Traffic Impact Assessment

Friends Road, Williams Road, Hoopers Road (Rosedale)

Client

[redacted]

Issued
12/11/2024

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Revision Table

REV	DESCRIPTION	DATE	[redacted]	AUTHORISED
1.0	Submission	9/11/2021		
2.0	Submission	10/10/2022		
3.0	Submission	15/08/2024		
4.0	Submission	12/11/2024		

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1 PREAMBLE

1.1 INTRODUCTION

Beveridge Williams has been engaged to prepare a Traffic and Transport Assessment for the proposed multi-lot residential subdivision that will be bordered by Friends Road, Williams Road, Hoopers Road and Willung Road, Rosedale. It is understood that the subdivision will comprise a total of 85 residential lots.

The following report sets out the findings of this assessment based on the investigations undertaken by Beveridge Williams.

1.2 OBJECTIVES

Based on the scope of Beveridge Williams' engagement, the information contained within this assessment has been prepared to respond the following objectives:

- Review of surrounding road network;
- Review background documentation, plans and council correspondence;
- Road Hierarchy Considerations;
- Traffic Impact Considerations;
- Design Considerations;
- Other Considerations

1.3 FACTS AND MATTERS RELIED UPON

In preparing this assessment, Beveridge Williams have relied upon the following facts, matters and information:

- Wellington Planning Scheme;
- Indicative Subdivision Plans Version 06; prepared by Beveridge Williams dated; 21/12/2023.
- Australian Standards;
- Infrastructure Design Manual; and
- Desktop inspection observations.

2 EXISTING CONDITIONS

2.1 SUBJECT SITE

The subject site comprises 15 properties bordered by Friends Road, Williams Road, Hoopers Road and Willung Road, Rosedale, and occupies a total site area of approximately 75.8 hectares. While the subject site is generally cleared, it also has numerous avenues of trees, several dams and around 10 existing residential dwellings. The site boundary has approximately 840m of frontage onto Friends Road to the west and Willung Road to the east, and 1km of frontage onto Hoopers Road to the south and Williams Road to the north.

The subject site existing conditions are shown in Figure 1.

Figure 1: Subject Site Location

2.2 SUBJECT SITE CONTEXT

Located within the Shire of Wellington local government area, the subject site is mostly zoned as a Rural Living Zone 1 (RLZ1) with one lot zoned as Public Use Zone – Service and Utility (PUZ1) and another as Public Use Zone – Local Government (PUZ6). The zoning configuration for each lot within the subject site is shown in Figure 2.

To the immediate west of the subject site, the adjacent properties are zoned as RLZ1. Further to the west of this, and to the south and east of the subject site, the land is classified as Farming Zone (FZ). To the immediate north there is a Low Density Residential Zone (LDRZ) area. After that, the land that is zoned as Industrial 1 Zone (IN1Z) and General Residential Zone – Schedule 1 (GRZ1). The subject site and surrounding lots are generally undeveloped land.

The site is located roughly 2km south of the town centre of Rosedale, 23km east of Traralgon, and 27km west of Sale. Figure 3 shows the location of the site with respect to the surrounding area.

