

PROPOSED HOLIDAY/ MOTEL UNITS + CAFE/ RESTAURANT (CARABOODA VILLAGE)

LOT 6276 (14) TRIAN RD, CARABOODA

TRANSPORT IMPACT STATEMENT



Final 1-0

Prepared by i3 consultants WA for

Carabooda Village Pty Ltd



Project details

Project Proposed Holiday/ Motel Units + Cafe/ Restaurant (Carabooda Village)

Location Lot 6276 (14) Trian Rd, Carabooda

Project ID 18701

Client Carabooda Village Pty Ltd

Prepared for Carabooda Village Pty Ltd

Description A Transport Impact Statement for a proposed development that includes 30 motel units, 23 holiday

chalets, a 52-seat cafe/ restaurant and a 176-seat function centre, to be known as Carabooda Village, on Lot 6276 (14) Trian Road within the City of Wanneroo suburb of Carabooda. I has been prepared in

accordance with the WAPC 2016 Transport Impact Assessment Guidelines.

Document control

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ABOUT THE AUTHOR

David Wilkins has over 35 years of practical experience in traffic engineering, road safety and transport planning in both the UK and Australia and is an RTA NSW Certified Level 3 Lead Auditor (RSA-08-0178) and Main Roads Western Australia (MRWA) accredited Senior Road Safety Auditor (SRSA 0101). In addition to this, David is an MRWA accredited Crash Investigation Team Leader and Roadworks Traffic Manager (MRWA-RTM-10-RTM20). David has undertaken 123 road safety audits in the last five years and 267 road safety audits since 2001 across the full range of stages from feasibility through to pre-opening, including roadworks, existing roads, schools and mine sites.

David's specialist skills are in the management and development of transport infrastructure and planning, particularly with respect to road safety engineering, roadworks traffic management, traffic engineering, crash investigation, road safety audits, alternative transport systems (TravelSmart, shared paths, cycle facilities), transport statements, transport assessments, parking demand management, local area traffic management, speed management, accessible environments and innovation.

David specialises in undertaking and preparing traffic impact assessments in accordance with either the WAPC document 'Transport Impact Assessment Guidelines' or Austroads 'Guide to Traffic Management Part 12: Traffic Impacts of Developments'. In the last 7 years, David has personally prepared over 180 traffic and transport impact reports in accordance with these guidelines.



1 INTRODUCTION

This Transport Impact Statement report has been prepared in accordance with the WAPC publication Transport Impact Assessment Guidelines (1). These guidelines indicate that a Transport Impact Statement (TIS) is required for those developments that would be likely to generate moderate volumes of traffic and therefore would have a moderate overall impact on the surrounding land uses and transport networks.

A development that generates between 10 and 100 vehicle trips in the peak hour is classified as Moderate Impact and requires a Transport Impact Statement (TIS). A development that generates more than 100 additional vehicle trips in the peak hour is classified as High Impact and requires a Transport Impact Assessment.

Table 1 of Volume 4 of the WAPC Guidelines indicates the level of TIA required by land use and size and is reproduced as Table 1 below.

	MODERATE IMPACT	HIGH IMPACT			
LAND USE	Transport Impact Statement required	Transport Impact Assessment required			
	10 – 100 vehicle trips in the peak hour	> 100 vehicle trips in the peak hour			
Residential	10–100 dwellings	>100 dwellings			
Schools	10-100 students	>100 students			
Entertainment venues, restaurants, etc.	100–1000 persons (seats) OR 200–2000 m² gross floor area	>1000 persons (seats) OR >2000 m² gross floor area			
Fast food restaurants	50–500 m² gross floor area	>500 m² gross floor area			
Food retail /Shopping centres with a significant food retail content	100–1000 m² gross floor area	>1000 m² gross floor area			
Non-food retail	250–2500 m² gross floor area	>2500 m² gross floor area			
Offices	500–5000 m² gross floor area	>5000 m² gross floor area			
Service Station	I-7 refuelling positions	>7 refuelling positions			
Industrial/Warehouse	1000–10,000 m² gross floor area	>10,000 m² gross floor area			
Other Uses	Discuss with approving authority	Discuss with approving authority			

Table 1 – Level of TIA required by land use and size (Source Table 1 WAPC Guidelines Vol 4)

The proposed development includes 30 motel units, 23 holiday chalets, a 52-seat cafe/ restaurant and a 176-seat function centre that are forecast to generate 43 trips during its busiest hour and hence warrants that a Transport Impact Statement is prepared in accordance with the WAPC Guidelines. Details regarding the forecast trip generation are included in **Section 6.**



2 EXISTING DEVELOPMENT

The existing site (Lot 6276) is a 94,619 m² rural lot with a two storey 4-bedroom/ 3-bathroom residence and several agricultural outbuildings as shown in Photograph 1 and Photograph 2 below. Although it has frontage to Wanneroo Road, all access is off the Trian Rd frontage. Refer **Section 5** for access details.



Photograph 1 – Existing development: aerial view showing redevelopment area (25 May 2019)



Photograph 2 – Existing 4-bedroom/ 3-bathroom residence on site

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3 PROPOSED DEVELOPMENT

It is proposed to redevelop the site to include 30 motel units, 23 holiday chalets, a 52-seat cafe/ restaurant and a 176-seat function centre, as shown in Figure 1 below. The existing residence will be retained as a Caretakers Residence and the existing large shed will be retained as a Workshop/ Maintenance Shed. New ancillary facilities for use by motel and holiday cabin guests include a Tennis Court, Pool, BBQ Area and Baby Animal Nursery. A new Office & Reception building and Café/ Restaurant/ Function Centre will also be provided. All access is proposed off Trian Rd. Refer **Section 5** for access details.

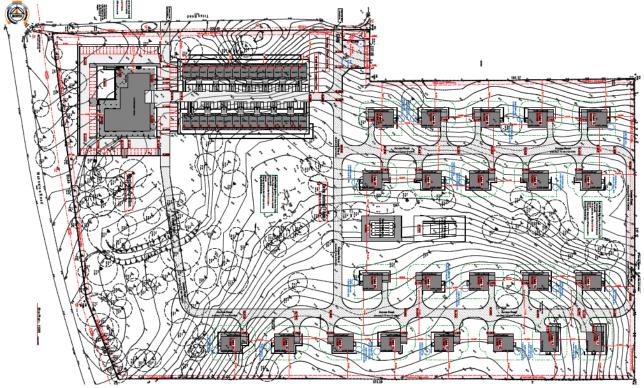


Figure 1 – Proposed Development

Typical hours of operation of the Cafe/ Restaurant and Reception Office are expected to be 6am-10pm daily. The Function Centre will operate according to bookings. Function Centre hours are usually governed by licencing laws and are typically between 10 am and 12 midnight.



4 CONTEXT WITH SURROUNDS

4.1 ROAD AND PUBLIC TRANSPORT NETWORK

The location of the subject site in the context of the road, cycle and public transport network (i.e. none), 400 m (5-minute walk) and 800 m (10-minute walk) radii is shown in Figure 2 below.

