

# Proposed Child Care Centre

304 Marangaroo Drive, 3 Callison Way  
and 96 Callison Way, Koondoola

## Transport Impact Statement

**PREPARED FOR:**  
Accord Property

May 2022

## Document history and status

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# 1 Introduction

This Transport Impact Statement (TIS) has been prepared by Transcore on behalf of Accord Property with regard to a proposed child care centre to be located at 304 Marangaroo Drive, 3 Callison Way and 96 Callison Way, Koondoola in the City of Wanneroo.

The subject site is located at the southwest corner of the 'T' intersection of Marangaroo Drive and Callison Way. The subject site is currently occupied by three residential properties and vehicular access to the subject site is currently available from Marangaroo Drive and Callison Way. It is bound by Marangaroo Drive to the north, Callison Way to the east and south and other residential properties to the immediate west as illustrated in **Figure 1**.



**Figure 1: Location of the subject site**

The Transport Impact Assessment Guidelines (WAPC, Vol 4 – Individual Developments, August 2016) states: “A Transport Impact Statement is required for those developments that would be likely to generate moderate volumes of traffic<sup>1</sup> and therefore would have a moderate overall impact on the surrounding land uses and transport networks”.

**Section 6** of Transcore’s report provides details of the estimated trip generation for the proposed development. Accordingly, as the total peak hour vehicular trips are estimated to be less than 100 trips, a Transport Impact Statement is deemed appropriate for this development.

Key issues that will be addressed in this report include the traffic generation and distribution of the proposed development, access and egress movement patterns and parking demand and supply.

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<sup>1</sup> Between 10 and 100 vehicular trips per hour



## 2 Proposed Development

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The Development Application (DA) for the subject site proposes development of a child care centre with associated car park at 304 Marangaroo Drive, 3 Callison Way and 96 Callison Way, Koondoola in the City of Wanneroo.

This child care centre is proposed to accommodate up to 91 children and 15 staff.

According to the development plan provided in **Appendix A**, a total of 22 on-site parking bays including one ACROD bay are proposed to address the parking demand of the proposed child care centre. The carpark comprises 5 pairs of tandem bays and 12 single bays. The tandem bays are located at the southern side of the car parking area and will be allocated to staff to ensure there is no turnover of these bays during peak periods. Moreover, a turnaround bay is also proposed at the end of the car parking area to provide efficient vehicular circulation within the site.

A bin storage area is provided at the southwest corner of the subject site. Waste collection and deliveries will be accommodated within the site. Waste collection is anticipated to take place when the facility is closed or outside of the peak operation periods of the centre.

As part of the proposed development, vehicular access to the subject site is proposed via a single full movement crossover on Callison Way.

Pedestrian access to the proposed development is available via the existing external footpath network on Marangaroo Drive and the proposed external footpath network on Callison Way with pedestrian crossing facilities.

A copy of the proposed development plan is included in **Appendix A**.

# 3 Vehicle Access and Parking

## 3.1 Access

As part of the development proposal, one existing crossover on Marangaroo Drive and three existing crossovers on Callison Way at the subject site will be closed and one full movement crossover on Callison Way is proposed to serve the proposed development as illustrated in **Figure 2**.

