

PROPOSED MIXED USE COMMERCIAL CENTRE

LOT 2 YANCHEP BEACH ROAD, YANCHEP

TRAFFIC AND PARKING ASSESSMENT

April 2018



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1.0 EXECUTIVE SUMMARY

Riley Consulting has been commissioned to prepare a traffic and parking statement for a proposed child care centre and commercial development on Lot 2 Yanchep Beach Road, Yanchep. The findings of this report are:

- The proposed childcare centre and commercial land uses are forecast to generate about 694 vehicle movements per day. During the peak periods a maximum attraction of 78 vehicles is expected and under WAPC guidelines requires the provision of a traffic statement.
- The level of traffic generated to any single traffic lane is forecast to be significantly less than 100 vehicles during the peak hour of operation. Under WAPC guidelines the development would be considered to have no material impact to the operation of the local road network.
- Access to the site is provided via a dedicated 8 metre wide lane between Booderee Road and Kakadu Road. The lane has been approved for the purpose of providing access to the commercial sites fronting Yanchep Beach Road as direct access to Yanchep Beach Road is not provided..
- Analysis of the peak period traffic demands indicates that no material traffic impact would be caused by the proposed development.
- Parking in accordance with the City of Wanneroo's Town Planning Scheme is provided. All parking bays accord with AS2890.1.

2.0 THE SITE AND SURROUNDING ROAD NETWORK

The site is located on Lot 2 Yanchep Beach Road, Yanchep. The location of the site is shown in Figure 1 and Figure 2 shows an aerial image of the site and surrounding area. Roads of significance to the development site are considered below.

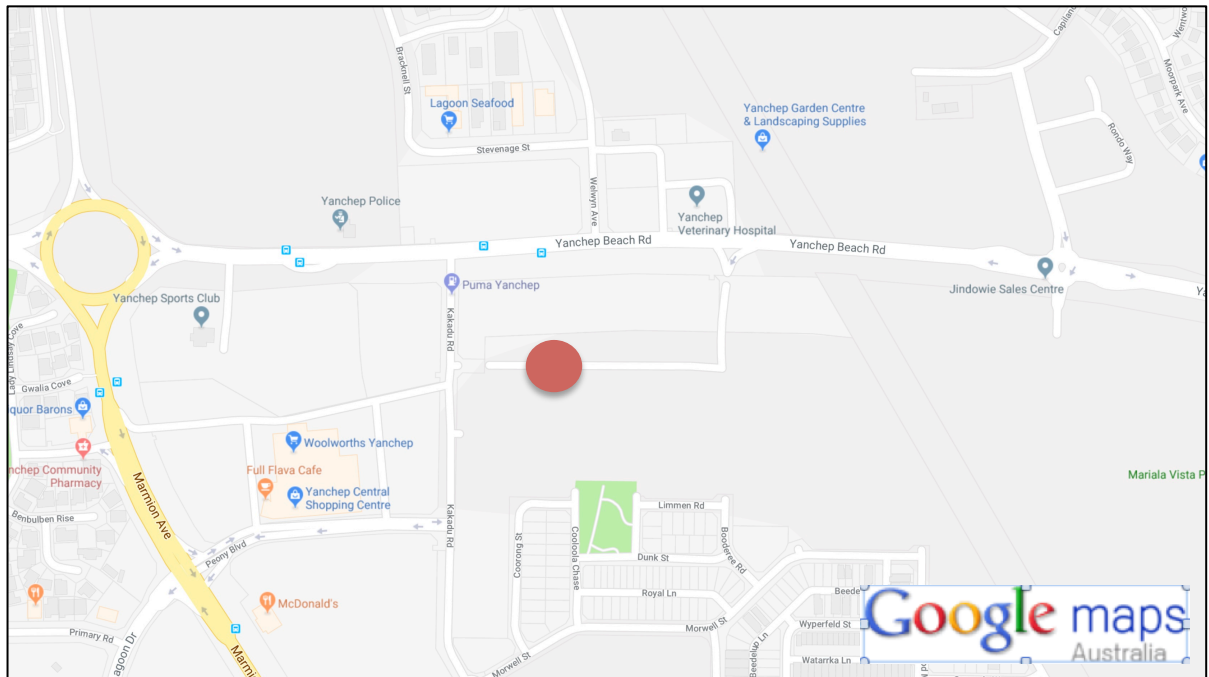


Figure 1 Site Location



Figure 2 Aerial Image of the Subject Site (site area indicative)

Yanchep Beach Road

Yanchep Beach Road is classified as a district distributor B road in the Main Roads *Functional Road Hierarchy*, adjacent to the subject site. It is constructed with a single lane in each direction. At some future time duplication to a four lane divided road will be undertaken. A 60kph speed limit applies.