Figure 2: Zoning Configuration Within Subject Site

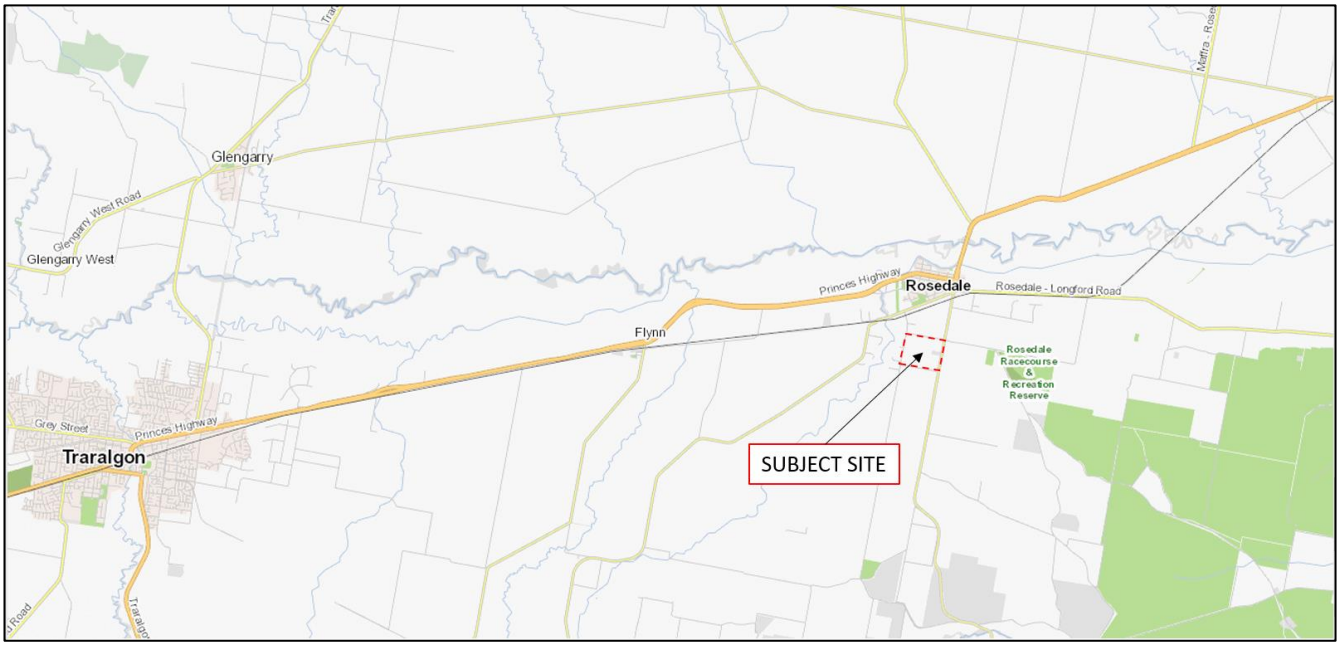

Figure 3: Subject Site Context

2.3 ROAD NETWORK

The existing road network is managed and under the authority of the Shire of Wellington and allows the subject site to be accessed via Willung Road, Friends Road, Hoopers Road and Williams Road. Willung Road is a major access road that operates at a posted speed limit of 80km/h while the other three are local roads that operate with an unposted default rural speed limit of 100km/h. All four roads allow for two-way traffic. There are currently no footpaths along the frontage of the site. Specific details regarding the existing and future road conditions are as follows:

2.3.1 FRIENDS ROAD

Friends Road is aligned in a north-south direction and intersects with and terminates at Rosedale-Flynns Creek Road 1km to the north and Rices Road 6.2km to the south. The total length of Friends Road is roughly 7.2km. The purpose of this road is to facilitate local traffic movements generated from farms and residencies in the surrounding countryside. Just south of the intersection of Friends Road and Hoopers Road, the carriageway transitions from sealed to unsealed. To the north, the length of road that is sealed is approximately 1.6km while the length of the road to the south that is unsealed is 5.6km. The road is roughly 7m-wide and is contained within a 20m road reserve.

2.3.2 HOOPERS ROAD

Hoopers Road intersects with and terminates at Friends Road to the west and Willung Road to the east. This road provides a local access road function. Hoopers Road is roughly 1km long and has an unsealed road width of approximately 5.5m contained within a 20m road reserve.

2.3.3 WILLIAMS ROAD

Williams Road terminates at Friends Road to the west and intersects with Willung Road to the east before continuing as the Rosedale-Stradbroke Road, which connects the townships of Rosedale to the north and Stradbroke to the east. This road provides a local access road function. Williams Road is roughly 1km long and has an unsealed road width of approximately 5.5m contained within a 60m road reserve.

2.3.4 WILLUNG ROAD

Willung Road is aligned in a north-south orientation and intersects with Williams Road to the north and Hoopers Road to the south. The purpose of this road is to connect Rosedale in the north (it merges with the Rosedale-Stradbroke Road) to the Gormandale-Stradbroke Road in the south, and to distribute and collect local traffic movements from and to the local road network. Willung Road is 12.6km long and has a sealed carriageway. The road width is approximately 7m and is contained within a 60m road reserve.