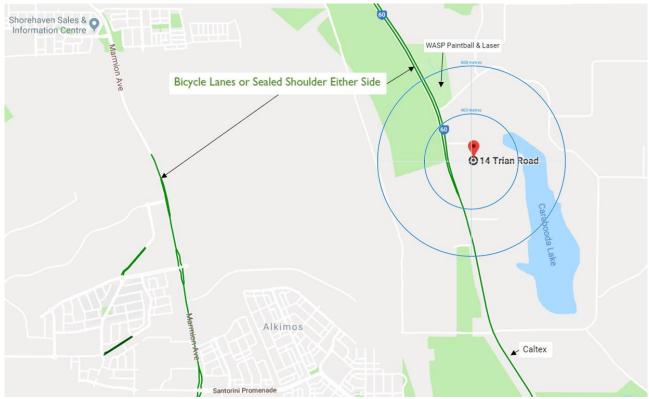


Figure 2 – Site context, road network, on-road cycle routes, bus routes (none), station (none) & nearest traffic generators (Paintball & Caltex Service Station), 400 m and 800 m walk/ cycle radii

Figure 2 reflects the rural context of the development site, which is located approximately 20 kms (20-minute drive) north of the City of Wanneroo centre. The nearest traffic generators to the development site are a Paintball and Laser centre approximately 100 m to the north on the northeast corner of Karoborup Rd/Wanneroo Rd intersection and a Caltex Service Station with convenience store approximately 2 kms south on Wanneroo Rd just south of the Karoborup/Romeo Rd/Wanneroo Rd intersection.



4.2 FUNCTIONAL ROAD HIERARCHY

The road classifications described in this TIS report are defined in the Main Roads Functional Road Hierarchy as follows:

Primary Distributor (Wanneroo Road) Managed by Main Roads WA

These provide for major regional and inter-regional traffic movement and carry large volumes of generally fast-moving traffic. Some are strategic freight routes, and all are State roads.

District Distributor A (Marmion Ave) Managed by Local Government

These carry traffic between industrial, commercial and residential areas and generally connect to Primary Distributors. These are likely to be truck routes and provide only limited access to adjoining property.

Local Distributor (Romeo Rd) Managed by Local Government

Carry traffic within a cell and link District/Regional Distributors at the boundary to access roads. The route of the Local Distributor discourages through traffic so that the cell formed by the grid of Regional/District Distributors only carries traffic belonging to or serving the area. In Built Up Areas, these roads should accommodate buses, but discourage trucks.

Access Roads Managed by Local Government

Provide access to abutting properties with amenity, safety and aesthetic aspects having priority over the vehicle movement function. In Built Up Areas, these roads are bicycle and pedestrian friendly.



4.3 KEY ROADS AND INTERSECTION

4.3.1 Wanneroo Road

Wanneroo Road is the main frontage road to the development site and the closest Distributor road to it (Primary Distributor) as shown in Figure 3 below. It does not provide direct vehicular or pedestrian access to the site and hence all site generated traffic will travel through the Trian Rd/ Wanneroo Rd intersection.

Wanneroo Road is a 44 km arterial highway linking Joondanna and Yokine in the south with Wanneroo and Yanchep in the north. As part of State Route 60, it begins from Charles Street in the inner city and becomes Indian Ocean Drive up to Dongara.

Originally a narrow country road with a single lane in each direction it has been periodically widened and straightened, particularly north of Wanneroo. The road has been realigned and widened to a dual lane dual carriageway through the Carabooda area, including its intersection with Trian Rd (refer **Section 4.3.3**). Short sections of the original, narrow road remain providing access to properties and businesses along the road.

The road is subject to a posted speed limit of 90 km/h in the vicinity of the development site.

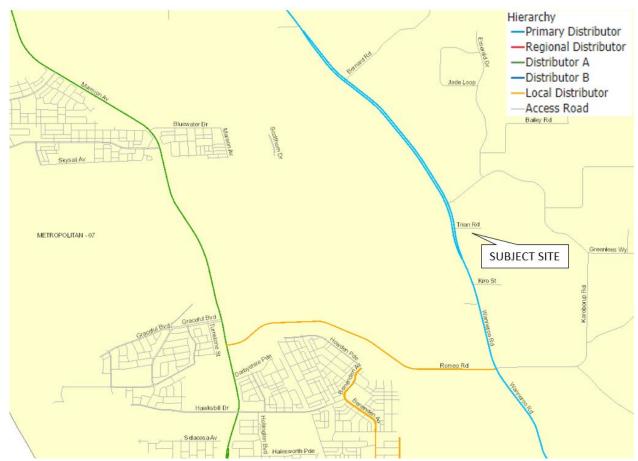


Figure 3 – Road Hierarchy

The layout of Wanneroo Road in the vicinity of Trian Rd is best described through the aerial and street view photographs provided as Photograph 3 and Photograph 4 on the following page.





Photograph 3 – Layout of Wanneroo Rd in the vicinity of the development site



Photograph 4 – Looking south on Wanneroo Rd at Trian Rd intersection



The latest available annualised traffic volume data for Wanneroo Road is dated 2015/16 and shows that the Average Daily Traffic is 12,805 (Monday to Friday). The peak hour volume is approximately 1,070 with a maximum of 650 in one direction. Hourly Mon-Fri volumes are shown in Figure 4 below. Weekend volumes are slightly lower.

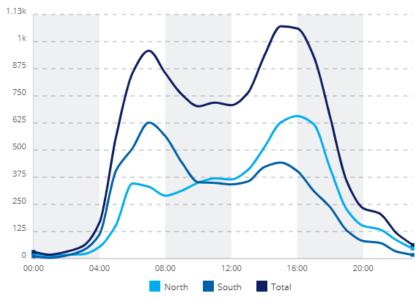


Figure 4 – Mon-Fri hourly traffic volume data for Wanneroo Rd north of Romeo Road (2017/18)

Figure 4 shows that current traffic volumes on Wanneroo Road are well below the assessed typical mid-block capacity of 1,900 vehicles in each direction per hour for a dual lane dual carriageway, as indicated in Table 5.1 (Typical mid-block capacities for urban roads with interrupted flow) in Austroads Guide to Traffic Management Part 3: Traffic Studies and Analysis. (3) It should be noted however, that the layout of Wanneroo Rd reduces to a single carriageway with one lane in each direction north and south of the development site and hence volumes are 'constrained' to 1,000 vehicles in each direction until these sections have been upgraded. This is still well above current volumes of up to 600 vehicles per lane per hour.

Despite being subject to a 90 km/h posted speed limit north of Romeo Rd, Wanneroo Road has an average 85%ile speed of 96 km/h at this location. Hourly speed data is shown in Figure 5 below.

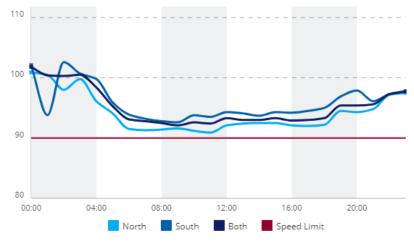


Figure 5 – Mon-Fri speed data for Wanneroo Rd north of Romeo Road (2017/18)



4.3.2 Trian Road

Trian Rd is the secondary frontage road to the development site and provides direct vehicular egress from the site via two access driveways, one located approximately 50 m east of Wanneroo Rd and the other at the eastern end of Trian Rd. It is a 'no thru road' cul-de-sac that extends for 260 m eastwards from Wanneroo Rd (Primary Distributor road). It consists of an unkerbed and sealed 5-6 m wide single carriageway (widening to 9 m with kerbs at its intersection with Wanneroo Rd) and is subject to the default urban speed limit of 50 km/h. Trian Rd is currently in a poor condition and warrants maintenance regardless of any development proposals, as shown in Photograph 5 and Photograph 6 below.



Photograph 5 – Looking west down Trian Rd from western access driveway (on left) to Wanneroo Rd



Photograph 6 – Looking east down Trian Rd from western access driveway (on right) to eastern access driveway (at end of road on right)

There is no known daily traffic volume data for Trian Road, but this is likely to be negligible.



4.3.3 Romeo Road & future road network

Although Romeo Rd is located approximately 1.6 kms south of the development site, it is the nearest east-west local distributor road that will eventually provide a link between Wanneroo Road and the Mitchell Fwy (via the Mitchell Fwy extension), Marmion Ave, the future Yanchep (currently Joondalup) metropolitan rail system and coastal suburbs such as Alkimos and Butler.

