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Sustainable Transport. Safe Solutions

34-36 St Michael Terrace, Mount Pleasant
Proposed Child Care Centre

TRANSPORT IMPACT STATEMENT

Prepared for:
Carcione Nominees Pty Ltd

November 2025

34-36 St Michael Terrace, Mount Pleasant

Prepared for: Carcione Nominees Pty Ltd
Prepared by: Paul Ghantous
Date: 21 November 2025
Project number: U24.177

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1 Introduction

This Transport Impact Statement has been prepared by Urbii on behalf of Carcione Nominees Pty Ltd with regards to the proposed child care centre, located at 34-36 St Michael Terrace, Mount Pleasant.

The subject site is situated on the north-west corner of St Michael Terrace and Queens Road, as shown in Figure 1. The site is presently vacant and is surrounded by a mix of residential, education and commercial land uses. Mount Pleasant Primary School is located across the road to the south of the site and some shops and medical services are located nearby to the east.

It is proposed to develop the site into a child care centre catering for up to 113 children and 29 staff.

The key issues that will be addressed in this report include the traffic generation and distribution of the proposed development, access and egress movement patterns, car parking and access to the site for alternative modes of transport.

This Transport Impact Statement has been updated in response to the matters raised by the City of Melville and the Development Assessment Panel during the previous assessment of the proposal.

The Panel deferred the application to allow further clarification on site-specific traffic issues, including the interaction between childcare activity and school peak periods, the adequacy of on-site parking, pedestrian safety at the driveway interface, and operational matters relating to waste collection.

This revised TIS incorporates additional site observations, refined operational measures and updated analysis to address these issues and to demonstrate that the development will operate safely and effectively within the surrounding road network.

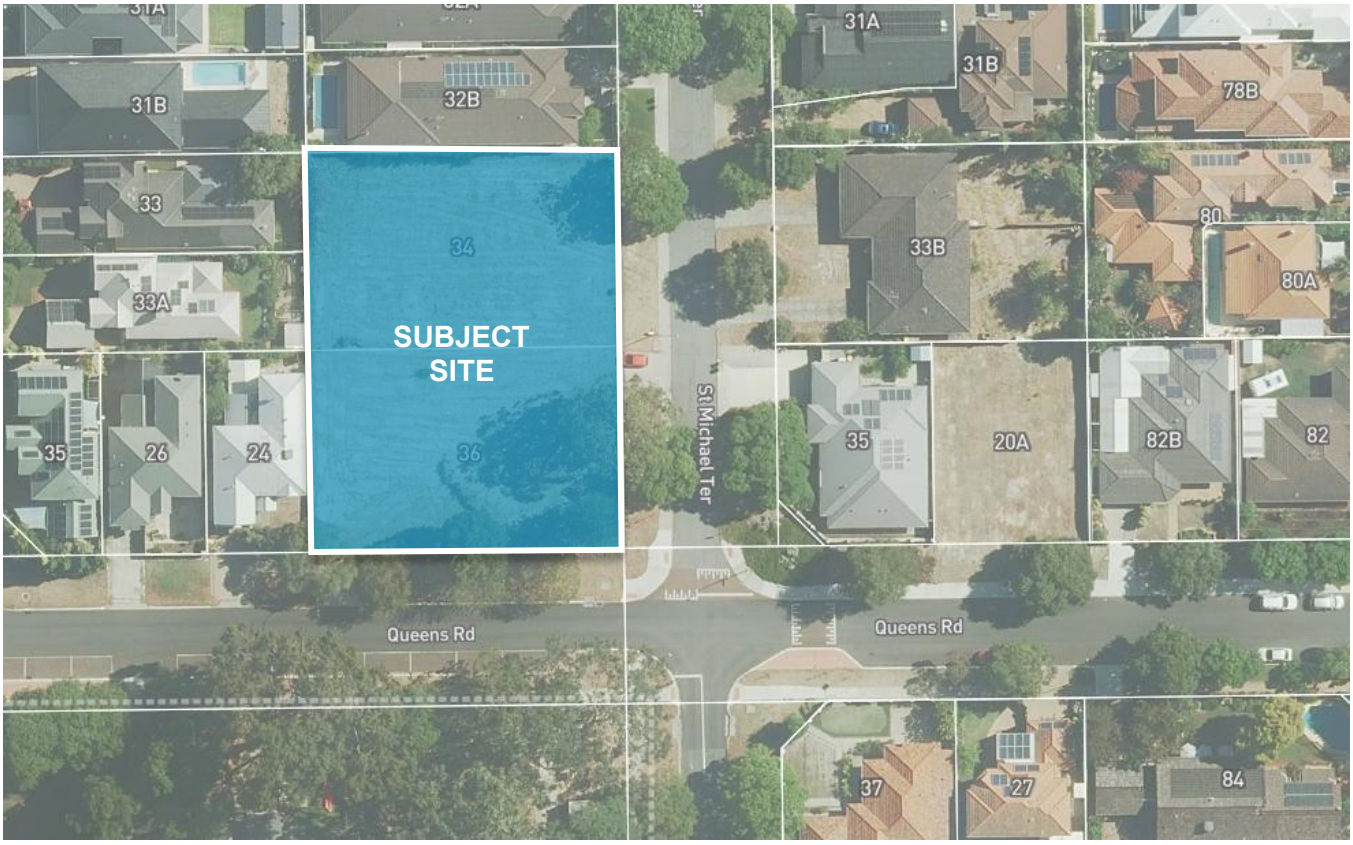


Figure 1: Subject site location

2 Proposed development

The proposal for the subject site is for a child care centre comprising:

- A child care centre with rooms allocated to different age groups;
- Outdoor play area;
- 26 onsite car parking bays, including one ACROD bay;
- Bicycle parking for eight bicycles;
- End of trip facilities including lockers, a shower and change room; and
- Bin store.

Vehicle access to the site is proposed via one crossover on St Michael Terrace. People walking and cycling will access the development from the external path network abutting the site.

Bins will be wheeled out from the bin store for street waste collection on designated days.

The proposed development plans are included for reference in Appendix A.

3 Vehicle access and parking

3.1 Existing vehicle access

As detailed in Figure 2, existing vehicle access to the site is via two crossovers on St Michael Terrace and one crossover on Queens Road.

Figure 2: Existing vehicle access

3.2 Proposed vehicle access

Vehicle access for the child care centre is proposed via one crossover on St Michael Terrace (Figure 3). Existing redundant site crossovers will be closed as part of the development.

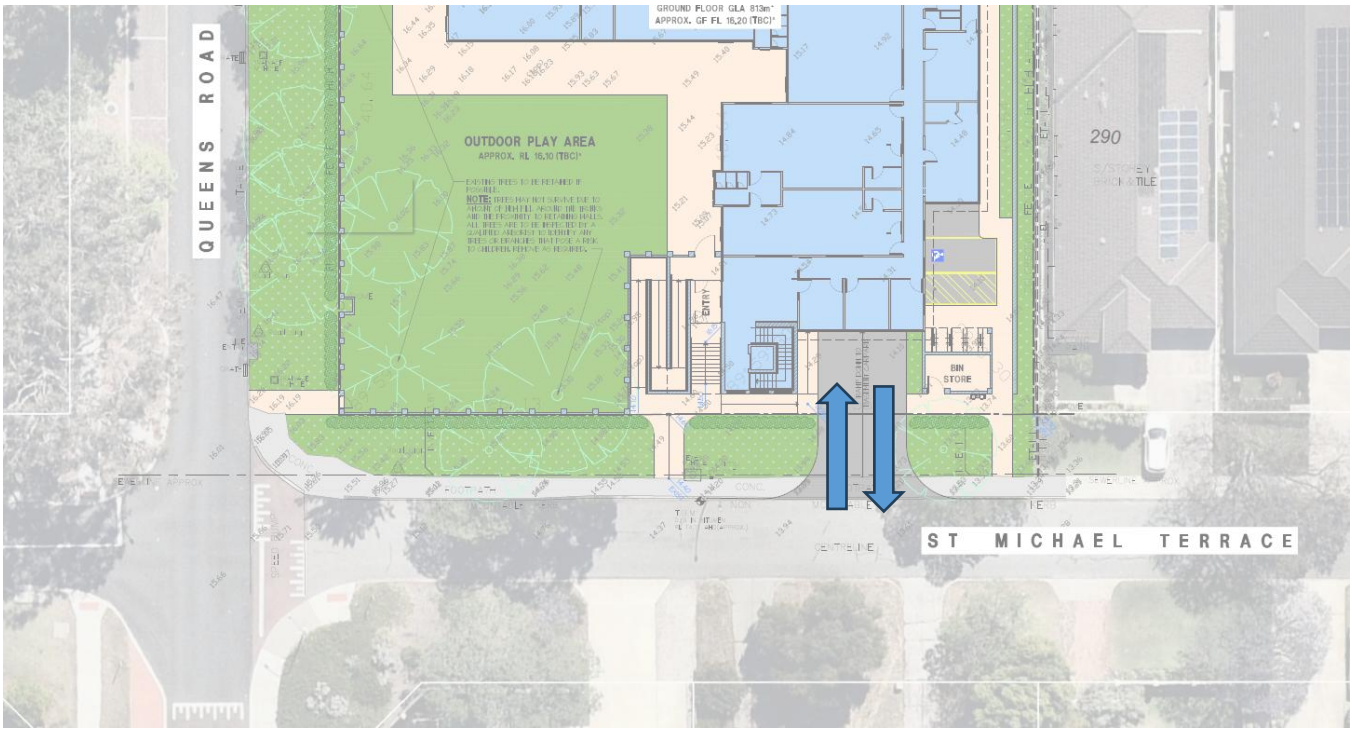


Figure 3: Proposed development vehicle access

3.3 Pedestrian Crossing Sight Distance

Crossing Sight Distance (CSD) is a critical safety requirement used to ensure that pedestrians waiting to cross a roadway have sufficient visibility of approaching traffic, and that drivers also have adequate time to perceive and react to pedestrians entering the crossing. CSD represents the minimum length of clear, unobstructed sight line between a pedestrian and an approaching driver to allow the pedestrian to safely assess traffic gaps and complete the crossing movement.

According to Austroads guidance, CSD is required at any location where a pedestrian is expected to cross a carriageway, particularly where pedestrians do **not** have priority. The purpose of CSD is to ensure that pedestrians can clearly see approaching vehicles in time to judge an acceptable gap, taking into account both crossing distance and walking speed. Likewise, CSD ensures that drivers can perceive the crossing environment and slow down if a pedestrian enters the roadway.

CSD is calculated using the following equation:

$$CSD = t_c \times \frac{V}{3.6}$$

Where:

- **CSD** = required pedestrian crossing sight distance (m)
- **tc** = critical safe gap (seconds), defined as crossing distance ÷ pedestrian walking speed
- **V** = 85th percentile approach speed (km/h)

The critical safe gap accounts for the time a pedestrian requires to walk from the kerb to a position clear of the traffic lane being crossed. Austroads notes that designers should consider a range of pedestrian characteristics, including lower walking speeds for mobility-impaired users. The standard guidance assumes a typical adult walking speed of approximately 1.2 m/s; however, a more conservative value (such as 1.0 m/s) may be applied where vulnerable users are likely. CSD must also remain unobstructed by trees, street furniture, parked vehicles or other roadside objects that could impede pedestrian or driver visibility.

Application of the above calculation results in a CSD requirement of 19m for southbound crossing and 36m for northbound crossing, as detailed in Table 1.

Table 1: Pedestrian Crossing Sight Distance requirement

Variable	Southbound	Northbound	Units
Crossing Distance (m)	3.5	6.5	m
Walking Speed (m/s)	1	1	m/s
Vehicle Speed (km/h)	20	20	km/h
Sight Distance (m) =	**19**	**36**	**m**

The sight distance sketch in Appendix B confirms that the proposed development layout provides satisfactory Crossing Sight Distance.

3.4 Car parking layout

Dimensions of car parking aisles and bays are compliant with AS2890.1. Onsite visitor bays are 2.6m wide by 5.4m long and an aisle width of 6.6m has been provided. The ACROD bay is designed to AS2890.6 with a shared space and bollard. A 1m blind aisle extension is provided at the end of the car park.

A turnaround space is not required due to high turnover of short-stay bays. Furthermore, if all the visitor bays are occupied, a parent will most likely wait in the car park for a bay to be vacated so they can pick up or drop off their child.

The parking bays fronting the child care centre building are configured to be 4.8m long, with an additional 600mm vehicle overhang. This configuration is proposed to avoid the use of wheel stops, which may cause a trip hazard fronting the building.

