Transport Impact Assessment

Two Rocks Precinct C Local Development Plan and Retail and Commercial Development Application

CW1197300

Prepared for

Fabcot Pty Ltd

27 October 2021

Cardno

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Table of Contents

Appendices

Tables

Figures

1 Introduction

1.1 Background

Cardno has been commissioned by Fabcot Pty Ltd 'the Client') to prepare a Transport Impact Assessment (TIA) for the Precinct C Local Development Plan (LDP) and proposed Woolworths/Commercial Development Application located at Part Lot 9702 Enterprise Avenue, Two Rocks, within the City of Wanneroo (the "Site").

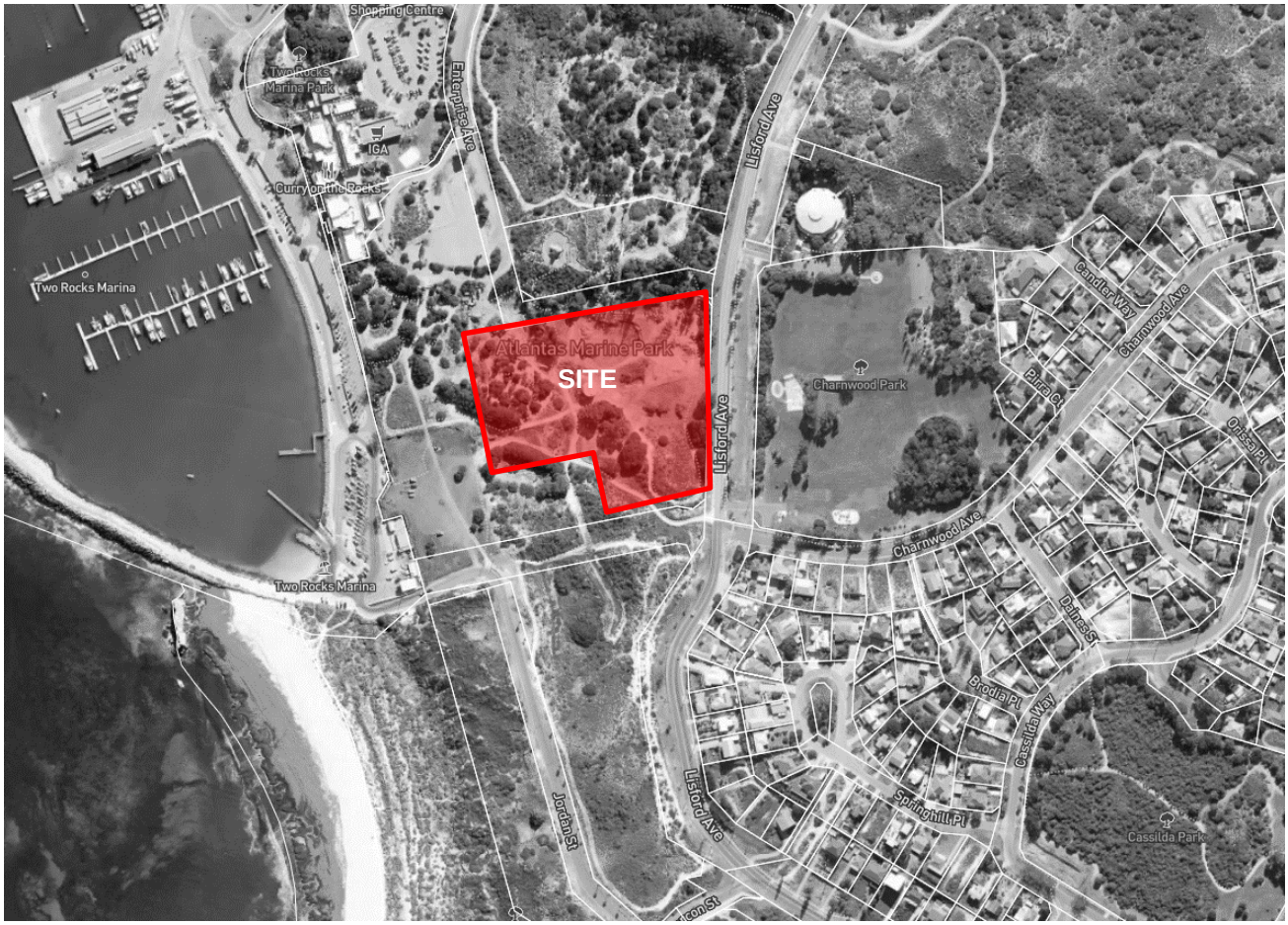
This report aims to assess the impacts of the proposed LDP and development application upon the adjacent transport network, with a focus on traffic operations, circulations, and car parking requirements. The report also provides detailed consideration of the impact of one specific development site within the LDP to support a Development Application.