Romeo Road is currently closed just east of the corridor for the future Mitchell Freeway and rail corridor.

The extension of the Mitchell Fwy to Romeo Rd has been the subject of recent Federal Liberal and Labor political party's election commitments but no date or funding has been included in forward planning budgets at this stage. Infrastructure Australia identified the project as having high priority within the next five years to address congestion.

A plan of proposed road network upgrades, and the stages of these, is provided as Figure 6 on the following page.



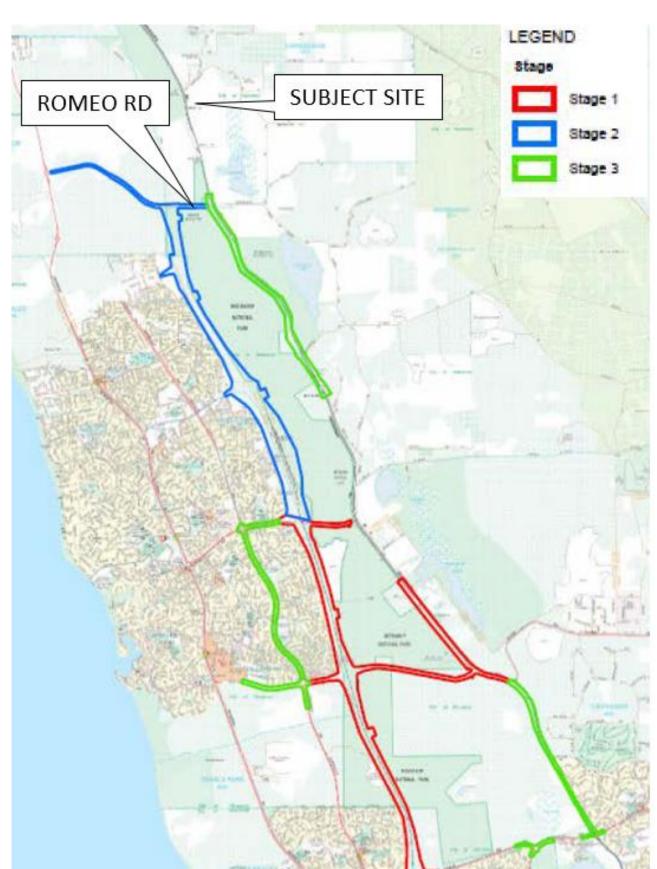


Figure 6 – Planned road network upgrades



4.3.4 Trian Road/ Wanneroo Rd intersection

The Trian Rd/ Wanneroo Rd intersection is a Give-way controlled 'seagull' intersection with a 120 m right turn lane from Wanneroo Rd into Trian Rd as shown in Photograph 7 below. Whilst this right turn demand is low, it is from the outside 'fast lane' and was observed to be used by more U turn, than right turn, traffic.



Photograph 7 – Annotated aerial photograph of Trian Rd/ Wanneroo Rd intersection

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The required Safe Intersection Stopping Distance (SISD) at this intersection is 270m, as shown in Calculation 1 below based on Equation 2 in Austroads Guide to Road Design Part 4A (3).

$$SISD = \frac{D_{7} \times V}{3.6} + \frac{V^{2}}{254 \times (d + [0.01 \times a])}$$

$$SISD = \text{Safe Intersection Sight Distance}$$

$$D_{7} = \text{Decision Time (s)} = \text{observation time (3s)} + \text{reaction time (1.5 alert, 2.0-2.5 other)} = 5.0$$

$$V = \text{Vehicle operating (85\%ile) speed (km/h)} = 98$$

$$d = \text{coefficient of deceleration (night car: 0.46, night truck: 0.29)} = 0.29$$

$$a = \text{longitudinal grade (%: +uphill, -downhill)} = 0$$

$$SISD = \frac{5.00 \times 98}{3.6} + \frac{9604}{254 \times (0.29 + [0.01 \times 0.00])}$$

$$SISD = 267$$

Sight lines at the Trian Rd/ Wanneroo Rd intersection for traffic turning out of Wanneroo Rd exceed 267 m. The sight line for drivers turning right into Trian Rd, and for northbound Wanneroo Rd drivers performing a U at this intersection, is restricted by vegetation in the median on the north side, as shown in Photograph 8 below. Despite this sight restriction, there have not been any reported crashes at this intersection in the last 5-year reporting period. Refer **Section 11** (Safety issues) for further comment on this.

Calculation 1 – Safe Intersection Sight Distance Trian Rd/ Wanneroo Rd



Photograph 8 – Sight line from right and U turn facility at Train Rd to southbound Wanneroo Rd traffic restricted by vegetation in median island



5 VEHICLE PARKING & ACCESS

The on-site parking requirements are set out in Section 4.14 (Car Parking Standards) of the City of Wanneroo's District Planning Scheme No. 2 (DPS2), as shown in the extract below.

4.14 CAR PARKING STANDARDS

- 4.14.1 The number of on-site car parking bays to be provided for specified development shall be in accordance with Table 2. Where development is not specified in Table 2 the Council shall determine the parking standard. The Council may also determine that a general car parking standard shall apply irrespective of the development proposed in cases where it considers this to be appropriate.
- 4.14.2 The design of off-street parking areas including parking for disabled shall be in accordance with Australian Standards AS 2890.1 or AS 2890.2 as amended from time to time. Car parking areas shall be constructed, marked, drained and thereafter maintained to the satisfaction of the Council.

An extract of Table 2 showing relevant land uses highlighted is provided as Table 2 below.

USE CLASS	NUMBER OF ON-SITE CAR PARKING SPACES
Caravan Park	1 per caravan site plus 1 visitor bay per 10 caravans for permanent sites and 1 visitor bay per 20 caravan sites for short stay sites with an overall minimum of two visitor bays plus 1 per non resident staff member
Bed & Breakfast	2 plus 1 per 2 guests
Caretaker's Dwelling	2
Motel	1 per unit plus 1 per 5m² dining area
Restaurant	1 per 4 people accommodated or 1 per 5m ² seating area

Table 2 – Extract from Table 2 of DPS2 (Car Parking Requirements)

An assessment of the required and provided number of parking bays is provided as Table 3 below.

Land Use	DPS2 Land Use	Source		Parking Requi	irement	Units	Bays Required	Provided
Chalet	Caravan Park	DPS2 Table 2 C4.14	1.00	bay per	1 site	23	23	23
			1.00	visitor bay per	10 sites	23	2	
Motel	Motel	DPS2 Table 2 C4.14	1.00	bay per	1 unit	30	30	32
Café	Restaurant	DPS2 Table 2 C4.14	1.00	bay per	5 m ² dining	190	38	81
Restaurant	Restaurant	DPS2 Table 2 C4.14	1.00	bays per	4 people	176	44	01
Caretakers D	welling	DPS2 Table 2 C4.14	2.00	bays per	1 dwelling	1	2	2
		•			TOTAL		120	120

Table 3 – Assessed parking bay requirements and provision

As indicated in Section 4.14 of DPS2, the above parking requirement includes 1 bay designated for use by people with a disability, marked out as shown in Figure 7 and Figure 8 on the following page.



