

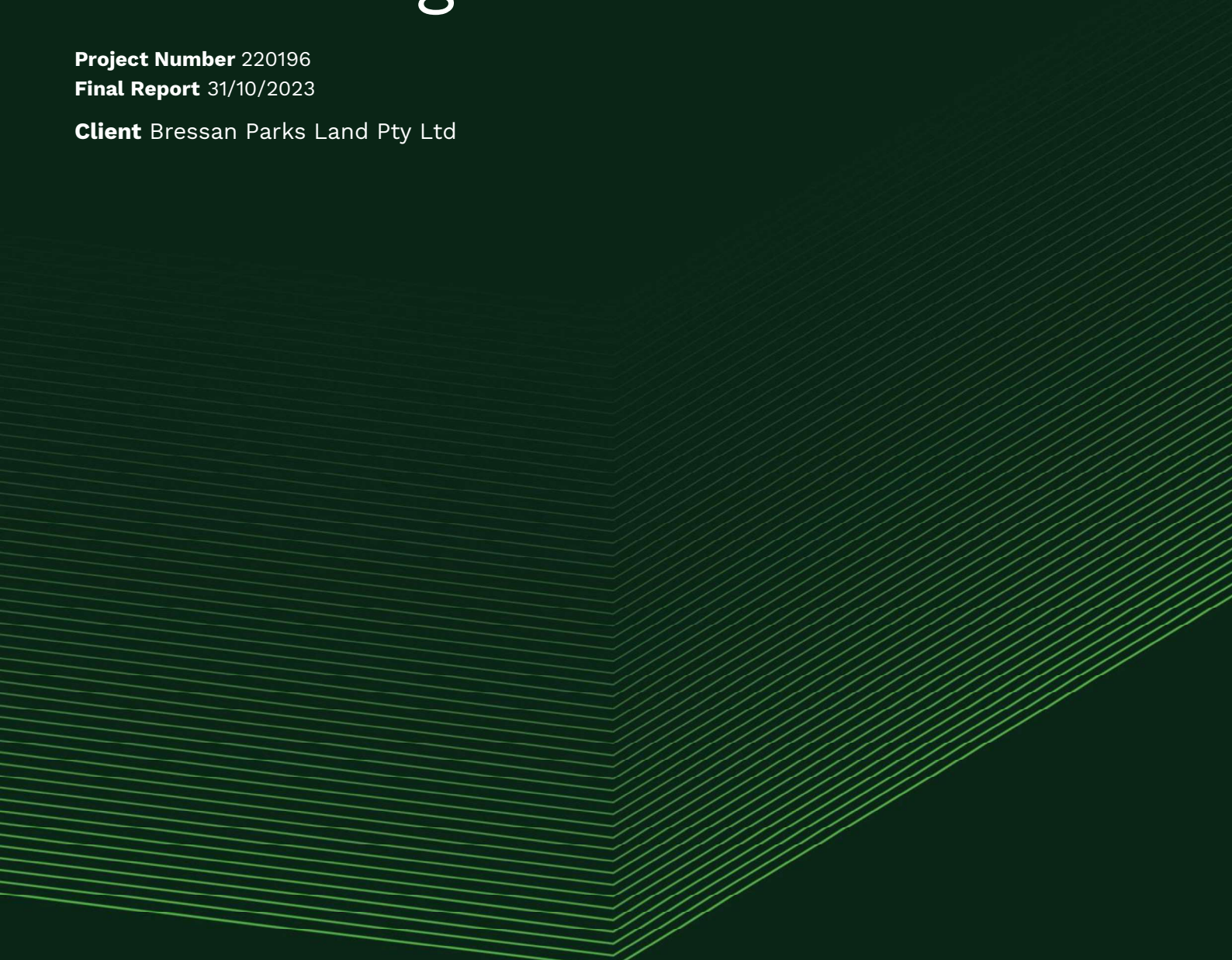
Traffic Impact Assessment Report

Riverland Lifestyle Village, Yarrawonga

Project Number 220196

Final Report 31/10/2023

Client Bressan Parks Land Pty Ltd



Document control record

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Document control

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Executive summary

Bressan Parks Land Pty Ltd engaged Trafficworks to undertake a traffic impact assessment (TIA) for the proposed development of the **Riverland Lifestyle Village, Yarrawonga**.

The table below summarises the site, proposed development, and our conclusions and recommendations.

Address	10-38 Brears Road, Yarrawonga
Zoning	Low Density Residential Zone (LDRZ)
Proposed development	Lifestyle village <ul style="list-style-type: none"> — 210 residential dwellings
Road network	<ul style="list-style-type: none"> — Brears Road — Murray Valley Highway
Traffic generation	<ul style="list-style-type: none"> — 720 vehicles per day (vpd) — morning and afternoon peaks of 46 vehicles per hour (vph).
Conclusion	<p>We conclude there are no traffic engineering reasons that would prevent the development from proceeding, subject to the implementation of our recommendations.</p> <ul style="list-style-type: none"> — Recommendation 1: detailed design of individual driveway locations is completed to achieve compliance with the entering sight distance criteria in AS/NZS 2890.1. — Recommendation 2: lot boundary fence design achieves the sight distance to pedestrians required in AS/NZS 2890.1. — Recommendation 3: construct an auxiliary right turn (AUR) lane from Murray Valley Highway into Brears Road following the construction of the 70th dwelling within the proposed lifestyle village. — Recommendation 4: the internal roads within the development must be designed and constructed to the Council's satisfaction as per the IDM. — Recommendation 5: at detailed design, ensure that SISD is satisfied at the internal intersections. — Recommendation 6: all roads should be designed to provide enough space for an 8.8 m emergency / service vehicle to travel through the network safely. Swept path analysis should be completed to confirm this requirement is met.

-
- **Recommendation 7:** parking restrictions should be applied to the internal road network to ensure car parking is only included at designated places and within residents' driveways.
 - **Recommendation 8:** provide a designated waste collection area at the end of the street for the properties serviced by short, shared access roads.
-

Referenced documents

References used in the preparation of this report include the following:

- RTA Guide to Traffic Generating Developments
- Austroads Guide to Road Design Part 4A
- Infrastructure Design Manual

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1 Introduction

Bressan Parks Land Pty Ltd engaged Trafficworks to undertake a traffic impact assessment (TIA) for the proposed development of the **Riverland Lifestyle Village, Yarrawonga.**

For the detail about:

- existing site conditions – see section 2
- description of the proposed development – see section 3.1
- traffic impact of the proposed development – see section 3
- assessment of the access to the proposed development – see section 4
- assessment of the internal road layout – see section 5
- our conclusions and recommendations – see section 6.

2 Existing conditions

2.1 Subject site

The site is:

- located at 10-38 Brears Road, Yarrawonga and is located approximately 3 km west of Yarrawonga
- currently used as a holiday/tourist caravan and camping park
- 4 residential lots.

Vehicular access to the site is currently available from Brears Road.

Figure 1 shows the site's location, which is surrounded by residential properties.



Figure 1: Location plan (reproduced with permission from Nearmap)

The majority of the subject site is zoned Low Density Residential (LDRZ) under the Moira Shire Council’s (council) planning scheme.

Figure 2 shows the zoning for the site and surrounding area.