This report has been prepared in accordance with the *Western Australian Planning Commission (WAPC) Transport Impact Assessment Guidelines for Developments: Volume 3 – Subdivisions (2016)* and the checklist is included in **Appendix A.**

1.2 Site Context

The Site is located at part of Lot 9702 Enterprise Avenue, Two Rocks and is currently vacant land. The Site is located in the City of Wanneroo. **Figure 1-1** shows an aerial image of the LDP area with **Figure 1-2** showing a close up of the development Site.

Figure 1-1 Aerial Image of LDP Area



Source: MetroMap (2021)

Figure 1-2 Close up of the Development Site

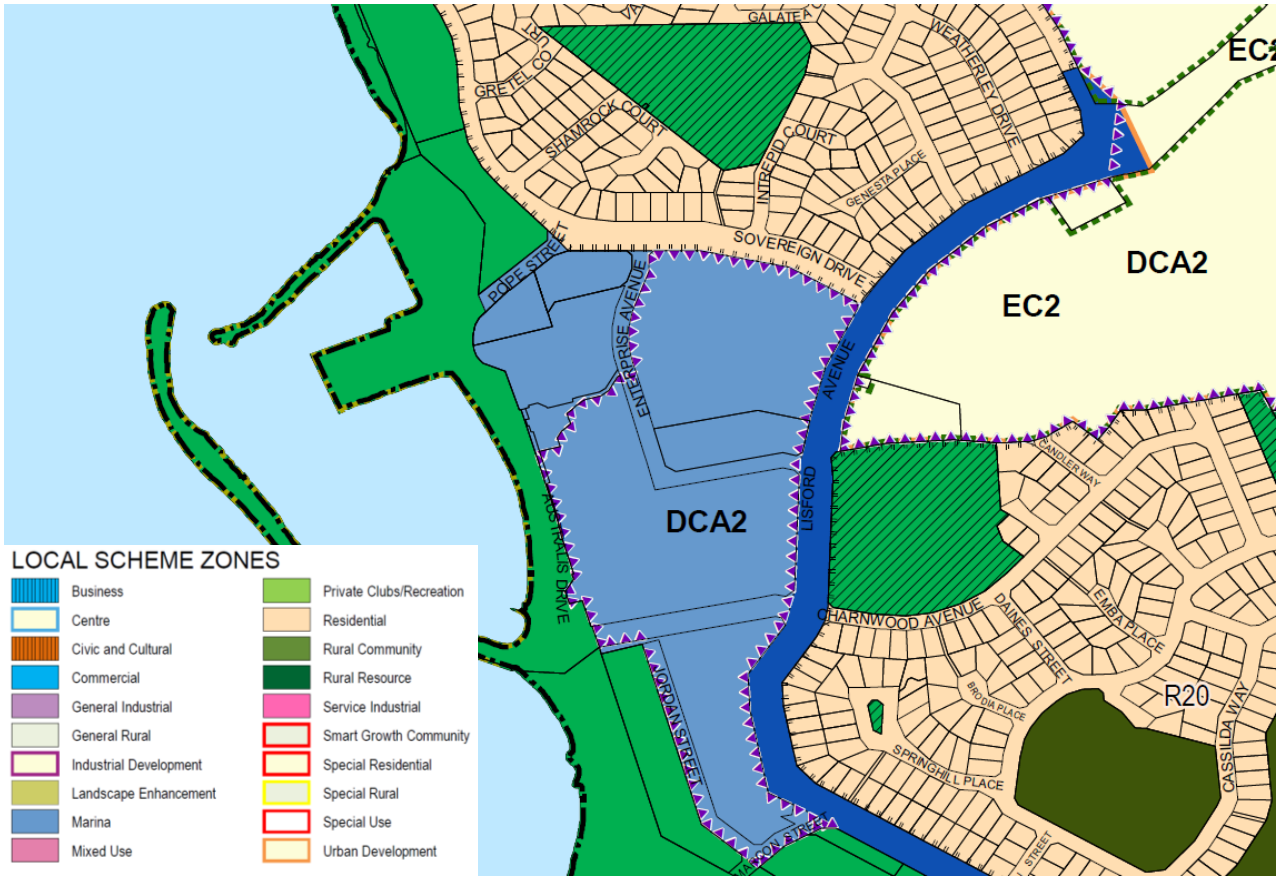
Source: MetroMap (2021)