Figure 4: Existing Road Network

3 PROPOSAL

3.1 GENERAL

Based on the indicative subdivision plan (ISP), dated 11 June 2021, it is proposed to develop the subject site into residential lots with a proposed yield of 85 lots. The yield breakdown includes 85 rural lots with an average lot size of 8,158m^2. There are 4 battle axe lots with narrow driveway accesses to the frontage road.

There are two proposed streets between Williams Road and Hoopers Road that will run parallel to Friends Road and Willung Road.

The proposed subdivision layout is provided in Figure 5 below. The full subdivision plan is provided in Appendix A.

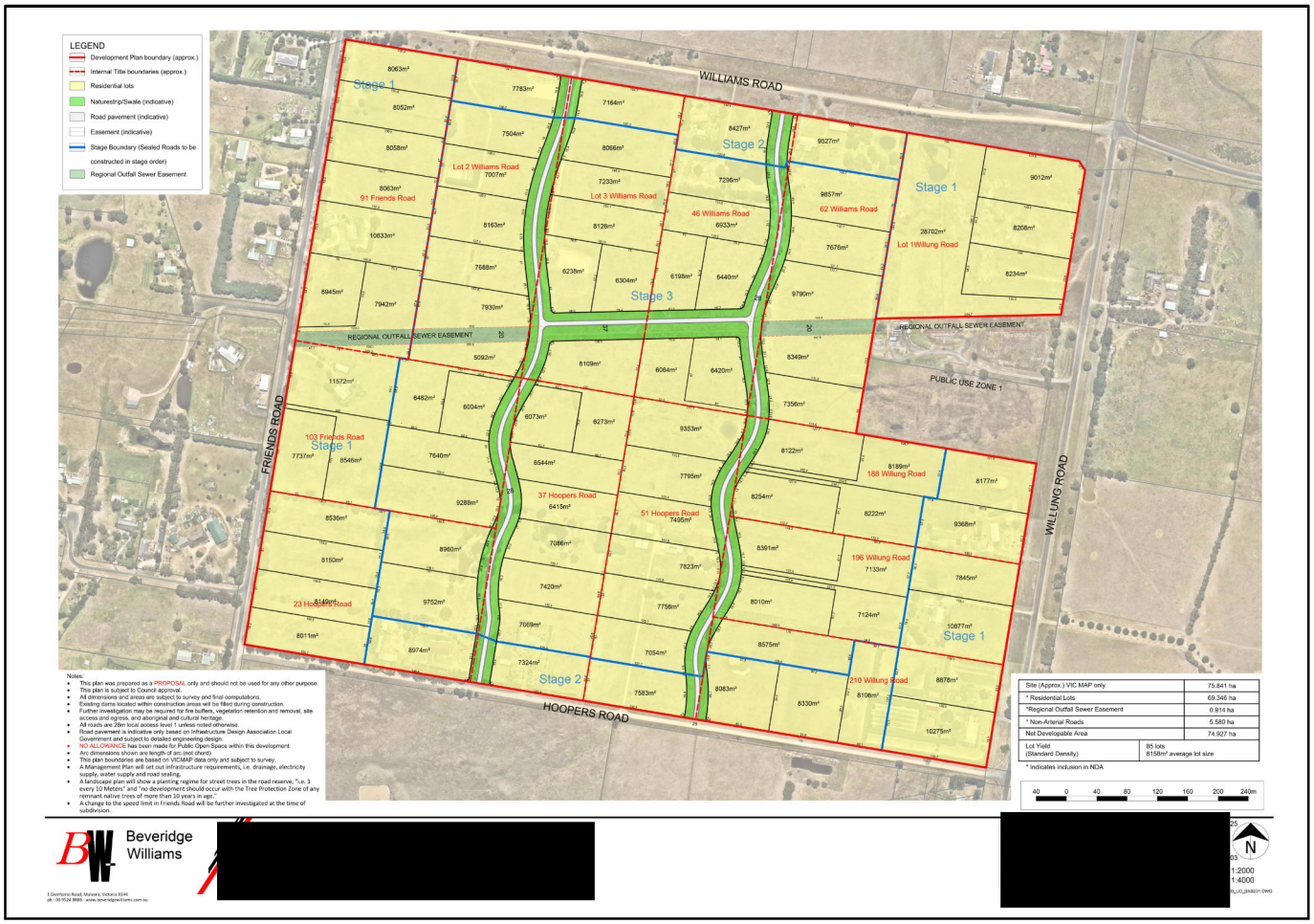

Figure 5: Subdivision Plan

3.2 PRIMARY SITE ACCESS

The site's Williams Road frontage will be sealed to provide the primary access to the site for the development of 85 lots. This will accommodate most of the post-development traffic movements generated by the subject site (85 lots with 765 vehicle movements per day). Access will also be available via Hoopers Road to the south, which will also be sealed. Most traffic will head north towards Princes Highway to access the township of Rosedale and to travel west towards Traralgon and east to Sale.