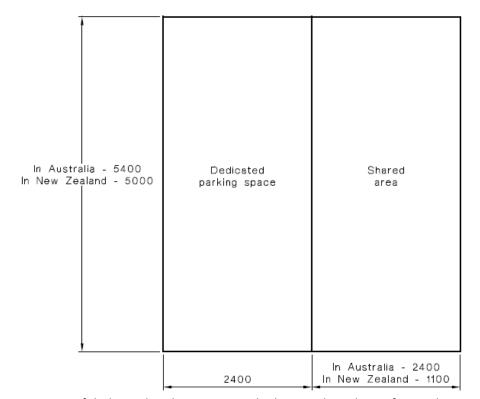


Figure 7 – Dimensions of dedicated parking space and adjacent shared area for use by people with a disability (Source Figure 2.1 of AS/ NZS 2890.6 (4))

3.1 SPACE IDENTIFICATION

Each dedicated space shall be identified by means of a white symbol of access in accordance with AS 1428.1 between 800 mm and 1000 mm high placed on a blue rectangle with no side more than 1200 mm, placed as a pavement marking in the centre of the space between 500 mm and 600 mm from its entry point as illustrated in Figure 3.1.

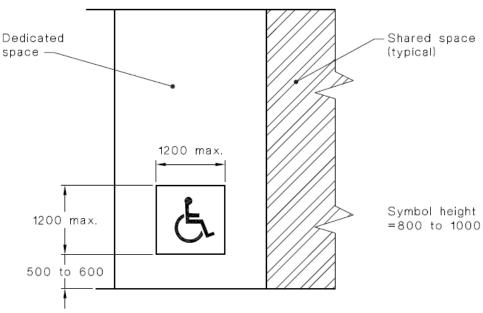


Figure 8 – Use of symbol to identify spaces for people with a disability



Based on the development site containing less than 140 parking spaces, the access facility category in AS/ NZS 2890.1 (5) is "2". This indicates a requirement that the access driveways are a minimum of 6.0 m wide and that there are no internal intersection areas within 6.0 m. The access driveway must also not be within 6 m of the tangent point of the Trian Rd/ Wanneroo Rd intersection.

The scaled access driveway width is 7.0 m wide and is located 100 m from the Wanneroo Road intersection and therefore complies in this regard.

Standard Drawings and Specifications for the proposed Access Driveways (crossovers) are available at:

http://www.wanneroo.wa.gov.au/downloads/download/529/standard drawings - crossovers and verge



6 TRAFFIC VOLUMES AND VEHICLE TYPES

The WAPC Guidelines indicate that:

Vehicle trip generation rates are to be based on surveys of comparable land uses or extracted from recognised land use traffic generation databases such as:

- Guide to Traffic Generating Developments Version 2.2, October 2002 Roads and Traffic Authority, New South Wales(RTA) (4) and 2013/04a Updated Traffic Surveys (RMS) (5); and
- Trip Generation Manual Institute of Transportation Engineers, Washington, USA (ITE) (6)

A review of the latest available trip generation databases has revealed that the Motel and Holiday Unit land uses can be assessed as 'Motel" and that the Restaurant/ Cafe land use can be assessed either by area or seat numbers, as shown in Table 4 below.

Land Use	Source	Adopted Trip Generation Rate*	Units	Max Peak Hour Trips*	IN	OUT	IN	OUT	Pass-By (ITE)
Motels (85% occupancy rates)	RTA	0.34 per 1 unit	53	18	57%	43%	10	8	0%
Restuarants (includes Café's) by Seats	RTA	0.10 per 3 seats	52	2	67%	33%	1	1	43%
Function Centre by Seats	i3	1.00 per 3 seats	176	59	67%	33%	39	19	43%

Table 4 – Assessed trip generation

Table 4 indicates that the proposed development is likely to generate up to 52 trips during its busiest hour (78 trips less 26 by-pass trips), however this data is for each land uses busiest hour and these do not coincide. An assessment of the hourly trip generation of each land use based on mid-week and Saturday data for similar developments in WA has been undertaken by the author and is provided as Figure 9 and Figure 10 on the following page. This results in a forecast maximum trip generation of 43 trips in an hour.

The vast majority of trips are expected to be by light vehicles (cars) with occasional servicing by larger vehicles.

Note regarding restaurant/ café trips:

The proposed restaurant/ café is primarily for use by motel and holiday unit guests and hence will not generate the trips indicated in the database. In order to allow for up to 10% of restaurant/ cafe patrons to be external to the site, the trip generation rates for restaurant/ café land use has been multiplied by 10%, as shown in Table 4.



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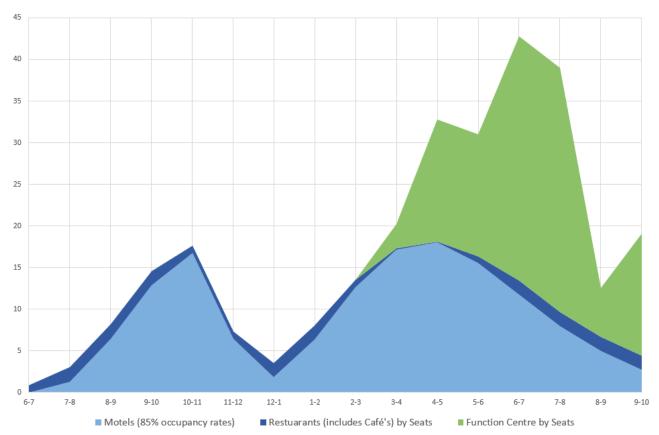


Figure 9 – Assessed cumulative weekday hourly trip generation by land use

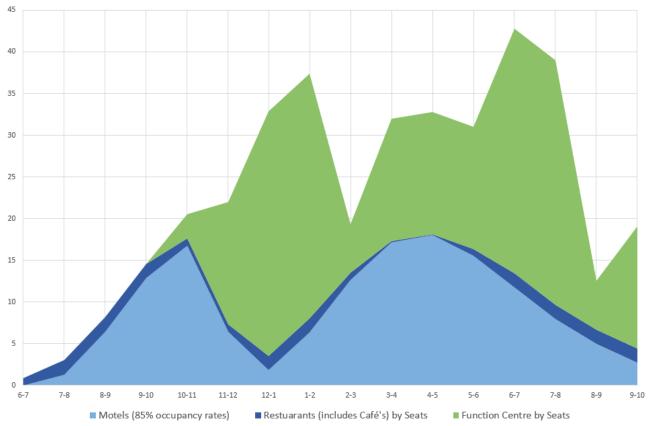


Figure 10 – Assessed cumulative Saturday hourly trip generation by land use



7 TRAFFIC MANAGEMENT ON FRONTAGE STREETS

Traffic management on the frontage streets is best described through the following photographs:

- Photograph 4 Looking south on Wanneroo Rd at Trian Rd intersection (Page 11);
- Photograph 5 Looking west down Trian Rd from western access driveway (on left) to Wanneroo Rd (Page 13);
- Photograph 6 Looking east down Trian Rd from western access driveway (on right) to eastern access driveway (at end of road on right) (Page 13); and
- Photograph 7 Annotated aerial photograph of Trian Rd/ Wanneroo Rd intersection (Page 16)

There are no signed parking or stopping restrictions on either frontage road and none are warranted due to its rural nature and lack of demand for stopping or parking on these roads.



8 PUBLIC TRANSPORT ACCESS

There are no public transport routes or stops within reasonable walking distance of the development site. The nearest bus route is along Marmion Ave and the nearest Train station is Butler Station, both accessible via Wanneroo Rd and Pipidinny Rd north of the subject site, as shown in Figure 11 below.



Figure 11 – Public Transport Access



9 PEDESTRIAN AND CYCLE ACCESS

9.1 PROPOSED PEDESTRIAN AND CYCLE FACILITIES WITHIN THE DEVELOPMENT

There are no bicycle facilities shown in the development plans. Pedestrians and cyclists are expected to access the site via the access driveway.

9.2 EXISTING PEDESTRIAN AND CYCLE FACILITIES ON SURROUNDING ROADS

As shown in Figure 2 in **Section 4.1** and Photograph 9 below, there are sealed shoulders on both sides of Wanneroo Road that are designated as formal cycle routes.