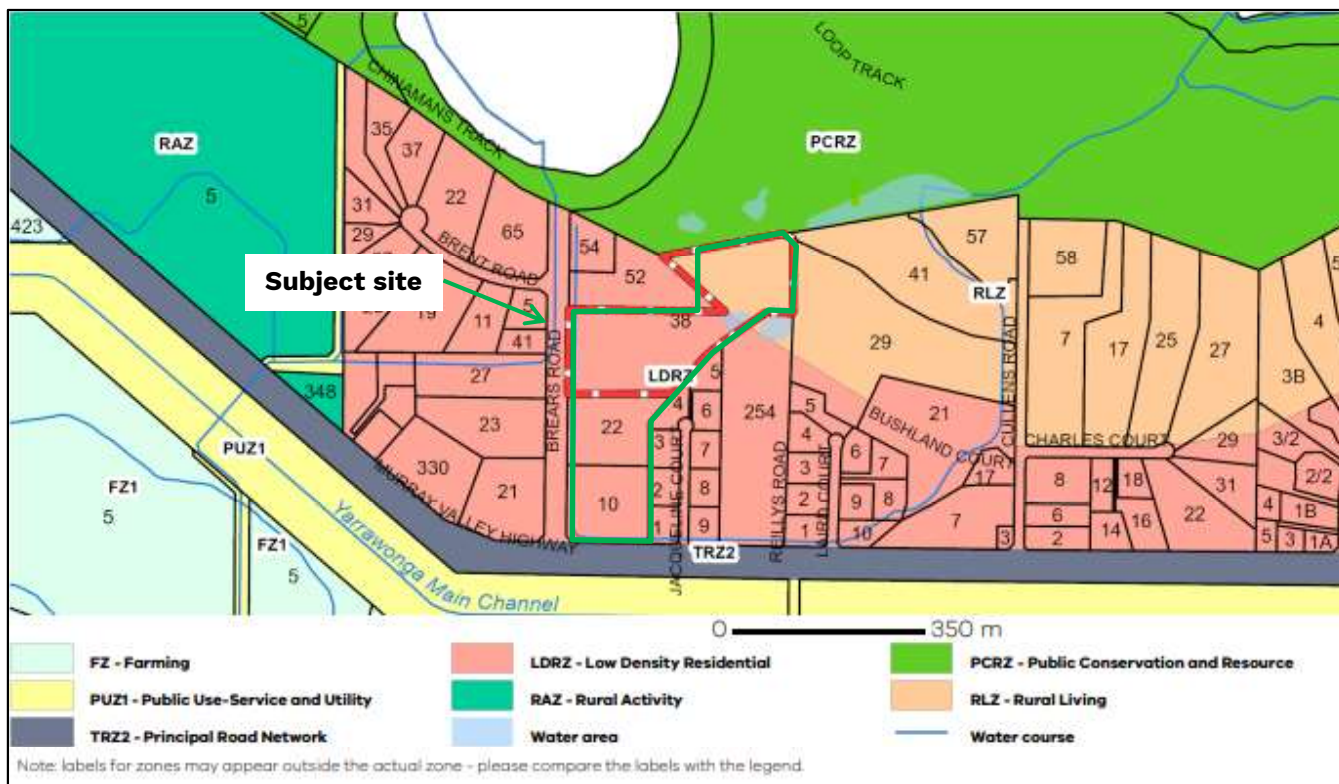


Figure 2: Zoning plan (reproduced from the VicPlan website)

2.2 Road network

The road network includes:

- Murray Valley Highway (B400)
- Brears Road

2.2.1 Murray Valley Highway (B400)

Table 1 describes the features of this road.

Table 1: Murray Valley Highway features

Feature	Description
Road type	Classified state road managed by the Department of Transport and Planning (DTP)
Access	Provides access between Sturt Highway (Euston) at the north-western end and the Hume Freeway (Barnawartha North) at the south-eastern end
Carriageway	Two-lane two-way road consisting of 3.0 m traffic lanes in each direction bound by 2.5 – 4.0 m unsealed shoulders
Road reservation	60 m wide
Speed limit	Posted speed limit of 80 km/h

Figure 3 and Figure 4 provide further information about the road.



Figure 3: Murray Valley Highway looking east towards Yarrowonga, Jacqueline Court on the left



Figure 4: Murray Valley Highway looking west towards Cobram, Jacqueline Court on the right

2.2.2 Brears Road

Table 2: Brears Road features describes the features of this road.

Table 2: Brears Road features

Feature	Description
Road type	Classified as an access-residential road per the council’s public road register
Access	Provides access between Chinaman’s Track to the north and Murray Valley Highway to the south
Carriageway	Two-lane two-way road with a 5.8 m seal and unsealed shoulders
Road reservation	40 m wide
Speed limit	Default urban speed limit of 50 km/h

Figure 5 and Figure 6 provide further information about the road.



Figure 5: Brears Road looking north, the caravan park access and a bus stop to the right



Figure 6: Brears Road looking south, the caravan park access and a bus stop to the left

2.3 Traffic volumes

The existing traffic volumes within the vicinity of the subject site were surveyed on Wednesday, 11 January 2023. The relevant intersections included:

- Brears Road / Murray Valley Highway
- Brears Road / site access

The traffic surveys were undertaken to capture the peak period of the proposed development and the commuter peaks along Murray Valley Highway. The peak hour was found to occur between:

- 11:00 am and 12:00 pm and 1:30 pm and 2:30 pm during the development peak
- 10:00 am and 11:00 am and 3:15 pm and 4:15 pm during the commuter peaks (on Murray Valley Highway).

The survey data is summarised in Figure 7 and provided in Appendix 1.

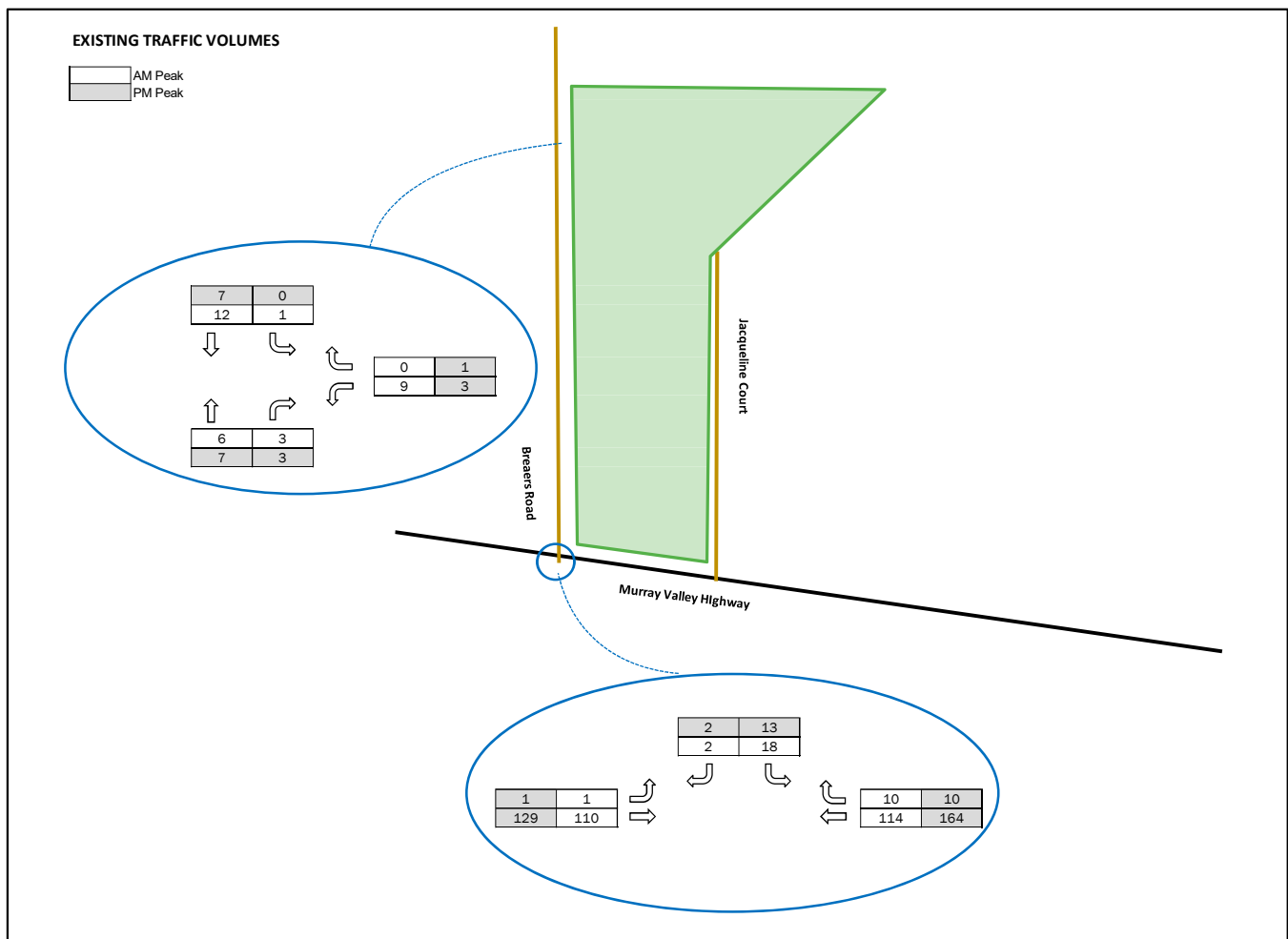


Figure 7: Surveyed peak hour traffic volumes at the intersection of Murray Valley Highway and Brears Road

