



2023-07 (50) AFFORDABLE HOUSING DEVELOPMENT 108-114 RAWLINSON STREET, BEGA NSW

Traffic Impact Assessment

Project Details

Title	Traffic Impact Assessment – Ver 2
Project Type	Affordable Housing Development
Project Location	108-114 Rawlinson Street, Bega NSW
Client	Southern Cross Community Housing
Project Reference	2023-07 (50)
Relevant Council	Bega Valley Shire Council
Reviewed By	<p>Ali Raza (CPEng, NER, MIEAust, ProfCertAM, Road Safety Auditor)</p> <p>Principal Traffic and Road Safety Engineer Traffwise Consultants Pty Ltd araza@traffwise.com.au</p>

Document History

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1. Introduction

1.1 Overview

Edmiston Jones, on behalf of Southern Cross Community Housing (**Client**), have commissioned Traffwise Consultants Pty Ltd (Traffwise) to undertake a Traffic Impact Assessment (TIA) study for the proposed affordable housing development in Bega NSW.

Figure 1 shows the location plan of the proposed development.



Figure 1 Proposed Development – Location Plan

Source: Nearmap

1.2 Context

The Client is planning to develop an affordable housing development in Bega NSW at 108-114 Rawlinson Street, Bega NSW.

The proposed development would comprise boarding houses and residential flat buildings.

Figure 2 illustrates the perspective of the proposed development.



Figure 2 Proposed Development Perspective
Source: Edmiston Jones

1.3 Reference Documents/Websites

- Bega Valley Development Control Plan 2013
- Google Maps and Google Traffic Map
- Google Earth Pro
- Nearmap
- RMS Guide to Traffic Generating Developments (2002)
- RMS Guide to Traffic Generating Developments Updated Traffic Surveys (TDT 2013/04a)
- Transport for NSW Website
- Australian Standards - AS/NZS 2890.1:2004 and AS/NZS 2890.6:2009
- State Environmental Planning Policy (Housing) 2021

1.4 Report Structure

- Section 1: **Introduction**
- Section 2: **Existing Conditions**
- Section 3: **Proposed Development**
- Section 4: **Traffic Assessment**
- Section 5: **Parking Assessment**
- Section 6: **Findings**

2. Existing Conditions

2.1 Project Site Locality

The project site is located on Rawlinson Street, west of intersection with Newton Road in Bega NSW. The project comprises of the following two lots:

- LOT2/-/ DP1187097 with area of 6,196 m².
- LOT2/-/DP516732 with area of 3,389 m².

Figure 3 illustrates the site analysis plan of the project site. It is evident that the predominant land use in the vicinity of the site is residential.

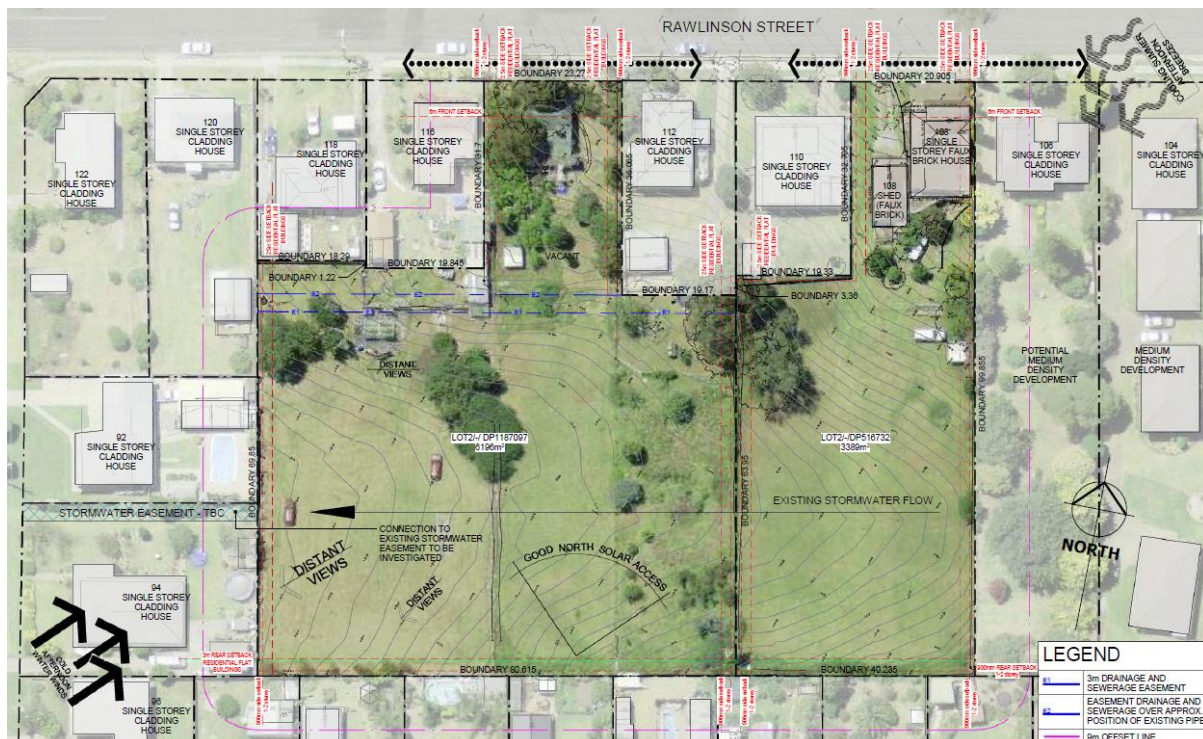


Figure 3 Project Site – Site Analysis Plan
 Source: Edmiston Jones

2.2 Existing Condition and Surrounding Road Network

As shown in **Figure 4**, there is no existing development in LOT2/-/ DP1187097 and an existing single storey house with a shed in LOT2/-/DP516732. The provided plan indicates that the existing structures will be demolished for the construction of the affordable housing development.

Figure 4 also shows that the project site is located on Rawlinson Street, a local road, with access to Princes Highway from Carp Street and Newton Road.

The residents and visitors would be able to access Princes Highway within less than five minute drive from the proposed development.



Figure 4 Project Site – Existing Condition
Source: Nearmap

2.3 Existing Access Provisions

As shown in **Figure 4**, the project site is only accessible from Rawlinson Street. The project site currently has two crossovers on Rawlinson Street, one from each lot i.e. LOT2/-/ DP1187097 and LOT2/-/DP516732.

The provided development plan indicates that the proposal seeks to have no additional crossover and will have only two access points on Rawlinson Street.

2.4 Public Transport Accessibility

The project site is in proximity to the bus stops on Newtown Road, at approximately 5-minute walking distance. The proposed development would be serviced by the existing bus services, providing access to surrounding areas, employment centres and key destinations.

Figure 5 shows the 20-minute walkability catchment of the proposed development site. The Bega shopping strips on Carp Street and Auckland Street are within a 20-minute distance from the proposed development.