Photograph 9 – Example of sealed shoulders on both sides of Wanneroo Road that are designated as formal cycle routes

9.3 PROPOSALS TO IMPROVE PEDESTRIAN OR CYCLE ACCESS

There are no identified proposals to improve pedestrian or cycle access.



10 SITE SPECIFIC ISSUES

There are no site-specific issues other than to ensure that appropriate waste collection facilities are provided.

There are a number of options for waste collection that need to be considered, including recycling and composting. Food waste from the restaurant/ café will require freezing facilities if this is not collected or composted daily.

If waste collection is to be kerbside, the safe movement and storage of bins on the verge needs to be considered and managed.

If waste collection is to be from a bin area on-site, the safe movement and operation of the waste collection vehicle needs to be accommodated.

There may be a need to include a centralised waste bin area that will be required to comply with regulations regarding storage, cleaning and vermin control.

It is recommended that waste collection is discussed with the City of Wanneroo to determine the most appropriate management and that the site is then designed to accommodate the required movements and facilities.



11 SAFETY ISSUES

A review of the five-year crash record for the period ending 31st December 2017 has revealed that there have been no reported crashes at the Trian Rd/ Wanneroo Rd intersection as shown in the crash plot map provided as Figure 12 below. It should be noted that each marker denotes a crash location and may represent a single crash or several crashes at the indicated location.

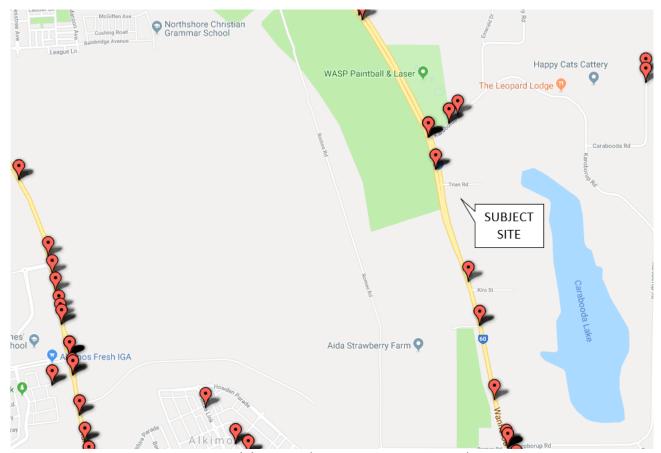


Figure 12 – Crash location plot map: 5 years to December 2017

Sight lines at the Trian Rd/ Wanneroo Rd intersection for traffic turning out of Wanneroo Rd exceed the assessed Safe Intersection Sight Distance requirement of 267 m. The sight line for drivers turning right into Trian Rd, and for or northbound Wanneroo Rd drivers performing a U at this intersection, is restricted by vegetation in the median on the north side, as shown in Photograph 8 on page 17. It is recommended that the relevant road authority address this by replacing the vegetation with ground cover and/ or trees with trunk diameters of 100 mm or less and high canopies. This should be carried out regardless of any development proposals.