Traffic data available on the MRWA website indicates 4,907 vehicles per day (vpd) west of Wanneroo Road (2016). Traffic data provided by the City of Wanneroo shows 5,288vpd east of Parkland Drive (2017). Data recorded to the east of Kakadu Drive indicates 6,958vpd (2016). It can be expected that Yanchep Beach Road adjacent to the subject site is passing about 6,500vpd. Table 1 provides a summary of the current traffic demands.

Table 1 Yanchep Beach Road

Volume	AM Peak (7-8)	PM Peak (4-5)	Capacity
6,500vpd (2016)	156 east 377 west	377 east 170 west	13,500vpd

* peak flow assumed to be reverse of MRWA count at Wanneroo Road

Future traffic forecasts for Yanchep Beach Road indicate an ultimate demand of about 20,000vpd¹ adjacent to the subject site. The forecast demand could be accommodated in a boulevard style road, although land for a four lane divided road is provided. A four lane divided road would have capacity to carry 40,000vpd with good levels of Service.

Kakadu Road

Kakadu Road is classified as an Access street in the Main Roads *Functional Road Hierarchy*. As such it would be restricted to a maximum daily flow of 3,000vpd under the *Liveable Neighbourhoods* planning guidelines. Access to Yanchep Beach Road is restricted to left-in and left-out movements only. A 50kph speed limit applies.

Avon Road

To the south of the subject site is Avon Road, a local access street fronted by residential dwellings. Avon Road does not provide direct access to the subject land. It is constructed with a 6 metre pavement and is suitable to carry up to 3,000vpd.

¹ Yanchep-Two Rocks DSP

Booderee Road

Booderee Road is classified as an Access street in the Main Roads *Functional Road Hierarchy*. As such it would be restricted to a maximum daily flow of 3,000vpd under the *Liveable Neighbourhoods* planning guidelines. Access to Yanchep Beach Road is restricted to left-in and left-out movements only. A 50kph speed limit applies.

Commercial Site Access Lane

To the south of the subject site is an access lane specifically constructed to provide access to the commercial sites fronting Yanchep Beach Road, The lane is constructed to a width of 8 metres and links Booderree Road through to Kakadu Road.

At Kakadu Road, a Puma service station has been constructed and is adjacent to the subject site. To the east of the subject site a future development is to be constructed.

Peony Boulevard

Peony Boulevard is the new main street providing access to the commercial precinct. It is constructed as a boulevard style road between Kakadu Road and Marmion Avenue. Its intersection with Marmion Avenue is controlled by traffic signals. Traffic data recorded in 2013 showed about 2,130vpd. With full construction of the shopping centre and other local facilities a daily flow closer to 5,000vpd would be expected.

The Proposed Development

It is proposed to develop the site to provide a childcare centre accommodating up to 69 children with 550m² of commercial. A concept layout for the proposed development is shown in Figure 3.



Figure 3 Concept Development Plan (refer to DA plans)

3.0 TRAFFIC GENERATION AND DISTRIBUTION

The subject site is currently vacant and generates no traffic movement.

The proposed development is for a childcare centre with small commercial use fronting Yanchep Beach Road.

The childcare centre will have 13 staff and cater for upto 69 children comprising:

24 children between 0 – 2 years old

25 children between 2 – 3 years old

20 children over 3 years old

Reference to the RTA *Guide to Traffic Generating Developments* (NSW) suggests the trip rates for child care centres shown in Table 2.