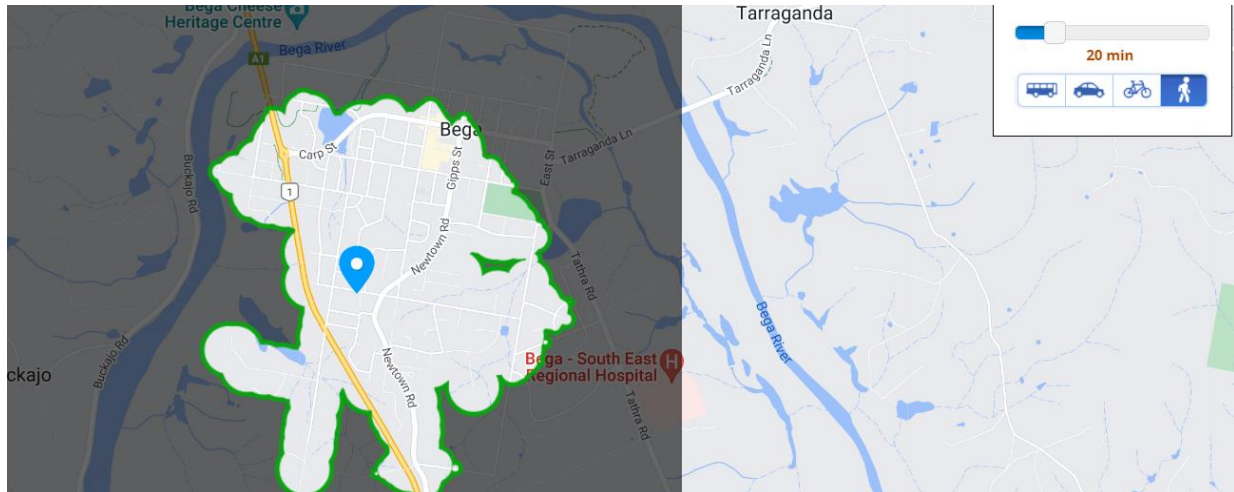


Figure 5 Project Site – Walkability

Source: <https://www.walkscore.com/score/108-rawlinson-st-bega-nsw-australia> (Accessed online on the 10th September 2023)

2.4.1 Project Site – Existing Bus Services

The project is serviced by the existing bus routes with bus stops concentrated along Newtown Road.

As evident from **Figure 6** that the nearest bus stop (**Name: Newtown Rd at Prospect St, No: 2550446**) is located at a distance of only 350 metres from the project site with an average waking time of approximately five minutes.

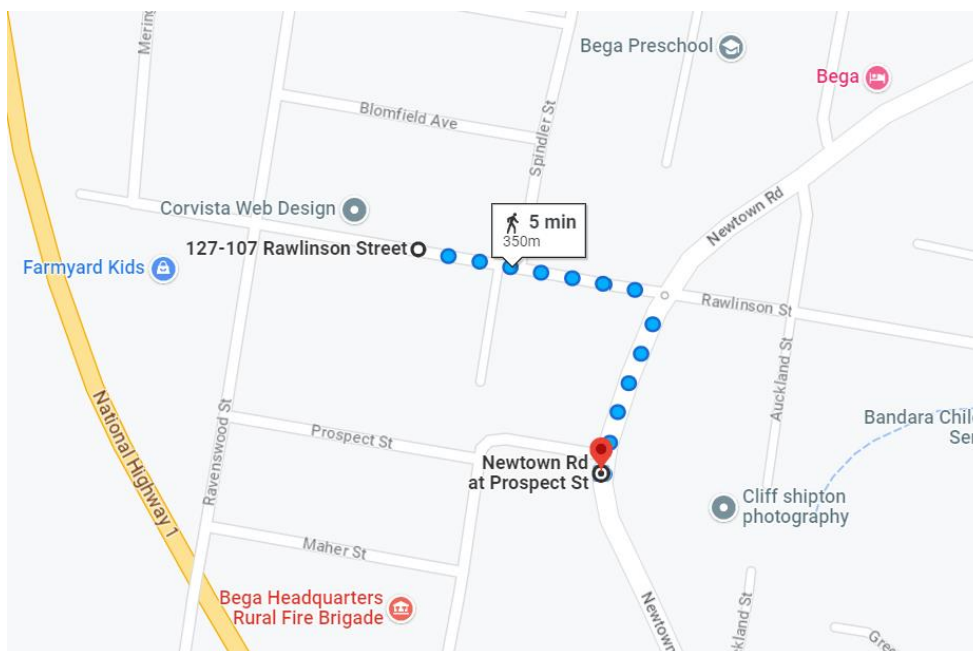


Figure 6 Project Site – Nearby Bus Stops

Source: <https://www.google.com/maps>

Table 1 summarises the key routes operating in the vicinity of the project site.

Table 1 Bus Route Summary

874	Bega to Bermagui
874	Bermagui to Bega
885	Bega to Tathra via Auckland St & SE Regional Hospital
890	Eden to Bega via Merimbula & Wolumla
890	Bega to Eden via Wolumla & Merimbula
891	Bega to Eden via Kalaru & Tura Beach

Source: <https://transportnsw.info/stop?q=G255065#/> (Accessed online on the 10th September 2023)

2.5 Existing Traffic Conditions

As per the trip generation assessment (See **Section 0**), the proposed development is expected to generate a maximum of 19 trips in the peak periods. The minimal trip generation is expected to have no impact on the existing road network.

Therefore, on-site surveys were not carried out, and Traffwise has referred to the Google Typical Traffic Map to assess the existing traffic flow condition in the project site's vicinity. The typical traffic map considers historical traffic conditions on a road network at a particular time of a specific day to reflect an average traffic condition at that time of the day.

Figure 7 illustrates typical traffic conditions in the vicinity of the proposed development site at:

- 08:35 AM, AM Peak Hour on a typical Thursday
- 03:50 PM, PM Peak Hour on a typical Thursday

It is evident from the typical traffic maps that the traffic flow condition on the existing road network is satisfactory, with no indication of congestion in peak hours.