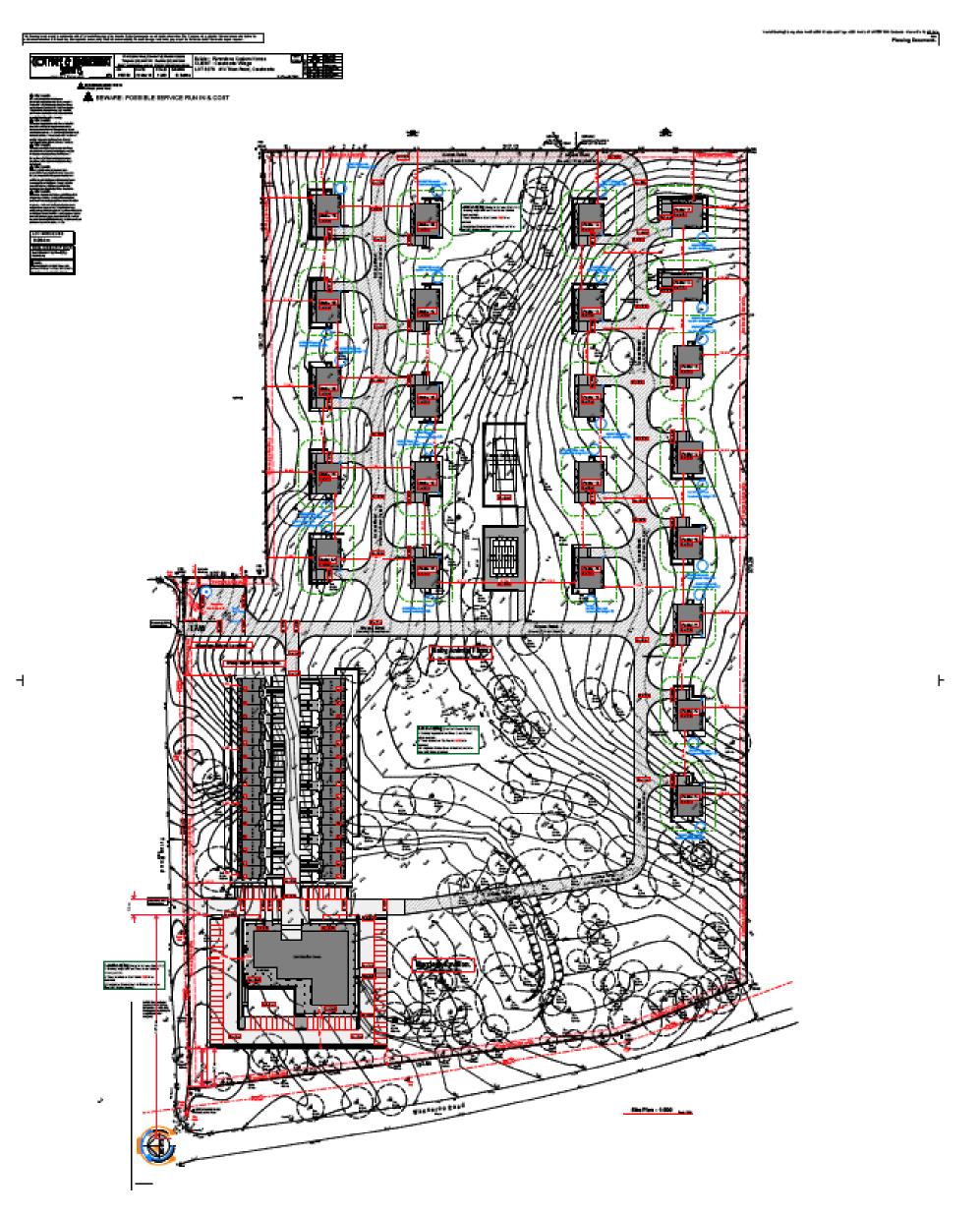


REFERENCES

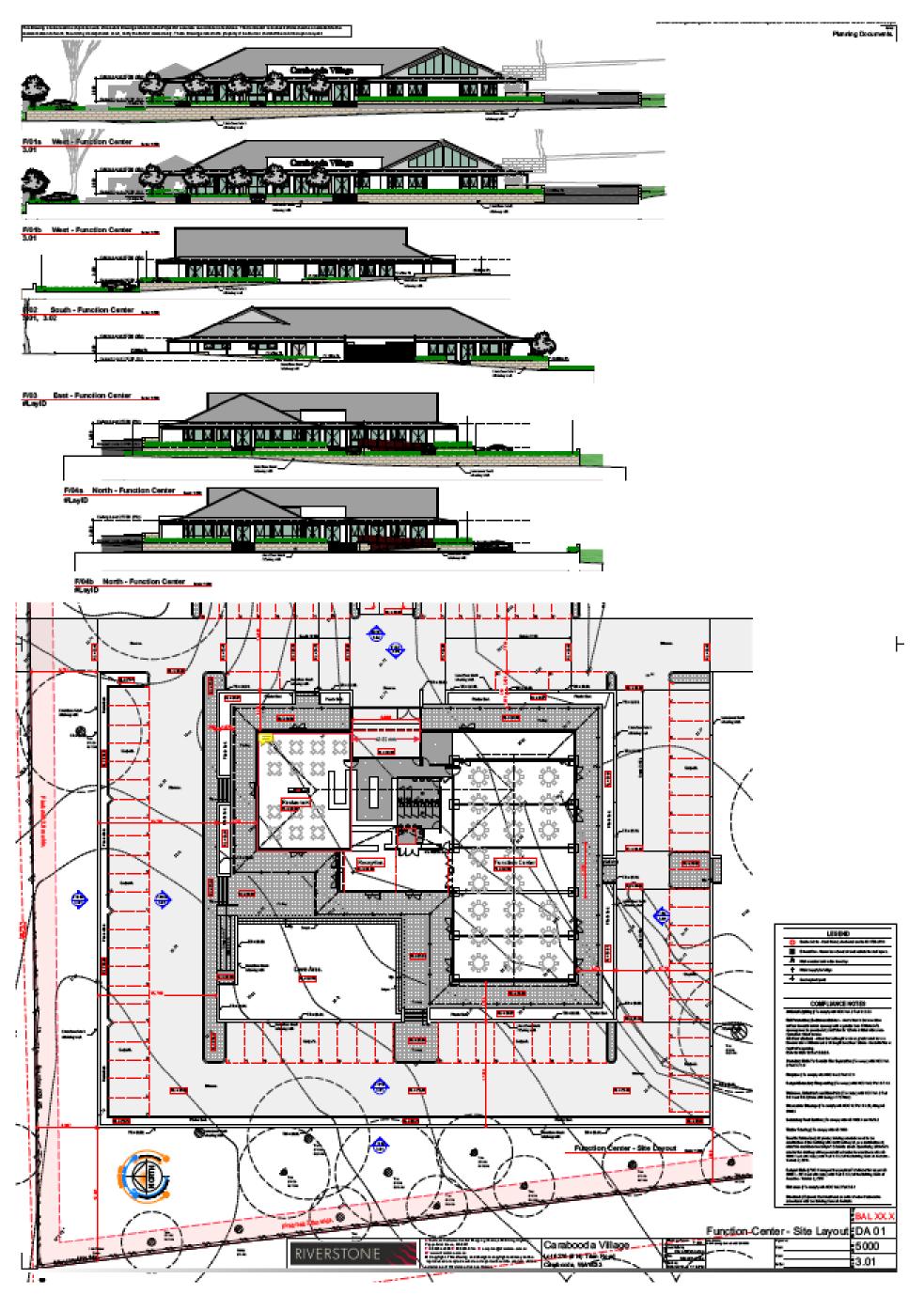
- 1. Western Australian Planning Commission. *Transport Impact Assessment Guidelines*. Department of Planning, Government of Western Australia. Perth, Western Australia: Western Australian Planning Commission, August 2016. p. 182, Revised August 2016. The current version of the TIA guidelines (August 2016) has been endorsed by the WAPC..
- 2. **Austroads.** *Guide to Traffic Management Part 3: Traffic Studies and Analysis.* Sydney : Austroads Incorporated, 2009. p. 196. Vol. 3. ISBN 978-1-921551-77-2.
- 3. . Guide to Road Design Part 4A: Unsignalised and Signalised Intersections (2017). [ed.] Peter Aumann and Mike Whitehead. Third. Sydney: Austraods Ltd, 2017. p. 142. Vol. 4A. ISBN 978-1-925451-73-3.
- 4. **Standards Austarlia/ Standards New Zealand.** *AS/ NZS 2890.6-2009: Parking facilities Part 6: Off-street parking for people with disabilities.* Sydney & Wellington: Standards Australia and Standards New Zealand, 2009. p. 25. Vol. 6. ISBN 0 7337 9285 5.
- 5. **Standards Australia.** *AS/NZS 2890.1 2004 Parking facilities Part 1: Off-street car parking.* Sydney: Standards Australia/ Standards New Zealand, 2004. p. 77. (Incorporating Ammendment No 1). ISBN 0 7337 5742 1.
- 6. Roads and Traffic Authority NSW. Guide to Traffic Generating Developments. Transport Planning Section. Sydney: Roads and Traffic Authority NSW, October 2002. p. 174. Version 2.2. ISBN 07305 9080 1.
- 7. **NSW Government.** *Guide to Traffic Generating Developments Updated traffic surveys.* Transport, Roads & Maritime Services. Sydney: NSW Government, August 2013. p. 22, Technical Direction. RMS.13.298.
- 8. **Institute of Transportation Engineers (USA).** *Trip Generation Manual, 9th Edition.* 9th Edition. Washington: Institute of Transportation Engineers (USA), September 2012. ISBN-13: 978-1-933452-64-7; ISBN-10: 1-933452-64-1.
- 9. **Main Roads Western Australia.** Perth Metropolitan Area Functional Road Hierarchy. [ed.] Asset & Network Information. Perth, WA, Australia : Main Roads Western Australia, August 1997.
- 10. **Standards Australia.** *AS 2890.3:2015 Parking facilities Part 3: Bicycle parking.* Sydney : SAI Global Limited under licence from Standards Australia Ltd, 2015. Vol. 3. ISBN 9781760352295.

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APPENDIX A DEVELOPMENT PLANS