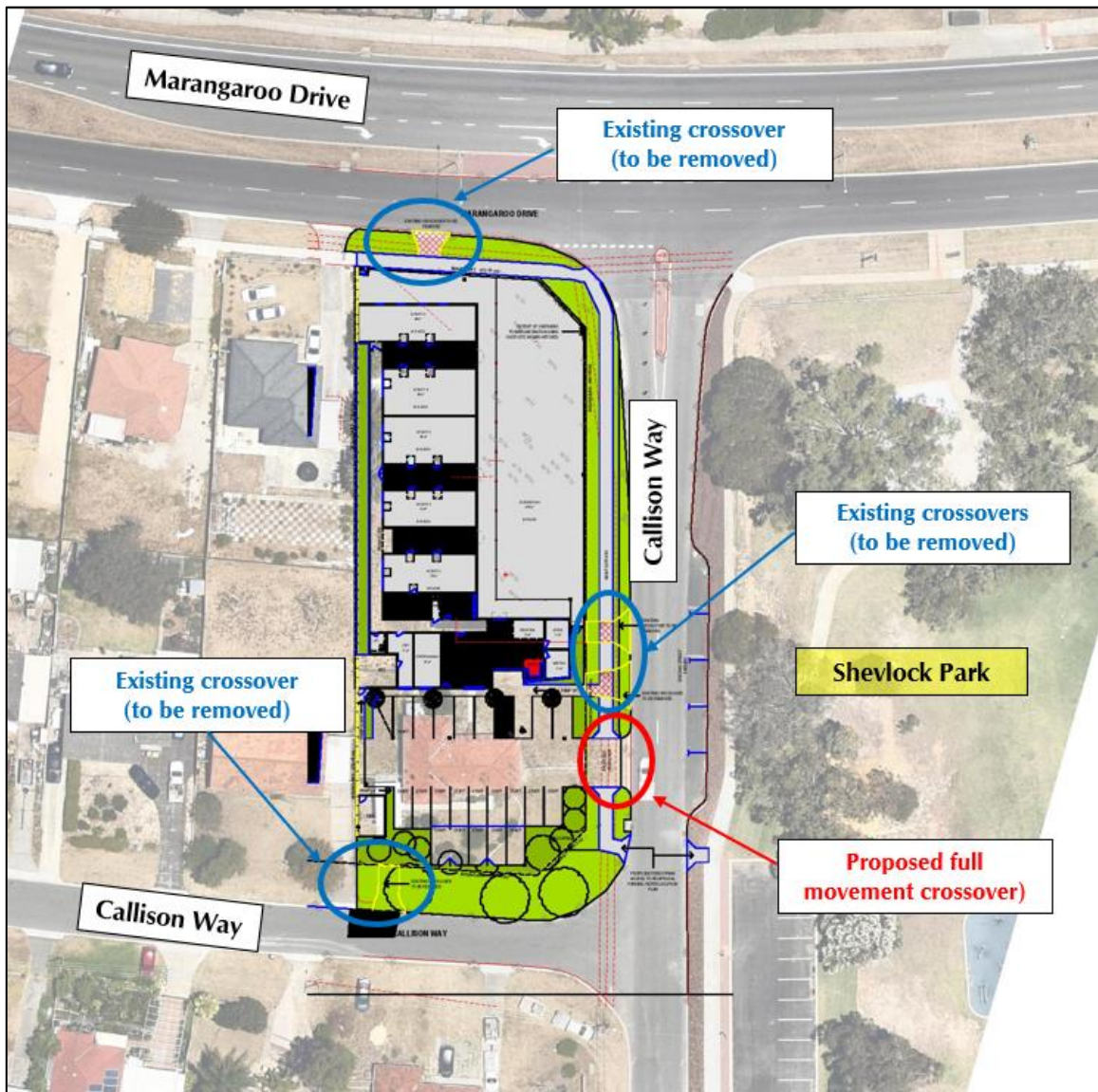


Figure 2: Proposed development crossover



## 3.2 Parking Supply and Demand

Based on the City of Wanneroo's Planning and Sustainability Local Planning Policy 2.3: Child Care Centres, the parking provision applicable to the proposed child care centre is:

- ✚ 1 space for each staff member, plus;
- ✚ 9 bays + 1 per 8 children accommodated in excess of 54 for 55 or more children; and,
- ✚ Not less than 5 spaces.

The proposed child care centre accommodates up to 91 children and 15 staff members. According to the City's policy, the proposed CCC requires parking provision of 28.6 (29) bays.

The proposed development provides a total of 22 bays (inclusive of one ACROD bay) which represents a formal parking shortfall of 7 parking spaces under the requirement of the City's policy. The parking supply and demand of the proposed child care centre is further discussed in the following section of the report.

## 3.3 Estimated Actual Parking Demand Based on Trip Generation

Transcore has undertaken a parking analysis based on the anticipated peak hour traffic generation of the proposed child care centre, to estimate the actual peak parking demand of the centre.

**Section 6.1** of this report details the anticipated peak hour traffic generation of the proposed child care centre. It is established that the calculated morning peak hour trip generation of the proposed child care centre is 36 vehicles in and 33 vehicles out of the car park (afternoon peak hour is expected to generate less trips).

This represents a potential 36 vehicles using the child care centre car park during the peak hour.

The NSW *"Guide to Traffic Generating Developments"* section on childcare centres provides commentary on childcare centre mode share, parking utilisation and parking length of stay. It should be noted that the commentary provided in the NSW guide is based on surveys of actual parking activity undertaken in New South Wales. The NSW guide indicates highest parking demand of 0.23 cars per child (which represents a parking requirement of 21 bays for the proposed child care centre) and the average recorded length of stay for all surveyed child care centres of 6.8 minutes.

Conservatively assuming that the length of stay for pick-up/drop-off parking for the proposed child care centre is 10 minutes, it is calculated that each parking bay can accommodate a turnover of up to 6 vehicles per hour.

It is therefore established that at least 6 bays ( $36/6 = 6$  bays) should be reserved for pick-up and drop-off activities during peak hour periods which result in actual parking demand of 21 bays (6 bays for drop off/pick up + 15 bays for staff).

The proposed development provides a total of 22 bays which satisfies and exceeds the estimated actual parking demand for the proposed child care centre.