Table 2 RTA Child Centre Trip Rates

Centre Type	Peak vehicle trips		
	7am – 9am	2:30-4pm	4pm – 6pm
Pre-school	1.4	0.8	-
Long day care	0.8	0.3	0.7
Before/after school	0.5	0.2	0.7

The pre-school children would predominately be those children under 2 years old and long day care would typically apply to children over 2. It is not expected that the centre would provide significant levels of before/after school care. Based on the RTA trip rates, the proposed centre could be expected to generate:

7am - 9am	$(24 \times 1.4 = 33.6) + (45 \times 0.8 = 36)$	70 vehicle movements
2:30 - 4pm	$(24 \times 0.8 = 20) + (45 \times 0.3 = 13.5)$	34 vehicle movements
4pm – 6pm	$(24 \times 0) + (45 \times 0.7 = 31.5)$	32 vehicle movements

The maximum daily traffic demand can be found from.

- Number of staff (13) x 2 trips 26 trips
- Number of children (69 x 4 trips) 276 trips

In total the childcare centre could attract 302 trips per day.

Domino's Pizza

The westernmost tenancy has been identified for a Domino's pizza outlet with a small al-fresco area. Trip generation rates for Domino's Pizza are significantly lower than major fast food outlets such as McDonalds and KFC. Reference to the ITE Trip Generation indicates a pm peak generation of 27 trips per 100m² for fast foot outlets with no drive –through. With a floor area of 130m² a peak generation of 35 movements would be expected. During the peak period of fast food activity (typically 7pm-8pm) the ITE trip rate is 56.3 trips per 100m² or 73 vehicle movements. It is noted that Domino's typically operate between 11am and 11pm, except Friday and Saturday when the store close as 12am.

Trip generation sources do not provide daily traffic generation rate for fast food outlets, but tend to suggest the traditional peaks attraction about 10% of their daily attraction. This would suggest that the Domino's outlet can be expected to generate 350 vehicle movements per day.

Commercial Tenancies

Reference to the RTA *Guide to Traffic Generating Developments* identifies a trip rate of 10 trips per 100m² GFA for commercial tenancies. With four units of 105m² of floor area, the commercial tenancies can be expected to generate 42 trips per day. During the peak period some 20% of commercial traffic will occur, or 8 peak trips.

Table 2 shows the expected traffic generation of the proposed development.

Table 1 Traffic Generation

	Daily	AM	PM
Existing land use	0	0	0
Child care	302	70	32
Domino's*	350	-	35
Commercial Tenancies	42	8	8
Traffic Increase	+694	+78	+75

*50% of traffic could be pass-by trade

Distribution

Traffic attracted to the childcare centre will be drawn from the surrounding residential area and from parents already passing the site using Yanchep Beach Road on their way to work.

However, with access to Yanchep Breach Road restricted to left-in / left-out movements, local road will be used to provided access.

Reference to Google maps indicates that about one third of residential development lies to the east of the subject site, with the remainder closer to the beach. Traffic attracted to the child care centre will most likely be undertaking a work trip with traffic heading to Marmion Avenue and/or Wanneroo Road. The close proximity of the local shopping centre can be expected at attract a significant reciprocal use.

The Domino's outlet is expected to attract traffic in a similar manner to the child care centre (predominantly home based) and the commercial unit having a higher attraction form Marmion Avenue.

The daily and peak hour movements anticipated are shown in Appendix B.

4.0 TRAFFIC IMPACT

Reference to the WAPC *Transport Assessment Guidelines for Developments* (Volume 4) states that:

“where a traffic increase as a result of a proposed development is less than 10% of current road capacity, it would not normally have a material impact”.

“For ease of assessment, an increase of 100 vehicles per hour for any lane can be considered as equating to around 10% of capacity. Therefore any section of road where traffic would increase flows by more than 100 vehicles per hour for any lane should be included in the analysis”.

Based on the RTA traffic generation rates for the proposed development, it can be seen that the peak traffic demand is shown to be 78 vehicles during the morning peak period between 7am and 9am. The development will generate a maximum of 39 vehicles to any traffic lane in any hour (half the total traffic generation) The WAPC guidelines would therefore deem that the proposed development would have no material impact as no traffic lane would experience an increase of more than 100 vehicles in any hour.

