social housing building with 18 residential apartments. A car parking area with 15 car spaces (including 2 PWD spaces) and 4 visitor spaces is proposed at ground floor level. Vehicles will enter and exit via McDermott Avenue using the existing driveway cross over. The first and second floor each contain 9 residential units with common space. The proposed development contains a total of 6 one-bedroom units and 12 two-bedroom units.

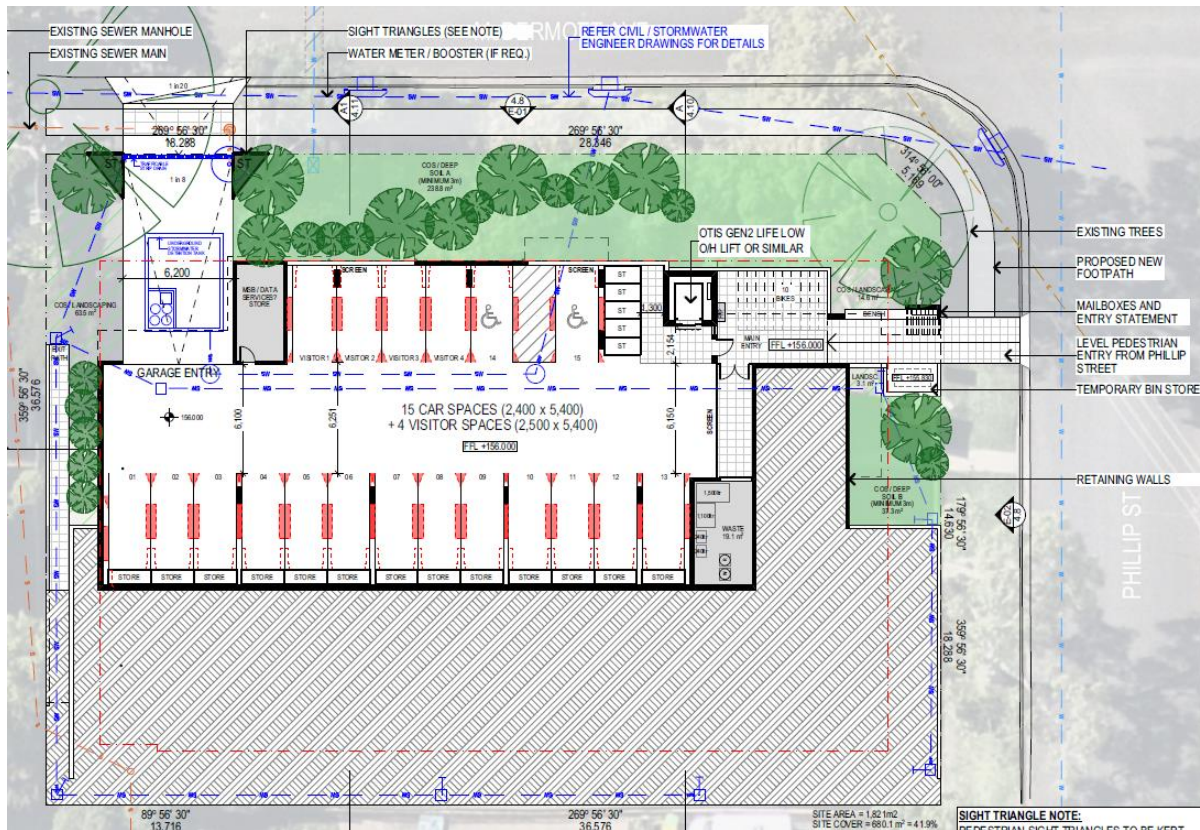


Figure 3 | Proposed development ground floor plan, Source: Raunik Design Group

1.5. Abbreviations and definitions

Commonly used abbreviations throughout this report are:

AADT – Average Annual Daily Traffic, average daily traffic based on 365 days' worth of data

ADT – Average Daily Traffic, average daily traffic based on 7 days' worth of data

2.1. Road network – McDermott Avenue

202.0 m

Jubilee Ave

McDermott Ave

Philip St

To Ballina Road

Subject site

7m

N

McDermott Avenue is of similar functionality to a local street with a maximum traffic volume of 2000 vpd (although this road has an upright kerb instead of the mountable kerb for this classification).