Moreover, it also should be noted that:

- ✚ Some of the staff of the child care centre are expected to use public transport or to be dropped off at the centre as there is a bus stop on Marangaroo Drive approximately 40m walking distance from the proposed development;
- ✚ Some of the staff of the child care centre are expected to share ride or walk;
- ✚ The proposed child care centre may also use other nearby public parking bays including 5 existing on-street parking bays on Callison Way and 15 existing bays within Shevlock Park, located approximately 20m from the proposed development; and,
- ✚ As part of the proposed child care centre a pedestrian path along Callison Way (same side as the child care centre) is proposed with pedestrian ramps on both side of the road to facilitate improved pedestrian movements and crossings in this locality and for the child care centre.

For the reasons outlined above, it is considered that sufficient parking has been provided on site and additional nearby public bays the anticipated needs of the proposed child care centre will be met.

## 4 Provision for Service Vehicles

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A bin storage area is located at the southwest corner of the subject site as shown in the development plan in **Appendix A**.

Waste collection and deliveries will take place within the site. A private contractor will collect the waste. The waste collection truck will be able to enter the site via the proposed full movement crossover on Callison Way, reverse into a suitable position adjacent to the bin store for rubbish collection and then exit the site via same crossover in forward gear.

Turn path analysis carried out for an 8.8m waste truck in **Appendix B** shows satisfactory access, egress and circulation within the site.

It is expected that the child care centre will generate a small volume of additional service vehicle traffic primarily associated with the deliveries for the child care centre. It is recommended that smaller vehicles such as vans should be used for deliveries.

The onsite service and waste collection will take place when the facility is closed or outside peak operating periods to ensure the car parking area is available for safe manoeuvring, loading and unloading activities with no disturbance to the operation of the centre.

## 5 Hours of Operation

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The proposed child care centre is proposed to operate during weekdays between 6:30AM to 6:30PM Monday to Friday.

## 6 Daily Traffic Volumes and Vehicle Types

### 6.1 Proposed Development Trip Generation

In order to establish an accurate traffic generation rate for the proposed child care centre, traffic count surveys undertaken by Transcore at similar centres in the Perth metropolitan area were sourced.

Discussions with the respective centre managers revealed that the peak drop-offs and pick-ups for each of these centres occur between the hours of 7:00AM– 10:00AM and 3:00PM–6:00PM.

From the total number of children at each of the centres on the surveyed days, the following average generation rates were established for the morning and afternoon surveyed periods:

- ✚ 7:00AM–10:00AM: 1.58 trips per child (52% in / 48% out); and,
- ✚ 3:00PM–6:00PM: 1.67 trips per child (47% in / 53% out).

From this information, the traffic generation rate for the combined period of 7:00AM–10:00AM and 3:00PM–6:00PM was calculated as 3.25 trips per child. To convert this figure to a daily generation rate, this figure was increased to 3.5 trips per child to account for any trips outside of the surveyed times. It was assumed that the daily in and out split for vehicle trips was 50/50.

Furthermore, the following peak hour generation rates were established from the surveys for the Child Care Centres:

- ✚ AM peak hour: 8:00AM – 9:00AM: 0.75 trips per child (52% in / 48% out); and,
- ✚ PM peak hour: 3:00PM – 4:00PM: 0.60 trips per child (55% in/ 45% out);

Comparison of the six-hour generation rates and the peak hour generation rates confirms that the distribution of traffic from these centres is spread over the peak periods and that full concentration of traffic does not occur in the peak hour. The AM peak hour represents 47% of the 3-hour AM peak period traffic generation and the typical school PM and road network PM peak hours represent 36% and 29% of the 3-hour PM peak period traffic generation, respectively. As such, childcare centres operate quite differently to schools as their peak period is spread out.

Accordingly, the following number of trips was estimated for the proposed child care centre, assuming a maximum scenario of 91 children being present (i.e., centre at full capacity):

- ✚ AM peak hour: 69 trips generated (36 in / 33 out);
- ✚ PM peak hour: 55 trips generated (30 in / 25 out); and,
- ✚ Daily traffic generation: 319 trips generated (160 in / 160 out).

## 6.2 Traffic Flow

Based on the general spatial distribution of existing residential developments in the immediate area, permeability of the local road network, the child care centre's traffic distribution adopted for this analysis is as follows:

- 45% to/from the west of Marangaroo Drive;
- 35% to/from the east of Marangaroo Drive; and,
- 15% to/from the south of Callison Way; and,
- 5% to/from the west of Callison Way.

**Figure 3** illustrates trip generation and traffic distribution over the local road network for the proposed child care centre.