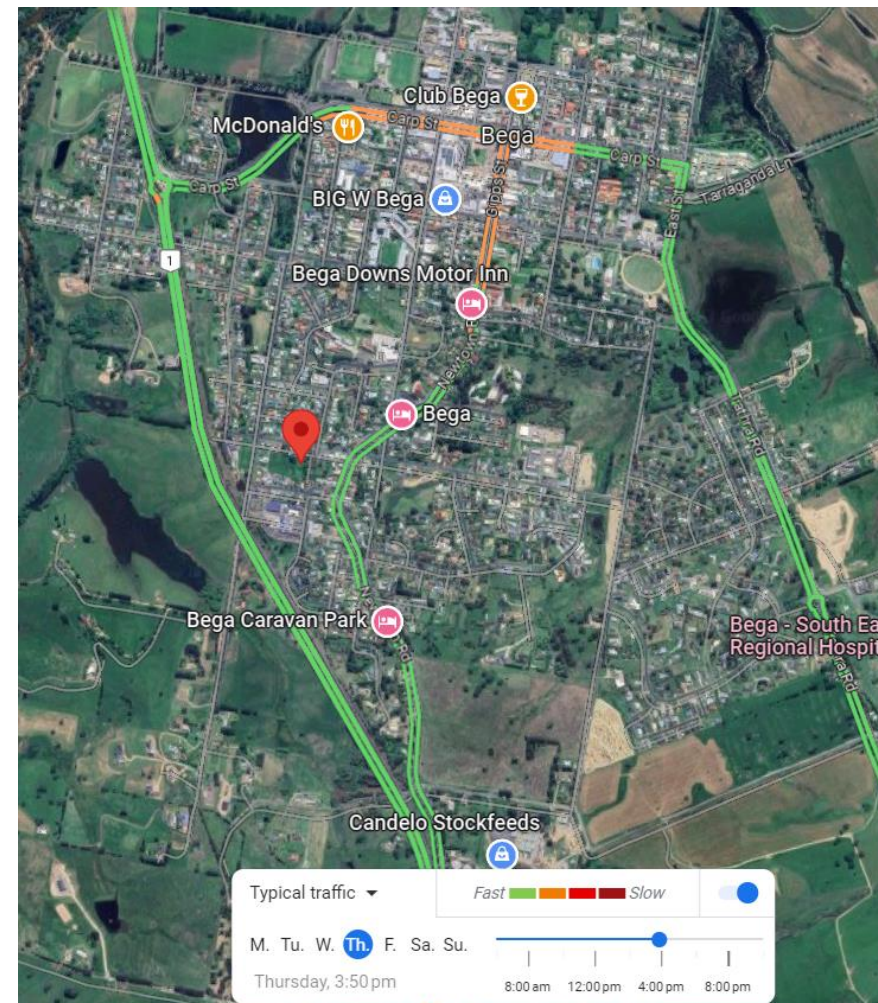
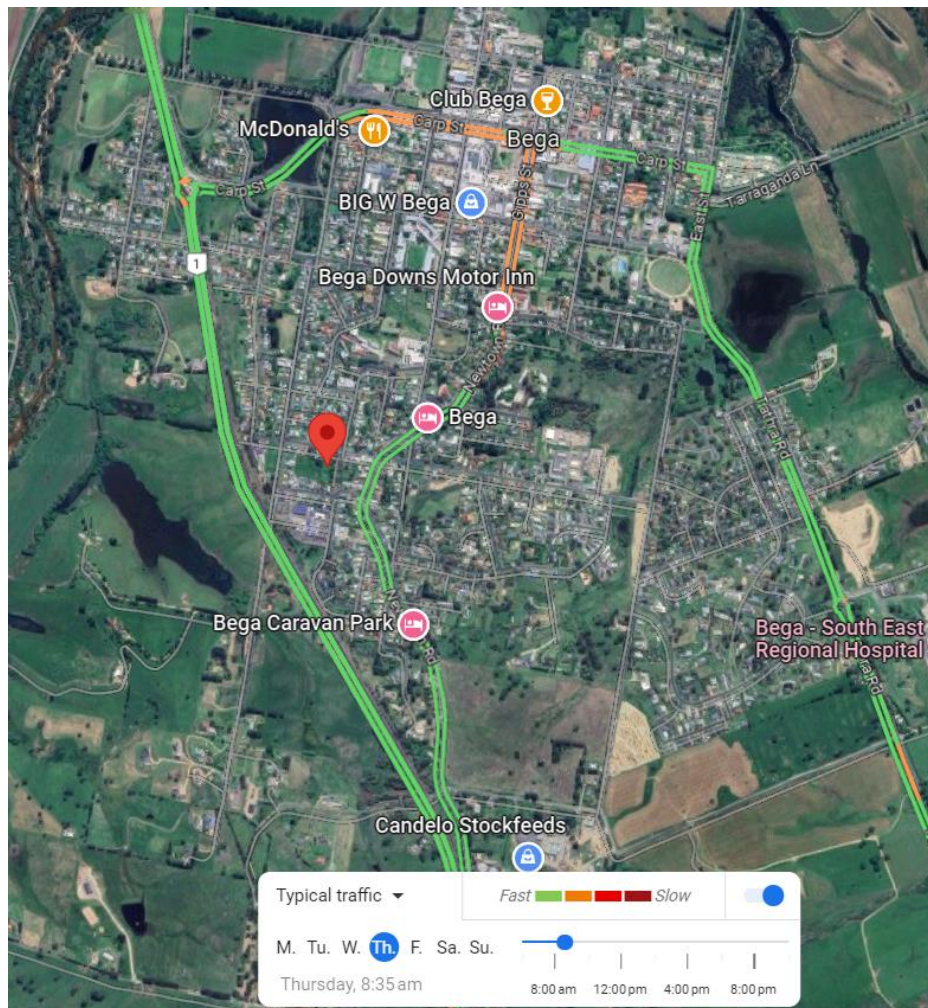


Figure 7 Existing Traffic Flow Condition
Source: Google Live Traffic Maps (Accessed online on the 10th September 2023)

3. Proposed Development

Southern Cross Community is proposing to develop affordable housing development in Bega NSW.

As per the provided information, the proposed development would comprise demolition of existing structures, tree removal and construction of Boarding Houses and Residential Flat Buildings over two stages including lot consolidation and associated works.

Figure 8 illustrates the proposed development plan. The layout plans shared by the architect are provided in **Appendix A**.