Road Type	Maximum Traffic Volume (vpd) ⁽¹⁾	Maximum Speed ⁽²⁾ (km/h)	Carriageway Width (m) ⁽³⁾⁽¹⁰⁾ Min	Parking Provisions Within Road Reserve	Kerbing ⁽⁴⁾	Footpath Requirement ⁽¹⁵⁾ minimum	Bicycle path Requirement	Verge Width (m) minimum (each side)	Minimum Road Reserve Width (m)
Access Street	100	40	6	Carriageway	Mountable	No	No	3	14
Local Street	2000	50	7-9	Carriageway	Mountable	Network Dependent	Network Dependent	3.5	15-17
Collector Street	3000	50	11	Carriageway	Mountable	One side ⁽¹⁶⁾	Network Dependent	3.5	18
Distributor Road	3000+	60	13	Carriageway	Upright	One Side	Network Dependent	3.5	20

Figure 5 | Characteristics of road in residential subdivision, source: NRLG Development

Specification D1

3. DEVELOPMENT IMPACT

3.1. Trip generation

The 2002 Guide to Traffic Generating Developments (GTTGD) provides trip generation rates for medium-density residential flat buildings. These are summarised in in Table 1.

Table 1 | Vehicle trips generation for medium-density residential flat building

	Daily vehicle trips	Weekday peak hour vehicle trips
Smaller units and flats (up to two bedrooms)	4-5 per dwelling	0.4-0.5 per dwelling
Larger units and townhouses (Three or more bedrooms)	5-6.5 per dwelling	0.5-0.65 per dwelling

On this basis, a regular residential flat building with 18 units would generate approximately $18 \times 5 = 90$ daily vehicle trips and $18 \times 0.5 = 9$ weekday peak-hour vehicle trips. However, this is a proposed social housing project, which will likely house residents with higher unemployment rates and a higher public transport dependency. Therefore, the trip generation by the proposed development will likely be lower than the estimates based on the 2002 GTTGD.

3.2. Off-street parking requirements

The following three pieces of documentation have been reviewed to determine the compliance of off-street parking requirements:

- State Environmental Planning Policy (Housing) 2021 Act (NSW)
- Traffic Impact Study in the 2002 RTA Guide to Traffic Generating Developments (GTTGD)
- Lismore DCP – Part A Chapter 4.6

We have been advised that the State Environmental Planning Policy (Housing) 2021 Act (NSW) Chapter 2, pt 2 div 1 sub-div 18 cl (g) applies, and the minimum parking requirements are given below:

- For each dwelling containing 1 bedroom – at least 0.5 parking spaces
- For each dwelling containing 2 bedrooms – at least 1 parking spaces
- For each dwelling containing 3 bedrooms – at least 1.5 parking spaces

Both GTTGD and Lismore DCP suggested a minimum of one visitor parking space per each five units.

Based on the requirements stated above for the proposed development, a minimum of 15 resident parking spaces and 4 visitor parking spaces are required. Detailed calculation is shown in Table 2. The proposal complies with these requirements.

Table 2 | Detailed calculation for parking spaces

No of bedroom	No of dwelling	Resident parking space required	Visitor parking space required
1 Bed	6	$0.5 \times 3 = 3$	$18 / 5 = 3.6$
2 Bed	12	$1 \times 12 = 12$	
Total		15	4

In addition to the requirement of minimum parking spaces, all parking spaces should be sized according to AS/NZS 2890.1:2004 and AS/NZS 2890.6:2004. Residential and visitor parking are classified as User Class 1A, and all parking spaces shall be 5.4m x 2.4m with a minimum aisle width of 5.8m. PWD parking spaces are classified as User Class 4 and shall be sized as explained in section 3.3 below.

