Transport Impact Statement

Project:	Proposed Commercial Development 147 Burswood Road, Burswood
Client:	Elven Property
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Date:	3rd July 2024
Shawmac Document #:	2402007-TIS-001

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Document Status: Client Review

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File Reference: \\shawmacserver\NewData\Jobs Active 2024\T&T - Traffic & Parking\Elven Property_147 Burswood Rd, Burswood_TIS_2402007\3. Documents\3.20 TIS\Elven Property_147 Burswood Rd, Burswood_TIS_2402007 - Rev B.docx

Contents

Figures

Tables

1 Introduction

1.1 Proponent

Shawmac has been engaged by Elven Property to prepare a Transport Impact Statement (TIS) for a proposed commercial and child care centre development in Burswood. This TIS has been prepared in accordance with the WAPC *Transport Impact Assessment Guidelines* (TIA guidelines).

1.2 Site Location

The site address is 147 Burswood Road in Burswood. The local authority is the Town of Victoria Park. The general site location is shown in **Figure 1**.

Figure 1: General Site Location

An aerial view of the site is shown in **Figure 2**.

Figure 2: Existing Site (January 2024)

2 Proposed Development

2.1 Land Use

The proposed development is a two-storey building with a commercial tenancy and car parking on the ground level and a child care centre on the upper floor. The child care centre will accommodate up to 85 children and 17 staff.

The site previously had a small commercial building which has since been removed. The site is zoned as Office/Residential under the Town of Victoria Park Local Planning Scheme No. 1 (LPS1). The site is surrounded by other commercial development along Burswood Road and residential dwellings to the east.

It has been advised that the site under the causeway precinct background report (2009) requires a mandatory residential land use. The client acknowledges this requirement and there is potential to redevelop the site in the future.

The proposed site layout is shown in **Figure 3**.

Figure 3: Ground and First Floor Plans – Office and Child Care Centre

3 Traffic Management on Frontage Streets

3.1 Road Network Layout and Hierarchy

The current layout and hierarchy of the surrounding road network according to Main Roads WA's *Road Information Mapping System* is shown in **Figure 4**.

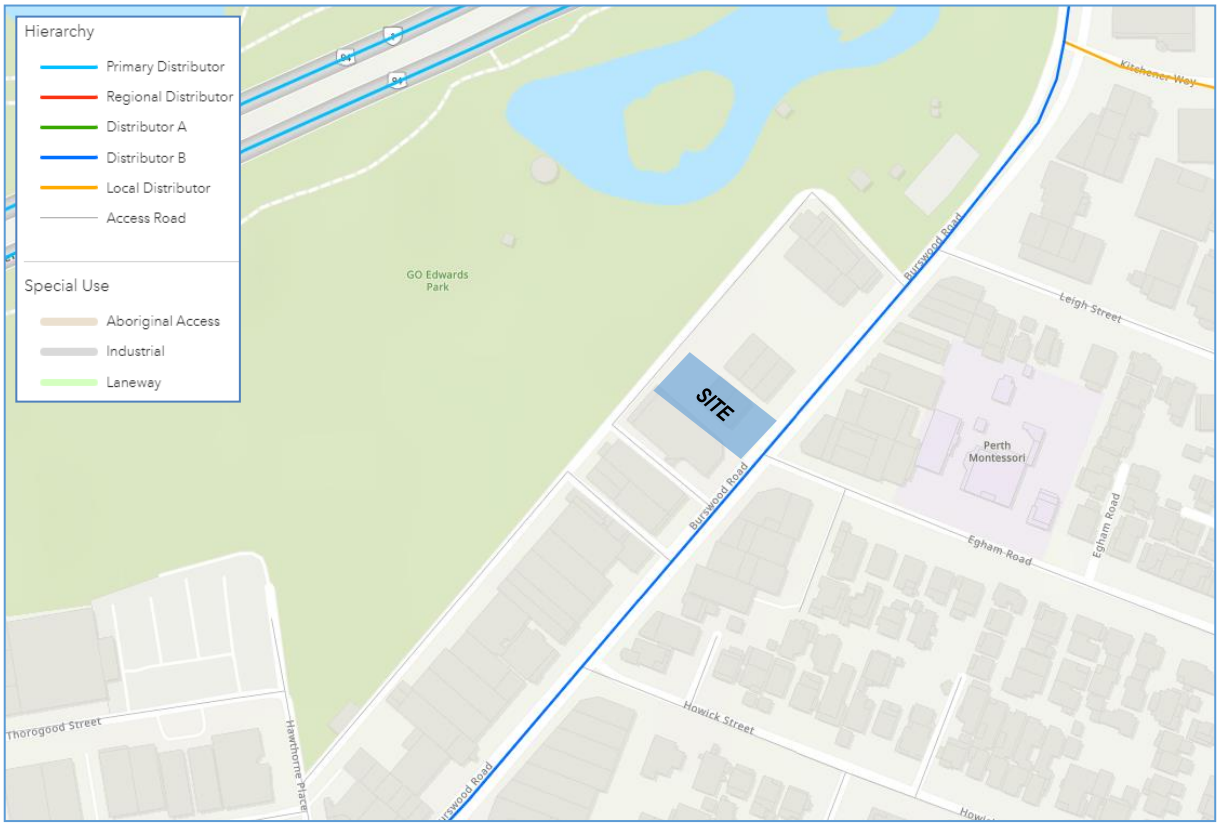


Figure 4: Road Layout and Hierarchy

3.2 Speed Limits

The current speed limits are shown in **Figure 5**.