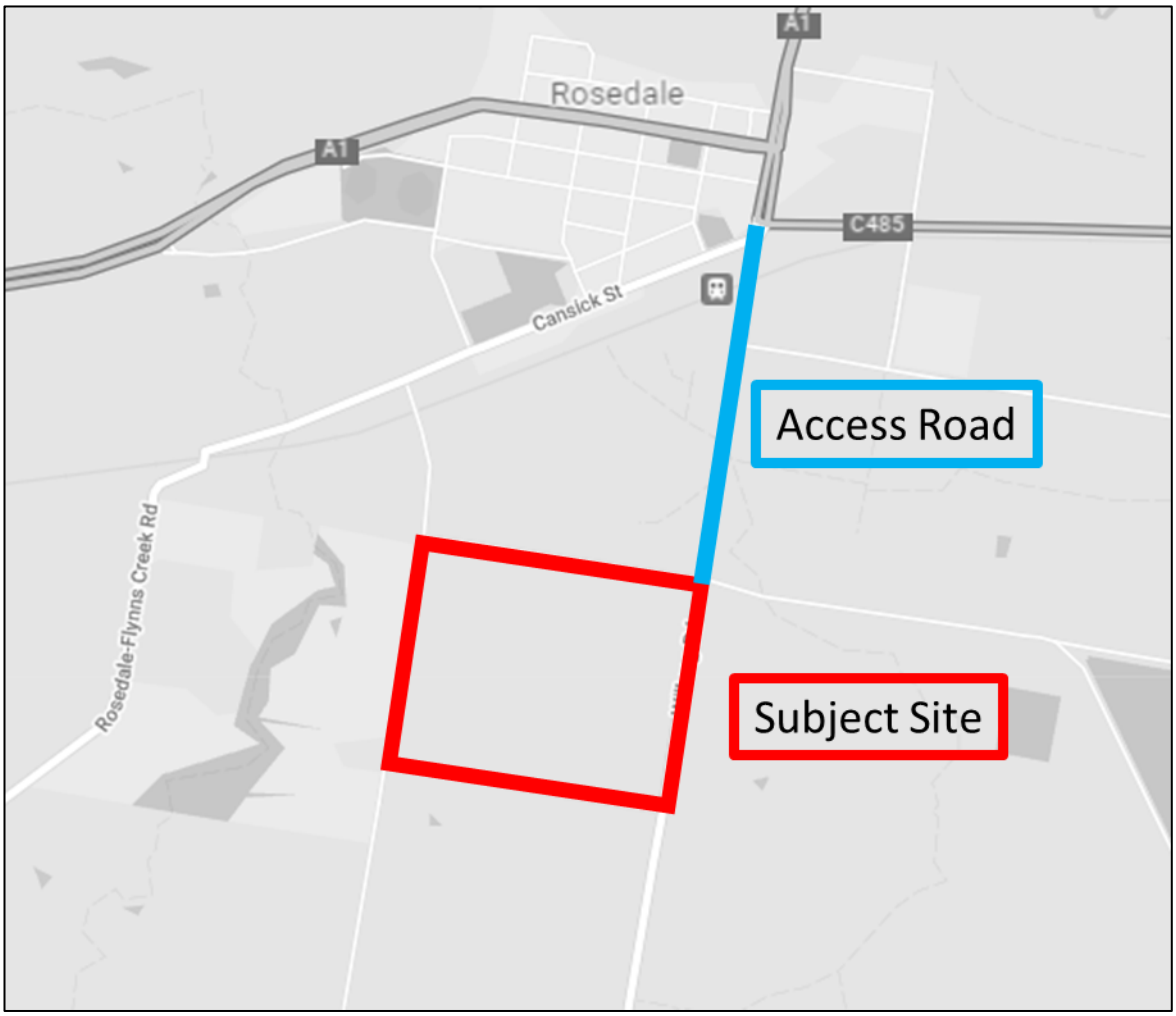

Figure 6: Primary Site Access

3.3 INTERNAL ROAD NETWORK HIERARCHY

It is proposed to provide two internal access streets running in a north-south orientation. These streets will service the vehicle movements generated by the lots that do not front any of the four existing external roads. Hoopers and Williams Road will connect Friends Road and the two internal access streets to Willung Road (a higher order Connector Road) from where vehicle movements can be distributed to the wider surrounding network. The proposed internal road hierarchy is illustrated in Figure 7 with the legend listing the road reserve widths for each of the streets. The individual cross sections are discussed in Section 3.4.

