

Proposed Child Care Centre Lots 84 (16) & 87 (30) Anstey Road, Forrestdale Transport Impact Statement



PREPARED FOR: OTB Management Pty Ltd

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1.0 Introduction

This Transport Impact Statement (TIS) has been prepared by Transcore on behalf of OTB Management Pty Ltd with regard to a proposed child care centre (CCC) to be located at Lots 84 (16) & 87 (30) Anstey Road, Forrestdale, in the City of Armadale.

The subject site is located at the south east side of Anstey Road which is currently occupied by a rural/residential property. The subject site is zoned "Urban Development" in the City of Armadale TPS4. Transcore prepared the Transport Impact Assessment (TIA) for the Anstey East Local Structure Plan (LSP) in 2018. The subject site is located within that LSP area.

The subject site is proposed for various commercial uses however the development application and the focus of this report is only for the child care centre component as highlighted in red in Figure 1. The proposed development plan for the child care centre is included in Appendix A and the draft concept plan for the Anstey East LSP is provided in Appendix B.

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 traffic¹ and therefore would have a moderate overall impact on the surrounding land uses and transport networks"*. Section 6.0 of this 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.

The key issues that are addressed in this report include the traffic generation and distribution of the proposed development, parking provision, access and egress movement patterns.



¹ Between 10 and 100 vehicular trips per hour



Figure 1: Location of the subject site



2.0 Proposed Development

The development proposal is for a child care centre to be located at Lots 84 (16) & 87 (30) Anstey Road, Forrestdale, in the City of Armadale.

The proposed child care centre would accommodate up to 92 children with a total of 17 staff members.

It is proposed to provide vehicular access via a single full movement crossover on Anstey Road that leads directly to the car parking area.

As part of proposed development, a total of 27 car parking bays inclusive of an ACROD bay are provided within the site. The car parking area comprises a total of 20 tandem bays and 7 single bays inclusive of an ACROD bay. Out of 27 parking bays, 17 tandem bays are allocated to staff (all rear tandem bays are allocated to staff) and the balance of 10 bays are for drop off and pick-up activities and visitors to the centre.

Bike racks (accommodating 4 bikes) are provided at the south-eastern corner of the car parking area.

A bin storage area is located at the northwest side of the CCC building. Deliveries and waste collection will be accommodated within the site.

The proposed development plan is included for reference in Appendix A.



3.1 Access

Vehicle access and egress to the proposed development will be via the proposed crossover on Anstey Road, which provides direct access to the car parking facility providing a total of 27 bays as shown in **Figure 2**.



Figure 2: Access to the proposed development site

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3.2 Parking Provision

The City of Armadale Town Planning Scheme No.4 provides parking requirements for various land uses. The parking provision applicable to the proposed CCC is:

4 1 space per every 8 children allowed under maximum occupancy; plus,

4 1 space per employee or staff member.

The child care centre has been designed to accommodate up to 92 children and 17 staff members. According to the City's Policy, the proposed child care centre requires a parking provision of 29 car parking bays. The proposed development will provide a total of 27 parking bays on site, which represents a theoretical shortfall of 2 bays. The parking supply and demand is further discussed in the following section of this 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 CCC. It was established that the calculated morning peak hour trip generation of the proposed CCC is 36 vehicles in and 33 vehicles out of the car park (afternoon peak hour is estimated to generate less trips).

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

The RTA 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 RTA guide is based on surveys of actual parking activity undertaken in New South Wales. The RTA guide indicates highest parking demand of 0.23 cars per child 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 6 bays (36/6 = 6) should be reserved for pick-up and drop-off activities during peak hour periods which results in actual parking demand of 23 bays (6 bays for pick up/drop off + 17 bays for staff =23).

The proposed development provides a total of 27 bays inclusive of an ACROD bays which satisfies the estimated actual parking demand of the proposed child care centre.



It should also be noted that:

- Many patrons of the child care centre are anticipated to come from local residential catchment and may walk their children to and from child care centre;
- The centre provides bike racks (accommodating 4 bikes) at the south-eastern corner of the car parking area that encourage alternative modes of transport;
- A nearest bus stop is located on Armadale Road to the south of the subject site. Some of the staff of the CCC are expected to use public transport or be dropped off at the centre or can make alternative travel arrangement including car-pooling.