Tandem bays are provided at the end of the car park. These bays will be allocated for staff parking only. It is recommended that 'STAFF PARKING ONLY' signs be installed at the entry of the staff parking area (Figure 4). Staff bays are 2.4m wide.

The ground and height clearance has been checked using vertical swept path assessment (Appendix C).

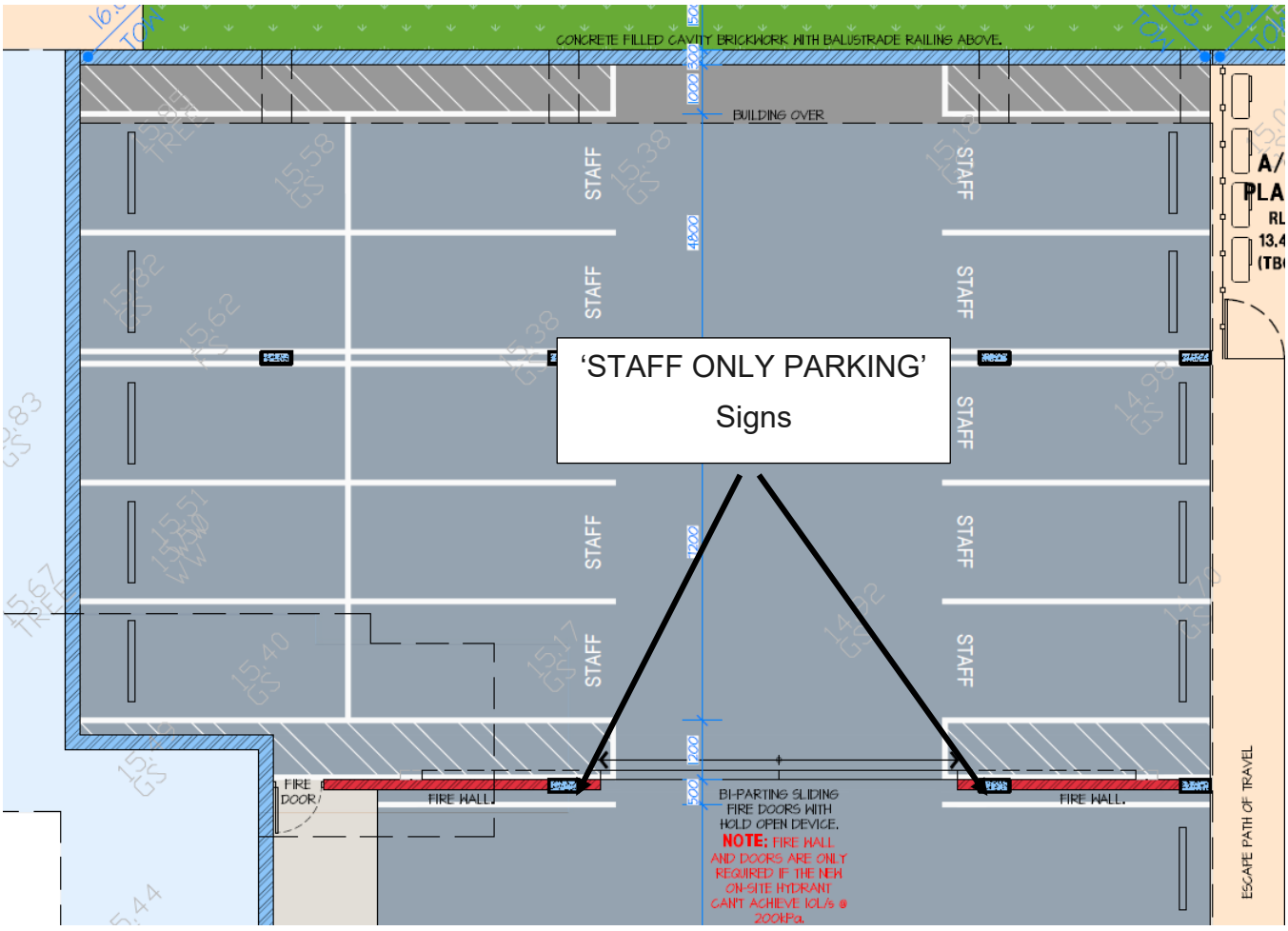


Figure 4: Recommended 'STAFF ONLY PARKING' signs

3.5 Parking supply and management

Parking requirements, supply, allocation and day-to-day management arrangements for the childcare centre are addressed in detail in the accompanying Parking Management Plan (PMP) prepared by Urbii. The PMP forms an integral part of the traffic and access framework for the development and provides a comprehensive explanation of how on-site parking will be utilised and controlled to ensure safe, efficient and orderly operation during all periods, including those coinciding with the adjacent primary school.

In summary, the development provides a total of 26 on-site parking bays, comprising staff parking, an ACROD bay and dedicated short-stay visitor bays. The parking supply meets the requirements of Local Planning Policy 1.6 and complies with the relevant design standards of AS2890.1. Parking demand modelling, supplemented by on-site observations, demonstrates that this supply is sufficient to accommodate all parking associated with staff, parents and visitors without reliance on on-street or verge parking. The PMP sets out a clear allocation system whereby staff are assigned dedicated bays and visitor bays are managed through short-stay time controls to ensure appropriate turnover during peak activity periods.

A key component of the PMP is the management of pick-up and drop-off activity to ensure that childcare-related traffic does not coincide with the short and concentrated peak periods generated by the nearby school. To address this, the PMP introduces operational restrictions preventing childcare drop-off and pick-up during the school's critical peak windows in the morning and afternoon. This measure is based on on-site observational surveys undertaken by Urbii and ensures that childcare traffic remains separated from school traffic, avoiding cumulative impacts on the local road network.

Additional operational measures detailed in the PMP include signage and wayfinding within the car park, parent communication protocols to ensure compliance with the parking rules, staff induction and training, and an annual review process to ensure the parking system continues to operate effectively. These measures collectively provide a robust management framework that ensures the on-site parking facilities function safely and efficiently within the surrounding residential context.

Further details on the parking supply, allocation, restrictions and operational procedures is provided within the Parking Management Plan, which should be read in conjunction with this Transport Impact Statement.

4 Provision for service vehicles

The proposed development will not generate significant service vehicle traffic. It is recommended that smaller vehicles such as vans or utes be utilised for deliveries to the site. These smaller vehicles can park in a visitor parking bay for a brief time during ‘off-peak’ periods.

All service, delivery and waste collection activities will be planned and scheduled with building management to occur outside the peak operating times of the facility, typically between 9:30am and 2:30pm daily.

Waste collection is proposed to be accommodated via on-street service, directly from the bin store, to avoid the presentation of bins on the footpath. Waste collection will be scheduled outside of the peak activity hours of the facility.

5 Hours of operation

The proposed child care centre operating hours will be 6:30am to 6:30pm, Monday to Friday. In order to ensure that traffic associated with the childcare centre does not coincide with the short and concentrated peak periods generated by the adjacent primary school, the centre will implement time-based restrictions on drop-off and pick-up activity.

Morning drop-offs for the childcare centre will not be permitted between **8:30am and 8:50am**, and afternoon pick-ups will not be permitted between **2:45pm and 3:30pm**, as these periods represent the primary school's busiest arrival and departure times.

These restrictions form part of the operational measures outlined in the Parking Management Plan and ensure that childcare-related traffic remains separated from school traffic, thereby reducing cumulative peak-hour activity on St Michael Terrace and maintaining a safe and orderly environment for all road users.

6 Daily traffic volumes and vehicle types

6.1 Traffic generation

The traffic volume that will be generated by the proposed development has been estimated using trip generation rates derived with reference to the following sources:

- Transport for NSW (2024), *Guide to Transport Impact Assessment*.

The trip generation rates adopted are detailed in Table 2.

Table 2: Adopted trip rates for traffic generation

Land use	Trip rate source	Daily rate	AM rate	PM rate	AM-in	AM-out	PM-in	PM-out
Child Care	TFNSW	2.97	0.81	0.8	50%	50%	50%	50%

The estimated traffic generation of the proposed development is detailed in Table 3. The proposed development is estimated to generate 336 vehicles per day (vpd), with 92 vehicles per hour (vph) and 90 vph generated during the AM and PM peak hours, respectively.

These trips include both inbound and outbound vehicle movements. It is anticipated that most of the vehicle types would be passenger cars and SUVs.

Table 3: Development traffic generation – Weekday AM and PM peak hour

Land use	Quantity	Daily Trips	AM Trips	PM Trips	AM Peak Trips		PM Peak Trips	
					IN	OUT	IN	OUT
Child Care	113	336	92	90	46	46	45	45

6.2 Impact on surrounding roads

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

"As a general guide, an increase in traffic of less than 10 percent of capacity would not normally be likely to have a material impact on any particular section of road but increases over 10 percent may. All sections of road with an increase greater than 10 percent 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 percent 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."

The proposed development will not increase traffic flows on any roads adjacent to the site by the quoted WAPC threshold of +100vph to warrant further analysis. Therefore, the impact on the surrounding road network is moderate (Figure 5).

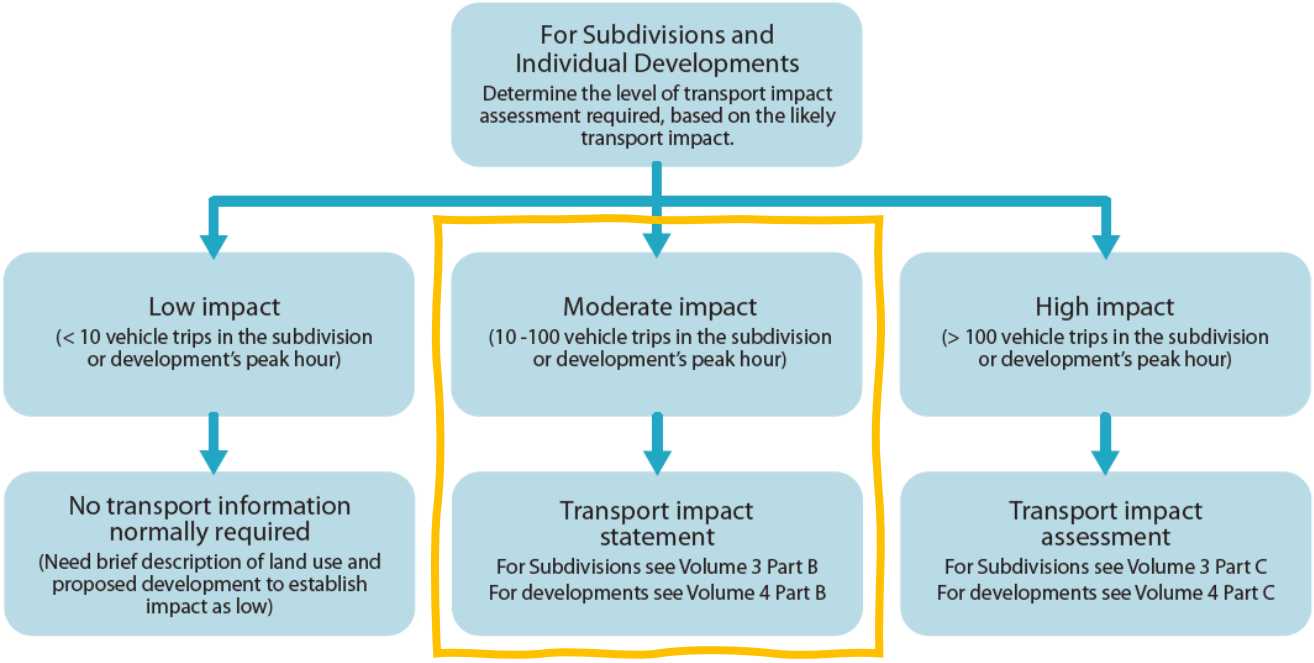


Figure 5: Level of traffic impact for subdivisions and individual developments

Source: WAPC *Transport Impact Assessment Guidelines Volume 4: Individual Developments*, August 2016

7 Traffic management on the frontage roads

Information from online mapping services, Main Roads WA, Local Government, and/or site visits was collected to assess the existing traffic management on frontage roads.

7.1.1 St Michael Terrace

St Michael Terrace near the subject site is an approximately 5.8m wide, two-lane undivided road. A path for walking and cycling is provided on the western side of the road. Walk crossings are provided at nearby intersections, which include kerb ramps.

St Michael Terrace is classified as an *Access* road in the Main Roads WA road hierarchy (Figure 7) and operates under a speed limit of 50km/h (Figure 8). Access roads are the responsibility of Local Government and are for the provision of vehicle access to abutting properties. (Figure 9).