2.4 Crash history

The Department of Transport and Planning (DTP) data portal, which details all injury crashes on roads throughout Victoria, reports that a single casualty crash has occurred on the roads in the vicinity of the subject site in the last five-year period of available data.

- A ‘serious injury’ off-right bend into object / parked vehicle type casualty crash (DCA 181) occurred along the Murray Valley Highway, approximately 100 m west of Brears Road. The crash occurred in day conditions at 12:15 pm on Monday, 1 October 2018.

Conclusion 1: No trend requires immediate investigation.

3 Traffic assessment of the proposed development

3.1 The proposal

The proposed lifestyle village will include:

- 210 dwellings (maximum)
- community facilities
- wellness centre
- private internal road network

Vehicular access to the proposed development will be via a two-way access to Brears Road. An extract of the proposed development is shown in Figure 8, with the full plan provided in Appendix 2.



Figure 8: Development plan - extract

3.2 Traffic generation

Traffic generation for new developments is typically estimated using the traffic generation rates provided in the RTA Guide to Traffic Generating Developments (2002) or the rates provided in the Infrastructure Design Manual (IDM).

For this analysis, case study data has been sourced from other traffic consultants for a similar regional lifestyle village in Bittern to the southeast of Melbourne that has a similar size to the proposed development, with 202 dwellings for over 55 year old people.

The sourced case study data established the following commuter peak hour traffic generation rates:

- AM commuter peak – 0.22 movements per dwelling (32% inbound / 68% outbound)
- PM commuter peak – 0.22 movements per dwelling (66% inbound / 34% outbound)
- Daily (weekday average) – 3.43 movements per dwelling

In addition, the case study data found that the site peak hour traffic generation was 0.34 movements per dwelling and occurred between 10:00 am and 11:00 am.

Adopting the above rates, the proposed development traffic generation is summarised as follows:

- 720 vehicles per day (vpd) to and from the development
- morning and afternoon peaks of 46 vehicles per hour (vph).

3.3 Traffic distribution assumptions

Our traffic distribution assumptions are that:

- Arrival and departure volumes were extracted from the case study data as follows:
 - AM peak: 32% inbound 68% outbound
 - PM peak: 66% inbound 34% outbound
- Directional splits along Brears Road and onto Murray Valley Highway matched the existing movements extracted from the traffic surveys

3.4 Anticipated traffic volumes

Figure 9 shows the anticipated peak hour traffic volumes at the proposed development.

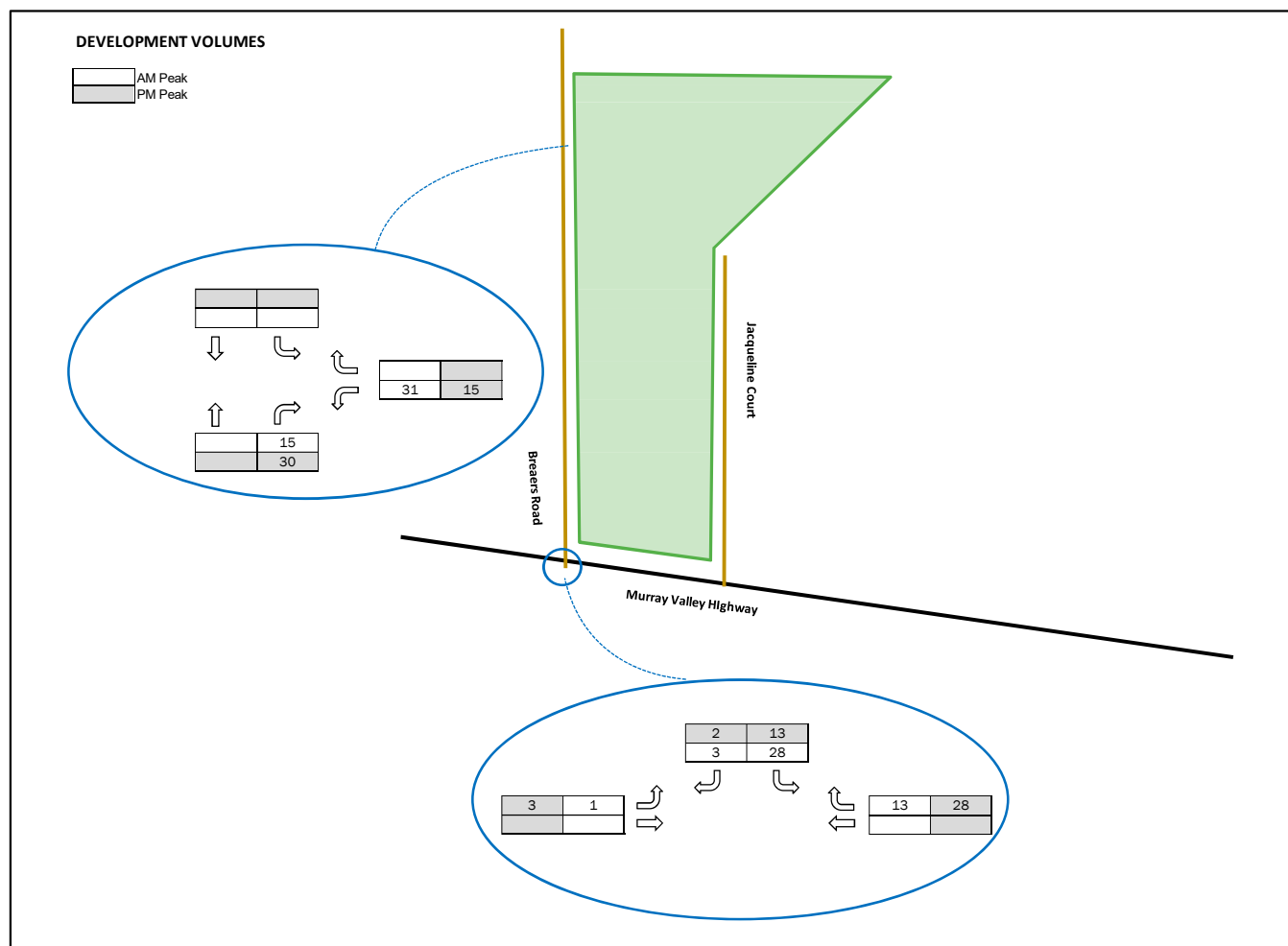


Figure 9: Anticipated peak hour traffic volumes

The traffic generation for the existing caravan park was determined using the turning movement counts undertaken during January 2023 and detailed in Section 2.3 of this report. Given that the proposed development will replace the existing caravan park, these volumes were subtracted from the existing turning movement counts to develop a base line

data set combined with the development volumes from Figure 9 to develop the anticipated overall peak hour volumes shown in Figure 10.