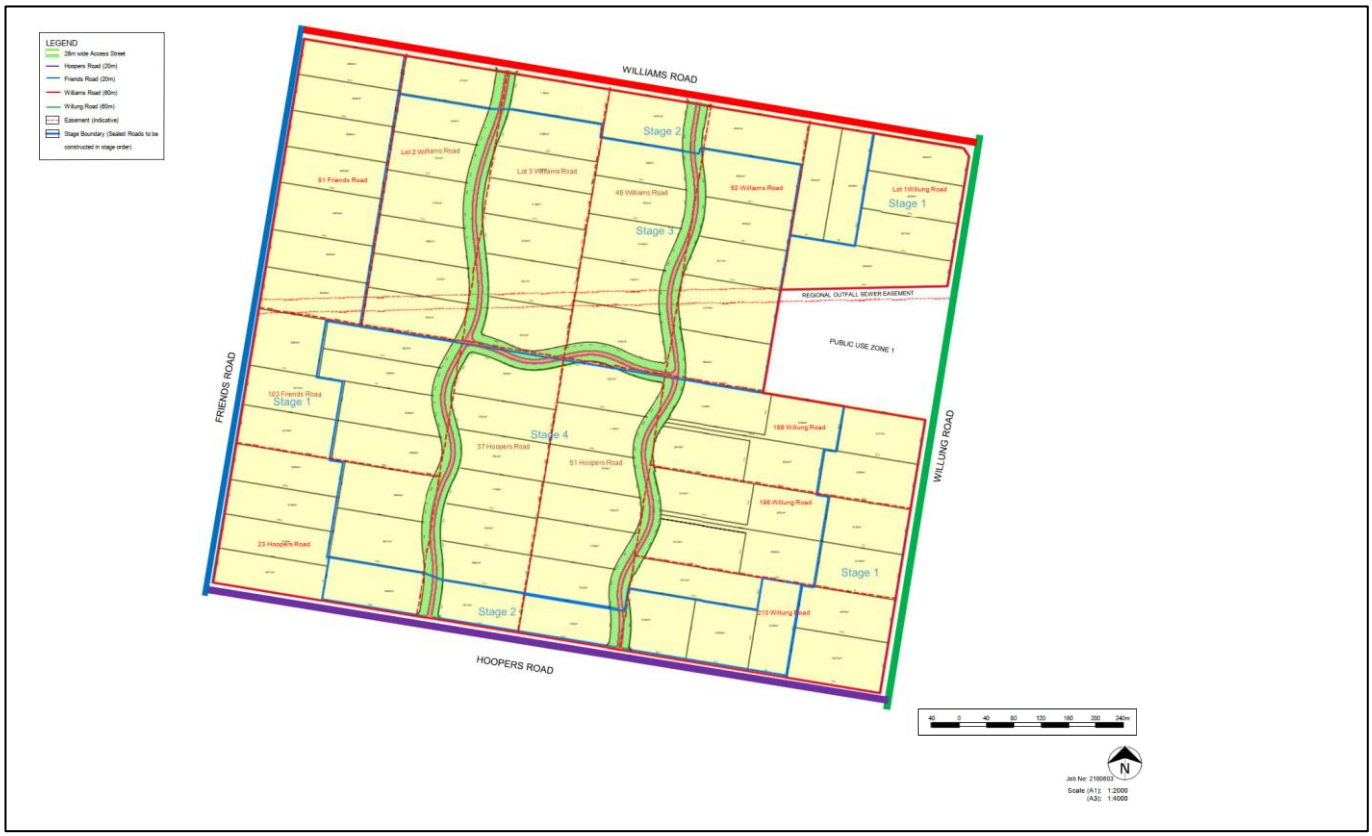

Figure 7: Road Network Hierarchy

3.4 INTERNAL ROAD NETWORK CROSS SECTIONS

Friends Road and Willung Road are expected to require no further development since they are built to carry substantially greater volumes of traffic than what will be generated by the subject site. Williams Road and Hoopers Road will be upgraded to provide better access to the subject site. Two internal north-south roads will be also constructed to facilitate access to the properties not serviced by the four existing roads. Footpaths will not be provided for any of the existing or proposed roads due to low pedestrian volumes, lack of destinations within walking distance and the IDM does not require it for a rural living access road.

3.4.1 RURAL LIVING ACCESS ROAD

Rural Living Access Roads typically comprise a road pavement with a 6.2m wide carriageway allowing for two-way traffic flow and a shoulder width of 1.5m contained within a 20m road reserve. Hoopers Road will have the proposed cross-section of a Rural Living Access Road, as seen in Figure 8, since it abuts a Farming Zone and a Rural Living Zone. The two internal north-south streets will also need to accommodate pedestrian movements & street. So, they will use the cross-section at Figure 8A, which provides for a 28m wide reserve. It is expected that the daily capacity of the road will be significantly greater than the number of traffic movements generated by the subject site.