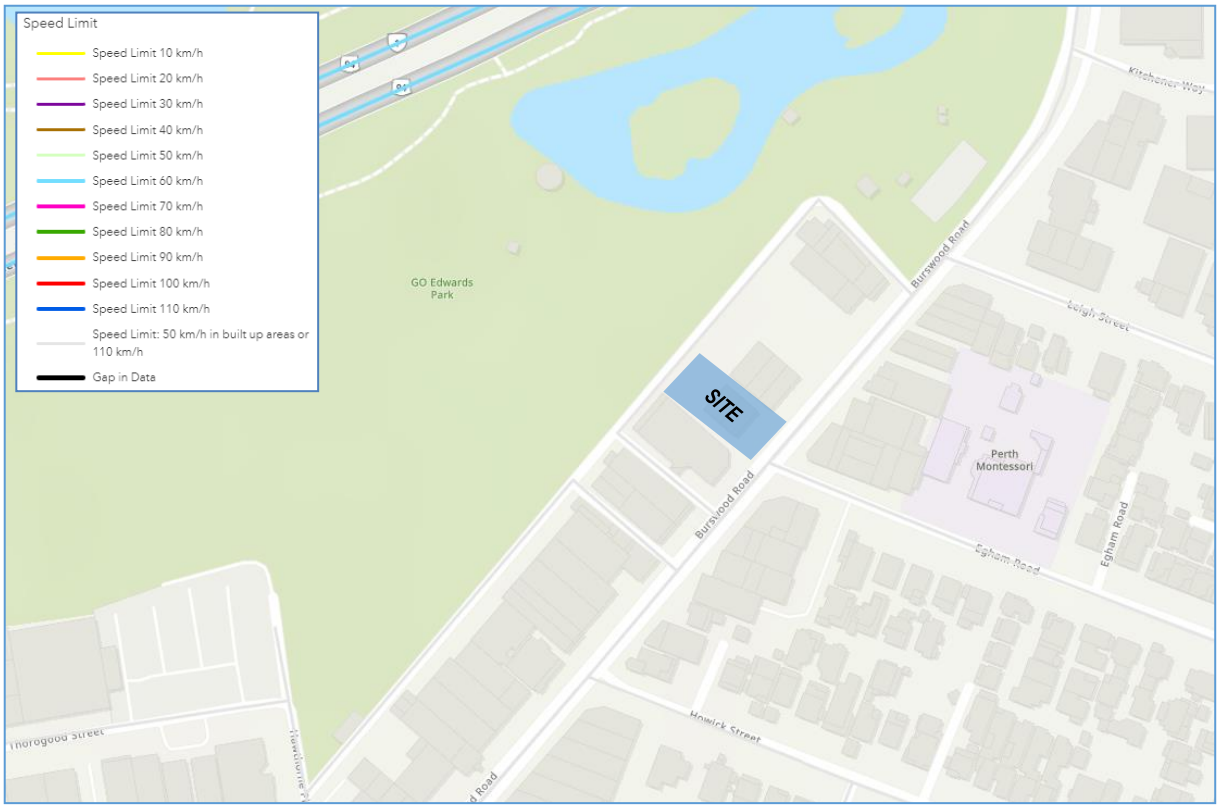


Figure 5: Speed Limits

3.3 Traffic Counts

The latest traffic volumes on the road network were sourced from Main Roads WA's *Traffic Map* as shown in **Figure 6**. The closest traffic counts are at the existing signalised intersection (ID: LM01167) at Great Eastern Highway / Victoria Park Drive / Burswood Road as shown in **Figure 6**.

Figure 6: Average Weekday Traffic

The actual traffic volumes along Burswood Road in the vicinity of the site are likely to be much lower than noted above as a moderate proportion of traffic will turn to and from Kitchener Avenue.

The TIA Guidelines refers to Austroads *Guide to Traffic Management* for assessment of the impact of changes in traffic flows on the surrounding road network. The typical mid-block capacities for urban roads according to Austroads *Guide to Traffic Management Part 3: Traffic Studies and Analysis* are detailed in **Figure 7**.

Table 5.1: Typical mid-block capacities for urban roads with interrupted flow

Type of lane	One-way mid-block capacity (pc/h)
Median or inner lane	
Divided road	1000
Undivided road	900
Middle lane (of a 3 lane carriageway)	
Divided road	900
Undivided road	1000
Kerb lane	
Adjacent to parking lane	900
Occasional parked vehicles	600
Clearway conditions	900

Source: Table 5.1 in Austroads (2013).