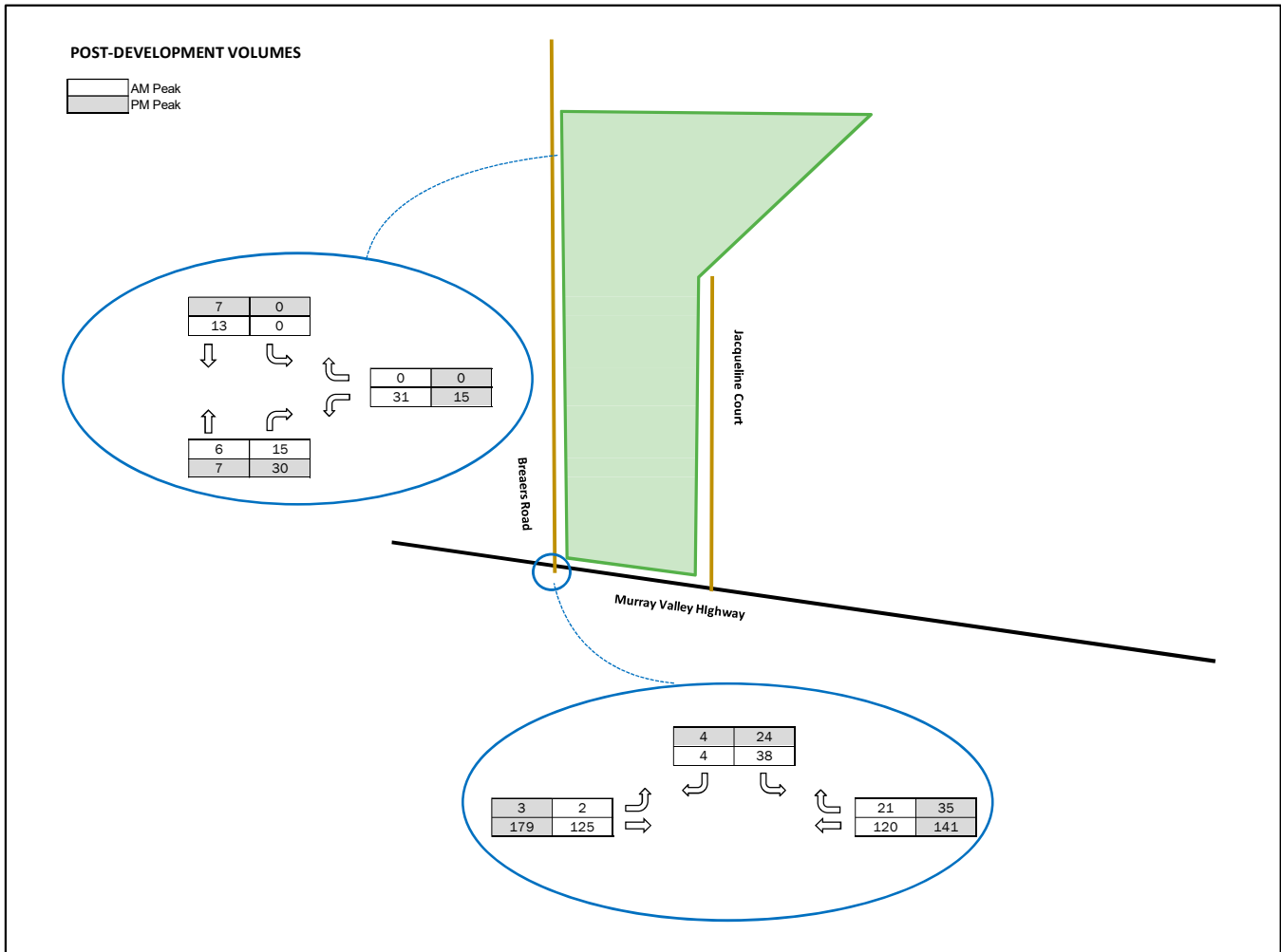


Figure 10: Anticipated overall peak hour traffic volumes

4 Assessments

4.1 Site access – Intersection SISD requirement

The visibility criterion normally applied to intersections is Safe Intersection Sight Distance (SISD). Figure 11 shows the SISD, which:

- is nominated in the Austroads Guide to Road Design, Part 4A (AGRD4) as the minimum distance that should be provided on a major road at any intersection (refer to Section 3.2.2 in AGRD4A)
- provides sufficient distance for the driver of a vehicle on the major road:
 - to observe a vehicle from the minor access approach moving into a collision situation, e.g., in the worst case, stalling across the traffic lanes
 - to decelerate to a stop before reaching the collision point.

The minimum SISD criterion, specified in Table 3.2 of AGRD4A, requires clear visibility for a desirable minimum distance of:

- 214 m at Brears Road / Murray Valley Highway, relating to the general reaction time RT of 2 seconds and a design speed of 90 km/h (posted speed limit plus 10 km/h)
- 97m at the site access / Brears Road, relating to a design speed of 50 km/h.

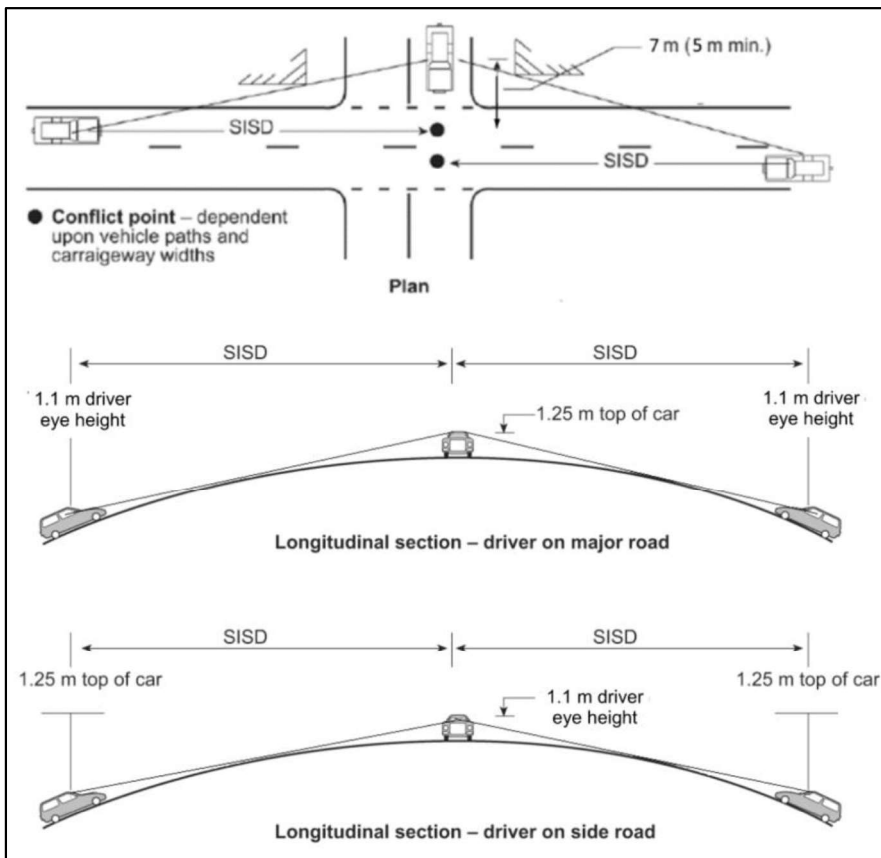


Figure 11: Safe Intersection Sight Distance (SISD) (Source: Figure 3.2 from AGRD4)

This sight distance applicable to Murray Valley Highway from Brears Road is demonstrated in Figure 12 and Figure 13.



Figure 12: Sight distance along Murray Valley Highway from Brears Road - view west



Figure 13: Sight distance along Murray Valley Highway from Brears Road - view east

This visibility requirement, measured at 7.0m from the conflict point, is satisfied at the intersection of Brears Road with Murray Valley Highway, and no further treatment is required in this regard.