**Figure 3: Estimated traffic movements for the subject site - AM Peak/PM Peak/Total daily trips**

## 6.3 Impact on Surrounding Roads

The WAPC Transport Impact Assessment Guidelines (2016) provides guidance on the assessment of traffic impacts:

*“As a general guide, an increase in traffic of less than 10 per cent of capacity would not normally be likely to have a material impact on any particular section of road but increases over 10 per cent may. All sections of road with an increase greater than 10 per cent of capacity should therefore be included in the analysis. For ease of assessment, an increase of 100 vehicles per hour for any lane can be considered as equating to around 10 per cent of capacity. Therefore, any section of road where development traffic would increase flows by more than 100 vehicles per hour for any lane should be included in the analysis.”*

It is clear that the traffic increase from the proposed child care centre development would be significantly less than the critical threshold (100vph per lane). As detailed in **Section 6.2**, the proposed development will not increase traffic on any lanes on the surrounding road network by more than 100vph, therefore the impact of the development traffic on the surrounding road network will not be significant.

## 7 Traffic Management on the Frontage Streets

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**Marangaroo Drive**, north of the subject site, is constructed as a dual-divided carriageway with landscaped median and pedestrian path on either side of the road in the immediate vicinity of the subject site as shown in **Figure 4**.

Marangaroo Drive is classified as *Distributor A* in the *Main Roads WA Metropolitan Functional Road Hierarchy* and operates under the posted speed limit of 70km/h.

Traffic count data obtained from Main Roads WA indicates that Marangaroo Drive (east of Mirrabooka Avenue) carried 10,831 vehicles per day (vpd) in 2021/22. The morning and afternoon peaks were recorded between 8:00am to 9:00am and 3:00pm to 4:00pm with a total of 958vph and 1,065vph respectively.



**Figure 4: Eastbound view along Marangaroo Drive**



**Callison Way**, east and south of the subject site, is constructed as a single carriageway, two-way undivided road with pedestrian path on eastern side of the road as shown in **Figure 5**.

Callison Way is classified as an *Access Road* in the *Main Roads WA Metropolitan Functional Road Hierarchy* and operates under the default built up area speed limit of 50km/h. Callison Way forms a priority controlled 'T' intersection with Marangaroo Drive to the north.



**Figure 5. Northbound view along Callison Way**

## 8 Public Transport Access

According to the current Transperth bus network map, the closest bus routes are Transperth routes 360 and 377 operating on Marangaroo Drive, north of the subject site. The nearest bus stop is located on Marangaroo Drive approximately 40m east of the development site. The nearest bus stop is accessible from the subject site via the existing and proposed footpath network.

These bus routes provide links to Alexander Heights Shopping Centre, Perth Busport and Mirrabooka Bus Station.

Existing public transport services in the vicinity of the subject site are shown in **Figure 6**.