3.3. PWD parking

Two car spaces for a Person with Disability (PWD) are proposed on-site. AS/NZS 2890.6 defines that each PWD car park bay must have a combination of a dedicated non-shared space and a shared area on one side of the dedicated space. Both areas must have minimum dimensions of 2.4 metres wide and 5.4 metres long. Also, a shared area of 2.4x2.4m must be provided at one end of the dedicated non-shared space, which can be at the front or at the rear.



Neither the 2002 GTTGD nor Lismore DCP state a requirement for service vehicles and bicycle parking for a medium-density residential flat building or similar development. Therefore, no specific service vehicle loading bays and bicycle parking spaces are required for this development.

The proposed development will have one driveway crossover connecting to McDermott Avenue (refer to Figure 7). This driveway should comply with the minimum access driveway width, access driveway location, and sight distance at the access driveway exits in accordance with AS/NZS 2890.1:2004. Minimum widths will be discussed below, and the location of the driveway and the minimum sight distance will be discussed in Sections 3.6 and 3.7, respectively.

J1275_TIA

20 parking spaces fronting a local street, should have a minimum entry width of 3 – 5.5m. The proposed development fulfilled the requirements by providing a 6.2m wide access driveway.

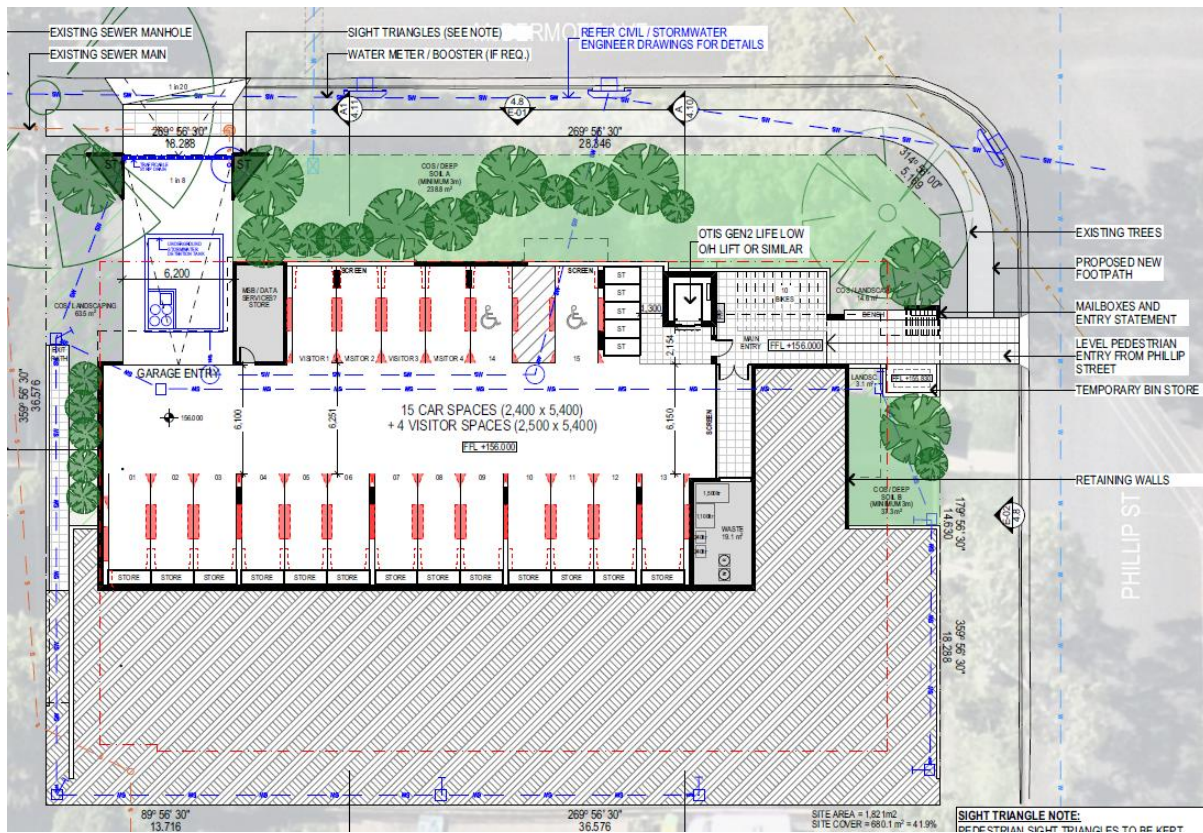


Figure 7 | Proposed development layout plan at ground floor / Level 1, source: Raunik Design Group