The sight distance applicable to Brears Road from the development access is demonstrated in Figure 14 and Figure 15.



Figure 14: Sight distance along Brears Road from the development access - view north



Figure 15: Sight distance along Brears Road from the development access - view south

Adequate sight distance is provided in both directions along Brears Road at the development access. On this basis, no further treatment is required in this regard.

Conclusion 2: SISD requirements are satisfied at the intersections of Brears Road and Murray Valley Highway and Brears Road and the development access.

4.2 Site access – Access driveway requirement

Section 3.2.4 in AS/NZS 2980.1 Parking Facilities – Part 1: Off-street car parking, sets out:

- entering sight distance (ESD) criteria for a driver exiting an access driveway to traffic on the frontage road
- sight distance to pedestrians.

Un-signalised access driveways within the proposed development shall be located. Hence, the intersection sight distance available to drivers leaving the driveway along the frontage road is at least that shown in Figure 3.2 of AS/NZS 2890.1 (reproduced in Figure 16).

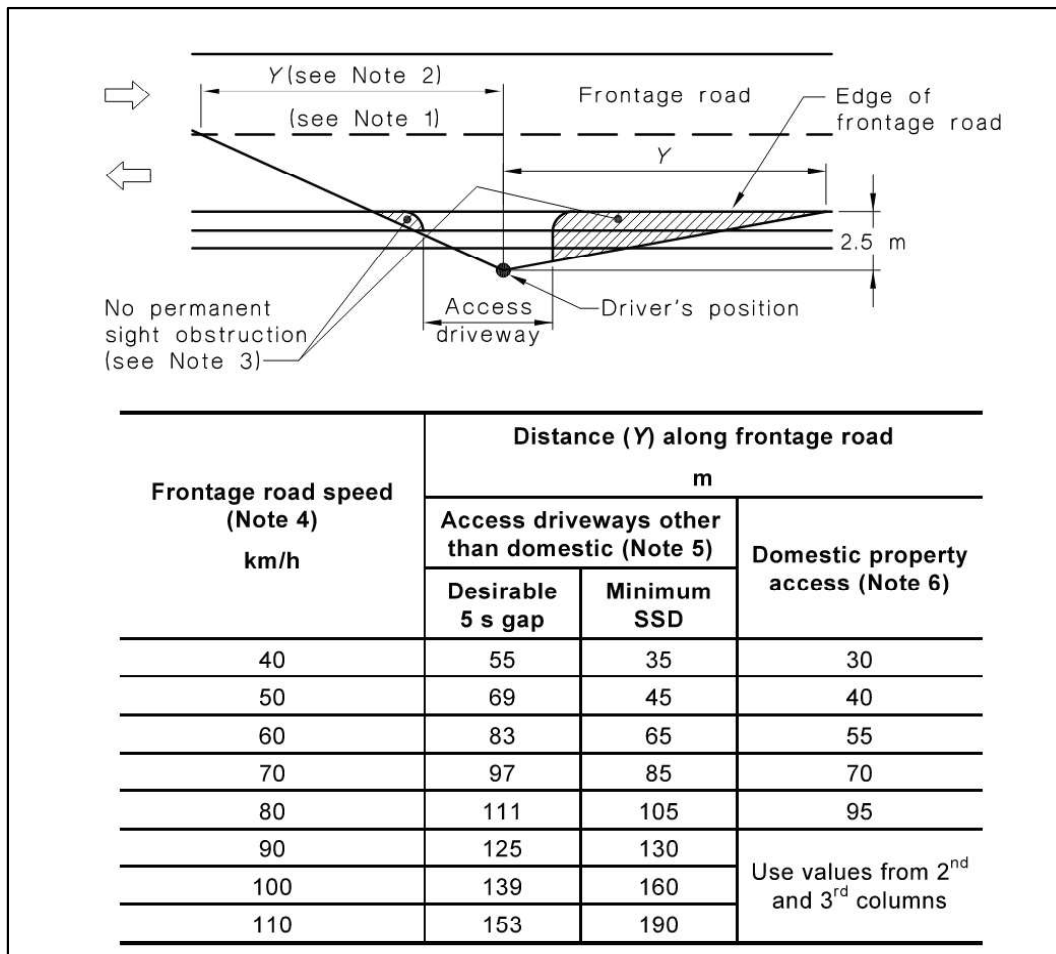


Figure 16: Sight distance requirements at driveways (Source: Figure 3.2 from AS/NZS 2890.1)

Detailed design of driveway locations to individual lots is required, considering visibility requirements.

Recommendation 1: detailed design of individual driveway locations is completed to achieve compliance with the entering sight distance criteria in AS/NZS 2890.1.

4.3 Site distance to pedestrians

Clear sight lines, as shown in Figure 3.3 of AS/NZS 2890.1 (reproduced in Figure 17), shall be provided at the property line so that adequate visibility is provided between drivers of vehicles leaving the property and pedestrians on the frontage road footpath.

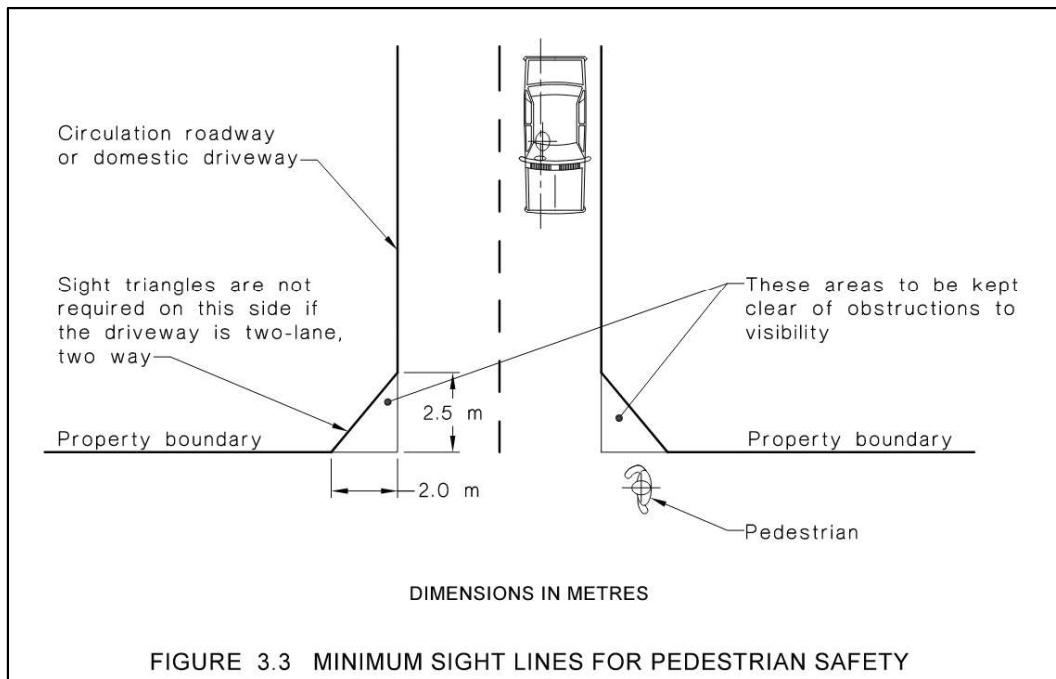


Figure 17: Minimum sight lines for pedestrian safety (Source: Figure 3.3 from AS/NZS 2890.1)

Lot boundary fences must be designed to taper down towards the street boundary. This provides the required sight lines between a departing driver and pedestrians on the frontage footpath.

Recommendation 2: lot boundary fence design achieves the sight distance to pedestrians required in AS/NZS 2890.1.

4.4 Turn provisions impact

The traffic turning from major roads into minor roads should not delay through traffic.