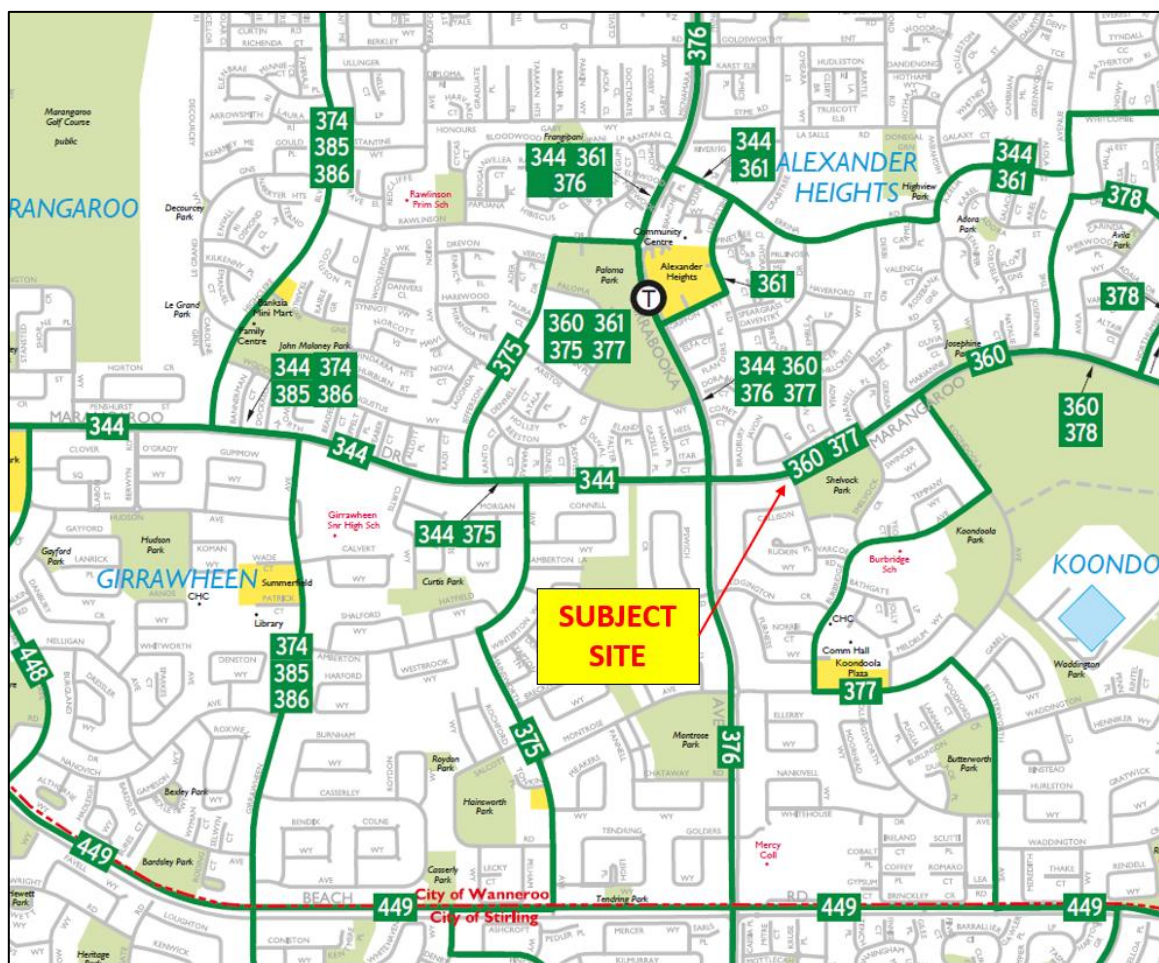


Figure 6: Public transport services (Transperth Maps)

## 9 Pedestrian Access

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Pedestrian access to the proposed development is available via the existing external footpath network on Marangaroo Drive and Callison Way and the proposed external footpath network on Callison Way.

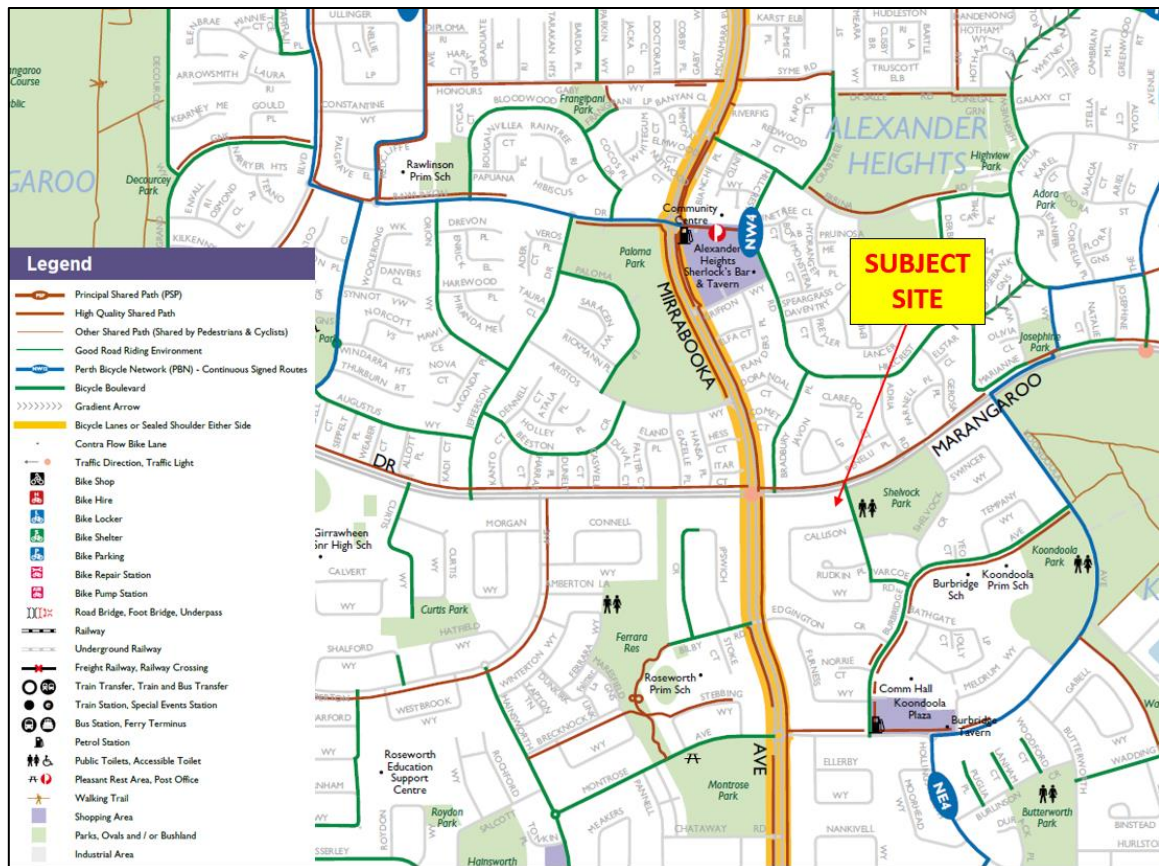
Pedestrian crossing facility is available at the intersection of Marangaroo Drive and Callison Way.