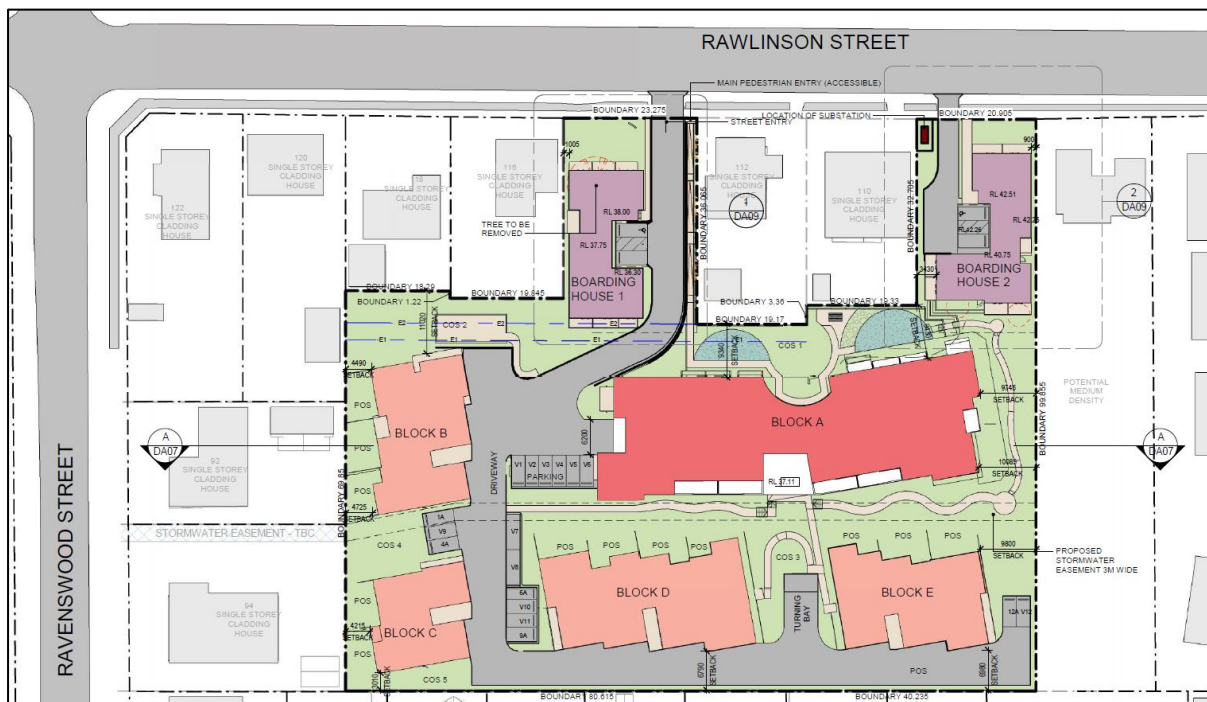


Figure 8 Proposed Development

Source: Edmiston Jones

Based on the information provided, **Table 2** summarises the proposed development's yield.

Table 2 Proposed Development Yield

Block/Building	Type of units	Yield
Block A (Residential Flat Building)	Studio	10
	1 Bed	14
	2 bed	7
Block B (Residential Flat Building)	Studio	2
	2 bed	1
	3 bed	1
	4 bed	1
Block C (Residential Flat Building)	Studio	1
	3 bed	1
	4 bed	1
Block D (Residential Flat Building)	Studio	4
	2 bed	2
	3 bed	1
	4 bed	1
Block E (Residential Flat Building)	Studio	2
	2 Bed	1
	3 bed	1
	4 bed	1
Boarding House 1	Rooms	6
Boarding House 2	Rooms	6

4. Traffic Assessment

4.1 Trip Generation Rates

Residential Units

The traffic generation for high-density residential units is specified in the Roads and Maritime (RMS) Guide to Traffic Generating Developments Updated Traffic Surveys (TDT 2013/04a), [Link](#).

The trip generation rates in the guide are based on per unit, per car space and per bedroom. For the purposes of trip generation, average trip rates based on per bedroom were adopted to ensure conservative assessment. **Table 3** summarises the adopted trip rates to assess the trip generation from the proposed high-density residential units.

Table 3 Trip Generation Rates (Regional Average) – High-Density Developments

AM Peak (1 Hour) Per Bedroom	0.21
PM Peak (1 Hour) Per Bedroom	0.15
Daily Vehicle Trips Per Bedroom	1.93

Boarding House

Neither of the RMS Guide or RMS Guide Update policies include traffic generation rates for boarding house developments.

it is assumed that the trip generation from boarding rooms will be lower than the low and medium density dwellings. Therefore, trip rates for high-density development were considered more relevant.

Table 4 summarises the adopted trip rates to assess the trip generation from the proposed boarding room.

Table 4 Trip Generation Rates – Boarding Room

AM Peak (1 Hour) Per Bedroom	0.21
PM Peak (1 Hour) Per Bedroom	0.15
Daily Vehicle Trips Per Bedroom	1.93

It is important to note that trip rates described in **Section 4.1** include both In and Out trips. The typical 20% IN and 80% OUT in AM Peak and the opposite IN and OUT proportion in the PM Peak was adopted.

4.2 Proposed Development – Trip Generation

Table 5 summarises the detailed trip generation based on the adopted trip rates described in **Section 4.1**. It is evident that the proposed development is expected to generate a maximum of 19 trips in any typical peak-hour period.

Table 5 Total Trip Generation Summary

Residential Flat Building Units					
Unit Type	Quantity	Number of Bedrooms	Trip Generation (per Bedroom)		
Studio	19	19	Weekday AM Peak	Weekday PM Peak	Daily Trips
1-Bed Unit	14	14			
2-Bed Unit	11	22			
3-Bed Unit	4	12			
4-Bed Unit	4	16			
Total Number of Bedrooms		83			
TOTAL TRIPS			17	12	160
IN			3	10	80
OUT			14	2	80
Boarding Rooms					
Unit Type	Quantity	Number of Bedrooms	Trip Generation (per Boarding Room)		
1-Bed	12	12	Weekday AM Peak	Weekday PM Peak	Daily Trips
Total Number of Bedrooms		12			
TOTAL TRIPS			3	2	27
IN			1	2	14
OUT			2	0	14

Total Peak Hour Trips			
Peak Period	IN	Out	Total
Weekday AM Peak	4	11	15
Weekday PM Peak	16	3	19

4.3 Potential Traffic Impacts

As described in **Section 4.2** and summarised in **Table 5**, the proposed development is expected to generate a maximum of **19 trips** in the peak hour on a typical weekday.

Considering minimal trip generation, the IN & OUT trip proportion and further trip distribution on the surrounding road network, there will be an insignificant increase in traffic on the surrounding road network.

Therefore, it is envisaged that the proposed **affordable housing development** is not expected to have any additional significant impact on the surrounding transport network. Also, the key intersections are expected to keep operating at the same level of service with no material impact on intersection delays and degree of saturation.

4.4 Waste Collection and Loading/Unloading Provisions

As per the provided information, the waste collection and loading/unloading will be undertaken within the premises, using maximum MRV size (8.8 m) vehicle.

Figure 9 illustrates that the bin store areas. Please refer to the waste management report for more details.