The proposed development would have no material impact under WAPC guidelines.

Table 3 provides an assessment of the daily attraction that could occur to the local road network.

Table 3 Increases to Local Road Network

Road	Daily Flow	Development	Capacity	%
Yanchep Beach Road	6,500vpd	+278vpd	13,500	+1%
Kakadu Road	<3,000vpd	+212vpd	3,000*	+7%
Booderee Road	<3,000vpd	+105vpd	3,000*	+3.5%
Peony Boulevard	@5,000vpd	+348vpd	13,500	+2.5%

* Residential amenity value threshold

It can be seen from Table 3 that the increases to the surrounding road network are low and less than 10% of the road capacity. It can be seen that the impact to local residential streets from a daily flow perspective is very low and would not be considered to have a material impact. The level of traffic increases would not be expected to impact residential amenity.

5.0 ACCESS

Access to the proposed development will be taken via a simple cross over to laneway to the south of the development site. The lane has been created specifically for the purpose of providing access to the commercial development fronting Yanchep Beach Road.

The location of the proposed cross over accords with the requirements of AS2890.1. Parking bay access is taken to the laneway and is in accordance with AS2890.1. A lane of 8 metres would have capacity to pass the same traffic flow as a single carriageway road. However, a flow of less than 3,000vpd would be appropriate to match adjacent adjoining streets. The development generates 684 movements per day, or 23% of the projected maximum flow. The lane has been specifically created to provide commercial site access and approved by structure planning accordingly.

Access to Yanchep Beach Road

No direct access is to be provided to Yanchep Beach Road. All traffic is required to use Kakadu Road and Booderee Road. Structure planning of the locality has designed these intersections accordingly.

Service Vehicle Access

Service vehicles will typically be smaller vehicles delivering goods to the commercial uses and the childcare centre. Transit van sized vehicles may require access and can be expected to use the internal car park. A service lane is provided to the west of the subject site and vehicles will be able to pass through the site to adjacent sites once developed.

6.0 PARKING AND MANAGEMENT

The City of Wanneroo's Town Planning Scheme (TPS) identifies a parking requirement for childcare centres of 1 parking bay for every staff member plus 9 bays for 65 - 72 children (refer Policy 2.3). Take away food requires 1 bay per 4 guests seated plus 7 bays per 100m² NLA non seated area. Commercial office requires 1 bay per 230m².

The proposed child care centre has 13 staff and 69 children and will require (13 + 9) 22 bays.

The Domino's pizza outlet has 78m² of seating area equating to a requirement of 15.6 bays plus 3.6 bays for non-seated area. In total 19.2 bays would be required.

The commercial offices have a total floor area of 420m² and require 14 bays.

In total the proposed development would require the provision of (22 + 19 + 14) 55 bays under the Town planning scheme.

The proposed development is shown to provide a total of 56 bays of which 37 bays are located in a dedicated car park fronting Yanchep Beach Road. Adjacent development will extend the car parking fronting Yanchep Beach Road.

The level of parking provided meets the minimum requirements of the City of Wanneroo's Town Planning Scheme.

Car Park Layout

All parking bays are designed to accord with AS2890.1.

7.0 PEDESTRIANS, CYCLISTS AND PUBLIC TRANSPORT

The site is located adjacent to Yanchep Beach Road, which is provided with a dual use path to its southern side. Future road widening will provide footpaths and cycle paths to current standards.

Cycling to the proposed development is feasible, although expected to be low. A dual use path currently exists to the site frontage to Yanchep Beach Road.

Yanchep Beach Road is serviced by route 491. Bus stops are located within 100 metres of the site. Figure 6 shows the local bus services. Future service passing the site can be expected to increase once the future rail station is constructed.