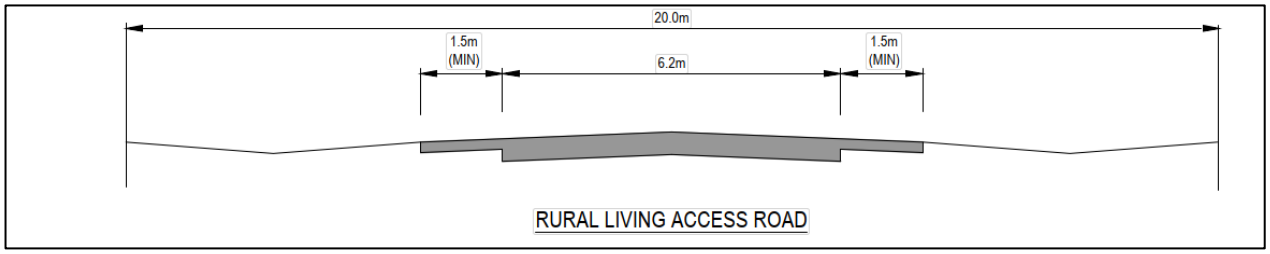

Figure 8: Rural Living Access Road

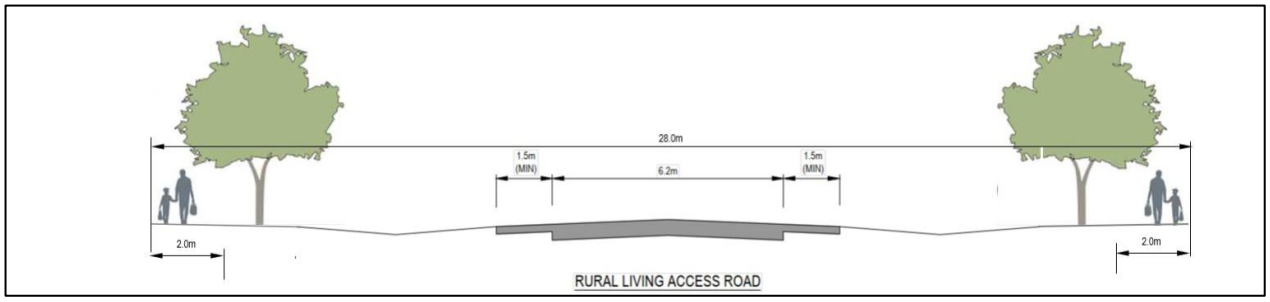

Figure 8a: Internal Rural Living Access Road

3.4.2 LOW DENSITY RESIDENTIAL ACCESS ROAD

Williams Road is between a Rural Living Zone and a Low Density Residential Zone (see Figure 2) and therefore should be either a low density residential access road (see Figure 9) or a rural living access road (see Figure 8). A low-density residential access road typically comprises a road pavement with a 7m wide carriageway allowing for two-way traffic flow and a 1.5m shoulder on either side within a 20m road reserve. It is noted that Williams Road has a road reserve of 60m.

It is expected that the capacity of the streets will be substantially greater than the traffic movements the subject site generates. The typical Low Density Residential Access Road cross-section is shown in Figure 9.

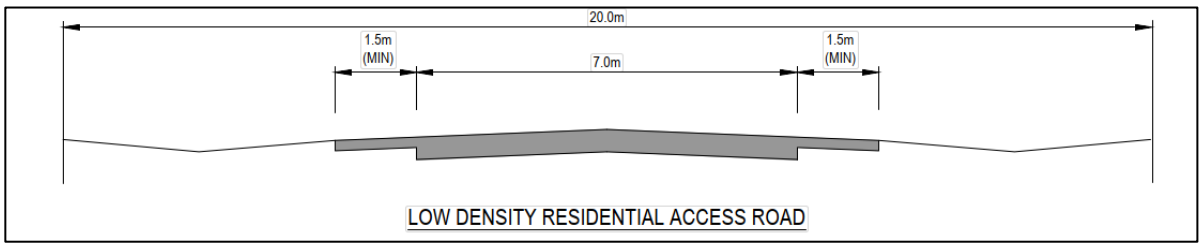

Figure 9: Low Density Residential Access Road

4 TRAFFIC CONSIDERATIONS

4.1 SUBJECT SITE TRAFFIC DISTRIBUTION

It is generally accepted that residential lots in outer suburban areas generate vehicular traffic at a rate of 9 vehicle movements per day (with 10% of movements occurring in the peak hours). In areas of higher density or with access to good public transport lower traffic generation rates can be recorded. For the purposes of this analysis, and to provide a robust assessment, the rate of 9 vehicle movements per day per lot has been adopted.

Application of this rate to the proposed 85 lots equates to a daily traffic generation of 765 vehicle movements or approximately 77vehicle movements in each of the morning and afternoon peak hours.

Based on the proposed development composition it is considered that all vehicle trips will have an external origin or destination and no allowance has been made for trips internal to the development.