3.6. Access driveway location

AS/NZS 2890.1:2004 stated that a Category 1 access driveway shall be 6m, measuring from the side road property lines, away from an unsignalized intersection. The proposed driveway complies with this clause.

3.7. Vehicle sight distances

According to AS/NZS 2890.1:2004 requirements shown in Figure 8, a min. 40m vehicle sight distance from the driver's perspective should be provided to vehicles leaving the subject site onto a 50 km/h posted speed limit frontage road. By measuring from the aerial photo shown in Figure 9 and given that the topography of the existing road is relatively flat, the sight distance to the left and right is estimated at 60m and 110m, respectively. Therefore, compliance with the minimum sight distance requirement is achieved.

Frontage road speed (Note 4) km/h	Distance (Y) along frontage road m		
	Access driveways other than domestic (Note 5)		Domestic property access (Note 6)
	Desirable 5 s gap	Minimum SSD	
40	55	35	30
50	69	45	40
60	83	65	55
70	97	85	70
80	111	105	95
90	125	130	Use values from 2 nd and 3 rd columns
100	139	160	
110	153	190	

Figure 8 | Minimum sight distance for access driveways, Source: AS/NZS 2890.1:2004



Figure 9 | Vehicle sight distance

3.8. Pedestrian sight lines

On either side of the driveway at the property boundary, no obstruction shall exist that will prevent drivers from observing pedestrian traffic. AS/NZS 2890.1:2004 suggests a minimum of 2.5m x 2.0m sight triangles, as shown in Figure 10, to comply with this requirement. The proposed layout is free from obstruction, so compliance with the pedestrian sight line is achieved.



Figure 10 | Safe pedestrian sight triangles

3.9. Internal circulation

The internal driveway width will be 6.1 metres at its narrowest point, which is adequate for 2-way traffic. Parking is in a 'blind aisle' arrangement. AS/NZS 2890.1:2004 states the following about the depth of a blind aisle:

In car parks open to the public, the maximum length of a blind aisle shall be equal to the width of six 90 degree spaces plus 1 m, unless provision is made for cars to turn around at the end and drive out forwards.

The proposed basement car parking area is not open to the public, therefore this clause does not apply. Furthermore, all car spaces will be designated to tenancies in the building. Therefore, each tenancy can manage the use of their own car space and the likelihood of someone finding no car space (therefore needing to back out again) is very low.

4. CONCLUSIONS AND RECOMMENDATIONS

The purpose of this report is to quantify the impact of the operations of the proposed development on the surrounding road network, in particular with respect to traffic generation and parking demand.

We provide the following conclusions and recommendations:

- Sufficient car parking spaces are provided on-site.
- The access driveway complies with the relevant standards (e.g. AS/NZS 2890 series).
- The minimum exit sight distances to pedestrians and the incoming traffic can be achieved.
- Sufficient space is allocated for internal manoeuvring.

Based on this assessment, we recommend that the proposed development be approved from a traffic engineering perspective.

REFERENCES

Guide to Traffic Generating Developments, Roads and Traffic Authority, Sydney, Version 2.2, October 2002

Australian / New Zealand Standard 2890.1:2004, Standards Australia, Sydney, Amendment No. 1, August 2005

Austroads Design Vehicles and Turning Path Templates Guide, Austroads Ltd., Sydney, 3rd edition, April 2013

Lismore Development Control Plan Part A - Chapter 1 Residential Development, Lismore City Council, Lismore, Amendment No. 35, July 2023

State Environmental Planning Policy (Housing) 2021 Act (NSW)