A 40km/h school speed zone is in place on school days. A raised, red-asphalt threshold treatment is provided on St Michael Terrace at the intersection with Queens Road.

Traffic count data obtained from the City of Melville indicates that St Michael Terrace carries average weekday traffic flows of only 311 vehicles per day (vpd), with only 40 vehicles per hour (vph) during the peak hour (Figure 6). Traffic speeds are low, with an 85th percentile speed of 46 km/h.

To inform the updated traffic assessment and operational strategy, Urbii staff undertook targeted on-site observations along St Michael Terrace during a typical school day. Surveys were completed during the morning arrival and afternoon departure periods to understand existing traffic behaviour, kerbside parking patterns and the duration and intensity of school-related activity.

During the morning period, St Michael Terrace was generally quiet between approximately 8:00am and 8:20am, with minimal vehicle movements and no verge parking. Activity increased modestly from around 8:25am as children walked to school, with a short peak occurring between roughly 8:30am and 8:40am when a small number of parents briefly stopped near the intersection to drop children off. This activity dissipated quickly, and by approximately 8:50am the street had returned to low-traffic conditions.

The afternoon observations showed a similar pattern. Traffic remained light until around 2:45pm, after which a short but concentrated increase in activity occurred as parents arrived for school pick-up. The upper portion of St Michael Terrace was busiest at around 2:55pm, with occasional informal kerbside parking. Vehicles began dispersing from about 3:00pm onwards, and by 3:30pm the street had returned to its typically low level of activity.

Traffic count data and on-site observations together demonstrate that St Michael Terrace has substantial spare capacity in both peak and off-peak periods. The brief and localised nature of school activity does not materially affect the performance of the road, and the underlying traffic volumes are well below those typically accommodated by an Access Road. Given the modest traffic generation of the childcare centre, the road network has ample capacity to accommodate the development without creating congestion, queuing or changes to the overall operation of St Michael Terrace.

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-125
Site: St Michael Tce -02.0.1NS
Description: **!St Michael Tce 50m north of Queens Rd (No 34)**
Filter time: **14:00 Thursday, 15 April 2021 => 12:00 Monday, 26 April 2021**
Scheme: Vehicle classification (AustRoads94)
Filter: Cls(1-13) Dir(NS) Sp(10,160) Headway(>0) Span(0 - 100) Lane(0-16)

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages 1 - 5	Averages 1 - 7
Hour									
0000-0100	0.5	0.0	0.0	0.0	0.5	1.0	0.5	0.3	0.5
0100-0200	0.5	1.0	1.0	1.0	0.5	1.0	1.0	0.7	0.8
0200-0300	2.0	0.0	0.0	0.0	1.0	0.0	1.5	0.9	0.8
0300-0400	0.0	0.0	1.0	0.0	0.0	1.0	1.0	0.1	0.5
0400-0500	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
0500-0600	1.0	1.0	1.0	0.0	1.5	0.0	0.0	1.0	0.6
0600-0700	2.5	7.0	6.0	4.0	3.0	1.5	1.5	4.0	3.1
0700-0800	15.5	18.0	22.0	15.0	21.0	3.0	3.5	18.3	12.8
0800-0900	16.0	**48.0**	**66.0**	**59.0**	**38.5**	9.5	8.0	**40.3**	**28.8**
0900-1000	**17.0**	10.0	26.0	27.0	22.0	14.5	14.5	20.1	18.1
1000-1100	16.0	20.0	29.0	16.0	31.0	14.5	**16.5**	22.7	20.1
1100-1200	14.5	16.0	16.0	13.0	19.5	**26.0**	9.5	16.1	16.7
1200-1300	24.0	15.0	13.0	10.0	22.0	**14.5**	**14.0**	17.7	16.3
1300-1400	19.0	20.0	8.0	12.0	21.0	12.5	12.0	16.8	15.0
1400-1500	21.0	37.0	33.0	27.5	28.5	10.5	13.5	29.0	22.8
1500-1600	26.0	**47.0**	**39.0**	**35.0**	**33.5**	13.5	13.0	**35.6**	**27.5**
1600-1700	24.0	24.0	24.0	24.0	22.0	13.5	12.0	23.4	19.5
1700-1800	**26.0**	24.0	24.0	22.0	21.5	12.5	12.5	23.0	19.2
1800-1900	11.0	14.0	21.0	15.0	15.5	8.5	10.0	15.3	13.1
1900-2000	10.0	13.0	10.0	10.5	13.5	8.5	3.0	11.6	9.5
2000-2100	3.0	6.0	6.0	10.5	3.5	1.5	3.0	6.1	4.7
2100-2200	2.0	7.0	4.0	4.0	6.0	2.0	1.5	4.7	3.6
2200-2300	0.0	0.0	4.0	0.0	3.5	3.0	0.0	1.6	1.5
2300-2400	1.0	2.0	1.0	1.0	3.5	1.5	1.5	1.9	1.7
Totals									
0700-1900	230.0	293.0	321.0	275.5	296.0	153.0	139.0	278.4	229.9
0600-2200	247.5	326.0	347.0	304.5	322.0	166.5	148.0	304.8	250.8
0600-0000	248.5	328.0	352.0	305.5	329.0	171.0	149.5	308.2	254.1
0000-0000	253.0	330.0	355.0	306.5	332.5	174.0	153.5	311.4	257.4
AM Peak	0900	0800	0800	0800	0800	1100	1000		
	17.0	48.0	66.0	59.0	38.5	26.0	16.5		
PM Peak	1700	1500	1500	1500	1500	1200	1200		
	26.0	47.0	39.0	35.0	33.5	14.5	14.0		

* - No data.

Figure 6: Traffic count data – St Michael Terrace

Source: City of Melville

7.1.2 Queens Road

Queens Road near the subject site is an approximately 6m wide, two-lane undivided road. A path for walking and cycling is provided on the southern side of the road. Walk crossings are provided at nearby intersections, which include kerb ramps.

Queens Road is classified as an *Access* road in the Main Roads WA road hierarchy (Figure 7) and operates under a speed limit of 50km/h (Figure 8). Access roads are the responsibility of Local Government and are for the provision of vehicle access to abutting properties. (Figure 9).

A 40km/h school speed zone is in place on school days.

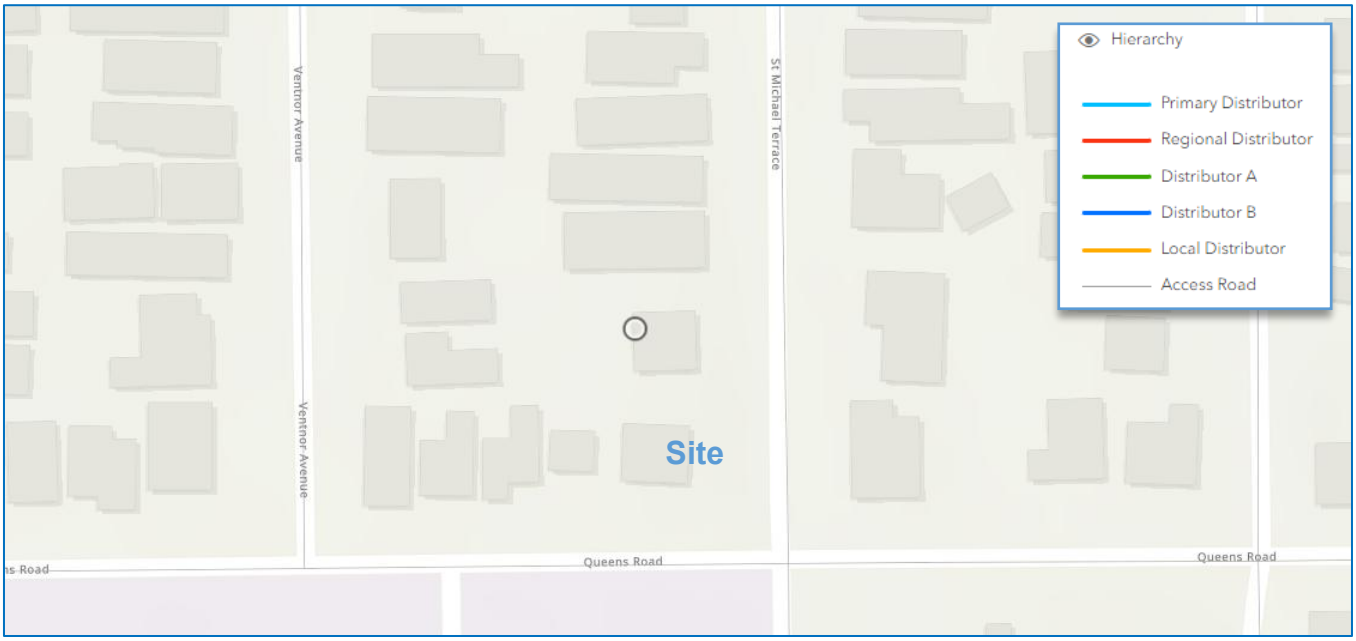


Figure 7: Main Roads WA road hierarchy plan

Source: Main Roads WA Road Information Mapping System (RIM)

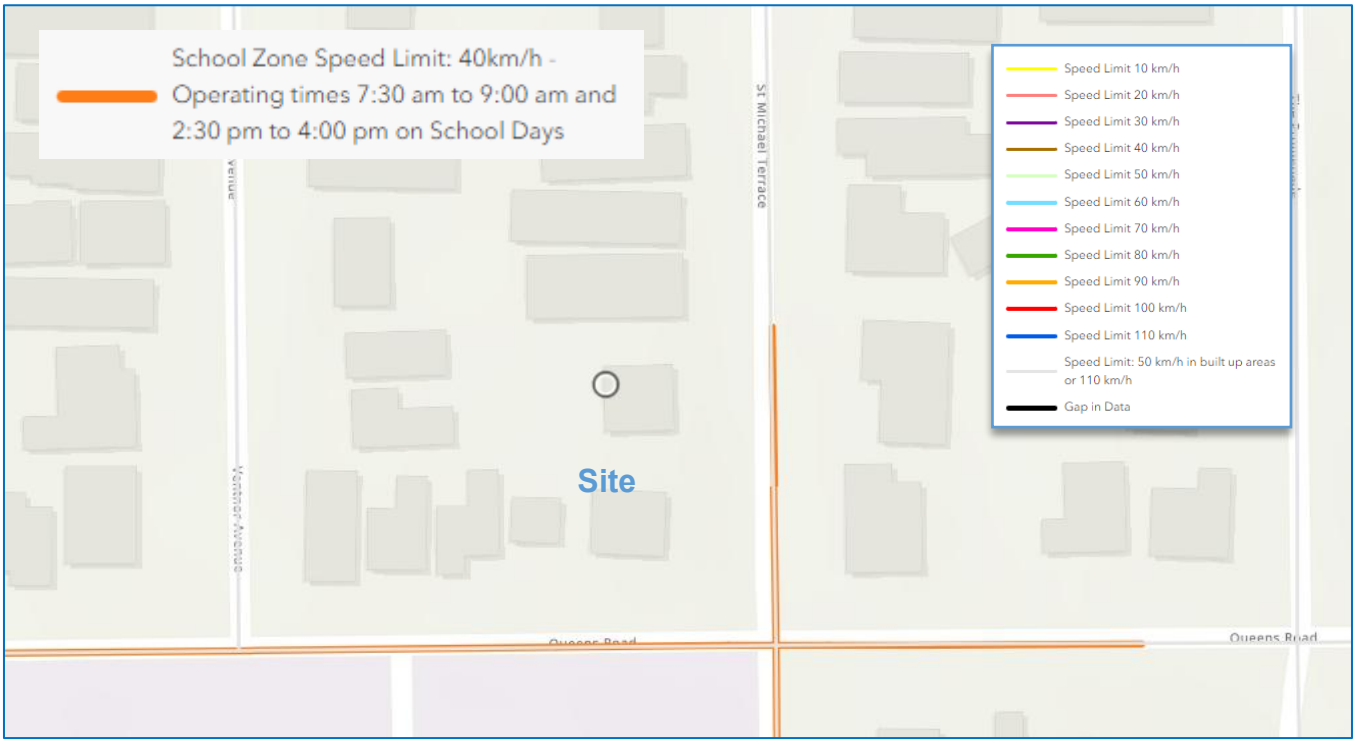


Figure 8: Main Roads WA road speed zoning plan

Source: Main Roads WA Road Information Mapping System (RIM)

ROAD HIERARCHY FOR WESTERN AUSTRALIA
ROAD TYPES AND CRITERIA (see Note 1)