As part of the proposed child care centre a pedestrian path along Callison Way (same side as the child care centre) is proposed with pedestrian ramps on both side of the road to facilitate improved pedestrian movements and crossings in this locality and for the child care centre.

# 10 Cycle Access

According to the current Department of Transport Bike Maps, the subject site has direct access to the existing bike path network within the locality via the high-quality shared path on Marangaroo Drive and good road riding environment on Callison Way.

The Perth Bicycle Network Map illustrated in **Figure 7** shows the cyclist connectivity in the vicinity of the subject site.



**Figure 7: Extract from Perth Bicycle Network (Department of Transport)**

# 11 Site Specific Issues

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Other than the theoretical parking shortfall for the centre (which is addressed in this report), no other site-specific issues have been identified for the proposed child care centre.



## 12 Safety Issues

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No particular safety issues have been identified for the proposed child care centre.



## 13 Conclusions

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This Transport Impact Statement (TIS) has been prepared by Transcore on behalf of Accord Property and provides information on the proposed child care centre development to be located at 304 Marangaroo Drive, 3 Callison Way and 96 Callison Way, Koondoola in the City of Wanneroo. The proposed child care centre will accommodate 91 children with a total of 15 staff.

As part of the development proposal, one existing crossover on Marangaroo Drive and three existing crossovers on Callison Way at the subject site will be closed and one full movement crossover on Callison Way is proposed to serve the proposed development.

A total of 22 on-site parking bays including one ACROD bay are proposed to address the parking demand of the proposed child care centre. The carpark comprises of 5 pairs of tandem bays and 12 single bays. Moreover, a turnaround bay is also proposed at the end of the car parking area to provide efficient vehicular circulation within the site. The on-site car parking can be directly accessed from the proposed full movement crossover on Callison Way.

Based on the estimated actual parking demand undertaken, it is established that at least 6 bays should be reserved for pick-up and drop-off activities and 15 car parking bays should be allocated to staff. The proposed development provides a total of 22 bays which satisfies and exceeds the estimated actual parking demand of the proposed child care centre. Further, the centre can use the nearby 20 public parking bays. Therefore, it is considered that sufficient parking has been provided on site and with the available nearby public parking bays, the anticipated needs of the proposed child care centre will be met.

The traffic analysis undertaken in this report shows that the traffic generation of the proposed development is relatively low and as such would have an insignificant impact on the surrounding road network.

The site features good connectivity via the existing road network, path network and has convenient access to the public transport service in this area.

Deliveries and waste collection activities will be accommodated within the site outside the peak operating periods of the child care centre or when the facility is closed.

No particular transport or safety issues have been identified for the proposed child care centre development.

It is concluded that the findings of this Transport Impact Statement are supportive of the proposed child care centre.

# Appendix A

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PROPOSED DEVELOPMENT PLAN





**PRELIMINARY**

NO.	REVISION	DATE
A.	DATE ISSUED	18/08/20
B.	DATE FOR REVIEW	15/09/20
C.	DATE OF COMMENCEMENT	06/10/20



**SITE / GROUND FLOOR**  
1/128



**LOCATION PLAN**

N/S

**DEVELOPMENT SUMMARY**

**KOONDOOLA**

NUMBER OF PLACES	11
SITE AREA	1228m <sup>2</sup>
BUILDING AREA	1200m <sup>2</sup>
BUILDING AREA PER PLACE	109m <sup>2</sup>
OUTDOOR PLAY AREA PER PLACE	120m <sup>2</sup>
LANDSCAPE AREA	120m <sup>2</sup>
TOTAL AREA	1200m <sup>2</sup>
NUMBER OF VISIT CAR SPACES	14
NUMBER OF VISIT BIKES PER PLACE (MOTOR)	10
NUMBER OF VISIT BIKES PER PLACE (ELECTRIC)	10
BIKE RACKS PROVIDED	10
TOILETS PROVIDED	2
TOILET AREAS PROVIDED	2
ACCESSIBLE TOILET AREAS PROVIDED	2
ACCESSIBLE TOILET AREAS PROVIDED	2

ROOM	AGE	PLACES	AREA (M <sup>2</sup> )	AREA (SQ. FT.)
ACTIVITY 1	0-2	16	54	581
ACTIVITY 2	3-4	16	54	581
ACTIVITY 3	5-9	16	54	581
ACTIVITY 4	10-14	16	54	581
ACTIVITY 5	15-17	16	54	581
<b>TOTAL</b>	<b>11</b>	<b>11</b>	<b>54</b>	<b>581</b>

NOTE: DIMENSIONS ARE BASED ON THE OFFICE TO BE PROVIDED BY LANDSCAPE DESIGNER.