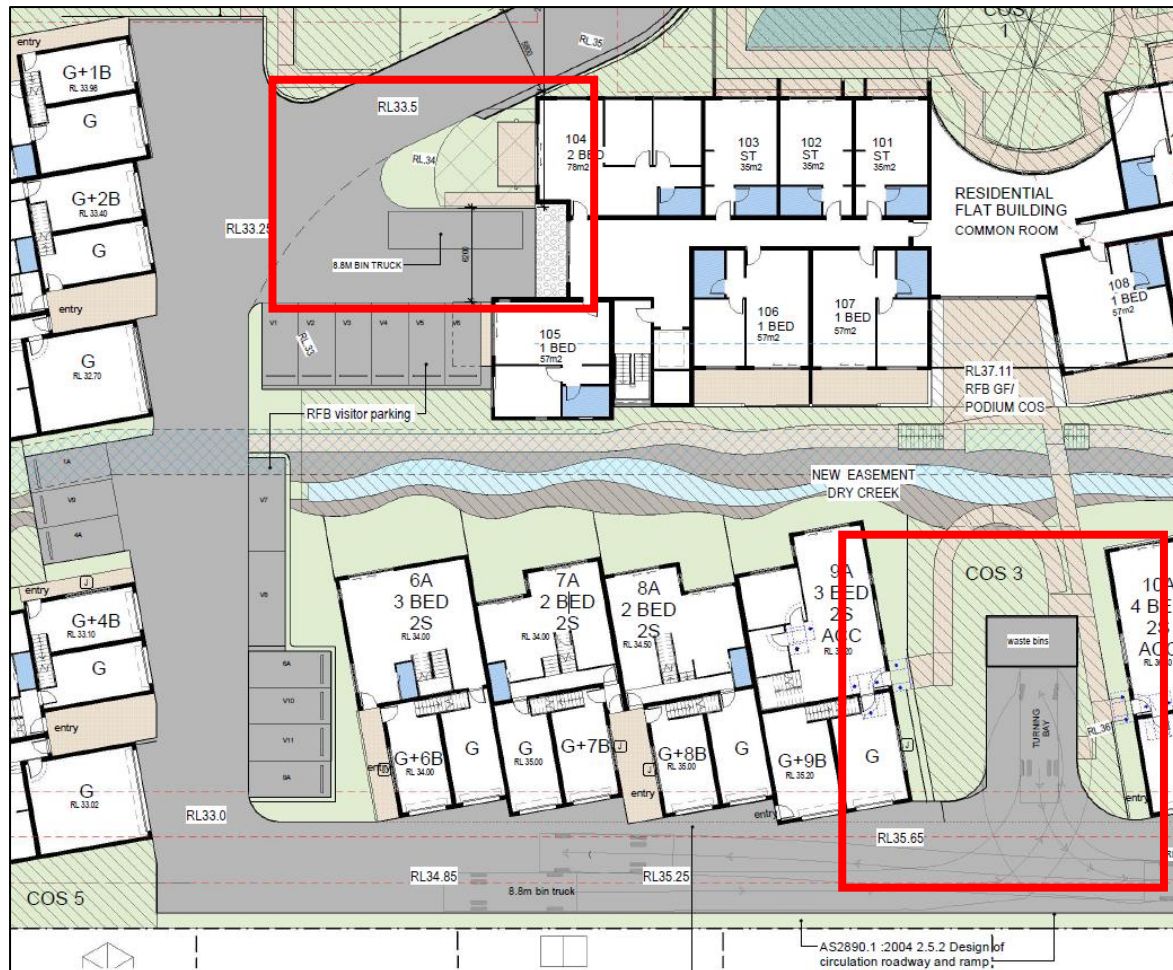


Figure 9 Proposed Waste Collection Points

Source: Edmiston Jones

Traffwise also carried out swept paths for both waste collection points proposed within the development. The swept paths are based on provided plans and were drawn using Autoturn tool and MRV truck template.



Figure 10 Swept Paths for service vehicle (MRV) Waste Collections Area 1
Source: Based on plans provided by Edmiston Jones and using Autoturn tool

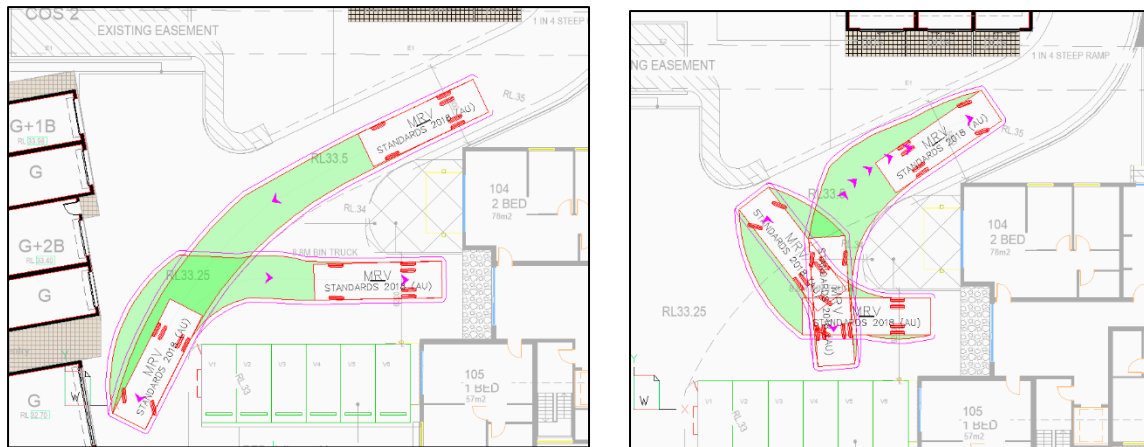


Figure 11 Swept Paths for service vehicle (MRV) for Waste Collections Area 2

Source: Based on plans provided by Edmiston Jones and using Autoturn tool

- The swept paths carried out are **Not For Construction** purposes.
- Based on drawings provided by the Architect
- Autoturn Tool was used for swept paths
- **MRV** vehicle template was used
- **300mm** body clearance envelope was adopted
- Turn on the spot was active for swept path assessment of parking bays

4.5 Proposed Access Arrangements

Figure 13 shows the location of the proposed access points for vehicles and pedestrians on Rawlinson Street.

It is important to note that a separate pedestrian entry is proposed to minimise conflict between vehicles and pedestrians.

4.5.1 Sight Distance at Crossovers

As per Section 3.2.4 of AS 2890.1:2004, the minimum sight distance at the intersection of access driveway (crossover) and the frontage road is 45 metres for 50 km/h speed zone.

It is recommended to introduce parking restriction as shown in **Figure 12**. Also, consider painted island to enhance visibility of oncoming vehicles.