Generally, turn treatments from major roads into minor roads at sign-controlled intersections are provided for safe and efficient operation of the intersection.

Figure 10 shows the anticipated traffic generated from the proposed development, and Figure 18 shows the formulas used to determine the major road volume (QM).

The results were then applied to Figure 3.26, Austroads Guide to Traffic Management Part 6 (AGTM6), to determine the turning treatments for the intersections.

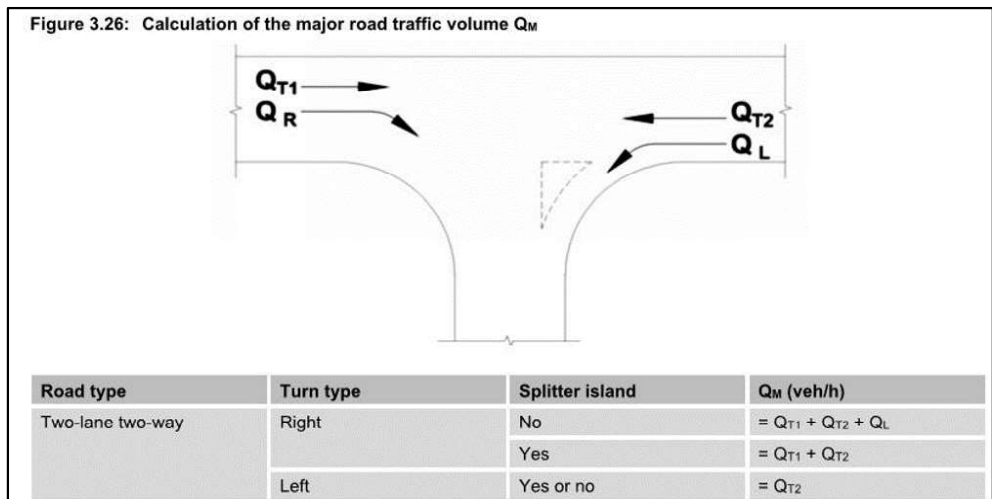


Figure 18: Formulas used to determine major road traffic (Source: Figure 3.26 from AGTM6)

4.4.1 Anticipated conditions for Brears Road / Murray Valley Highway intersection at full development (210 lots)

To determine anticipated conditions at the intersection, traffic volumes from Section 2.3 were used to determine the warrants shown in Table 3 and were applied in Figure 19.

Table 3: Turn lane treatments on Murray Valley Highway at Brears Road intersection – anticipated conditions

Road	Peak Period	Left Turn Q_L (vph)	Right Turn Q_R (vph)	Through Q_T (vph)	Q_M	
					Left Turn	Right Turn
Murray Valley Highway at Brears Road	AM	2	21	Q_{T1} 120	125	247
				Q_{T2} 125		
Murray Valley Highway at Brears Road	PM	3	35	Q_{T1} 141	179	323
				Q_{T2} 179		

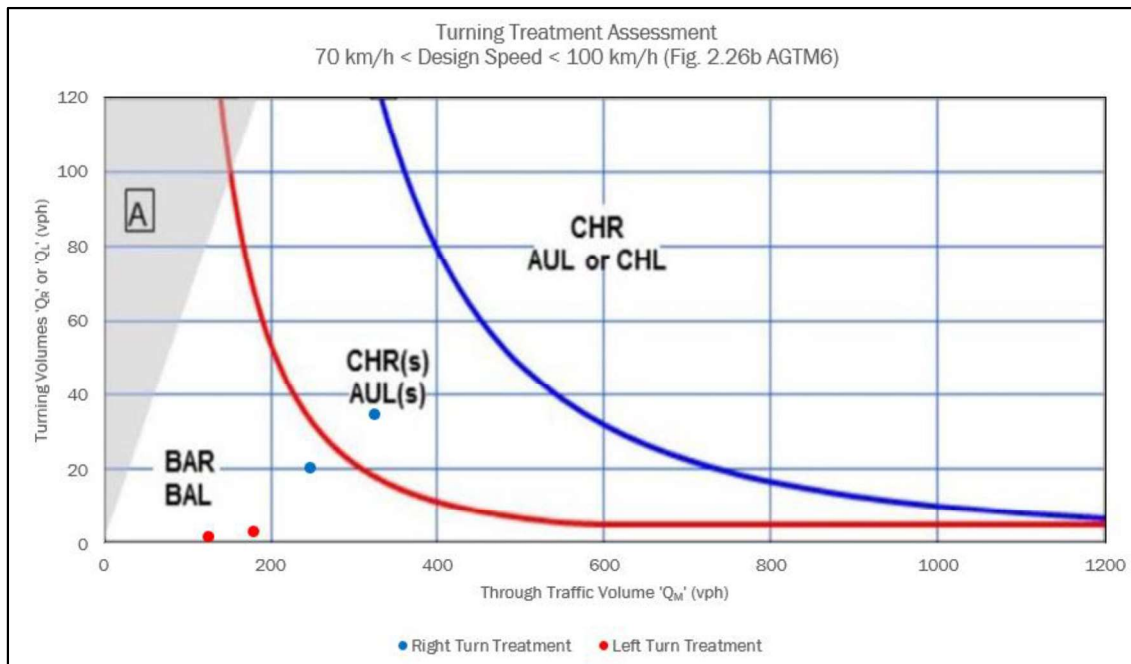


Figure 19: Graph used to determine the turn treatments Murray Valley Highway, at the Brears Road intersection – anticipated conditions

Based on the data gathered and reported in this section, our key observations are that the:

- right turn from Murray Valley Highway into Brears Road is likely to meet warrants for a short channelised right (CHR(S)) / auxiliary right (AUR) treatment at full development
- left turn from Murray Valley Highway into Brears Road is likely to meet warrants for a basic left (BAL) treatment in the morning and afternoon peak periods.

Given that the adjacent intersections along Murray Valley Highway to the east of Brears Road have an AUR treatment, this has been adopted for this location for consistency.

Conclusion 3: At full development, the proposed lifestyle village meets the warrants for an auxiliary right turn (AUR) treatment and a basic left turn (BAL) treatment.

4.4.2 Brears Road / Murray Valley Highway intersection – turn lane trigger

Based on the assessments undertaken in this report, the full development of the lifestyle villager will require upgrades to the turning lanes at Brears Road and Murray Valley Highway.

Given that the proposed development will be constructed over time, further assessment was undertaken on the intersection that determined the auxiliary right turn would be required after occupation of the 70th dwelling. Estimated traffic volumes on the external road network at this time were used to determine the warrants, as shown in Table 4, and were applied in Figure 20.

Table 4: Turn lane treatments on Murray Valley Highway at Brears Road intersection – 70 dwelling scenario

Road	Peak Period	Left Turn Q_L (vph)	Right Turn Q_R (vph)	Through Q_T (vph)		Q_M	Q_M
						Left Turn	Right Turn
Murray Valley Highway at Brears Road	AM	1	12	Q_{T1}	120	125	247
				Q_{T2}	125		
	PM	2	17	Q_{T1}	141	179	323
				Q_{T2}	179		