CRITERIA	PRIMARY DISTRIBUTOR (PD) (see Note 2)	DISTRICT DISTRIBUTOR A (DA)	DISTRICT DISTRIBUTOR B (DB)	REGIONAL DISTRIBUTOR (RD)	LOCAL DISTRIBUTOR (LD)	ACCESS ROAD (A)
Primary Criteria						
1. Location (see Note 3)	All of WA incl. BUA	Only Built Up Area.	Only Built Up Area.	Only Non Built Up Area. (see Note 4)	All of WA incl. BUA	All of WA incl. BUA
2. Responsibility	Main Roads Western Australia.	Local Government.	Local Government.	Local Government.	Local Government.	Local Government.
3. Degree of Connectivity	High. Connects to other Primary and Distributor roads.	High. Connects to Primary and/or other Distributor roads.	High. Connects to Primary and/or other Distributor roads.	High. Connects to Primary and/or other Distributor roads.	Medium. Minor Network Role Connects to Distributors and Access Roads.	Low. Provides mainly for property access.
4. Predominant Purpose	Movement of inter regional and/or cross town/city traffic, e.g. freeways, highways and main roads.	High capacity traffic movements between industrial, commercial and residential areas.	Reduced capacity but high traffic volumes travelling between industrial, commercial and residential areas.	Roads linking significant destinations and designed for efficient movement of people and goods between and within regions.	Movement of traffic within local areas and connect access roads to higher order Distributors.	Provision of vehicle access to abutting properties
Secondary Criteria						
5. Indicative Traffic Volume (AADT)	In accordance with Classification Assessment Guidelines.	Above 8 000 vpd	Above 6 000 vpd.	Greater than 100 vpd	Built Up Area - Maximum desirable volume 6 000 vpd. Non Built Up Area – up to 100 vpd.	Built Up Area - Maximum desirable volume 3 000 vpd. Non Built Up Area – up to 75 vpd.
6. Recommended Operating Speed	60 – 110 km/h (depending on design characteristics).	60 – 80 km/h.	60 – 70 km/h.	50 – 110 km/h (depending on design characteristics).	Built Up Area 50 - 60 km/h (desired speed) Non Built Up Area 60 – 110 km/h (depending on design characteristics).	Built Up Area 50 km/h (desired speed). Non Built Up Area 50 – 110 km/h (depending on design characteristics).
7. Heavy Vehicles permitted	Yes.	Yes.	Yes.	Yes.	Yes, but preferably only to service properties.	Only to service properties.
8. Intersection treatments	Controlled with appropriate measures e.g. high speed traffic management, signing, line marking, grade separation.	Controlled with appropriate measures e.g. traffic signals.	Controlled with appropriate Local Area Traffic Management.	Controlled with measures such as signing and line marking of intersections.	Controlled with minor Local Area Traffic Management or measures such as signing.	Self controlling with minor measures.
9. Frontage Access	None on Controlled Access Roads. On other routes, preferably none, but limited access is acceptable to service individual properties.	Prefer not to have residential access. Limited commercial access, generally via service roads.	Residential and commercial access due to its historic status Prefer to limit when and where possible.	Prefer not to have property access. Limited commercial access, generally via lesser roads.	Yes, for property and commercial access due to its historic status. Prefer to limit whenever possible. Side entry is preferred.	Yes.
10. Pedestrians	Preferably none. Crossing should be controlled where possible.	With positive measures for control and safety e.g. pedestrian signals.	With appropriate measures for control and safety e.g. median/islands refuges.	Measures for control and safety such as careful siteing of school bus stops and rest areas.	Yes, with minor safety measures where necessary.	Yes.
11. Buses	Yes.	Yes.	Yes.	Yes.	Yes.	If necessary (see Note 5)
12. On-Road Parking	No (emergency parking on shoulders only).	Generally no. Clearways where necessary.	Not preferred. Clearways where necessary.	No – emergency parking on shoulders – encourage parking in off road rest areas where possible.	Built Up Area – yes, where sufficient width and sight distance allow safe passing. Non Built Up Area – no. Emergency parking on shoulders.	Yes, where sufficient width and sight distance allow safe passing.
13. Signs & Linemarking	Centrelines, speed signs, guide and service signs to highway standard.	Centrelines, speed signs, guide and service signs.	Centrelines, speed signs, guide and service signs.	Centrelines, speed signs and guide signs.	Speed and guide signs.	Urban areas – generally not applicable. Rural areas - Guide signs.
14. Rest Areas/Parking Bays	In accordance with Main Roads' *Roadside Stopping Places Policy*.	Not Applicable.	Not Applicable.	Parking Bays/Rest Areas. Desired at 60km spacing.	Not Applicable.	Not Applicable.

Figure 9: Road types and criteria for Western Australia

Source: Main Roads Western Australia D10#10992

8 Public transport access

Information was collected from Transperth and the Public Transport Authority to assess the existing public transport access to and from the site.

The subject site has access to the following bus services within walking distance:

- Bus route 160: East Perth - Fremantle Stn via Willagee & Booragoon.

Public transport services provide a viable alternative mode of transport for staff and visitors to the proposed development.

The closest bus stops are located on Reynolds Road, less than 300m walk from the site (Figure 10). Bus services provide excellent coverage and connectivity to the rail network.

The existing public transport network plans are shown in Figure 11.

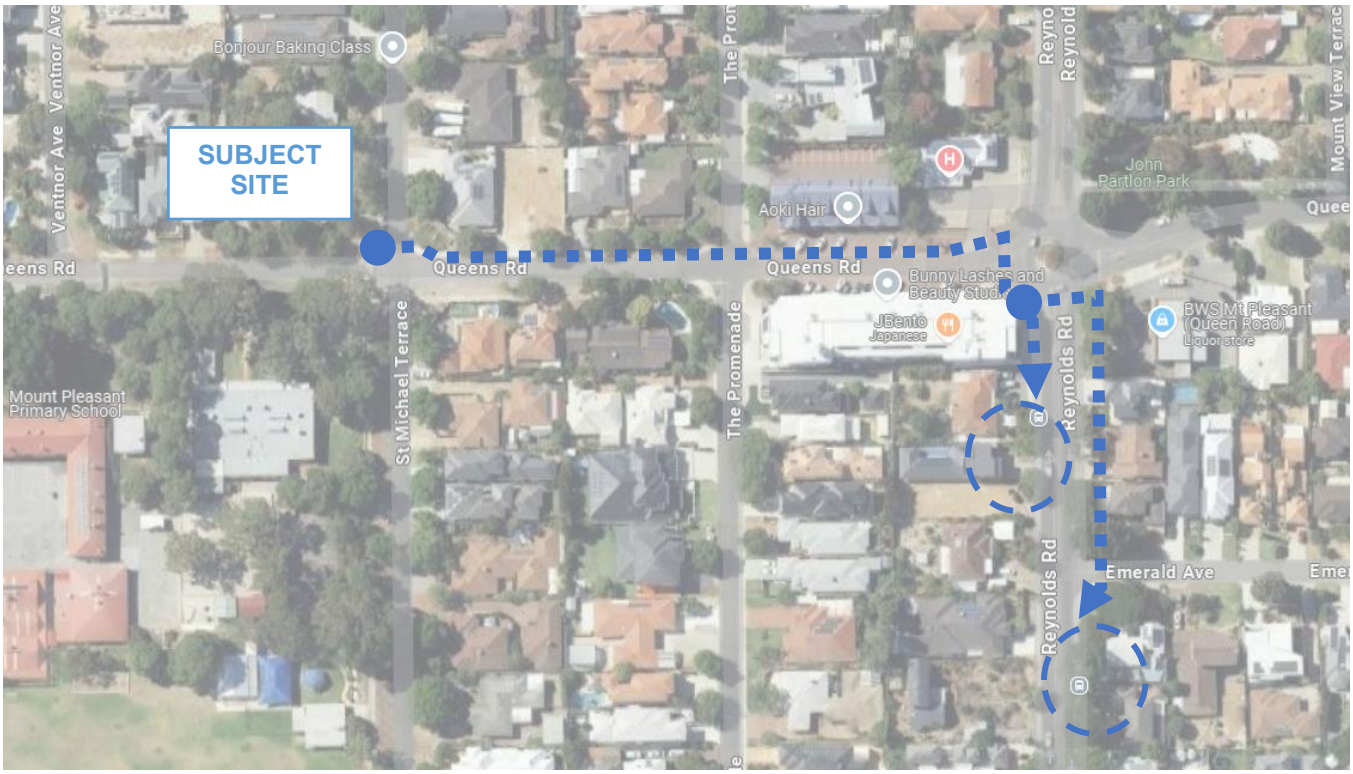


Figure 10: Closest bus stops serving the proposed development

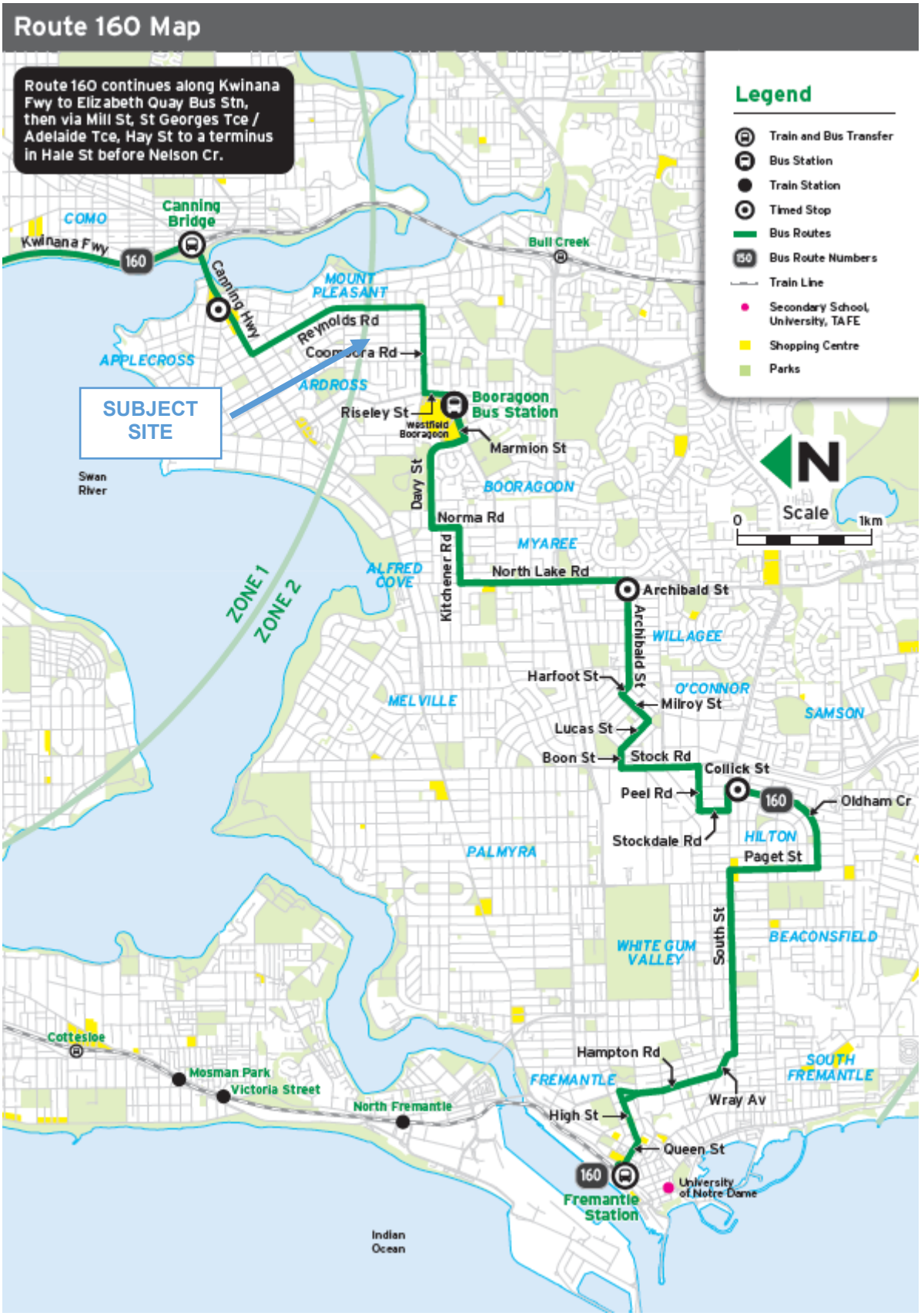


Figure 11: Transperth public transport plan

Source: Transperth

9 Pedestrian access

Information from online mapping services, Main Roads WA, Local Government, and site visits was collected to assess the pedestrian access for the proposed development.