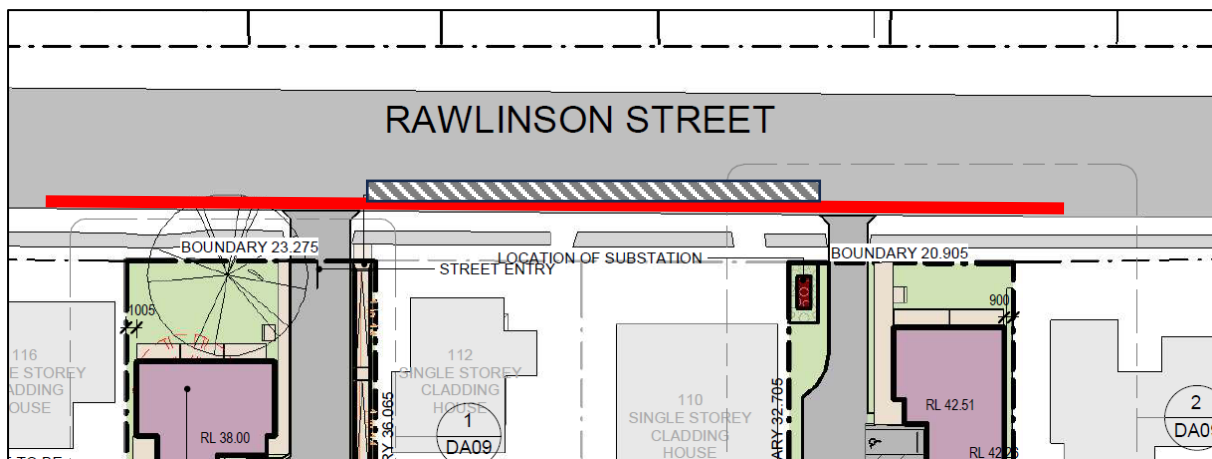
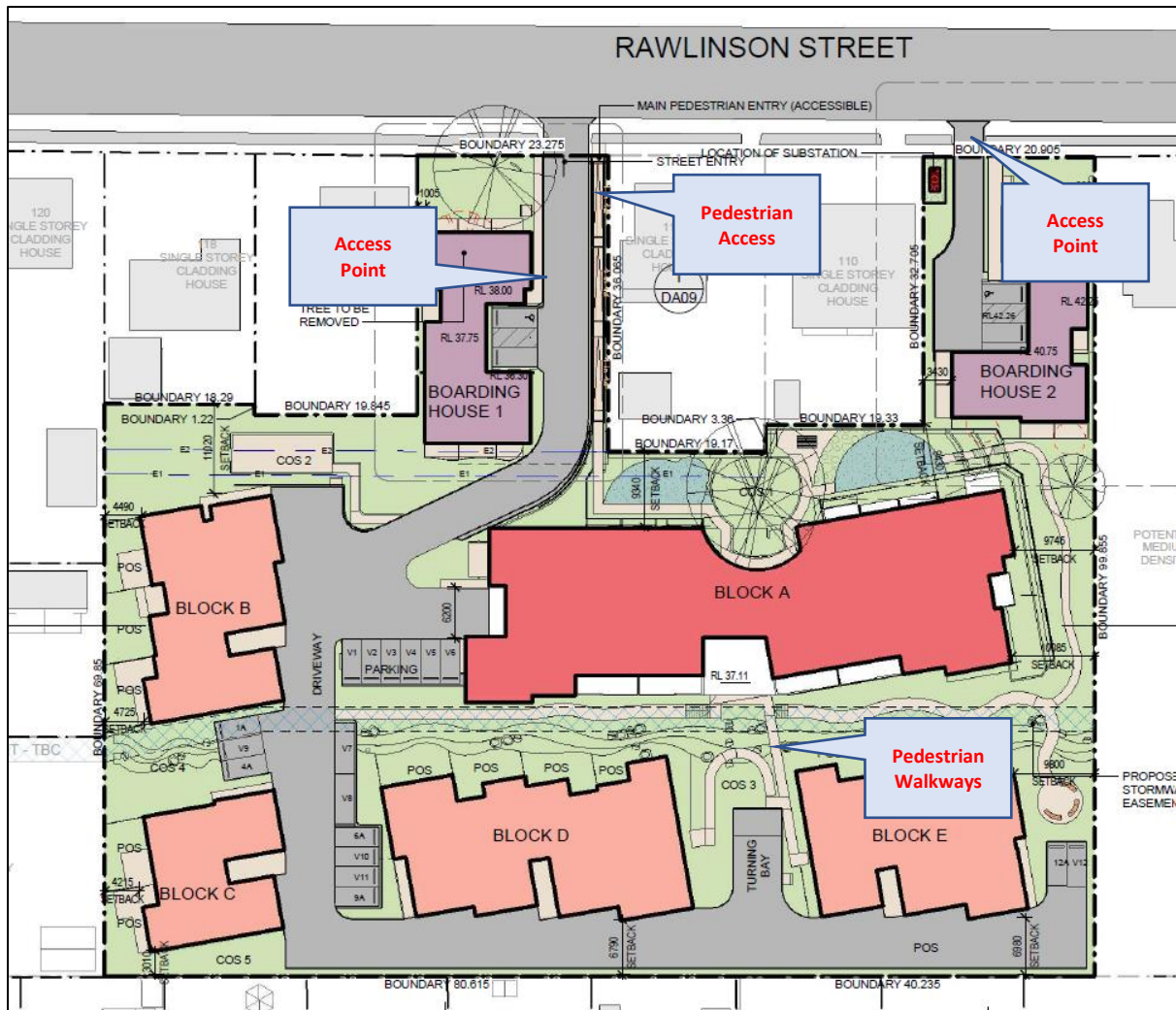


Figure 12 Proposed Parking Restrictions and Painted Island

Source: Edmiston Jones



5. Parking Assessment

5.1 Statutory Parking Requirements

Residential Units

As advised by the planner, the residential flat building is within 600 metres walking distance of B2 zones in Bega. Therefore, the following parking rates from the DCP has been adopted:

- For 1-2 bedroom unit:
 - 1 parking space per dwelling
 - 1 bicycle storage space per dwelling
- For 3 bedroom unit:
 - 1.5 parking spaces per dwelling
 - 1 bicycle storage space per dwelling
- For 4+ bedroom units:
 - 2 parking spaces per dwelling
 - 1 bicycle storage space per dwelling

Boarding House

As advised by the planner, the boarding houses are within 800m of a business zone and 400m from a bus stop. Therefore, the proposed development is within an accessible area.

Hence, parking rate of 0.2 spaces per boarding room has been adopted as specified in the State Environmental Planning Policy (Housing) 2021.

Visitor Parking

In line with the DCP requirements the visitor parking rate of 1 visitor space for every 5 dwellings has been adopted or part thereof.

5.2 Proposed Parking Provisions

Parking Provisions for Residents

The assessment indicates that the proposed development should have 59.4 car parking spaces for residents.

It is noted from the provided information that a total of 63 car parking spaces are proposed for residents. Therefore, the proposed parking provisions comply with the statutory parking requirements.

Table 6 summarises the proposed parking provisions for residents.

The assessment indicates that the proposed development should have **59.4** car parking spaces for residents.

It is noted from the provided information that a total of 63 car parking spaces are proposed for residents. Therefore, the proposed parking provisions comply with the statutory parking requirements.