Figure 7: Austroads Typical Mid-block Capacities for Urban Roads

The typical mid-block lane capacity of the adjacent roads is therefore approximately 900 vehicles per hour (vph) where there is no parking or a parking lane and 600 vph where there are occasional parked vehicles. There is intermittent parking along both sides of Burswood Road but the traffic lanes are wide enough for vehicles to pass by parked vehicles and so the theoretical mid-block capacity is estimated to be 900vph per direction.

The current mid-block peak hour traffic flows are below 900vph per hour in each direction and are therefore within the current mid-block capacity of the road.

4 Parking and Access

4.1 Parking Requirements

The car parking requirements for non-residential development in the Town of Victoria Park are outlined in the City's Local Planning Policy 23 (LPP23). The non-residential parking requirements are calculated in **Table 1**.

Table 1: LPP23 Car Parking Requirements

Land Use	Requirement	Quantum	Required Bays
Child Care Facilities	1 bay for every 5 children	85	17
Office	1 bay for every 40m^2 of Net Floor Area (NFA)	225m^2	6
		Total	**23**

As shown, the proposed development requires a minimum of 23 parking spaces. It has been advised that the client is the owner of the adjacent building and has agreed to lease 5 parking bays to the neighbouring tenants. Therefore, the site is required to provide 28 parking bays. The site proposes to provide 26 bays which is 2 bay short of the calculated requirement.

The minor shortfall is considered acceptable as there is ample available public parking along Burswood Road as shown in **Figure 8**.

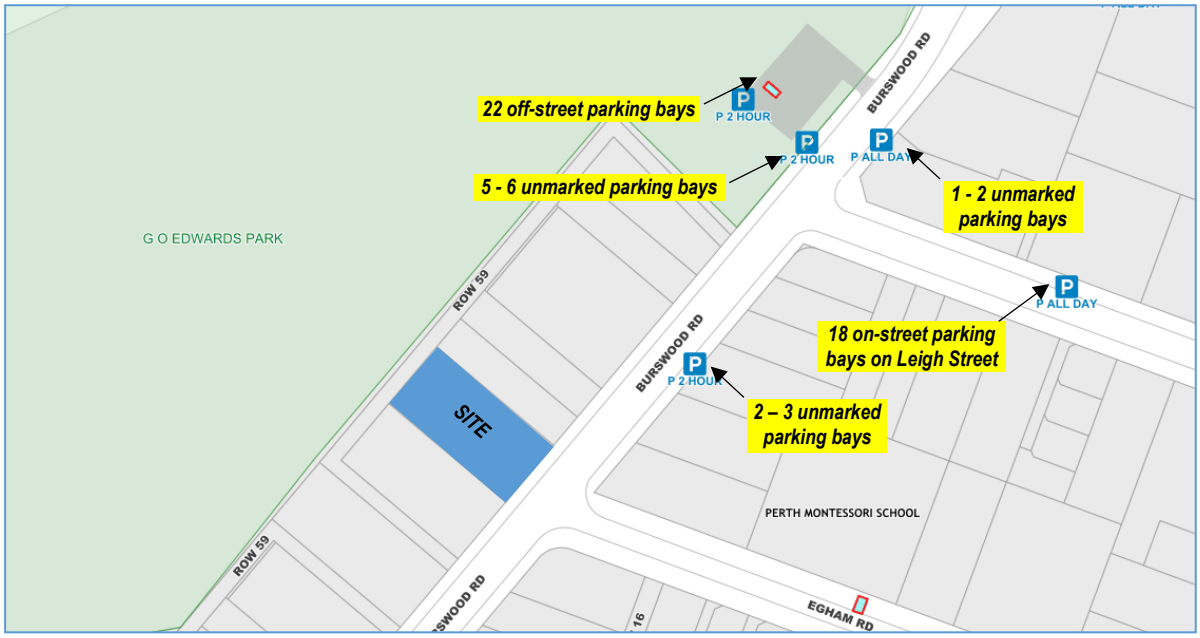
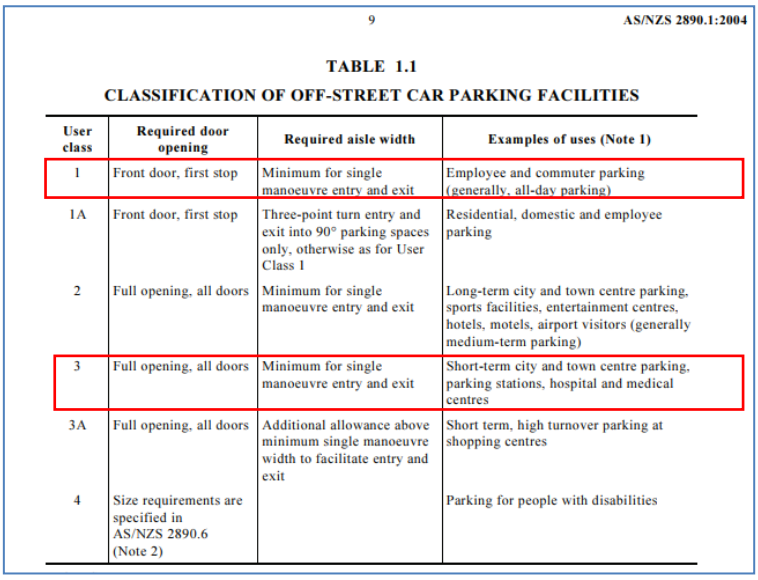