4.2 ULTIMATE INTERNAL TRAFFIC DISTRIBUTION

Given the proposed road network, lot orientation and external connections, the anticipated daily traffic volumes traversing the internal road network, as a result of the subject site development, are illustrated in Figure 10.

These volumes have been prepared with consideration to the future surrounding facilities and infrastructure and have resulted in the following adopted traffic distributions:

- 55% will travel west towards Traralgon
    - 45% will travel via Friends Road
    - 10% will travel via Willung Road
- 25% will travel east towards Sale
    - 4% will travel via Friends Road
    - 21% will travel via Willung Road
- 15% will travel north to Rosedale or towards Heyfield
    - 3% via Friends Road
    - 12% via Willung Road
- 5% of traffic will travel south
- All south movement will travel south along Willung Road
- Respectively, Willung Road and Friends Road will carry 43% and 52% of north-, east- and west-bound traffic

It is noted that the volumes illustrated in Figure 10 represent only those volumes generated by the subject site.

Review of the daily traffic volumes illustrated in Figure 10 indicates that the anticipated ultimate traffic volumes on the internal road network are within the environmental volume capacities of the proposed road network cross sections described in Section 3.4.

Whilst noting that the volumes presented in Figure 10 relate to traffic generated by the proposed sub-division, it is noted that additional through volumes associated with surrounding development will be experienced on all four bordering roads. The location and cross sections of these streets have been assessed as being appropriate to cater for these additional volumes.