9.1.1 Pedestrian facilities and level of service

Footpaths are provided on St Michael Terrace and Queens Road adjacent to the site. Pedestrian crossing facilities, including kerb ramps are provided at nearby intersections, which promotes improved access for bicycles, wheelchairs and prams.

The WAPC Transport Impact Assessment Guidelines for Developments (2016) provide warrants for installing pedestrian priority crossing facilities. This is based on the volume of traffic as the key factor determining if pedestrians can safely cross a road. The guidelines recommend pedestrian priority crossing facilities be considered once the peak hour traffic exceeds the volumes detailed in Table 4.

The traffic volumes in this table are based on a maximum delay of 45 seconds for pedestrians, equivalent to Level of Service E. The pedestrian crossing facilities on adjacent roads near the site are sufficient and within the traffic volume thresholds.

Table 4: Traffic volume thresholds for pedestrian crossings

Road cross-section	Maximum traffic volumes providing safe pedestrian gap
2-lane undivided	1,100 vehicles per hour
2-lane divided (with refuge)	2,800 vehicles per hour
4-lane undivided*	700 vehicles per hour
4-lane divided (with refuge)*	1,600 vehicles per hour

10 Bicycle access

Information from online mapping services, Department of Transport, Local Government, and/or site visits was collected to assess bicycle access for the proposed development.

10.1 Bicycle network

The Perth and Peel Long Term Cycle Network (LTCN) designates routes by their function, rather than built form. Function considers the type of activities that take place along a route, and the level of demand (existing and potential). The built form of a route is based on the characteristics of the environment, including space availability, topography, traffic conditions (speed, volumes), and primary users. The cycling network hierarchy is described in Figure 12.

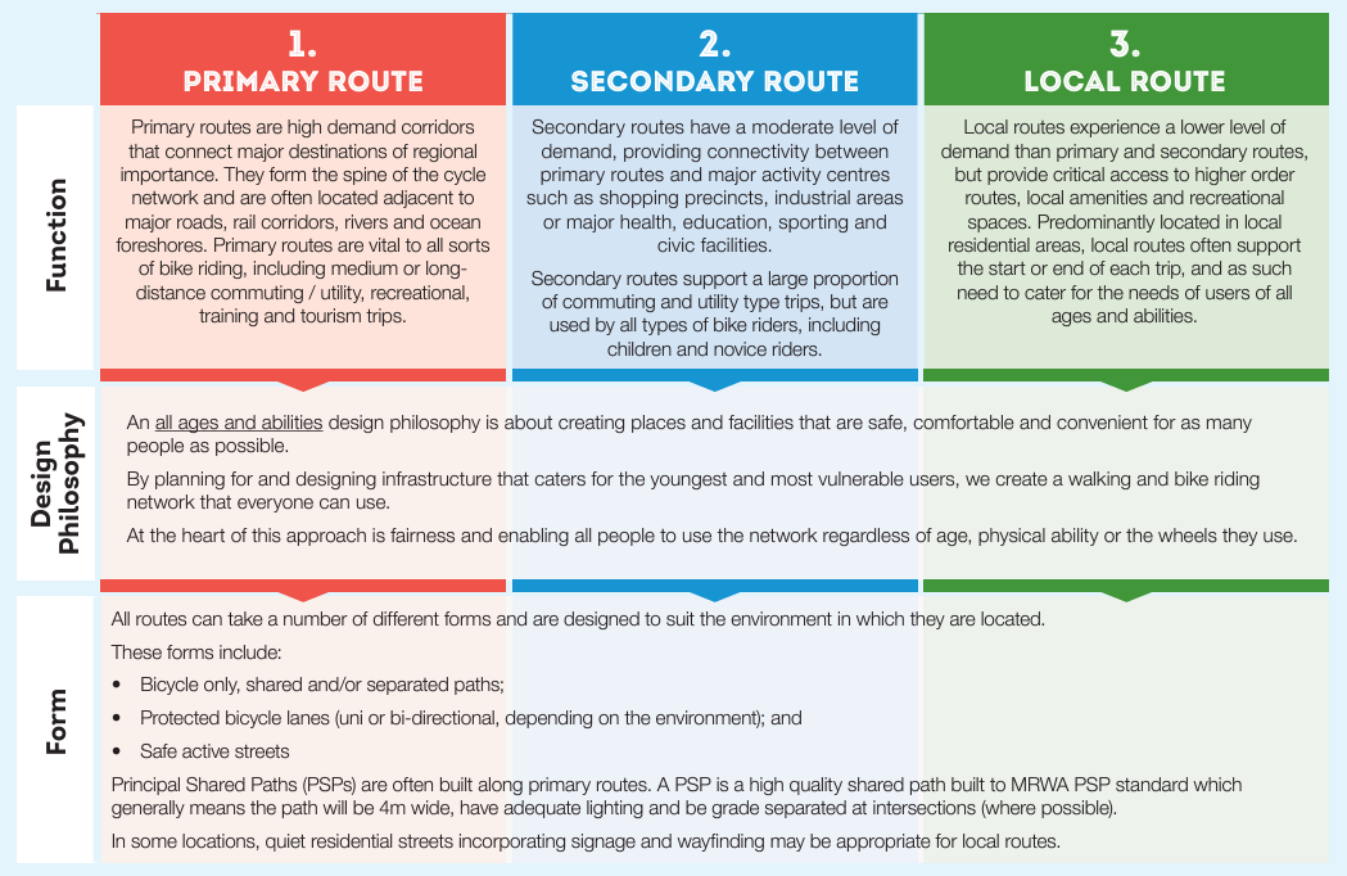


Figure 12: Western Australian Cycling Network Hierarchy

The Long-Term Cycle Network plan is detailed in Figure 13. No LTCN routes run past the subject site. However, footpaths are provided along surrounding roads, which may be used for cycling.

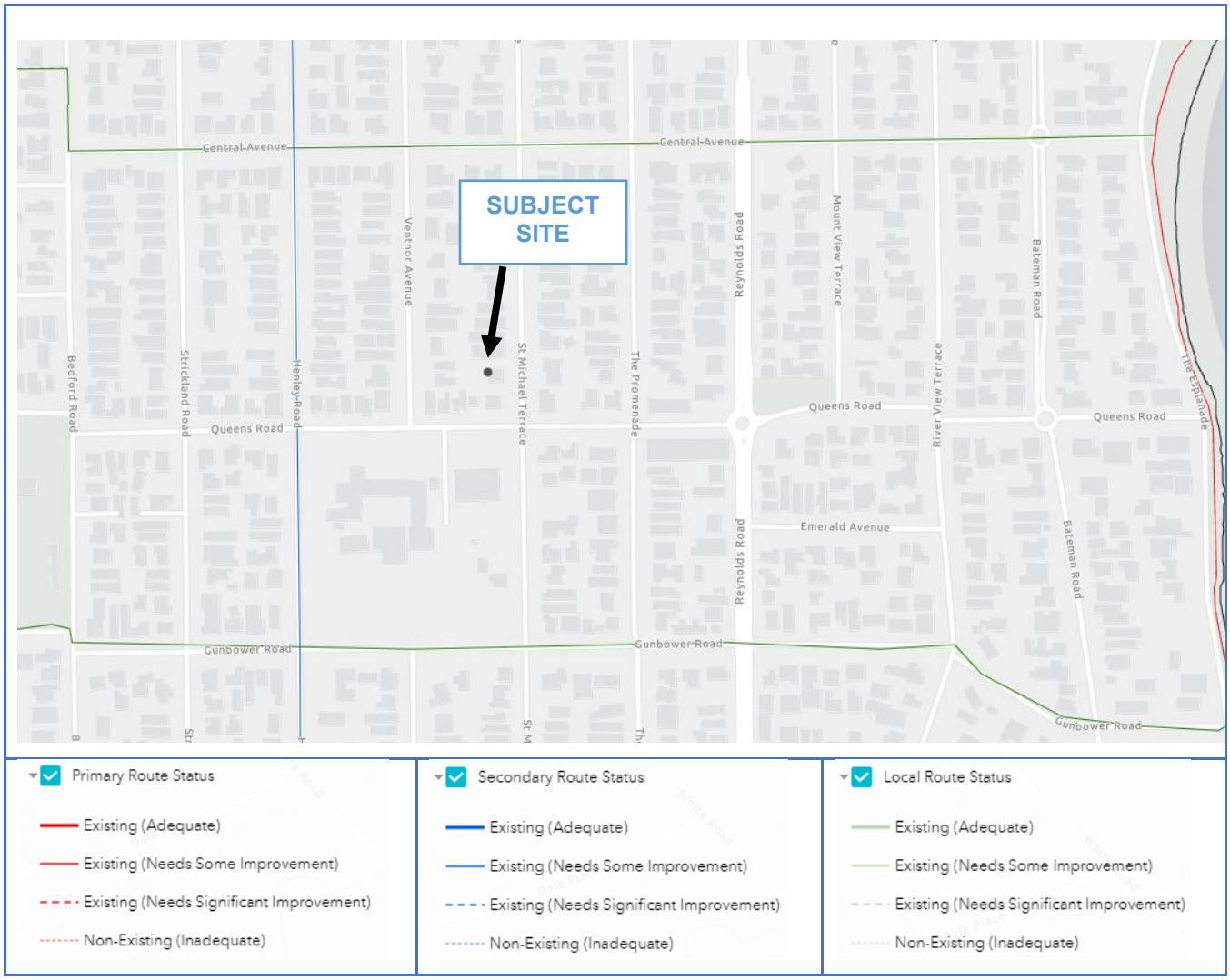


Figure 13: Perth and Peel Long Term Cycle Network plan (LTCN)

10.2 Bicycle parking and end of trip facilities

4 x double-sided bicycle racks are provided within the site near the main entry, providing parking for up to eight bicycles. End of trip facilities including a shower, change room and lockers are provided to encourage active transport for staff.

10.3 Sustainable transport catchment

As detailed in Figure 14, the subject site is well placed for staff and visitors to travel by sustainable modes of transport. A large catchment of people exists within a comfortable 8km or 20-25min cycling or micromobility journey to the site.

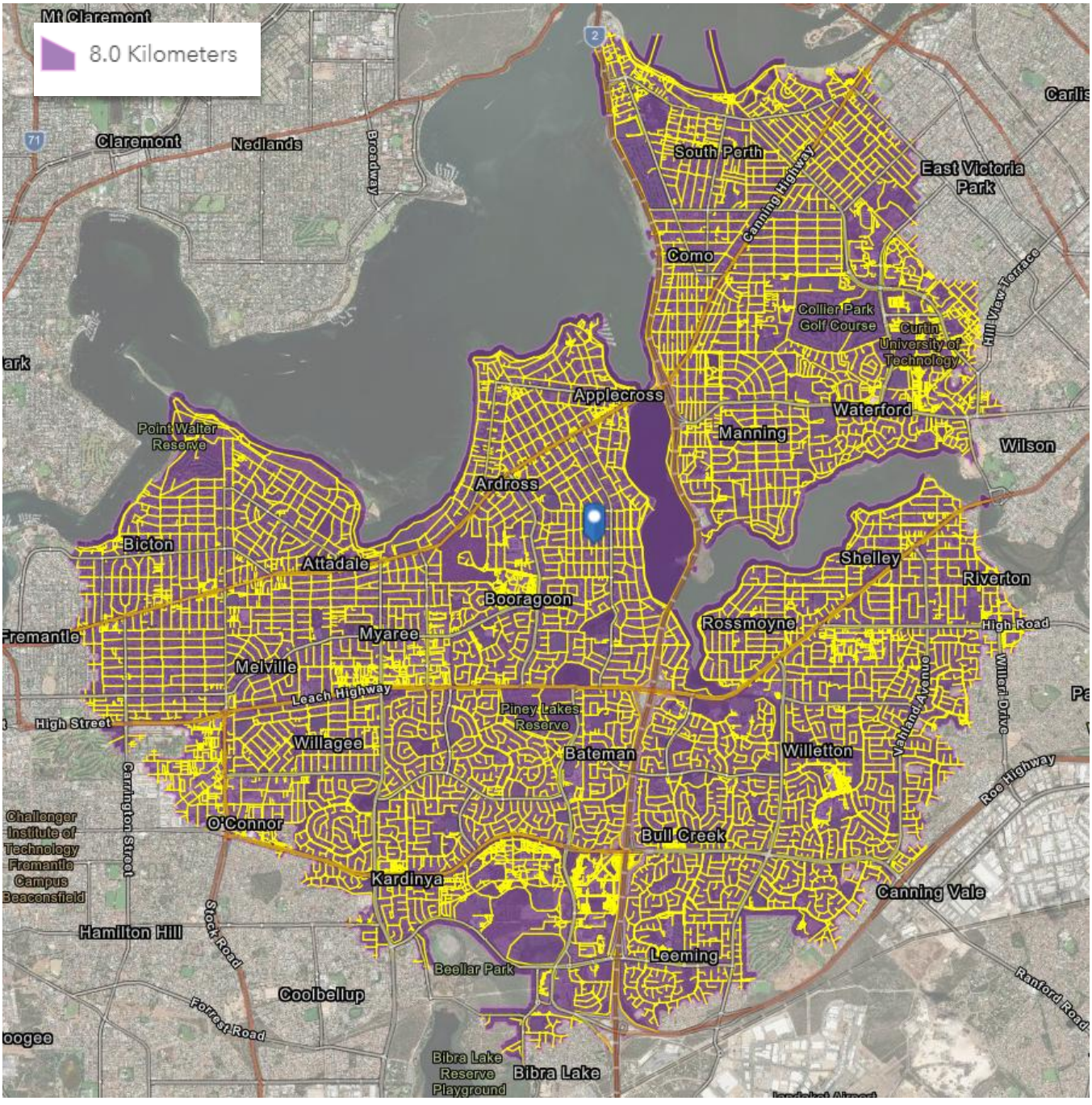


Figure 14: Cycling and micro-mobility catchment

11 Site specific issues

A number of site-specific issues were raised by the City of Melville, the Development Assessment Panel (DAP), and community submitters during the assessment of the development application. These matters primarily related to traffic activity associated with the childcare centre, its proximity to the adjacent primary school, pedestrian safety at the driveway interface, and the potential for waste collection and parking to affect residential amenity.