PROVISION OF ALL SERVICES (ELECTRICITY, WATER, GAS, SEWERAGE) IS THE RESPONSIBILITY OF THE DEVELOPER AND MUST BE PROVIDED PRIOR TO THE COMMENCEMENT OF THE DEVELOPMENT. THE DEVELOPER IS ADVISED THAT THE ABOVE INFORMATION IS FOR INFORMATION ONLY AND IS NOT A CONTRACT. THE DEVELOPER IS ADVISED THAT THE ABOVE INFORMATION IS NOT A CONTRACT AND IS NOT A GUARANTEE OF PERFORMANCE. THE DEVELOPER IS ADVISED THAT THE ABOVE INFORMATION IS NOT A GUARANTEE OF PERFORMANCE.

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SITE PLAN

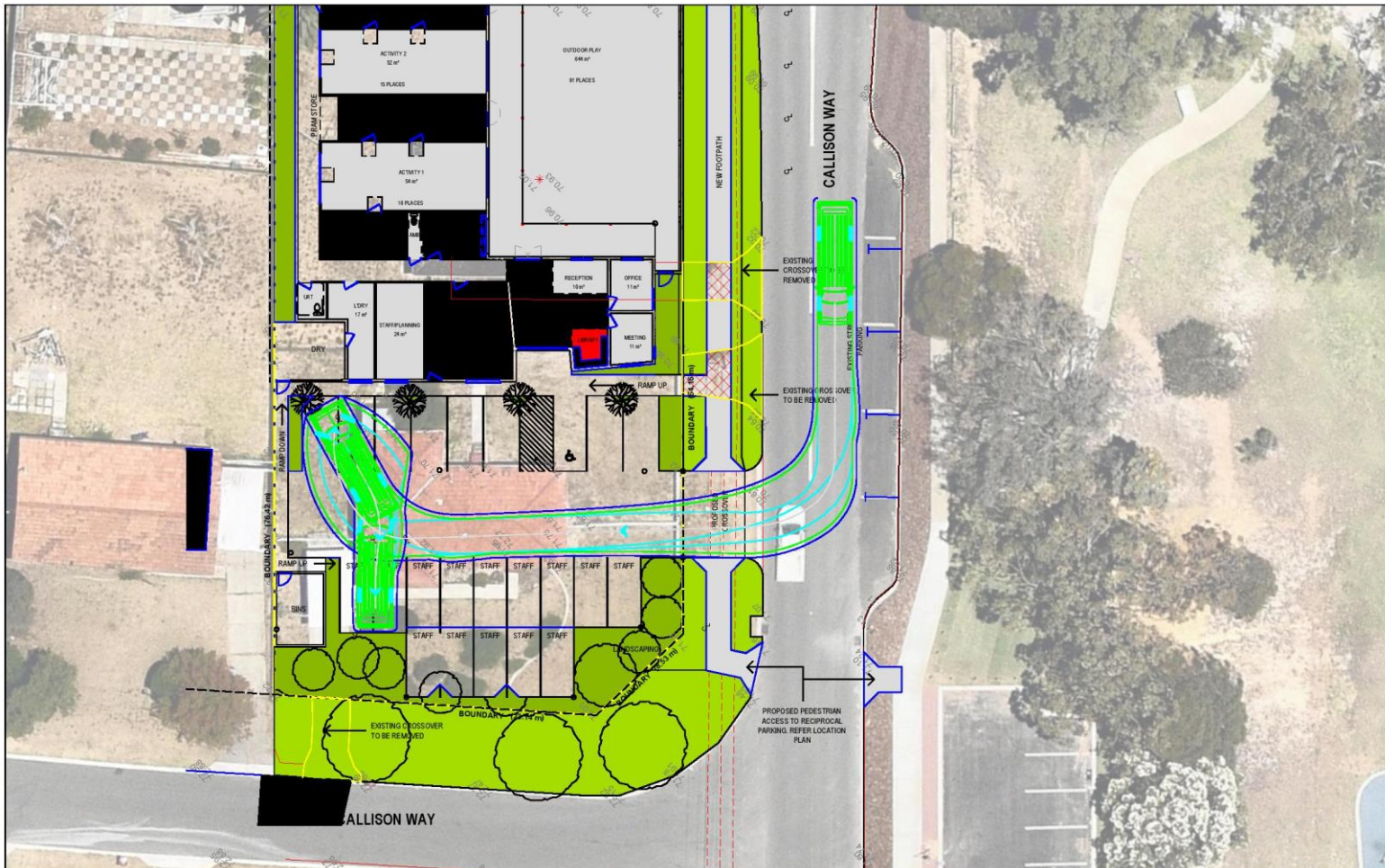
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# Appendix B