For the reasons outlined above, it is considered that sufficient parking has been provided to meet the anticipated needs of the proposed CCC.



A bin store is located at the north-western side of the CCC building as shown in the proposed development plan in **Appendix A**.

It is understood that waste collection will take place within the site by a private contractor. A waste collection truck will be able to enter the site via the proposed crossover on Anstey Road and then park in front of the bin store for the waste collection. The waste collection truck will exit the site via the same driveway crossover in forward gear onto Anstey Road.

Waste collection activities will take place when the facility is closed or outside operating periods to prevent traffic congestion and facilitate safe manoeuvring of the vehicles within the site. Turn path analysis carried out for an 8.8m waste collection truck in **Appendix C** indicates that minor adjustment of the indicative design of the proposed crossover would be required to accommodate the swept path of a truck turning left into the site but this is a matter that can easily be addressed as part of the detailed design for building licence approval.

It is also expected that the child care centre will generate a small volume of service vehicle traffic primarily associated with deliveries for the child care centre. It is recommended that smaller vehicles such as vans should be used for deliveries. Delivery vehicles may park within the site for a short period of time for loading and unloading activities. These activities will occur during the off-peak periods.



5.0 Hours of Operation

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



6.0 Traffic Volumes

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,

4 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: 4:30PM 5:30PM: 0.49 trips per child (43% in/ 57% 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 92 children being present (i.e. centre at full capacity):

- AM peak hour: 69 trips generated (36 in / 33 out);
- PM peak hour: 46 trips generated (20 in / 26 out); and,
- Daily traffic generation: 322 trips generated (161 in / 161 out).



6.2 Traffic Flow

Considering that all access to the child care centre is available from Anstey Road, it is concluded that all the estimated development generated traffic would arrive/ depart to and from the site via Anstey Road and then dissipate throughout the local road network.

As with similar centres, an overwhelming majority of patrons would originate from within the local area with only a marginal number of patrons arriving from afar.

Hence, based on the general spatial distribution of existing and future residential developments in the immediate area, permeability of the local road network and the assumption that all traffic attracted to the proposed child care centre would arrive/ depart via Anstey Road, the child care centre's traffic distribution adopted for this analysis is as follows:

- 4 50% to/from the west of Anstey Road; and,
- 4 50% to/from the east of Anstey Road.

Figure 3 illustrates the trip generation and traffic distribution over the local road network for the proposed child care centre. The vehicles expected to access the site are likely to be private passenger cars with a portion of 4WD.



Figure 3. Total traffic generated by the proposed development – Weekday AM, weekday PM peak hours and daily



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 6.1**, 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.



7.0 Traffic Management on the Frontage Streets

Anstey Road, north of the subject site, is constructed as 6.5m wide two-lane rural road with no pedestrian path on both sides of the road as shown in Figure 4 and Figure 5. It is classified as a *Distributor B* in the Main Roads WA *Functional Road Hierarchy*. It has posted speed limit of 60km/h in the vicinity of the subject site between Armadale Road to Keane Road and 80km/h between Keane Road to Ranford Road.

Based on the latest available traffic counts data obtained from the Main Roads WA, Anstey Road (north of Armadale Road) carried an average weekday traffic flows of 1,708 vehicle trips per day (vpd) with 13.2% of this traffic being heavy vehicles in 2017/18. The weekday AM and PM peak hour traffic flows on Anstey Road were recorded between 7:15AM to 8:15AM and 4:30PM to 5:30PM with a total of 138vph and 158vph, respectively.

Anstey Road links through from Armadale Road to Ranford Road which forms dual roundabout intersection with Armadale Road and Weld Street to the west and T-intersection with Ranford Road to the east.

The Anstey East, Anstey Road, Forrestdale – Proposed Local Structure Plan (LSP) Transport Impact Assessment prepared by Transcore in July 2020 indicates that the future, full development, daily traffic volumes on this section of Anstey Road (adjacent to the subject site will be 5,000vpd. This section of Anstey Road is planned to be upgraded to Neighbourhood Connector A standard as subdivision development of the surrounding area proceeds.



Figure 4: Eastbound view along Anstey Road





Figure 5: Westbound view along Anstey Road



Public transport services in the vicinity of the subject site are illustrated in **Figure 6**. The closest bus service is bus route no. 519 which traverses along Armadale Road to the south of the subject site. Bus route no.519 runs between Murdoch station to Armadale Station via Piara Waters. This bus route does not provide service on weekends and public holidays.