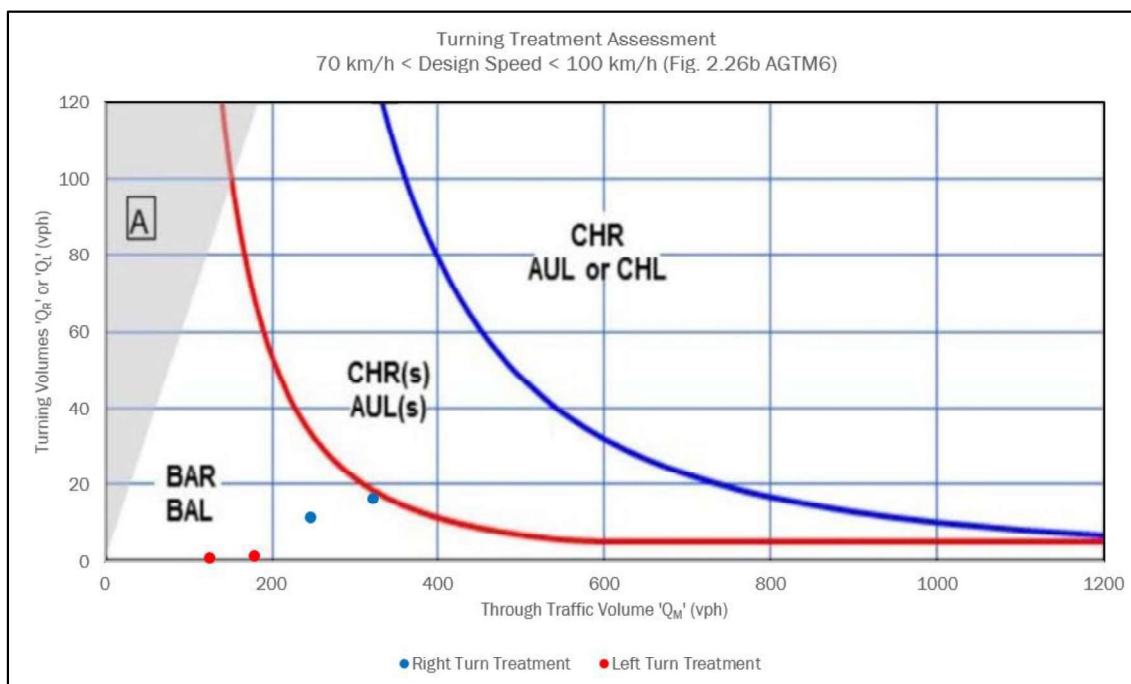


Figure 20: Graph used to determine the turn treatments at Murray Valley Highway / Brears Road intersection – 70 dwelling scenario

Based on the above assessments, the proposed development warrants BAR and BAL turn lanes prior to the construction of the 70th lot.

Conclusion 4: The proposed lifestyle village meets the warrants for a BAR and BAL turn lane treatment prior to the construction of the 70th dwelling.

Recommendation 3: construct an auxiliary right turn (AUR) lane from Murray Valley Highway into Brears Road following the construction of the 70th dwelling within the proposed lifestyle village.

5 Development internal road layout

The proposed internal road network and access point onto the Brears Road (shown in Appendix 2) generally meet good urban design principles and offers a high level of road amenity, connectivity and permeability.

The proposed internal network should meet the urban road characteristics and requirements set out in the *IDM*.

5.1 Road cross-sections

The proposed development includes an internal road network comprising 12.0 m road reserve widths and a 10.5 m wide road reserve width. The anticipated volumes along these internal roads suggest that they should be designed and constructed per the *IDM* manual and to the satisfaction of the Council.

Recommendation 4: the internal roads within the development should be designed per the *IDM* manual and to the satisfaction of the Council.

5.2 Road lengths and traffic calming

The proposed development is expected to operate under the default urban speed limit of 50 km/h. *Austrroads Guide to Traffic Management Part 8 (AGRM8)* indicates that straight section road lengths (i.e. between slow or near-stop conditions) should be kept below 200 m – 250 m for target speeds of around 50 km/h.

Assessment of the proposed internal road layout found that the roads are below 250 m in length, so no speed management is required.

Conclusion 5: the internal road network has short, straight road lengths, which will encourage low vehicle speeds and compliance with the 50 km/h speed limit.

5.3 Intersection design

A majority of the intersections within the proposed development are T-intersections. The intersections should be designed to minimise confusion and ensure that intersection priority is clear. There are crossroad intersections located within the development. However, the development plan does not provide a detailed design of the internal roads, and these intersections should be reviewed with detailed design. Typically, crossroad intersections should be avoided unless roundabouts can be provided.

The minimum SISD criterion specified in the *Austrroads* guides requires clear visibility for a desirable minimum distance of 97 m for a 50 km/h design speed. This sight distance applies to each of the internal intersections proposed within the development site.

Generally, the intersections appear to be reasonably positioned in relation to sight distance. To ensure this, any landscaping or pedestrian fencing within the verge should be low-level vegetation that will not obscure or obstruct the driver's line of sight.

Recommendation 5: at detailed design, ensure that SISD is satisfied at the internal intersections.

5.4 Emergency and service vehicle access

All roads within the development need to provide enough space so that emergency vehicles, waste collection vehicles and street-cleaning vehicles can conduct their functions while travelling in a forward direction only.

Roads should be designed to cater for an 8.8m service vehicle negotiating the road network in a forward direction, specifically ensuring that service vehicles will be able to negotiate curves in the road alignment and through all intersections within the site.

Preliminary swept path analysis has determined that localised widening will be required at intersections and 90 degree bends to facilitate two-way light vehicle manoeuvres and service vehicle manoeuvres.

Parking restrictions should be applied to the internal road network to ensure car parking is only included at designated places and within residents driveways.

Recommendation 6: all roads should be designed to provide enough space for an 8.8 m emergency / service vehicle to travel through the network safely. Swept path analysis should be completed to confirm this requirement is met.

Recommendation 7: parking restrictions should be applied to the internal road network to ensure car parking is only included at designated places and within residents driveways.

5.5 Termination of internal roads

The proposed development plan shows a number of roads terminating through the site. The roads end in “stubs,” which only service 2-4 properties and would appropriately be serviced by a designated waste collection area at the end of the street (on the main street).

Recommendation 8: provide a designated waste collection area at the end of the street for the properties serviced by short, shared access roads..

6 Conclusions and recommendations

We conclude there are no traffic engineering reasons that would prevent the development from proceeding, as outlined below:

- no trend requires immediate investigation.
- SISD requirements are satisfied at the intersections of Brears Road and Murray Valley Highway and Brears Road and the development access.
- at full development, the proposed lifestyle village meets the warrants for an auxiliary right turn (AUR) treatment and a basic left turn (BAL) treatment.
- the proposed lifestyle village meets the warrants for a BAR, and BAL turn lane treatment prior to the construction of the 70th dwelling.
- the internal road network has short straight road lengths,, encouraging low vehicle speeds and compliance with the 50 km/h speed limit.

However, this TIA has identified a number of recommendations that need to be addressed:

- **Recommendation 1:** detailed design of individual driveway locations is completed to achieve compliance with the entering sight distance criteria in AS/NZS 2890.1.
- **Recommendation 2:** lot boundary fence design achieves the sight distance to pedestrians required in AS/NZS 2890.1.
- **Recommendation 3:** construct an auxiliary right turn (AUR) lane from Murray Valley Highway into Brears Road following the construction of the 70th dwelling within the proposed lifestyle village.
- **Recommendation 4:** the internal roads within the development must be designed and constructed to Council's satisfaction as per the IDM.
- **Recommendation 5:** at detailed design, ensure that SISD is satisfied at the internal intersections.
- **Recommendation 6:** all roads should be designed to provide enough space for an 8.8 m emergency / service vehicle to travel through the network safely. Swept path analysis should be completed to confirm this requirement is met.
- **Recommendation 7:** parking restrictions should be applied to the internal road network to ensure car parking is only included at designated places and within residents driveways.
- **Recommendation 8:** provide a designated waste collection area at the end of the street for the properties serviced by short, shared access roads.