This section outlines the key issues identified and describes how each has been addressed through the revised TIS, the Parking Management Plan (PMP), and the updated Waste Management Plan (WMP).

The dominant concern raised during the previous assessment process related to the interaction between childcare traffic and the primary school's peak arrival and departure times. The City and DAP sought confirmation that the proposed childcare centre would not contribute to congestion or queuing on St Michael Terrace, nor exacerbate short-duration parking pressures generated by the school.

To address this, on-site surveys were undertaken by Urbii during a typical school day, covering both the morning and afternoon periods. These surveys confirmed that school-related activity is highly concentrated, short in duration, and confined to predictable windows—8:30–8:50am in the morning and 2:45–3:30pm in the afternoon.

Outside these peaks, St Michael Terrace operates with very low traffic volumes and minimal kerbside parking demand. Using this information, the Parking Management Plan introduces explicit operational restrictions preventing childcare pick-up and drop-off from occurring during the school's critical peak windows. This measure ensures that childcare traffic is physically separated from school traffic, which fully resolves the DAP's concern regarding overlapping demand and cumulative intensity during peak times.

The City also raised concern regarding the potential for vehicles associated with the childcare centre to rely on on-street parking, given the presence of the school opposite the site and the temporary parking pressures that occur during the afternoon peak. In response, the childcare centre has been designed with a fully self-contained parking supply. A total of 26 bays—including staff bays, an ACROD bay, and short-stay visitor bays—are provided in accordance with the City's Local Planning Policy 1.6 and AS2890.1.

Parking demand modelling confirms that the on-site supply is adequate for all operating periods and no reliance on verge or kerbside parking is required. The PMP reinforces this outcome through staff-only bay allocation, time-controlled short-stay visitor bays, clear wayfinding and signage, and an enforcement framework to ensure that visitors use on-site bays exclusively.

Pedestrian safety at the driveway and footpath interface was also identified as a matter requiring attention. The City sought clarification that sightlines, pedestrian priority, and driveway design were sufficient to protect users of the footpath, particularly school children walking to and from the primary school.

In response, Crossing Sight Distance (CSD) has been assessed and provides compliant sight distance in both directions along the footpath. The updated TIS confirms that drivers exiting the site will have clear visibility of approaching pedestrians.

Waste collection was another key issue raised by the City, particularly concerning the frequency of verge presentation and the potential amenity impacts of bins being placed on the street on multiple days. As waste collection is managed through a separate technical document, the

revised WMP addresses this by servicing the bins directly from the bin store during off-peak periods. The revised WMP avoids placing bins out on the footpath, and therefore no impact on footpath use is expected.

Waste collection has also been scheduled during off-peak traffic periods, avoiding the school's busy times and ensuring that emptying of bins does not conflict with childcare drop-off or pick-up activity. These refinements address the City's concern regarding operational amenity.

Lastly, the City queried the broader suitability of the local road environment, noting that St Michael Terrace is classified as a local access road rather than a higher-order distributor road. The updated TIS addresses this by demonstrating that the forecast traffic generation of the childcare centre is modest, well within the intended capacity of an access road, and does not require any modifications to the surrounding network. The removal of one redundant crossover and consolidation to a single upgraded vehicle access point improves safety by reducing conflict points.

The site's proximity to an intersection further distributes traffic efficiently, minimising localised concentration of movements. These factors, combined with the operational restrictions embedded in the PMP, ensure that the development's traffic characteristics remain consistent with the residential context.

Overall, the collective measures incorporated into the revised TIS, PMP and WMP comprehensively address the site-specific issues raised by the City and the DAP.

The proposed development will operate safely, efficiently and in a manner that protects residential amenity and ensures compatibility with the surrounding road network and land use environment.

12 Safety issues

12.1 Crash history

The five-year crash history in the vicinity of the site was obtained from Main Roads WA. As detailed in Figure 15, one crash was recorded in the immediate locality in the last five years. The detailed crash history is presented in Table 5.

The low traffic generation of the proposed development is unlikely to impact traffic safety in the area.

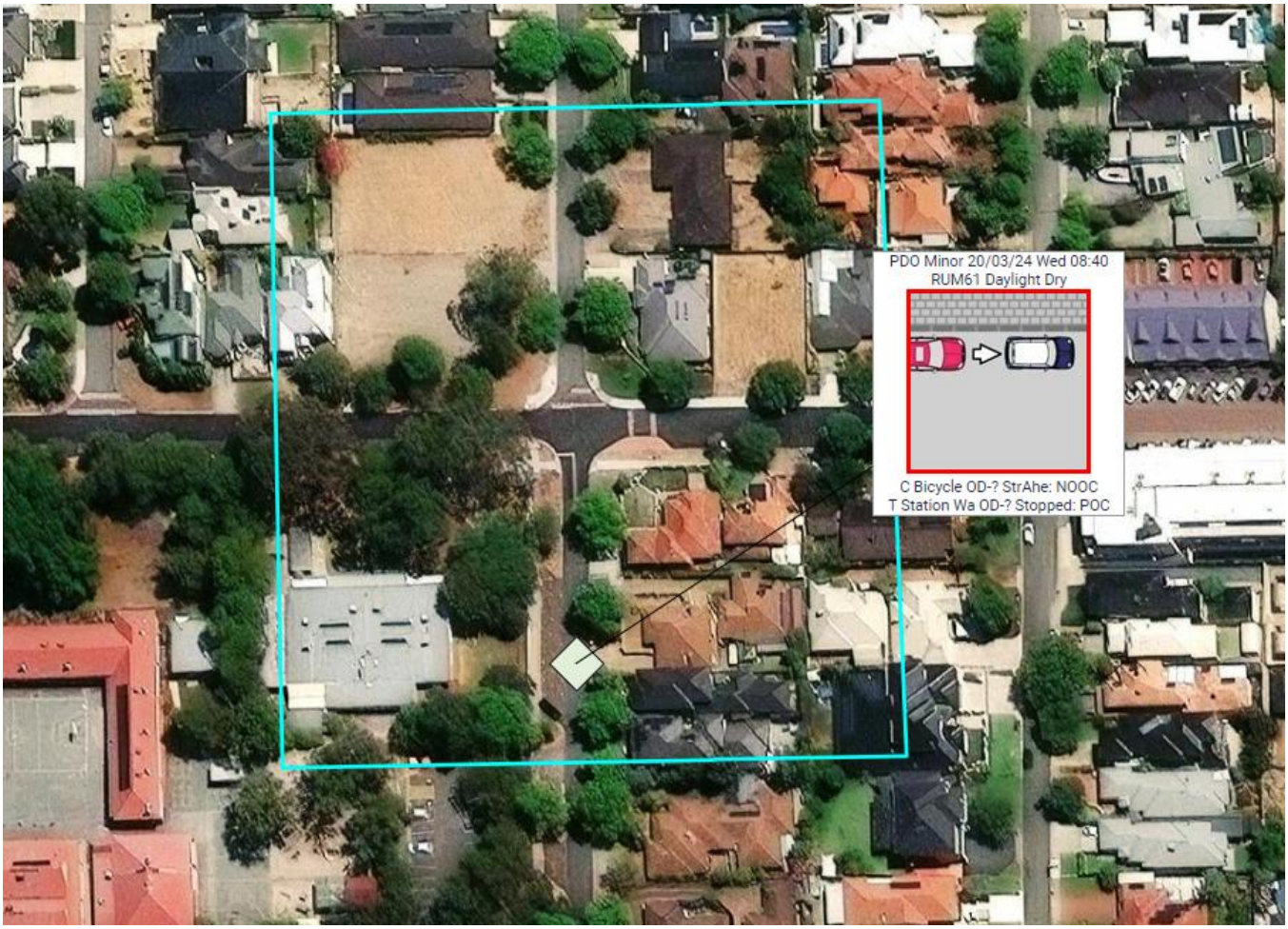


Figure 15: 5-year crash map in the locality (2020-2024)

Source: MRWA crash mapping tool

Table 5: 5-year crash history in the locality (2020-2024)

Severity	No.	%
Fatal	0	0
Hospital	0	0
Medical	0	0
PDO Major	0	0
PDO Minor	1	100.00

Year	No.	%
2024	1	100.00

Nature	No.	%
Head On	0	0
Hit Animal	0	0
Hit Object	0	0
Hit Pedestrian	0	0
Non Collision	0	0
Not Known	0	0
Rear End	1	100.00
Right Angle	0	0
Right Turn Thru	0	0
Sideswipe Opposite Dirn	0	0
Sideswipe Same Dirn	0	0

Light	No.	%
Dark - Street Lights Not Provided	0	0
Dark - Street Lights Off	0	0
Dark - Street Lights On	0	0
Dawn Or Dusk	0	0
Daylight	1	100.00
Not Known	0	0

Conditions	No.	%
Dry	1	100.00
Not Known	0	0
Wet	0	0

Alignment	No.	%
Curve	0	0
Not Known	0	0
Other / Unknown	1	100.00
Straight	0	0

Total	1

12.2 Road safety audit review

A Preliminary Design Road Safety Audit (RSA) was undertaken by an independent Road Safety Auditor for the proposed development. Urbii has reviewed each finding of the audit in detail, considering the existing road environment, local traffic data, and the operational measures that now form part of the revised design, Parking Management Plan (PMP) and Waste Management Plan (WMP). The following provides a consolidated response to each RSA finding.

Finding 2.1 – Trees within the clear zone

The RSA identifies mature verge trees located within the notional clear zone along St Michael Terrace and Queens Road. These trees are long-established elements of the residential streetscape and represent an accepted balance between shade provision, amenity and crash risk in low-speed environments. There is no crash history at this location associated with verge trees. As this condition is a pre-existing City asset and not generated by the development, the matter can be referred to the City for routine verge maintenance where required.

Finding 2.2 – Uneven footpath / tripping hazards

The RSA notes isolated areas of uneven pavement within the existing footpath network. These are existing infrastructure issues unrelated to the development works. Where construction works interface with the footpath, surfaces will be reinstated to current standards. Any additional defects outside the project footprint can be referred to the City as part of normal verge maintenance.

Finding 2.3 – Potential queuing from school activity affecting the site access

The RSA raises the possibility of vehicle queues on St Michael Terrace during primary school peak periods affecting drivers exiting the proposed crossover. Urbii's on-site observational surveys confirm that traffic volumes on St Michael Terrace are very low even during school peaks, with no extensive queuing at the intersection. In addition, the PMP introduces explicit time restrictions on childcare drop-off and pick-up activity during the school's busiest morning (8:30–8:50am) and afternoon (2:45–3:30pm) periods. This operational measure prevents overlap with school activity, directly addressing the RSA concern and ensuring that childcare activity does not contribute to or experience school-related congestion.

Finding 2.4 – Sightlines between drivers and pedestrians at the footpath

The RSA queries whether building alignment and verge vegetation may restrict visibility between exiting drivers and pedestrians on the footpath. Section 3.3 of this TIS includes a detailed Pedestrian Crossing Sight Distance (CSD) assessment consistent with Austroads guidance. The CSD check confirms that the required sight distances—19 m for the southbound direction and 36 m for the northbound direction—are achieved for the adopted vehicle exit speed of 20 km/h. The CSD sketch (Appendix B) also demonstrates unobstructed sight lines between the pedestrian crossing point and approaching vehicles. Accordingly, the required pedestrian visibility is satisfied, and the issue raised in the RSA is addressed through the design.