Table 6 Proposed Parking Provisions

Block/Building	Type of units	Yield	Parking rate	Required parking	Proposed parking
Block A (RFB)	Studio	10	1 space per unit	10	10
	1 Bed	14		14	14
	2 bed	7		7	7
Sub-Total				31	31
Block B (RFB)	Studio	2	1 space per unit	2	2
	2 bed	1		1	1
	3 bed	1	1.5 spaces per unit	1.5	2
	4 bed	1	2 spaces per unit	2	2
Sub-Total				6.5	7
Block C (RFB)	Studio	1	1 space per unit	1	1
	3 bed	1	1.5 spaces per unit	1.5	2
	4 bed	1	2 spaces per unit	2	2
Sub-Total				4.5	5
Block D (RFB)	Studio	4	1 space per unit	4	4
	2 bed	2		1	1
	3 bed	1	1.5 spaces per unit	1.5	2
	4 bed	1	2 spaces per unit	2	2
Sub-Total				8.5	9
Block E (RFB)	Studio	2	1 space per unit	2	2
	2 Bed	1		1	1
	3 bed	1	1.5 spaces per unit	1.5	2
	4 bed	1	2 spaces per unit	2	2
Sub-Total				6.5	7
Boarding House 1	Rooms	6	0.2 space/room	1.2	2
Boarding House 2	Rooms	6		1.2	2
Sub-Total				2.4	4
Total Parking				59.4	63

Parking Provisions for Visitors

The proposed development comprises 52 residential units. Therefore, 10.4 parking spaces are required for visitors.

As per the provided information, 12 parking spaces are proposed for the visitors that comply with the DCP requirements.

5.2.1 Parking Requirements – Bicycle and Motorcycles

The Bega Valley Development Control Plan 2013 (**DCP**) specifies parking rate of 1 bicycle storage space per dwelling for a residential flat building. As the proposed development comprises 52 residential units. Therefore, the architect has confirmed that they will propose 52 bicycle parking spaces.

The DCP does not specify bicycle rates for boarding house and the motorcycle parking rates for motorcycles are not provided in the DCP.

5.3 Parking Layout Review

As per **Section 1.4** and **Table 1.1** of the Australian Standard (**AS/NZS 2890.1:2004**), the proposed development's off-street parking facility can be classified as User Class "1A". The following are the minimum parking area requirements for User Class "1A" parking facility:

- All 90° angle parking with a minimum dimension of 5.4 m × 2.4 m and aisle width of 5.8 m
- Parallel parking with a minimum dimension of 2.1m x 6.2 m and aisle width of 3.1 m
- Minimum 3m wide access driveway
- Minimum 5.5 m two-way circulation roadway

The following points have been noted from the parking area plans designed by the Architect and provided information:

- A 5.5m wide two-way access driveway (crossover) is proposed for the main entrance.
- A 3.6m wide two-way access driveway for boarding house 2 has been proposed.
- Pedestrian sight triangle has been proposed at both access driveways.
- Minimum 5.8m wide circulation roadway have been proposed.
- **Table 7** summarises dimensions of parking spaces proposed for each residential flat buildings/blocks and boarding houses.

Table 7 High Level Parking Layout Review

Block/Building	Proposed parking	Layout of Parking Spaces
Block A	31	<ul style="list-style-type: none"> • 31 parking bays are proposed including four accessible bays • All bays have dimension of 2.5m * 5.5m • All accessible have a shared zone of similar dimension
Block B	7	<ul style="list-style-type: none"> • Three enclosed single car parking area (6m * 3.3m) have been proposed • One enclosed single car parking area (6m * 4.4m) has been proposed • One double car parking area (7.2m * 6m) has been proposed • One open parking space has been allocated to Unit 1A
Block C	5	<ul style="list-style-type: none"> • Two enclosed single car parking area (6m * 3.3m) have been proposed • One double car parking area (7.2m * 6m) has been proposed • One open parking space has been allocated to Unit 4A
Block D	10	<ul style="list-style-type: none"> • Six enclosed single car parking area (7.1m * 3.3m) have been proposed • One enclosed single car parking area (7.1m * 4.1m) has been proposed • One enclosed single car parking area (6.8m * 4.1m) has been proposed • Two open parking spaces have been allocated to Unit 6A and 9A units
Block E	7	<ul style="list-style-type: none"> • One enclosed double car parking area (7.2m * 6.2m) has been proposed • One enclosed single car parking area (7.1m * 3.3m) has been proposed • One enclosed single car parking area (7.1m * 3.5m) has been proposed • Two enclosed single car parking area (7m * 3.3m) has been proposed • One open parking space have been allocated to Unit 12A

Block/Building	Proposed parking	Layout of Parking Spaces
Boarding House 1	2	<ul style="list-style-type: none"> Two open car parking spaces have been proposed, including one accessible bay
Boarding House 2	2	<ul style="list-style-type: none"> Two open car parking spaces have been proposed, including one accessible bay
Visitor Parking	12	<ul style="list-style-type: none"> 10 perpendicular open parking spaces (5.4m * 2.4m) have been allocated Two parallel open parking spaces (6.2m * 2.4m) have been allocated

This traffic report only includes a high-level review of parking bay widths, aisle width, access driveway width and sight distance only.

Designer/Architect to ensure compliance with all other aspects including gradients, basement ramp, drainage, pavement design, pedestrian facility/provision design and circulation roadway design etc.