A review of the anticipated traffic volumes in Figure 10 in conjunction with the Road Hierarchy as presented in Section 6 shows that these anticipated volumes are within the nominal vehicular capacities of the proposed road network. Subsequently, it is anticipated that there will be adequate capacity within the proposed road network to accommodate the ultimate traffic volumes as generated by the proposed development.

Figure 10: Daily Traffic Distribution

5 SUMMARY AND CONCLUSIONS

Based on the preceding analysis, the proposed subdivision located at Friends, Williams, Hoopers and Willung Road, Rosedale, is considered appropriate from a traffic engineering perspective. A summary of the proposal is provided as follows:

- It is proposed to develop the subject site for the purposes of a residential subdivision comprising approximately 85 rural lots with an average lot size of 8,158m^2.
- The Williams and Hoopers Road will be upgraded to a sealed carriageway to provide access to the 85 lots.
- Access to the site will be obtained primarily via Williams Road, which will then distribute traffic to Willung and Friends Road.
- It is anticipated that the subject site may generate traffic at a rate up to 9 movements per dwelling per day, equivalent to 765 vehicle movements per day;
- Of these daily movements, it is anticipated that up to 10% will occur in both the AM and PM peak periods.
- Conservatively, the full construction of Williams Road will provide sufficient capacity for the site's post-development traffic volumes.
- The internal road network of the subject site is proposed to comprise of two Rural Living Access Streets connecting to two external Rural Living Access Streets (Williams and Hoopers Road) which then provide access to a higher order Connector Street (Willung Road);
- The proposed road network, including the proposed internal roads, is considered appropriate to cater for the anticipated traffic generated by the proposal;
- The proposed subdivision is considered appropriate from a traffic engineering perspective.

APPENDIX A: INDICATIVE SUBDIVISION PLAN

LEGEND

- Development Plan boundary (approx.)
- Internal Title boundaries (approx.)
- Residential lots
- Naturestrip/Swale (indicative)
- Road pavement (indicative)
- Easement (indicative)
- Stage Boundary (Sealed Roads to be constructed in stage order)
- Regional Outfall Sewer Easement

WILLIAMS ROAD

FRIENDS ROAD

WILLUNG ROAD

HOOPERS ROAD

Stage 1

Stage 2

Stage 3

91 Friends Road

103 Friends Road

23 Hoopers Road

37 Hoopers Road

51 Hoopers Road

Lot 2 Williams Road

Lot 3 Williams Road

46 Williams Road

62 Williams Road

Lot 1Willung Road

188 Willung Road

196 Willung Road

210 Willung Road

REGIONAL OUTFALL SEWER EASEMENT

PUBLIC USE ZONE 1

Notes:

- This plan was prepared as a PROPOSAL only and should not be used for any other purpose.
- This plan is subject to Council approval.
- All dimensions and areas are subject to survey and final computations.
- Existing dams located within construction areas will be filled during construction.
- Further investigation may be required for fire buffers, vegetation retention and removal, site access and egress, and aboriginal and cultural heritage.
- All roads are 28m local access level 1 unless noted otherwise.
- Road pavement is indicative only based on Infrastructure Design Association Local Government and subject to detailed engineering design.
- NO ALLOWANCE has been made for Public Open Space within this development.
- Arc dimensions shown are length of arc (not chord)
- This plan boundaries are based on VICMAP data only and subject to survey.
- A Management Plan will set out infrastructure requirements, i.e. drainage, electricity supply, water supply and road sealing.
- A landscape plan will show a planting regime for street trees in the road reserve, "i.e. 1 every 10 Meters" and "no development should occur with the Tree Protection Zone of any remnant native trees of more than 10 years in age."
- A change to the speed limit in Friends Road will be further investigated at the time of subdivision.

Site (Approx.) VIC MAP only	75.841 ha
* Residential Lots	69.346 ha
*Regional Outfall Sewer Easement	0.914 ha
* Non-Arterial Roads	5.580 ha
Net Developable Area	74.927 ha
Lot Yield (Standard Density)	85 lots 8158m² average lot size

* Indicates inclusion in NDA

40 0 40 80 120 160 200 240m

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