Appendix 1 – Traffic survey results

20:30	20:45	1	0	0	0	0	0	0	0	2	0	0	0	8	1	0	0	0	0	0	0	2	0	0	0	14	78	0	0
20:45	21:00	2	0	0	0	0	0	0	0	4	0	0	0	7	0	0	0	0	0	0	0	10	0	0	0	23	77	0	0
21:00	21:15	1	0	0	0	0	0	0	0	3	0	0	0	6	0	0	0	0	0	0	0	8	0	0	0	18	75	0	0
21:15	21:30	5	0	0	0	0	0	0	0	1	0	0	0	11	2	0	0	0	0	0	2	1	0	0	22	77	0	0	
21:30	21:45	0	0	0	0	0	0	0	0	1	0	0	0	10	1	0	0	0	0	0	0	4	2	0	0	18	81	0	0
21:45	22:00	0	0	0	0	0	0	0	0	3	0	0	0	4	0	0	0	0	0	0	0	6	1	0	0	14	72	0	0
22:00	22:15	2	0	0	0	0	0	0	0	1	0	0	0	12	1	0	0	0	0	0	7	1	0	0	24	78	0	0	
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22:30	22:45	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	5	0	0	0	8	58	0	0	
22:45	23:00	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	0	0	0	2	1	0	0	7	51	0	0	
23:00	23:15	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	2	1	0	0	6	33	0	0	
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23:45	00:00	1	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4	21	0	0	
TOTAL		153	1	0	0	26	0	0	0	145	0	0	0	1264	129	2	5	17	0	0	0	1265	116	3	5	3131			
		154				26				145				1400				17				1389							
		180								1545								1406											

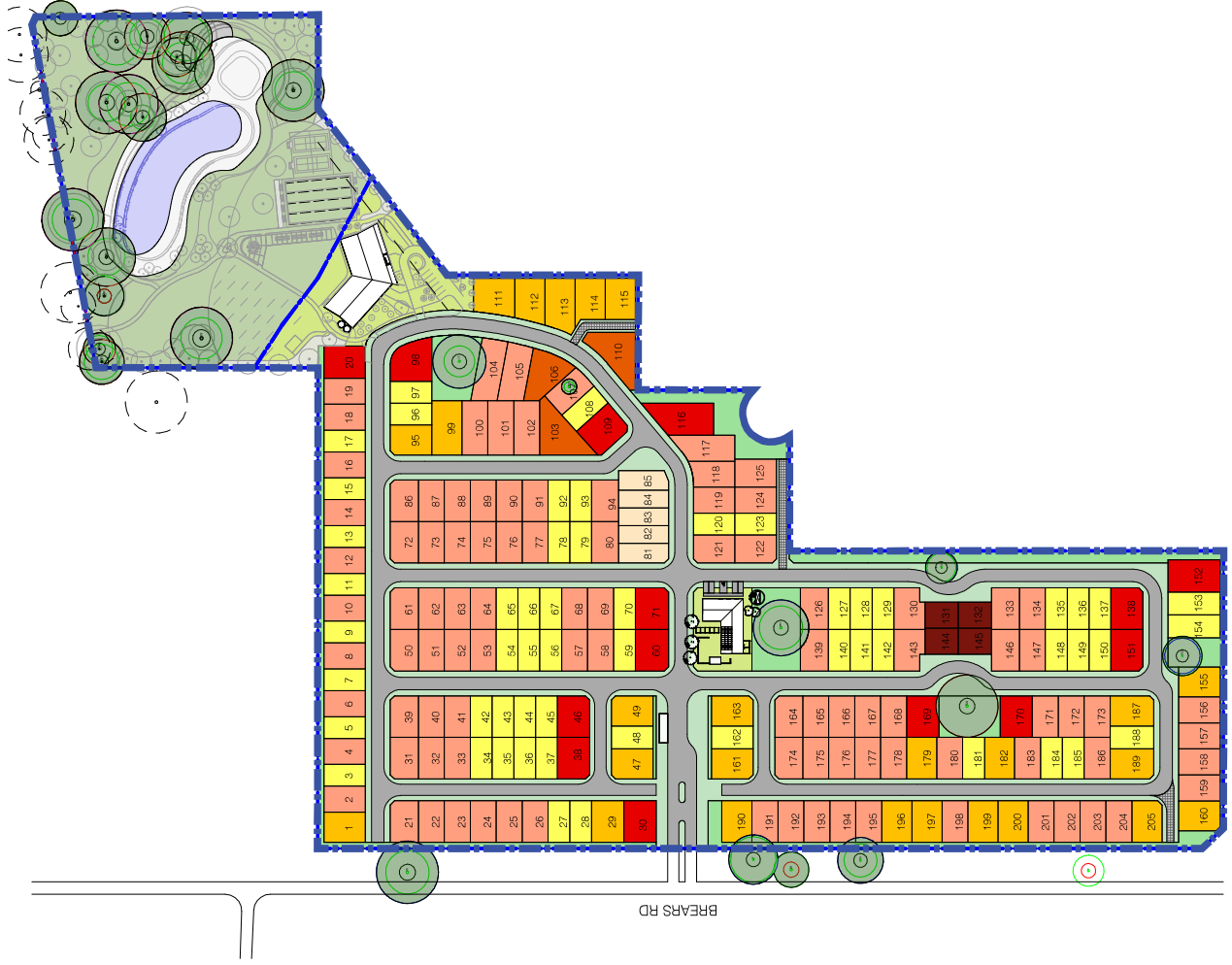
TIME	TURNING MOVEMENTS (VEHICLE CLASS)																				Total					
	1 (N)				3 (E)				4 (W)				Total													
	13 - Left		14 - Right		31 - Right		34 - Through		41 - Left		43 - Through															
Car	Truck	Bus	Bike	Car	Truck	Bus	Bike	Car	Truck	Bus	Bike	Car	Truck	Bus	Bike	Car	Truck	Bus	Bike							
10:00	11:00	17	1	0	0	2	0	0	0	10	0	0	0	103	11	0	0	1	0	0	0	101	8	1	0	255
15:15	16:15	13	0	0	0	2	0	0	0	10	0	0	0	152	12	0	0	1	0	0	0	125	4	0	0	319

TIME	TURNING MOVEMENTS TOTAL												Total	
	1 (N)				3 (E)				4 (W)					Total
	13 - Left		14 - Right		31 - Right		34 - Through		41 - Left		43 - Through			
10:00	11:00	18		2		10		114		1		110		255
15:15	16:15	13		2		10		164		1		129		319

Appendix 2 – Development Plan

Site Types

House Sites by Frontage and Mix



LEGEND

INDICATIVE VARIOUS HOUSE SITE TYPES (Indicative only may be subject to change).

- 8.5m Frontage Sites
- 10.5m Frontage Sites
- 12.5m Frontage Sites
- 14.5m Frontage Corner Sites
- 15.5m Frontage Alternate Corner Sites
- 16m Frontage Sites

Site Depths

House site depths are 20m with the exception of the 8.5m frontage sites which are 24m and the 16m frontage sites with a depth of 12.5m

Overall LLC Site Boundary

Frontage	Est. No.	Mix
16m Shallow Sites	4	2%
8.5 Sites	5	2%
10.5 Sites	55	27%
12.5 Sites	99	48%
14.5 Sites	25	12%
14.5 Alternate Sites	14	7%
Special Sites	3	1%
Yield Estimate	205	

1:2500 @ A3



Appendix 2 – Acronyms and terms

Acronyms / terms	Definition
AGRD4	Austrroads Guide to Road Design Part 4 – Intersections and crossings
AGRD4A	Austrroads Guide to Road Design Part 4A – Unsignalised and signalised intersections
AGTM6	Austrroads Guide to Traffic Management Part 6 – Intersections, interchanges and crossings management
AGTM8	Austrroads Guide to Traffic Management Part 8 – Local street management
AS/NZS2890.1	Australian Standard / New Zealand Standard 2890.1 Parking facilities Part 1: Off-street car parking
DTP	Department of Transport and Planning (formerly VicRoads)
ESD	Entering site distance
PSP	Precinct structure plan
SIDRA	SIDRA intersection – micro analytical traffic engineering software to model the performance of intersections
SISD	safe intersection sight distance
TIA	traffic impact assessment
vpd	vehicles per day
vph	vehicles per hour
VPA	Victorian Planning Authority