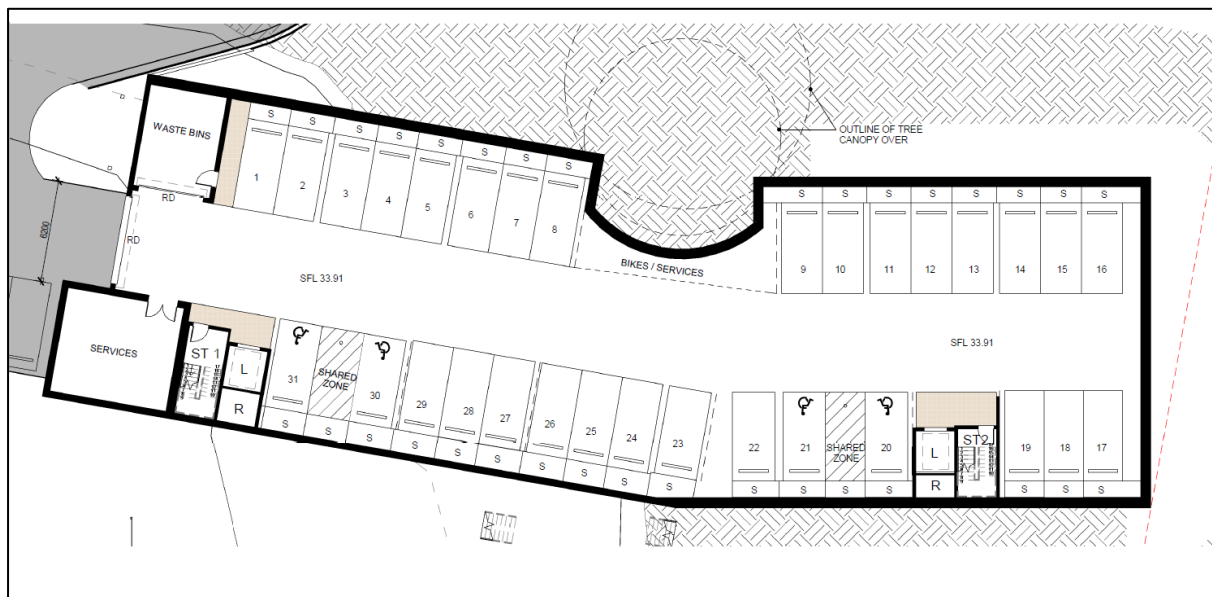


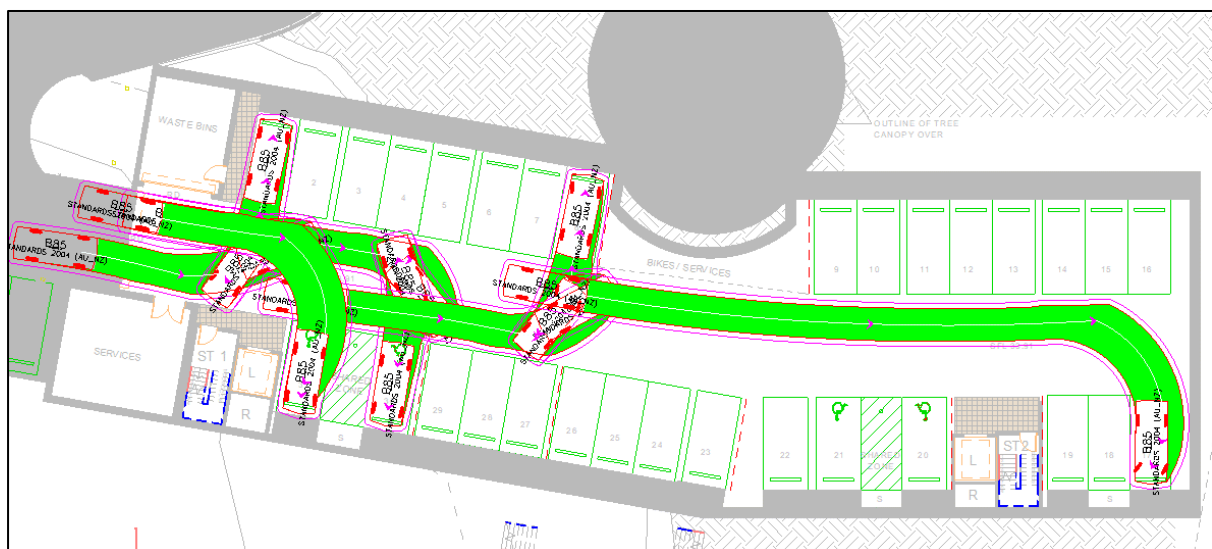
Figure 14 Proposed Basement Parking

Source: Edmiston Jones

5.4 Swept Path Assessment

Traffwise has carried out swept path assessment using B85 vehicle template to check movement patterns to and from a few parking bays. The Architect provided the base drawings, and autoturn was used to run swept paths.

IN Movement



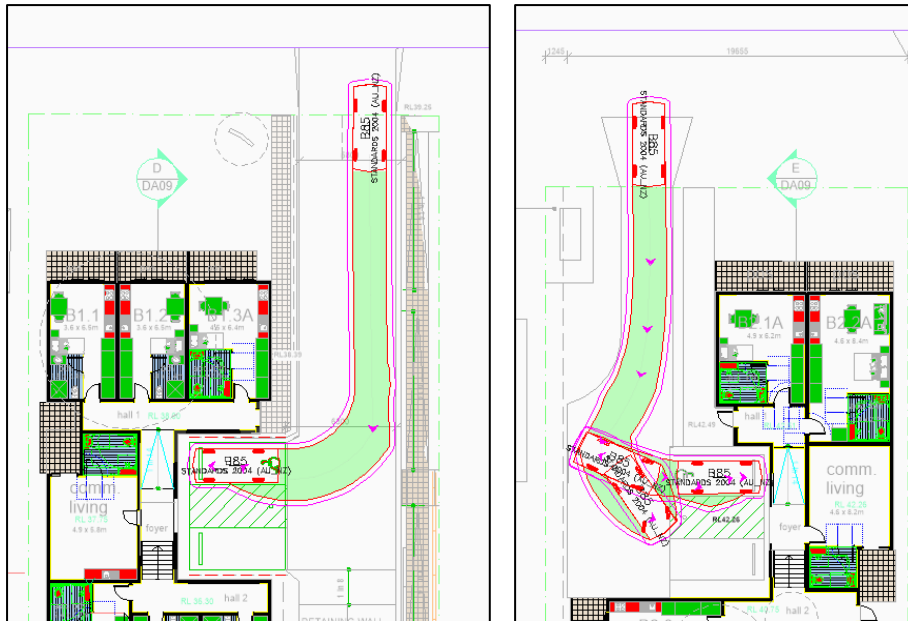




Figure 16 EXIT movement pattern from parking bays

- The swept paths carried out are **Not For Construction** purposes.
- Based on drawings provided by the Architect
- Autoturn Tool was used for swept paths
- B85 vehicle template was used
- 300mm body clearance envelope was adopted
- Turn on the spot was active for swept path assessment of parking bays

6. Findings

Edmiston Jones, on behalf of Southern Cross Community Housing (Client), have commissioned Traffwise Consultants Pty Ltd (Traffwise) to undertake a Traffic Impact Assessment (TIA) study for the proposed affordable housing development in Bega NSW.

Based on the assessment and discussions presented within this report, the following key points are noted:

- The project site is located on Rawlinson Street, west of intersection with Newton Road in Bega NSW. The project comprises of the following two lots:
 - LOT2/-/ DP1187097 with area of 6,196 m².
 - LOT2/-/DP516732 with area of 3,389 m².
- The project site is only accessible from Rawlinson Street. The project site currently has two crossovers on Rawlinson Street, one from each lot i.e. LOT2/-/ DP1187097 and LOT2/-/DP516732.
- The nearest bus stop (Name: Newtown Rd at Prospect St, No: 2550446) is located at a distance of only 350 metres from the project site with an average waking time of approximately five minutes.
- The proposed development would comprise demolition of existing structures, tree removal and construction of Boarding Houses and Residential Flat Buildings over two stages including lot consolidation and associated works.
- The proposed development is expected to generate a maximum of **19 trips** in the peak hour on a typical weekday.
- Considering low trip generation, IN & OUT trip proportion, and further distribution of traffic on the surrounding transport network, the proposed development is not expected to significantly impact the surrounding transport network.
- The assessment indicates that the proposed development should have a total of 69.8 car parking spaces, 59.4 for residents and 10.4 for visitors.
- It is noted from the provided plans that a total of 76 car parking spaces are proposed. Therefore, the proposed parking provisions comply with the statutory parking requirements.
- As per the provided information, the waste collection will be undertaken within the premises by a private company using a maximum MRV size truck.

Appendix A

DEVELOPMENT PLANS







A Traffic Engineering and Road Safety Consultancy

Contact Us

info@traffwise.com.au