Figure 8: Available Public Parking

4.2 Parking Layout

The parking layout will need to comply with the requirements of Australian Standard AS2890.1. The user class will depend on the purpose of the bay as detailed in **Figure 9**.



9 AS/NZS 2890.1:2004

TABLE 1.1

CLASSIFICATION OF OFF-STREET CAR PARKING FACILITIES

User class	Required door opening	Required aisle width	Examples of uses (Note 1)
1	Front door, first stop	Minimum for single manoeuvre entry and exit	Employee and commuter parking (generally, all-day parking)
1A	Front door, first stop	Three-point turn entry and exit into 90° parking spaces only, otherwise as for User Class 1	Residential, domestic and employee parking
2	Full opening, all doors	Minimum for single manoeuvre entry and exit	Long-term city and town centre parking, sports facilities, entertainment centres, hotels, motels, airport visitors (generally medium-term parking)
3	Full opening, all doors	Minimum for single manoeuvre entry and exit	Short-term city and town centre parking, parking stations, hospital and medical centres
3A	Full opening, all doors	Additional allowance above minimum single manoeuvre width to facilitate entry and exit	Short term, high turnover parking at shopping centres
4	Size requirements are specified in AS/NZS 2890.6 (Note 2)		Parking for people with disabilities

Figure 9: Classification of Parking Facilities

Staff parking (long term parking) would be classified as User Class 1. Pick-up and drop-off parking (short term parking) would most likely be classified as User Class 3.

An assessment of the AS2890.1 parking requirements is detailed in **Table 2**.

Table 2: AS2890.1 Car Parking Compliance

Dimension	Requirement	Provided
90 degree parking – Class 1 – Long Term Parking (Staff) - Office		
Car Bay Width	2.4m	2.6m
Car Bay Length	5.4m	5.4m
Car Bay Length (tandem bay)	10.0m	10.0m
Parking Aisle Width	5.8m	6.2m
End of Aisle Extension	1.0m	1.0m
90 degree parking – Class 3 – Short Term Parking (Pick-up / Drop-off) – Child Care Centre		
Car Bay Width	2.6m	2.6m
Car Bay Length	5.4m	5.4m
Car Bay Length (tandem bay)	10.0m	10.0m
Parking Aisle Width	5.8m	6.2m
End of Aisle Extension	1.0m	1.0m

As shown, all relevant parking layout dimensions are compliant with AS2890.1 requirements.

Swept path analysis of the end parking bays were undertaken in AutoTURN 11 using the Australian Standard B85 as demonstrated in **Appendix A** – Swept Path Analysis. The swept path assessment concluded that a vehicle is able to enter and exit the end parking spaces.

4.3 Access Arrangement

Access to the site is proposed along the existing laneway located at the rear of the site. No vehicle access is proposed along Burswood Road.

The proposed access arrangement is shown in **Figure 10**. The existing laneway access is shown in green and the proposed access to the site is in red.