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Carabood a Village

Lettick (F14) Tites Read Cambroda, WA 602 Motels - Site Layout DA 01

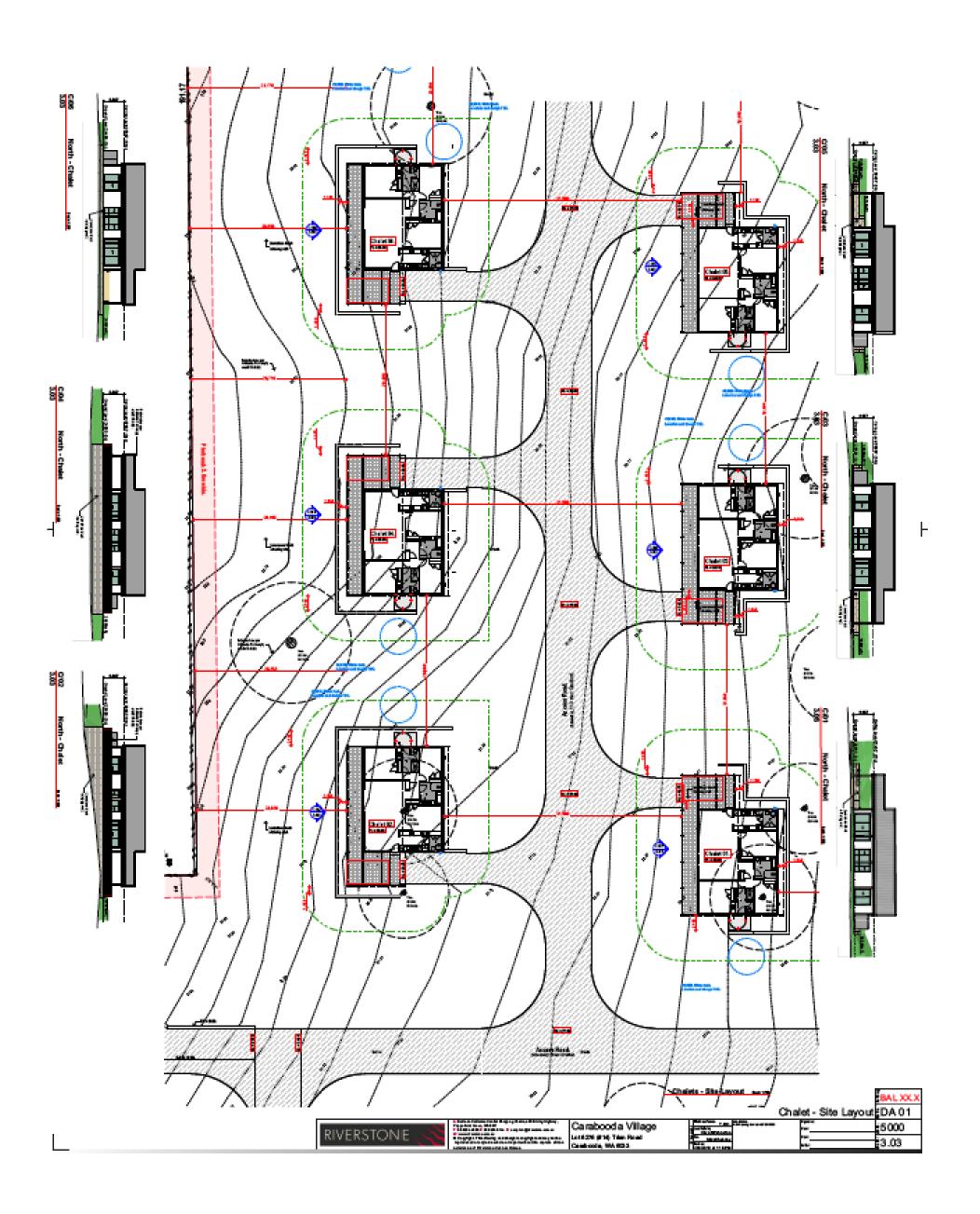
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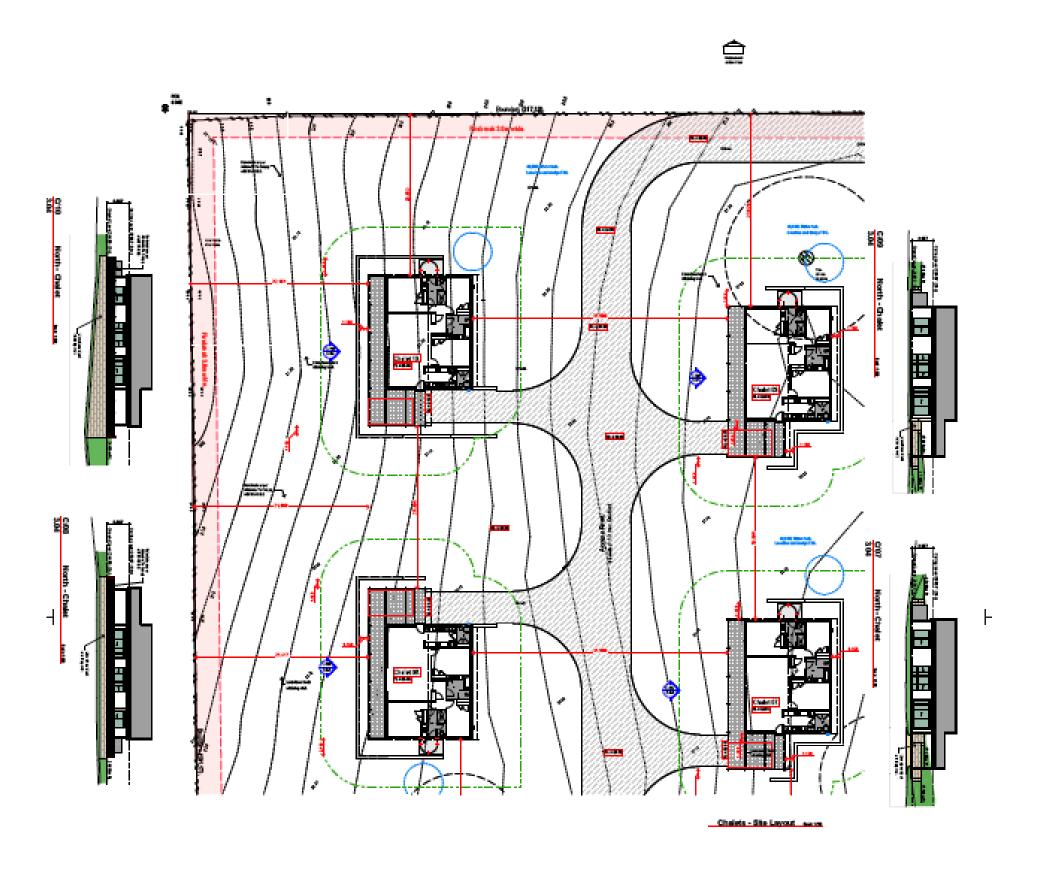
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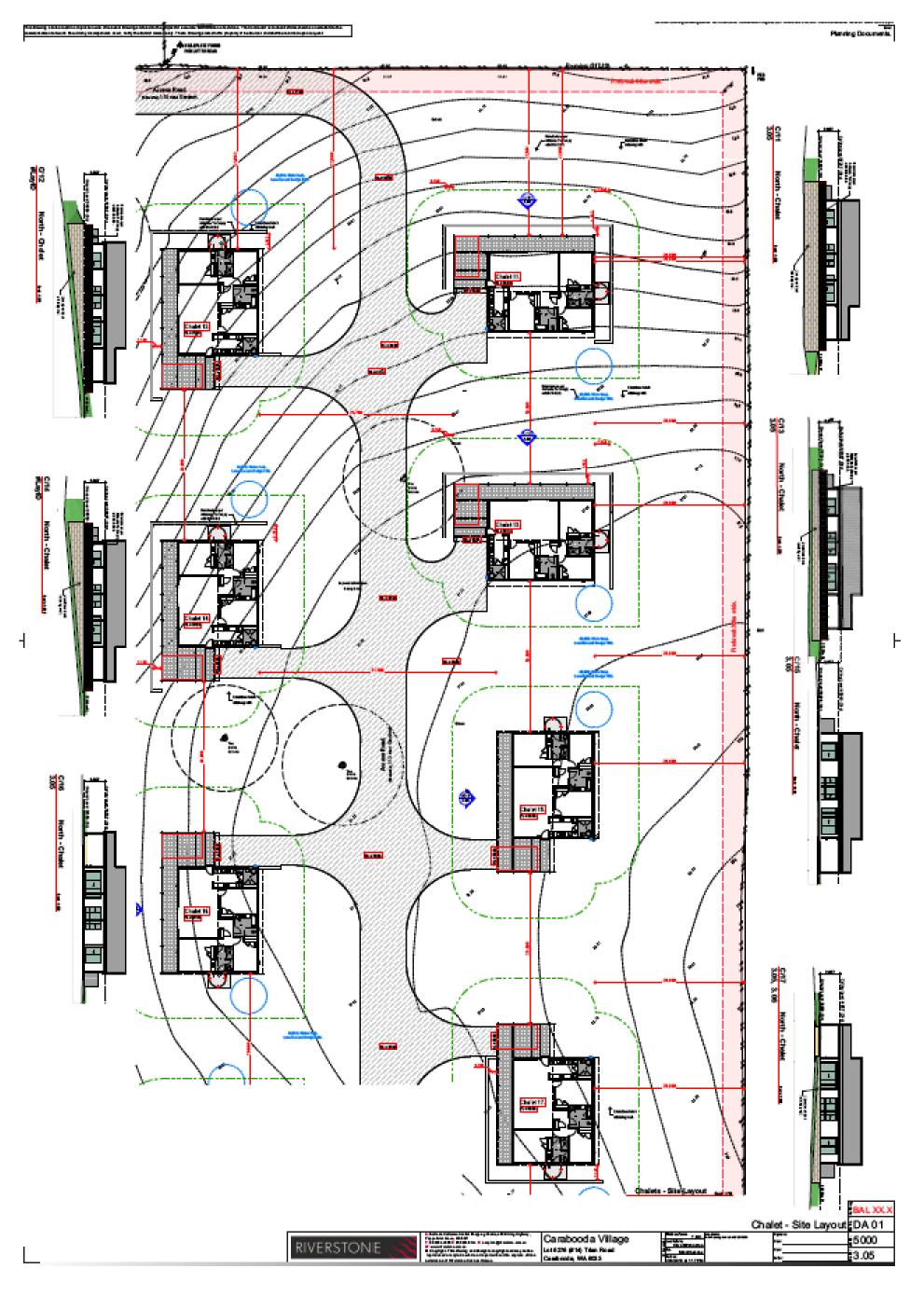