Figure 6: Public transport services (Transperth Maps)



9.0 Pedestrian Access

Currently there is no direct footpath network for pedestrians to access the subject site. However, high quality shared paths are provided on the northern and southern side of Armadale Road to the west and east of Anstey Road/Armadale roundabout in the vicinity of the subject site.



Existing bicycle facilities in the vicinity of the subject site are shown in **Figure 7**, which is sourced from the Department of Transport's Perth Bike Map series. This map shows that Anstey Road fronting the subject site is considered a good road riding environment. On road cycle lanes are provided on both sides of Armadale Road.



Figure 7: Perth bike map series - local area



11.0 Site Specific Issues

Vehicle access to the CCC will be via the proposed driveway crossover on Anstey Road.

The proposed driveway location of the CCC is in accordance with AS2890.1 which requires a separation of at least 6m between the driveway and the property boundary of an opposite T-intersection, as shown in **Figure 8**.



1 Accesses to domestic driveways are excluded from the prohibition in respect of the kerb section marked *Y-Y* (see Clause 3.2.3(a)).

2 The points marked X₁ and X are respectively at the median end on a divided road and at the intersection of the main road centre-line and the extensions of the side road property lines shown as dotted lines, on an undivided road. On a divided road, dimension Y-Y extends to Point Y₁.

DIMENSIONS IN METRES

Figure 8: Prohibited locations of access driveways

Anstey Road is a single carriageway road at present. In the short term while Anstey Road remains a single carriageway road the proposed driveway will operate satisfactorily as a full movement access.

According to the Anstey Road upgrade plan in **Appendix D**, Anstey Road will be upgraded to Neighbourhood Connector A road in accordance with the Liveable Neighbourhoods policy. A central median will be provided along this section of Anstey Road.

As can be seen on the Future Site Conditions Plan in **Appendix A**, the proposed driveway location would require the proposed median opening (currently shown on the Anstey Road Upgrade Plan at **Appendix D**) to be moved a few metres closer to



NOTES:

the future T-intersection on the opposite side of Anstey Road. The distance between the centreline of that opposite T-intersection and the centreline of the proposed driveway would still be in the order of 60m. This is considerably greater than the 40m separation required between staggered intersections on a Neighbourhood Connector A in Liveable Neighbourhoods, so the proposed median opening at this location is appropriate.



12.0 Safety Issues

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



13.0 Conclusions

This Transport Impact Statement (TIS) has been prepared by Transcore on behalf of OTB Management Pty Ltd with regard to a proposed child care centre (CCC) to be located at Lots 84 (16) & 87 (30) Anstey Road, Forrestdale, in the City of Armadale.

The subject site is located at the south east side of Anstey Road which is currently occupied by a rural/residential property. The subject site is located within the Anstey East Local Structure Plan (LSP) and proposed for various commercial land uses. However, the focus of this report is only on the child care centre component proposed within the subject site.

Vehicle access and egress to the subject site will be via the proposed crossover on Anstey Road.

Based on the assessment undertaken in this report, the proposed parking supply of 27 bays is considered to be sufficient to cater for the needs of the proposed CCC.

Waste collection and delivery activity will be accommodated within the site outside of operating hours of the child care centre. Turn path analysis provided in **Appendix C** for an 8.8m waste collection truck indicates that minor adjustment of the indicative design of the proposed crossover would be required to accommodate the swept path of a truck turning left into the site but this is a matter that can be easily and appropriately addressed as part of the detailed design for building licence approval.

The traffic analysis undertaken in this report shows that the traffic generation of the proposed development is estimated to be in the order of 322 daily trips with 69 AM and 46 PM peak hour trips (total of both inbound and outbound movements) respectively. Accordingly, the traffic generation of the proposed development is relatively low and as such would not have significant impact on the surrounding road network.

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

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



Appendix A

PROPOSED DEVELOPMENT PLAN







Appendix B

LOCAL STRUCTURE PLAN – DRAFT CONCEPT PLAN







Appendix C

TURN PATH ANALYSIS







Appendix D

ANSTEY ROAD UPGRADE CONCEPT PLAN