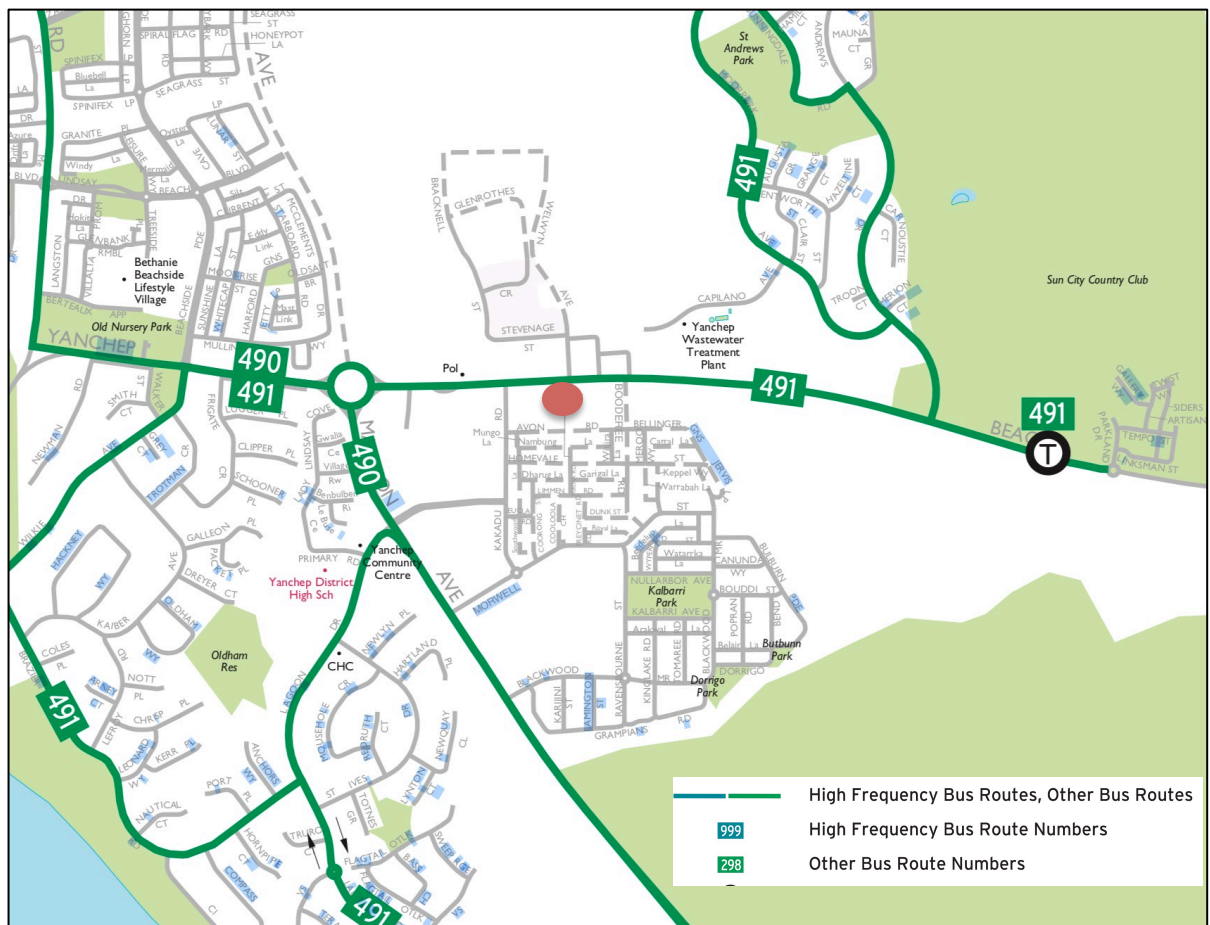


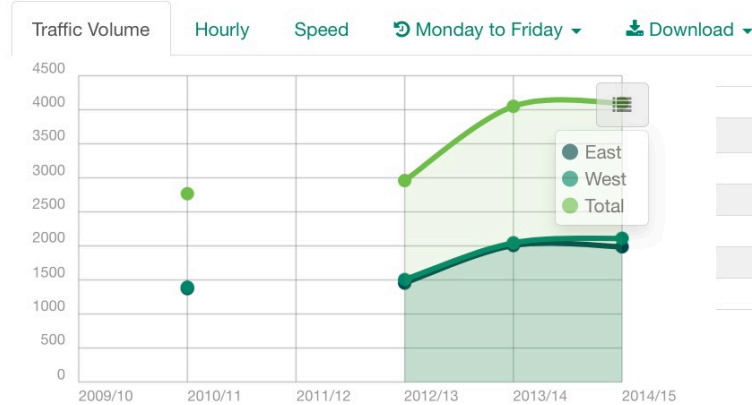
Figure 6 Local Bus Services

APPENDIX A TRAFFIC DATA

Yanchep Beach Rd [↗](#)