Finding 2.5 – Vegetation and trees affecting intersection sight distance near Queens Road

The RSA notes that a mature verge tree and low-level landscaping may influence driver sight distance approaching the Queens Road intersection. These elements are existing features of the residential streetscape and do not arise from the development. Operating speeds on St Michael Terrace are low, and there is no crash record at this location attributable to vegetation. Minor trimming of low-level vegetation can be undertaken as part of routine verge maintenance to optimise visibility. With travel speeds well below critical impact thresholds (46 km/h 85th percentile speed) and no adverse safety trends, the current arrangement is considered acceptable within a residential local-road context.

Finding 2.6 – Kerb ramps and TGSIs

The RSA recommends provision of compliant kerb ramps and tactile ground surface indicators (TGSIs) at pedestrian crossing points. These elements will be incorporated into the detailed design phase in accordance with AS 1428 and Main Roads WA standard drawings.

Finding 2.7 – Service cover projecting into the pedestrian path

A service lid protruding slightly into the footpath was identified as a pedestrian-comfort issue. This item is an existing utility asset and not created by the development. If impacted by construction works, it will be reinstated to current standards. If not affected, the matter can be referred to the relevant asset owner for future maintenance.

13 Conclusion

This Transport Impact Statement has been prepared by Urbii on behalf of Carcione Nominees Pty Ltd with regards to the proposed child care centre, located at 34-36 St Michael Terrace, Mount Pleasant.

The site is located on the north-west corner of St Michael Terrace and Queens Road and is currently vacant. The surrounding area comprises a mix of residential, educational and community land uses, including the adjacent Mount Pleasant Primary School. The proposal involves the development of a child care centre catering for up to 113 children and 29 staff.

The site benefits from good connectivity to the local walking and cycling network, with footpaths, kerb ramps and safe crossing points provided in the immediate vicinity. Public transport access is available via nearby bus routes. Vehicle access is proposed from St Michael Terrace, with one redundant crossover removed to improve pedestrian safety and reduce conflict points.

Traffic analysis undertaken for this TIS shows that the traffic generation associated with the child care centre is modest and comfortably within the practical capacity of the surrounding road network. St Michael Terrace currently carries very low traffic volumes—averaging around 311 vehicles per day—and on-site observations confirm that school-related traffic is short in duration and confined to narrow peak periods. Outside these brief windows, the street operates with minimal traffic activity and substantial spare capacity.

A detailed review of school-peak activity demonstrates that these periods are highly concentrated and occur only within short 20–30-minute time windows. The accompanying Parking Management Plan incorporates operational restrictions on child care drop-offs and pick-ups during these periods, preventing any overlap with school activity. These measures ensure that cumulative impacts remain low and that the operation of the local road network is not adversely affected.

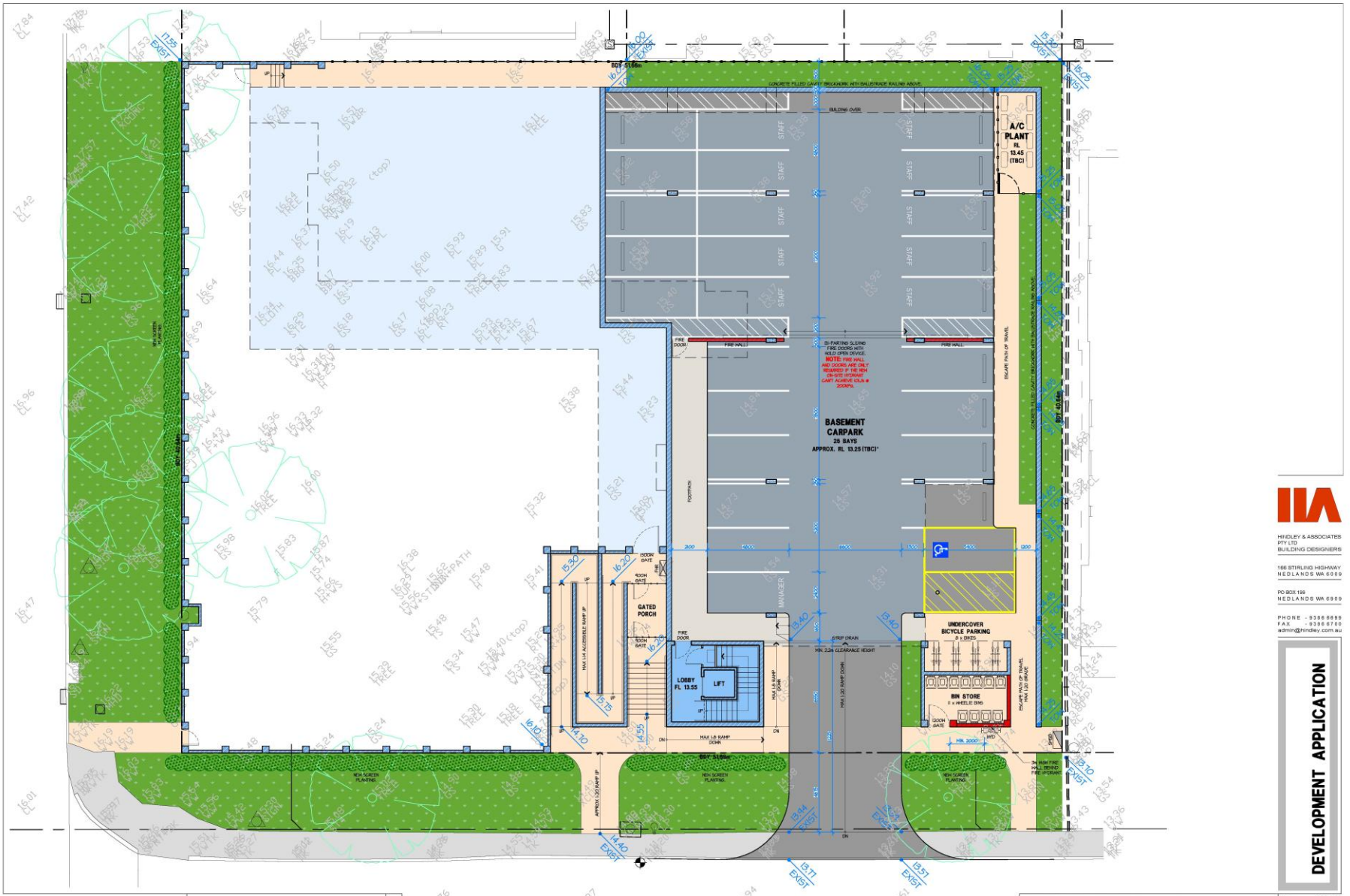
The development provides 26 on-site parking bays in accordance with Local Planning Policy 1.6 and AS2890.1, including dedicated staff parking, visitor bays and an ACROD bay. Parking demand modelling and management measures set out in the Parking Management Plan confirm that all parking activity can be accommodated on-site without reliance on verge or kerbside parking.

The design has also been reviewed through a Preliminary Design Road Safety Audit. Issues identified in the RSA have been addressed through the TIS, including confirmation of compliant pedestrian Crossing Sight Distance, incorporation of kerb ramp and TGSI upgrades at detailed design, and acknowledgement that several findings relate to existing City infrastructure rather than the proposed development.

Overall, the technical analysis undertaken within this TIS demonstrates that the proposed child care centre can be accommodated safely and efficiently within the surrounding road network. Traffic volumes remain low, ample spare capacity is available on St Michael Terrace, pedestrian sightlines are satisfactory, and operational measures ensure that activity associated with the development does not conflict with school traffic. On this basis, the findings of this Transport Impact Statement support the proposed development.

Appendices

Appendix A: Proposed development plans



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A	15.05.25	ISSUED FOR DA	JJR	SDS
B	30.05.25	TOWN PLANNER'S COMMENTS	JJR	SDS

A1 SHEET

PROPOSED BASEMENT FLOOR PLAN

SCALE 1:100

N

PROPOSED CHILDCARE CENTRE
LOTS 143 (34) & 144 (36)
ST MICHAEL TCE, MOUNT PLEASANT
for STOCK ROAD LAND PTY LTD

HINDLEY & ASSOCIATES
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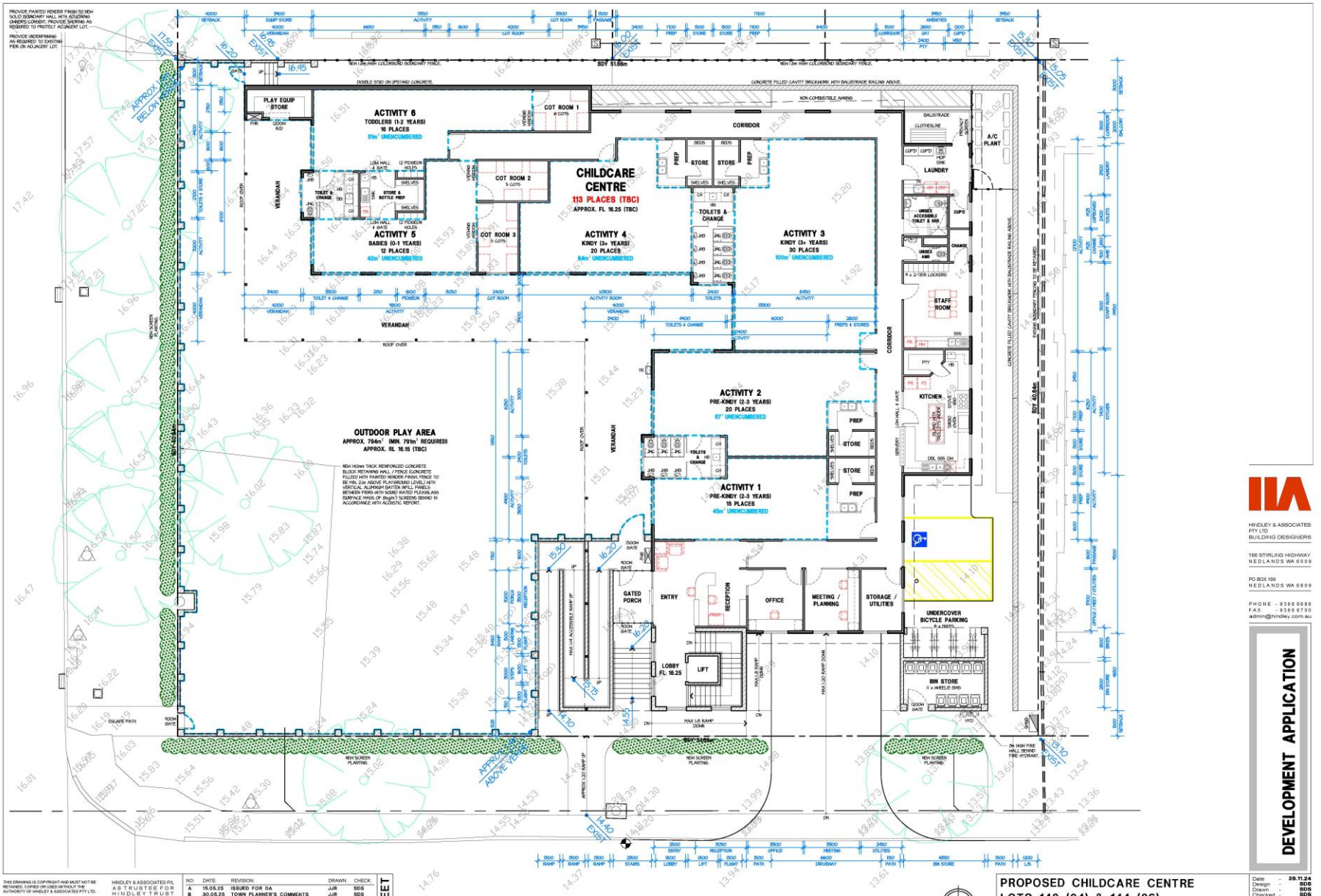
DEVELOPMENT APPLICATION

Date	28.11.24
Design	SDS
Drawn	SDS
Checked	SDS
Scale	1:100
Job No.	0847
Dwg -	DA03
Rev -	B



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DEVELOPMENT APPLICATION

HINDLEY & ASSOCIATES P/L
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ACN No. 088 989 904

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B	30.05.25	TOWN PLANNER'S COMMENTS	JJR	SDS