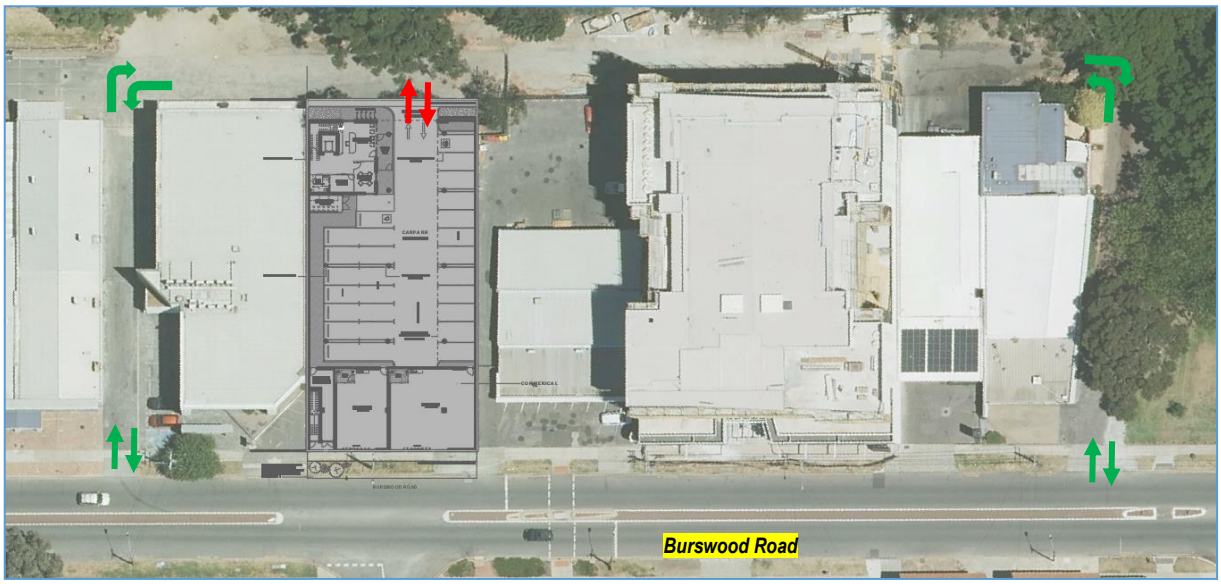


Figure 10: Vehicle Access Arrangement

The Town of Victoria Park has no driveway crossover specification for commercial uses. No changes to the existing access arrangements are proposed and so no further assessment is considered necessary.

4.4 Service Vehicles

As advised by the client, the proposed development will be serviced by vans and other light vehicles. Loading and unloading will be undertaken on site via the proposed parking bays.

Waste will be collected from the laneway as per the existing arrangement and so there will be no requirement to accommodate waste vehicles on the site. A building caretaker will need to transport the bins to and from the laneway. It is recommended that service vehicle movements are scheduled outside of peak periods where possible to minimise the impact on traffic.

5 Traffic Assessment

5.1 Traffic Generation

The volume of traffic generated by the proposed development has been estimated using trip generation rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual 11th Edition.*

The closest land use for the child care centre and office is determined to be *"Day Care Centre (565)"* and *"General Office Building (710)".*

The proposed trip generation is calculated in **Table 3**.

Table 3: Proposed Trip Generation – Child Care Centre / Office

Land Use	Units	Quantity	Generation Rate			Number of Trips		
			Daily	AM Peak	PM Peak	Daily	AM Peak	PM Peak
Child Care Centre	Children	85 Children	4.09	0.78	0.79	348	67	68
Office	100m² GFA	225m² GFA	11.67	1.64	1.55	27	4	4
Total						**375**	**71**	**72**

As shown, the proposed development is predicted to generate approximately 375 daily trips and 71 trips during the morning peak hour and 72 during the afternoon peak hour.

According to the WAPC TIA guidelines, an increase of between 10 to 100 peak hour vehicles is considered to have a low to moderate impact and is generally deemed to be acceptable without requiring detailed capacity analysis. The estimated 71 to 72 vehicles per hour is at the higher end of this range and so the development traffic is considered to have a moderate impact and can be accommodated within the existing capacity of the road network.

5.2 Traffic Distribution

Based on the location of the site and the layout of the road network, the traffic generated by the development is assumed to be distribution evenly along Burswood Road towards Great Eastern Highway to the north and Shepperton Road to the south as summarised in **Figure 11**.