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TURN PATH ANALYSIS





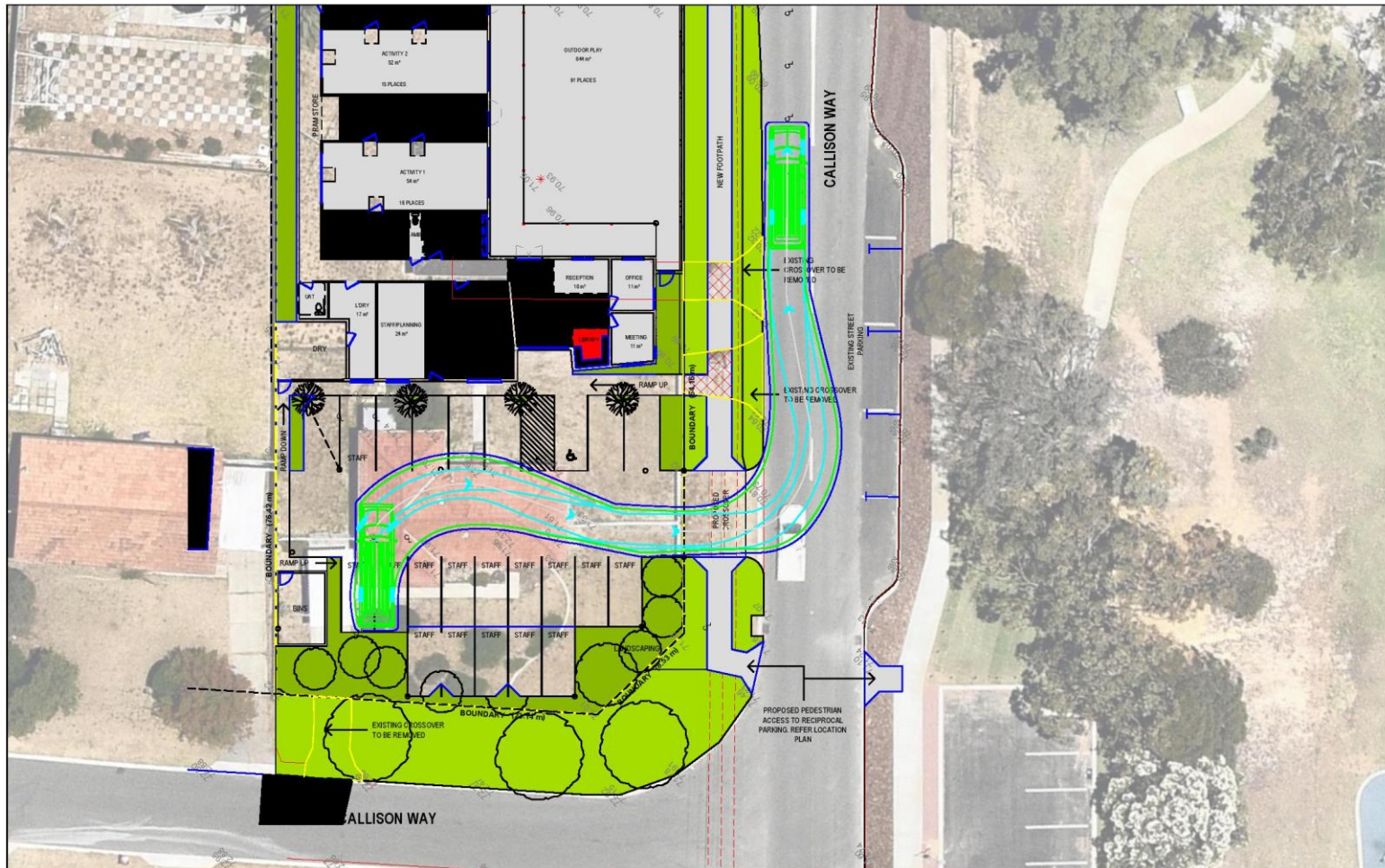
304 Marangaroo Drive & 3 Callison Way, Koondoola  
 Austroads 2013: 8.8m Service Vehicle  
 Service vehicle entry

**LEGEND**  
 Vehicle Body  
 Wheel Path  
 300mm Clearance



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 12/05/2022  
 Scale: 1:250 @ A3





304 Marangaroo Drive & 3 Callison Way, Koondoola  
 Austroads 2013: 8.8m Service Vehicle  
 Service vehicle exit

**LEGEND**  
 Vehicle Body  
 Wheel Path  
 300mm Clearance



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 Scale: 1:250 @ A3