A1 SHEET

PROPOSED GROUND FLOOR PLAN

SCALE 1:100

PROPOSED CHILDCARE CENTRE
LOTS 143 (34) & 144 (36)
ST MICHAEL TCE, MOUNT PLEASANT
for STOCK ROAD LAND PTY LTD

Date	28.11.24
Design	SDS
Drawn	SDS
Checked	SDS
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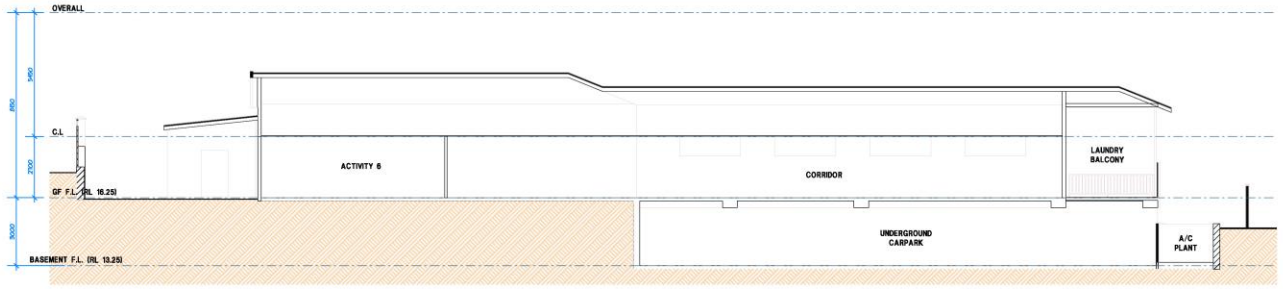
Dwg.	DA04
Rev.	B



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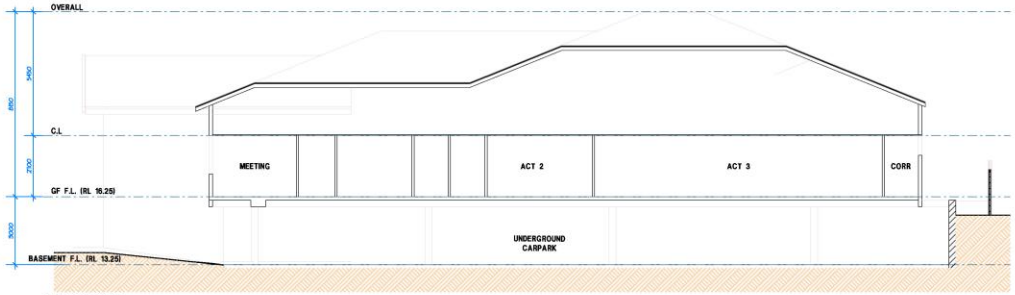

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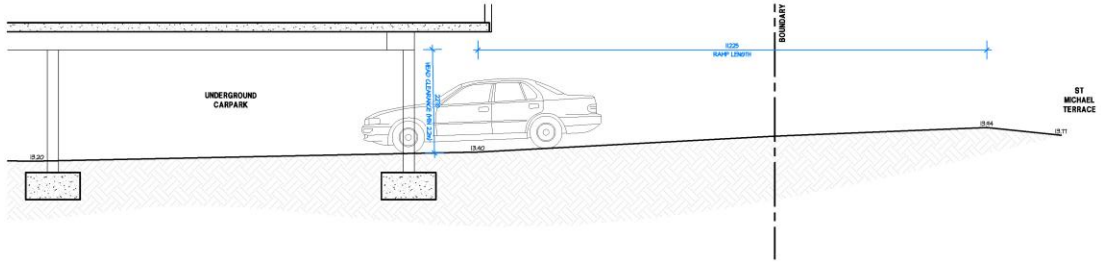

RAMP SECTION
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ACN No. 088 989 904

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B	20.06.25	TOWN PLANNER'S COMMENTS	JJR	SDS
C	13.08.25	RAMP SECTION ADDED	SDS	SDS

A1 SHEET

SECTIONS
SCALE 1:100

PROPOSED CHILDCARE CENTRE
LOTS 143 (34) & 144 (36)
ST MICHAEL TCE, MOUNT PLEASANT
for STOCK ROAD LAND PTY LTD

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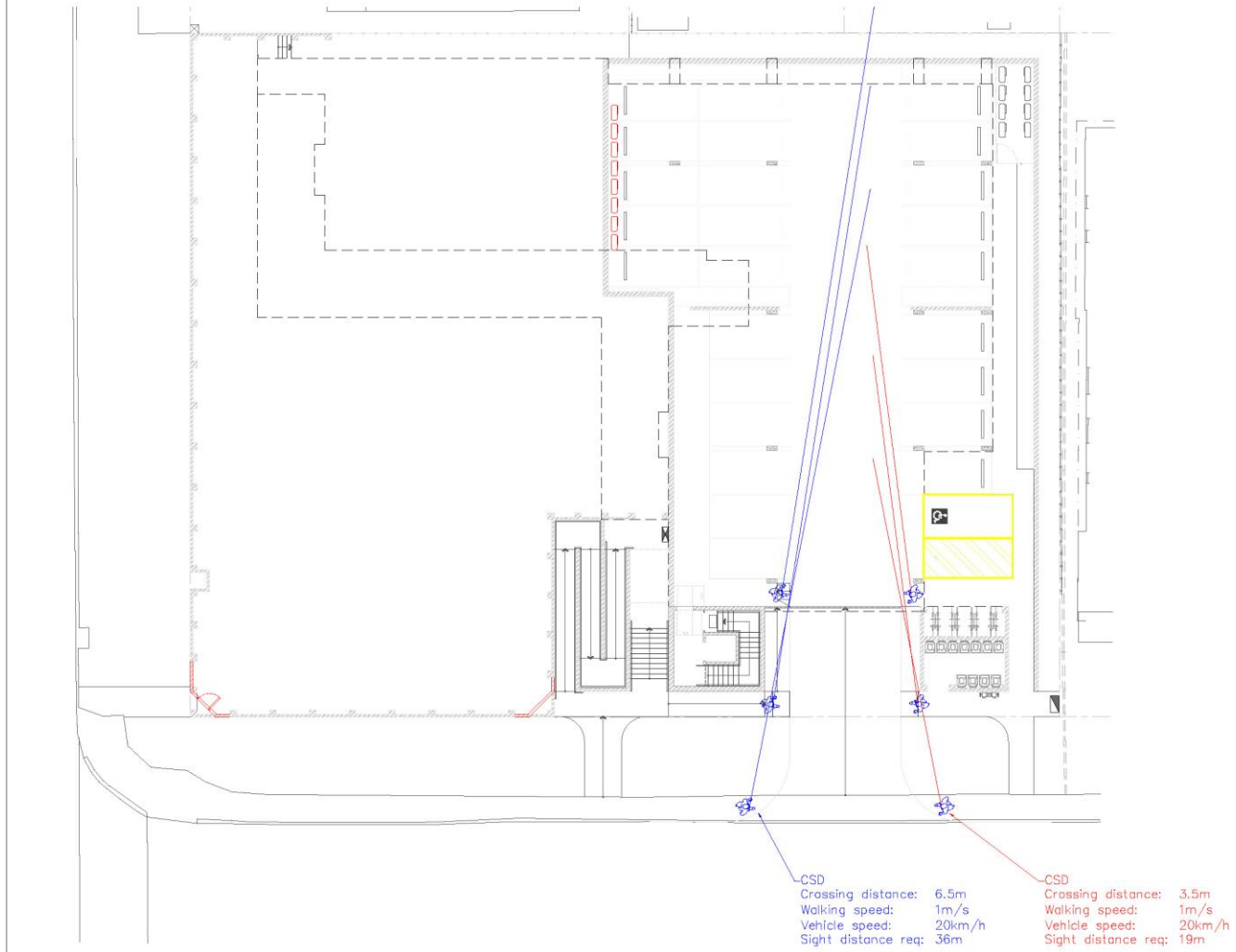
DEVELOPMENT APPLICATION

Date - 13.05.25
Design - JJR
Drawn - JJR
Checked - SDS
Scale - AS NOTED
Job No. 0847

Dwg - DA09
Rev - C

Appendix B: Sightline assessment sketches



Revision notes:		
Rev:	Date:	Notes:

Drawn by: Paul Ghantous	Project: U24.177 - 34-36 St Michael Terrace, Mount Pleasant Proposed Child Care Centre	Date: 21/11/2025	urbii Sustainable Transport. Safe Solutions
Client: Carcione Nominees Pty Ltd	Drawing Title: Crossing Sight Distance Assessment AGRD Part 4 - Intersections and Crossings - General	Scale @ A3: 1:250	
		Revision: sk03	

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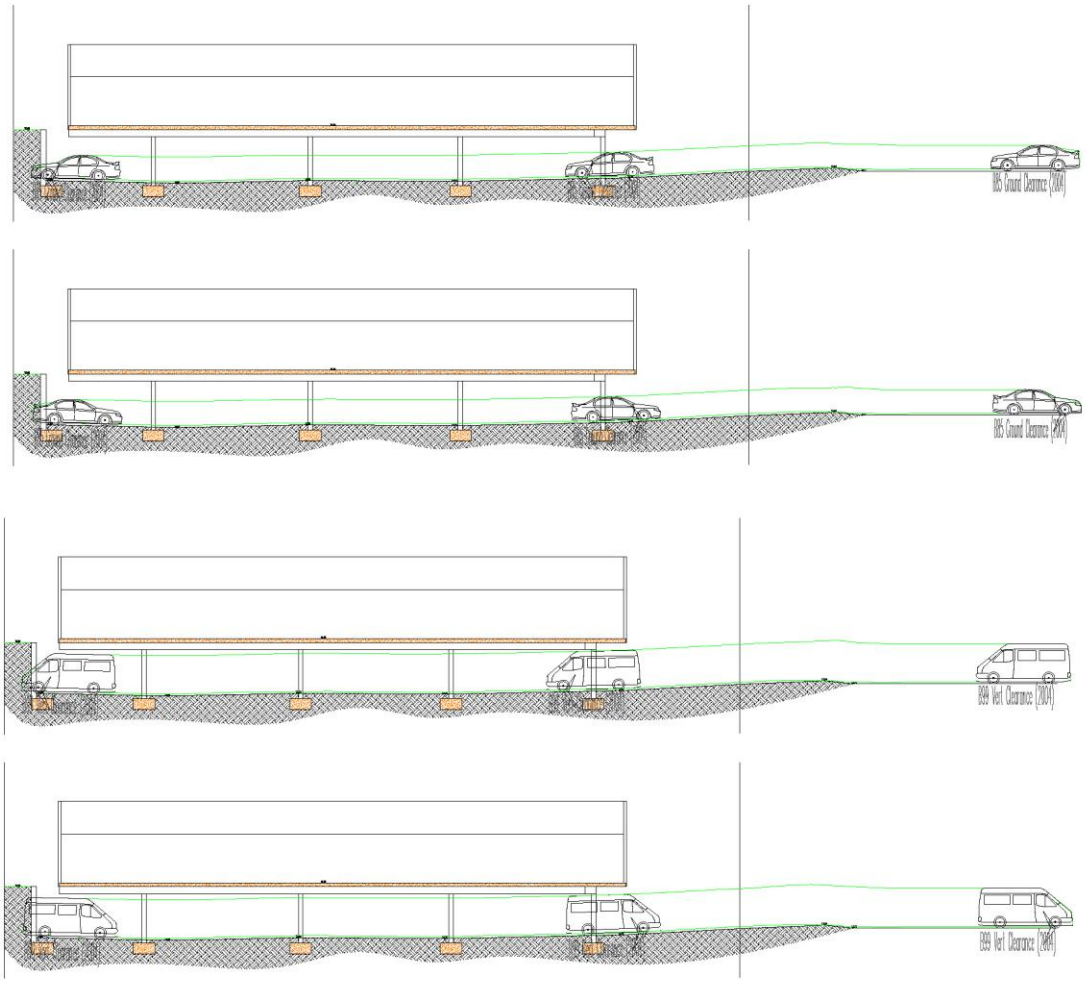
Appendix C: Vertical clearance swept path assessment



Revision notes:		
Rev:	Date:	Notes:

Drawn by: Paul Ghantous	**Project:** U24.177 - 34-36 St Michael Terrace, Mount Pleasant Proposed Child Care Centre	**Date:** 21/08/2025	urbii Sustainable Transport. Safe Solutions PO Box 4315, Baldivis WA 6171 customer@urbii.com.au 0433958164
Client: Carcione Nominees Pty Ltd	**Drawing Title:** Vertical ground and height clearance assessment AS2890.1 - B85 & B99 Vehicles	**Scale @ A3:** 1:250	
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