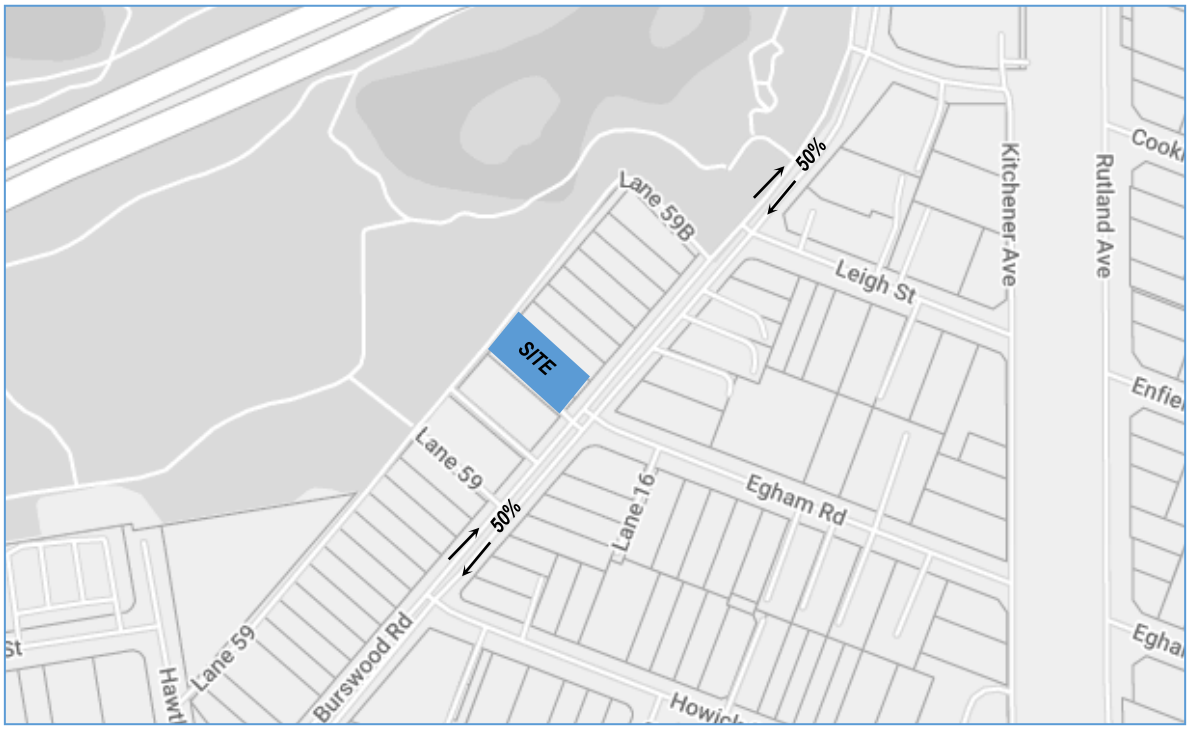


Figure 11: Traffic Distribution

The Institute of Transportation Engineers (ITE) *Trip Generation* provides a directional distribution of the daily, entering and exiting percentages for the land use *"Day Care Centre (565)"* and *"General Office Building (710)"* as shown in **Table 4**.

Table 4: ITE Traffic Distribution

Land Use	Units	Daily		AM Peak		PM Peak	
		Entering	Exiting	Entering	Exiting	Entering	Exiting
Child Care Centre	Children	50%	50%	53%	47%	47%	53%
Office	100m^2 GFA	*50%*	*50%*	*88%*	*12%*	17%	83%

The entering and exiting vehicle volumes are summarised and calculated in **Table 5**.

Table 5: Development - Entering and Exiting Volumes

Land Use	Units	Daily		AM Peak		PM Peak	
		Entering	Exiting	Entering	Exiting	Entering	Exiting
Child Care Centre	Children	**174**	**173**	**35**	**32**	**32**	**36**
Office	100m² GFA	**13**	**13**	**3**	**1**	**3**	**1**
Total		**187**	**187**	**39**	**32**	**33**	**39**

Table 6: Development – Volumes To/From the North and South

Land Use	Units	Daily		AM Peak		PM Peak	
		Entering	Exiting	Entering	Exiting	Entering	Exiting
To/from the North		94	94	20	16	17	20
To/from the South		93	93	19	16	16	19
Total		**187**	**187**	**39**	**32**	**33**	**39**

The peak hour traffic movements to and from the development are shown in **Figure 12** and **Figure 13**.

Figure 12: Entering Traffic Flow

Figure 13: Exiting Traffic Flow

According to the WAPC TIA Guidelines, an increase less than 100vph would not normally be likely to have a material impact on any particular section of road.

As shown in **Figure 12** and **Figure 13**, the proposed development is well below 100vph and so will not have a material impact on the existing road and further detailed analysis is not warranted.

6 Pedestrian and Cyclist Demand and Facilities Assessment

6.1 Existing Pedestrian / Cycle Networks

The existing path network in the surrounding area is shown in **Figure 14**. The footpaths are shown in yellow.