SITE 3290

West of Wanneroo Rd



	Vehicles	
	Total	Heavy
2014/15	4097	13%
2013/14	4050	12%
2012/13	2959	9%
2011/12		
2010/11	2767	
2009/10		

Levels of Service by Road Type

LOS	Single Carriageway ¹	2-Lane Boulevard ²	Dual Carriageway (4-Lanes) ³	Dual Carriageway (4-lane Clearway) ³
A	2,400vpd	2,600vpd	24,000vpd	27,000vpd
B	4,800vpd	5,300vpd	28,000vpd	31,500vpd
C	7,900vpd	8,700vpd	32,000vpd	36,000vpd
D	13,500vpd	15,000vpd	36,000vpd	40,500vpd
E	22,900vpd	25,200vpd ⁴	40,000vpd	45,000vpd
F	>22,900vpd	>25,200vpd ⁴	>40,000vpd	>45,000vpd

¹ Based on Table 3.9 Austroads - Guide to Traffic Engineering Practice Part 2

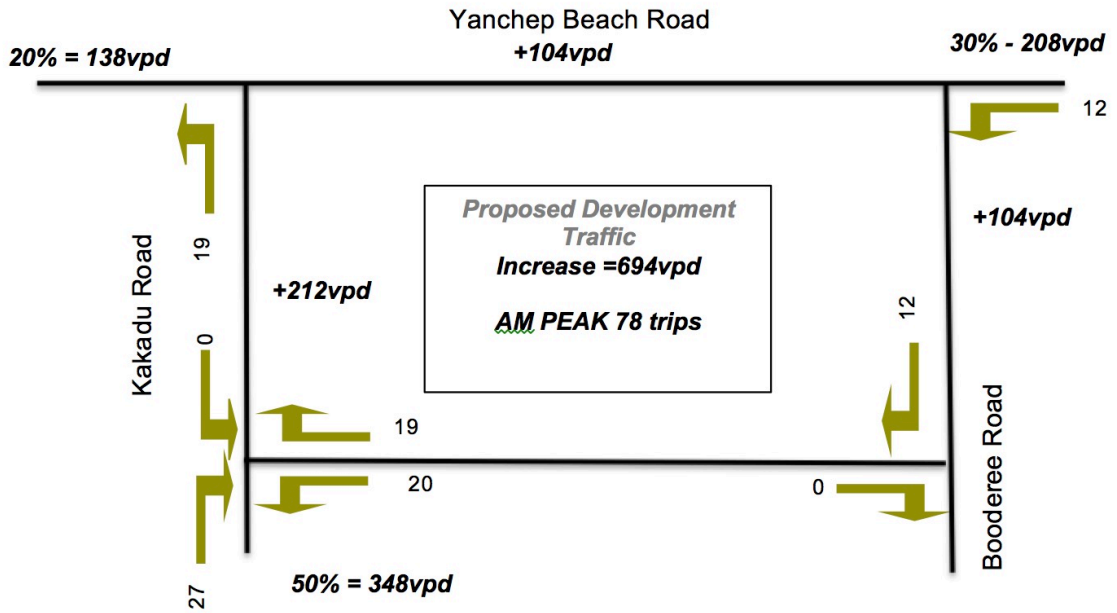
² Based on single carriageway +10% (supported by Table 3.1 Austroads - Guide to Traffic Engineering Practice Part 3) – Boulevard or division by medians.

³ Based on RRR Table 3.5 - mid-block service flow rates (SF.) for urban arterial roads with interrupted flow. Using 60/40 peak split.

⁴ Note James Street Guildford passes 28,000vpd.

APPENDIX B FORECAST TRAFFIC MOVEMENTS

Traffic Plan
AM PEAK and Daily Demand



PM Peak