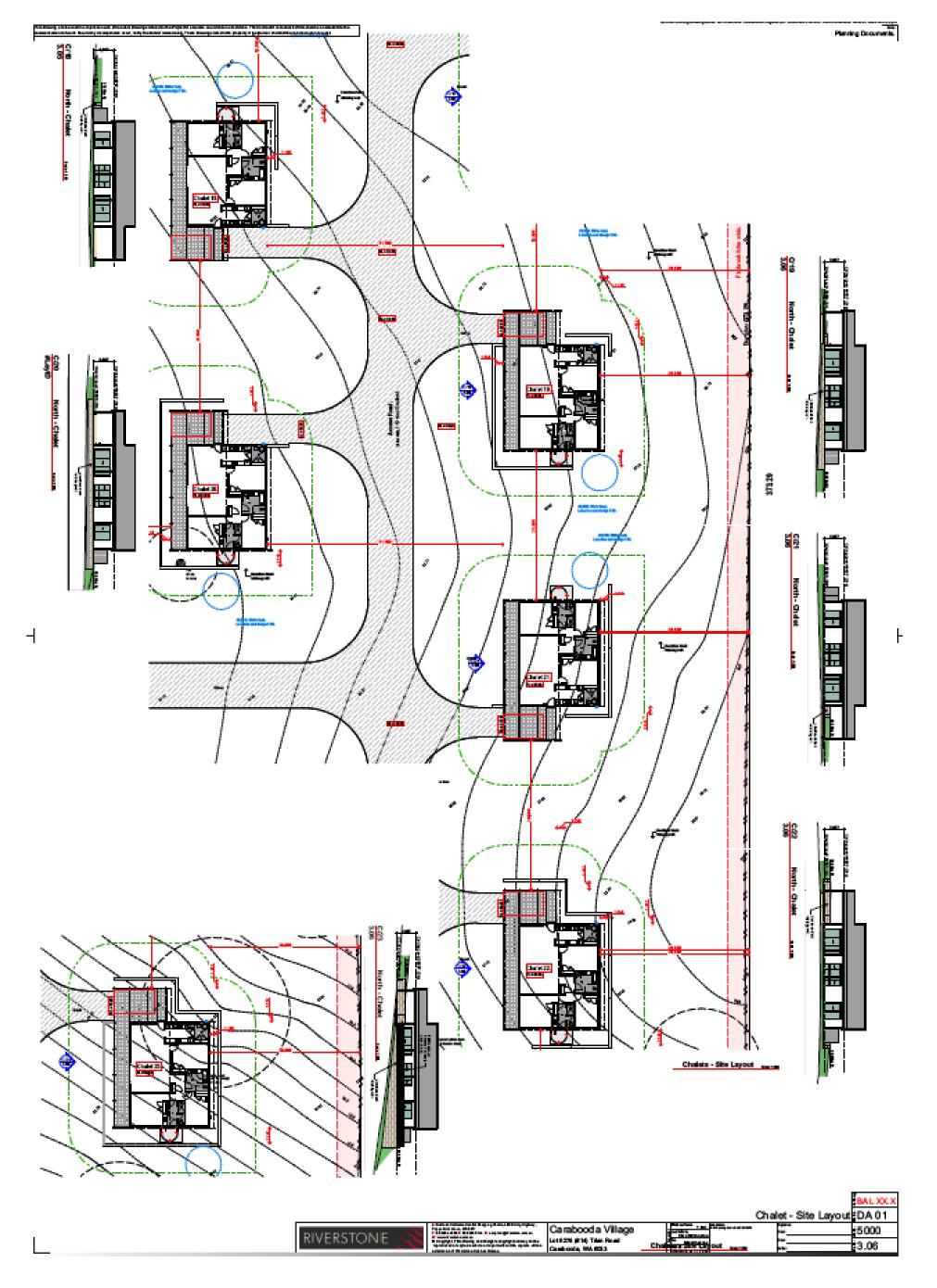


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APPENDIX B WAPC TRANSPORT IMPACT STATEMENT CHECKLIST

Checklist for a transport impact statement for individual development

- Tick the provided column for items for which information is provided.
- Enter N/A in the provided column if the item is not appropriate and enter reason in comment column.
- Provide brief comments on any relevant issues.
- Provide brief description of any proposed transport improvements, for example, new bus routes or signalisation of an existing intersection.

ITEM	PROVIDED	COMMENTS/PROPOSALS
Proposed development		
existing land uses	✓	Section 2, Photograph 1 & Photograph 2
proposed land use	✓	Section 3, Figure 1 & Appendix A
context with surrounds	✓	Section 4 & Figure 2
Vehicular access and parking		
access arrangements	✓	Section 5
public, private, disabled parking set down/pick up	√	Section 5
Service vehicles (non-residential)		
access arrangements	✓	Section 5
on/off-site loading facilities	✓	Section 5
Service vehicles (residential)		
rubbish collection and emergency vehicle access	TBA	Refer Section 10
Hours of operation (non-residential only)	√	Section 3
Traffic volumes		
daily or peak traffic volumes	√	Sections 4.3.1 and 6: Daily and Hourly
type of vehicles (for example, cars, trucks)	√	Section 6
Traffic management on frontage streets	√	Section 7, Photograph 4, Photograph 5, Photograph 6 & Photograph 7.
Public transport access		
nearest bus/train routes	✓	Section 8 Figure 2 & Figure 11
nearest bus stops/train stations	✓	Section 8 Figure 2 & Figure 11
pedestrian/cycle links to bus stops/ train station	NA	Not within reasonable walking or cycling distance.



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ITEM	PROVIDED	COMMENTS/PROPOSALS
Pedestrian access/ facilities		
existing pedestrian facilities within the development (if any)	NA	
proposed pedestrian facilities within development	√	Section 9.1
existing pedestrian facilities on surrounding roads	✓	Section 9.2
proposals to improve pedestrian access	✓	Section 9.3
Cycle access/facilities		
existing cycle facilities within the development (if any)	NA	
proposed cycle facilities within development	✓	Section 9.1
existing cycle facilities on surrounding roads	✓	Section 9.2
proposals to improve cycle access	na	Section 9.3
Site specific issues	✓	Section 10
Safety issues	✓	Section 11
identify issues	√	Section 10: Need to manage waste collection. Section 11: The sight line for drivers turning right into Trian Rd or northbound Wanneroo Rd drivers performing a U at this intersection is restricted by vegetation in the median on the north side.
remedial measures	•	Discuss waste collection options with the City of Wanneroo and include facilities to meet this. Request the relevant road authority address the current sightline obstruction by replacing the vegetation in the median in Wanneroo Rd north of Trian Rd with ground cover and / or trees with trunk diameters of 100 mm or less and high canopies.

Proponent's name	
Company	. Date

Transport assessor's name David Wilkins Company is consultants WA Date 21/06/19