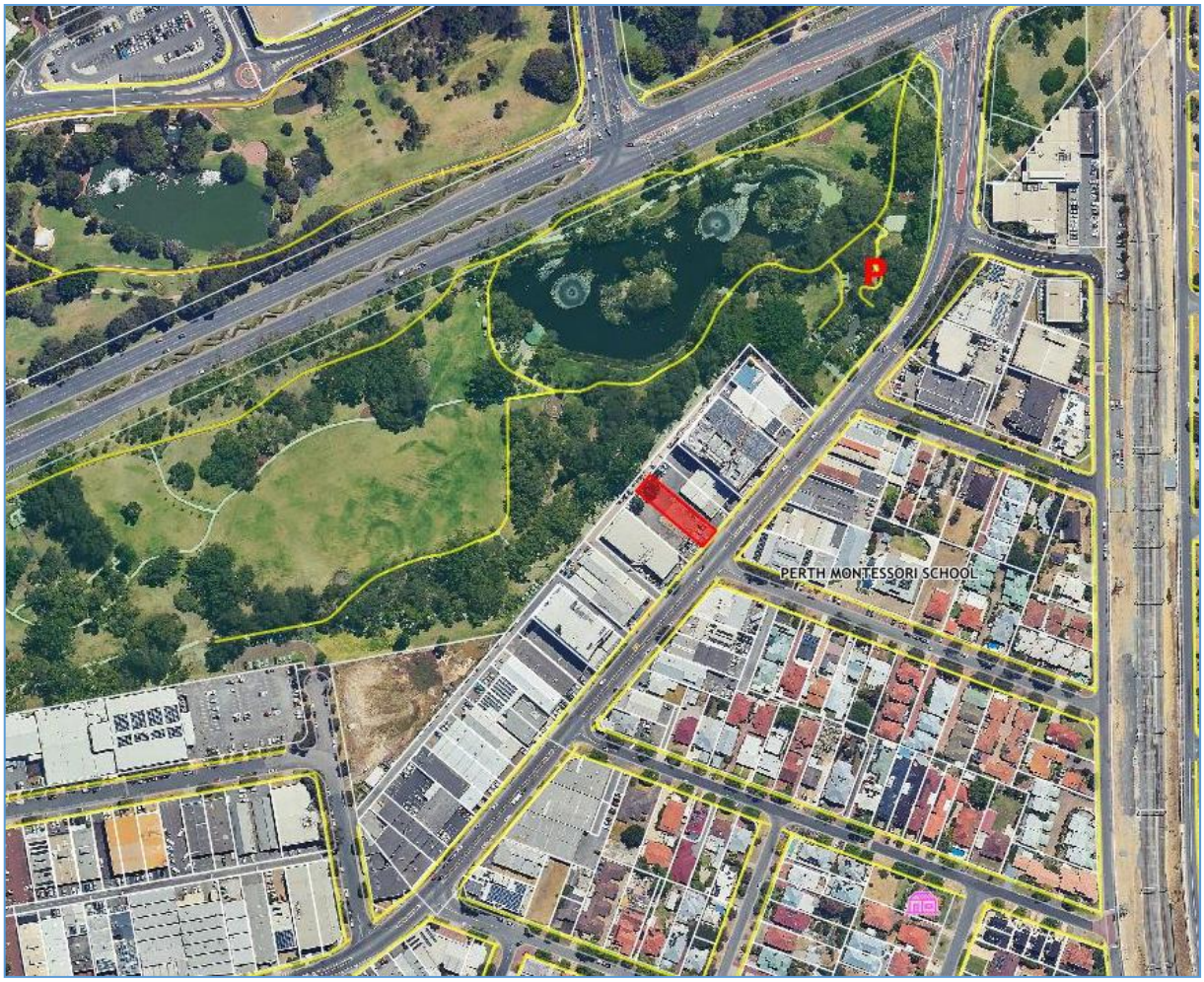


Figure 14: Existing Footpath Network

As shown, majority of the surrounding roads have paths or walkways along at least one side of the road. The existing path network is well established and is considered to be adequate to allow the safe movement of pedestrians and cyclists to and from the site.

6.2 Bicycle Parking Requirements

The Town of Victoria Path Local Planning Policy does not specify the required bicycle parking requirements.

The site proposes to provide 6 bicycle racks on site which are considered to be adequate based on the size of the development and proposed uses.

7 Public Transport Accessibility

The following public transport services currently operate within short walking distance of the site:

- Transperth Bus Route 39 which operates between Perth and Redcliffe Station via Star Street and Belmont Forum Shop Centre. This route operates every 15 minutes during the weekday and 30 minutes during the weekend.
- Transperth Bus Route 270 which operates between High Wycome Station and Perth via Kewdale and Belmont Forum Shop Centre.
- Transperth Bus Route 935 which operates between Redcliffe Station and Kings Park via Belmont Forum and Perth Shop Centre.
- Transperth Bus Route 940 which operates between Perth and Redcliffe Station via Great Eastern Highway.

The bus routes 270, 935 and 940 operates every 15 minutes during the weekday and 30 – 60 minutes during the weekend.

The closest bus stop located on Great Eastern Highway located to the north of the site. Access to this bus stop can be made via through GO Edwards Park (300m) or along Burswood Road to the north-east (650m walking distance).

The existing public transport services are expected to be adequate to meet the likely demand.

8 Road Safety Assessment

8.1 Crash History

The crash history of the adjacent road network was obtained from the Main Roads WA's Reporting Centre. A summary of crashes recorded over the 5 year period from January 2019 to December 2023 is shown in **Figure 15**.

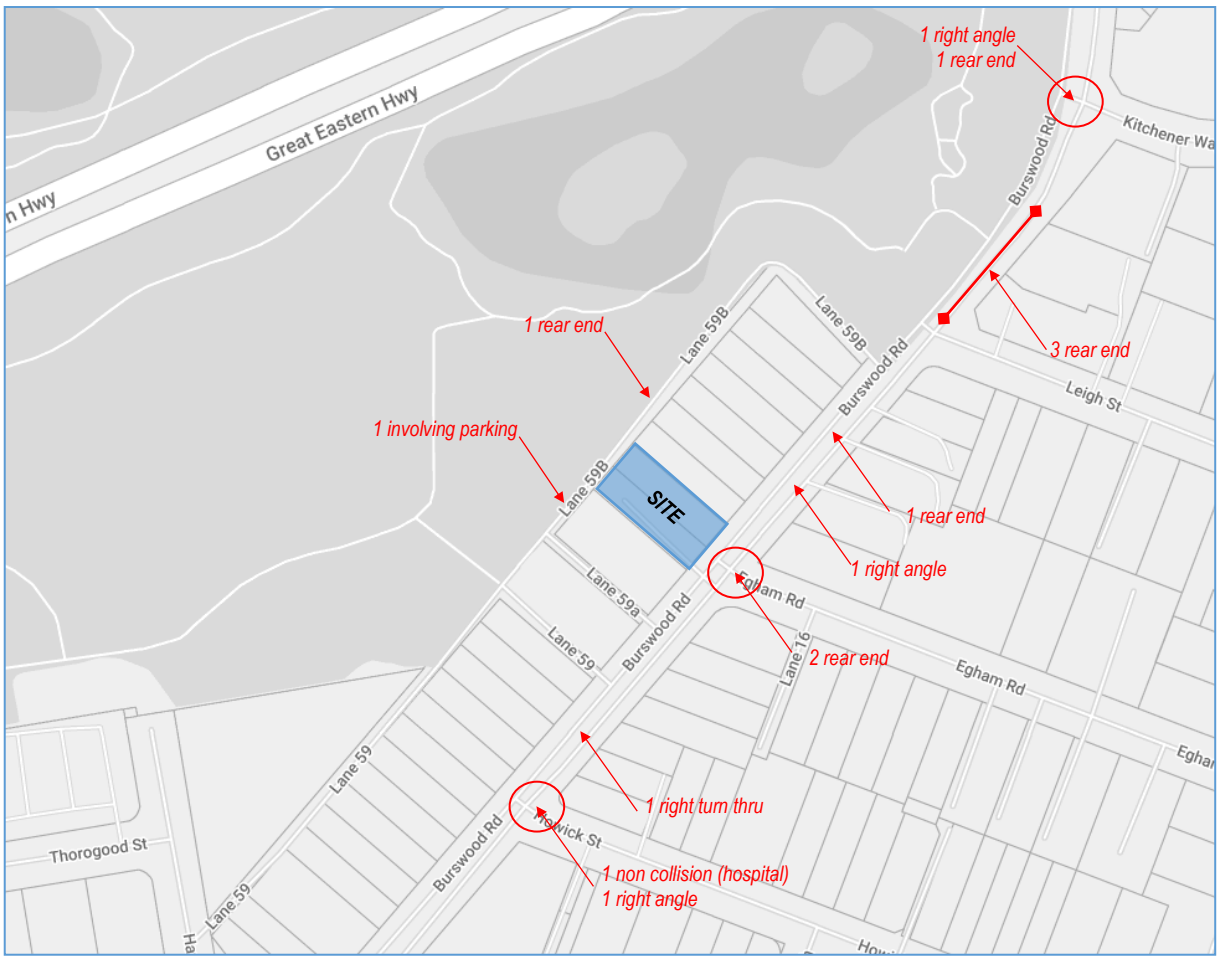


Figure 15: Crash History – January 2019 to December 2023

As shown, the number of crashes appears to be typical of the road environment and traffic volumes. Access to the site is via the existing laneway. There is no indication that the proposed development would increase the risk of crashes to an unacceptable level.

9 Conclusion

This Transport Impact Statement for the proposed office and child care centre development at 147 Burswood Road in Burswood concluded the following:

- The proposed development requires a minimum of 23 parking spaces. It has been advised that the client is the owner of the adjacent building and has agreed to lease 5 parking bays to the neighbouring tenants. Therefore, the site is required to provide 28 parking bays. The site proposes to provide 26 bays which is 2 bay short of the calculated requirement.
- The minor shortfall is considered acceptable as there is ample available public parking along Burswood Road
- The proposed parking layout dimensions are compliant with AS2890.1 requirements.
- The proposed development is predicted to generate approximately 375 daily trips and 71 trips during the morning peak hour and 72 during the afternoon peak hour.
- According to the WAPC TIA guidelines, an increase of between 10 to 100 peak hour vehicles is considered to have a low to moderate impact and is generally deemed to be acceptable without requiring detailed capacity analysis. The estimated 71 to 72 vehicles per hour is at the higher end of this range and so the development traffic is considered to have a moderate impact and can be accommodated within the existing capacity of the road network.
- The existing path network is well established and is considered to be adequate to allow the safe movement of pedestrians and cyclists to and from the site.
- The crash history on the adjacent road network is relatively low and does not appear to indicate any major safety issue. There is no indication that the development will increase the risk of crashes to an unacceptable level.
- The existing public transport services are expected to be adequate to meet the likely demand.

Appendix A – Swept Path Analysis

PARKING AS/NZS 2890.1
COMPLIANT.

7 Carbays

8 Carbays

2600mm X 5400mm

DEEP SOIL ZONE OVER
SHOWN DASHED (3200mm
CEILING HEIGHT)

Pedestrian
Accessway

Dis.

Dis.

PARKING AS/NZS 2890.1
COMPLIANT.

7 Carbays

8 Carbays

2600mm X 5400mm

DEEP SOIL ZONE OVER
SHOWN DASHED (3200mm
CEILING HEIGHT)

Dis.

Dis.