2 Existing Situation

2.1 Surrounding Land Uses

Pursuant to the provision of the *City of Wanneroo District Planning Scheme No. 2* (DPS2), the Site is zoned '*Marina*', as shown in **Figure 2-1**. The Site is immediately surrounded by undeveloped land, with the existing Two Rocks Marina and small shopping precinct to the north west, and residential areas to the north, east and south.

Figure 2-1 City of Wanneroo Zoning



Souce: City of Wanneroo District Planning Scheme No. 2

2.2 Existing External Road Network

Road classifications are defined in the Main Roads Functional Hierarchy as follows:

- **Primary Distributors (light blue):** Form the regional and inter-regional grid of MRWA traffic routes and carry large volumes of fast-moving traffic. Some are strategic freight routes, and all are National or State roads. They are managed by Main Roads.
- **Regional Distributors (red):** Roads that are not Primary Distributors, but which link significant destinations and are designed for efficient movement of people and goods within and beyond regional areas. They are managed by Local Government.
- **District Distributor A (green):** These carry traffic between industrial, commercial and residential areas and connect to Primary Distributors. These are likely to be truck routes and provide only limited access to adjoining property. They are managed by Local Government.
- **District Distributor B (dark blue):** Perform a similar function to District Distributor A but with reduced capacity due to flow restrictions from access to and roadside parking alongside adjoining property. These are often older roads with traffic demand in excess of that originally intended. District Distributor A and B roads run between land-use cells and not through them, forming a grid that would ideally be around 1.5 kilometres apart. They are managed by Local Government.
- **Local Distributors (orange):** Carry traffic within a cell and link District Distributors at the boundary to access roads. The route of the Local Distributor discourages through traffic so that the cell formed by the grid of District Distributors only carries traffic belonging to or serving the area. These roads should accommodate buses but discourage trucks. They are managed by Local government.
- **Access Roads (grey):** Provide access to abutting properties with amenity, safety and aesthetic aspects having priority over the vehicle movement function. These roads are bicycle and pedestrian friendly. They are managed by Local government.

The Site is bounded by Lisford Avenue to the east. The surrounding road network is further described in **Table 2-1** and shows the hierarchy as per the Main Roads WA Road Information Mapping System, whilst **Figure 2-2** shows the road hierarchy.

Table 2-1 Road Network Classification

Road Name	Road Hierarchy	Jurisdiction	No. of Lanes	No. of Footpaths	Road Width (m)	Posted Speed (km/h)
Lisford Avenue	District Distributor B	Local Government	2	1	7	60
Enterprise Avenue	Access Road	Local Government	2	1	6	50
Sovereign Drive	Local Distributor	Local Government	2	2	7.4	50

Figure 2-2 Road Hierarchy

Figure 2-3 Source: Main Roads WA – Road Information Mapping System

2.3 Existing Traffic Volumes

The most recent traffic volumes for the roads in the vicinity of the Site were obtained from the City of Wanneroo and are summarised in **Table 2-2**.

Table 2-2 Traffic Volumes

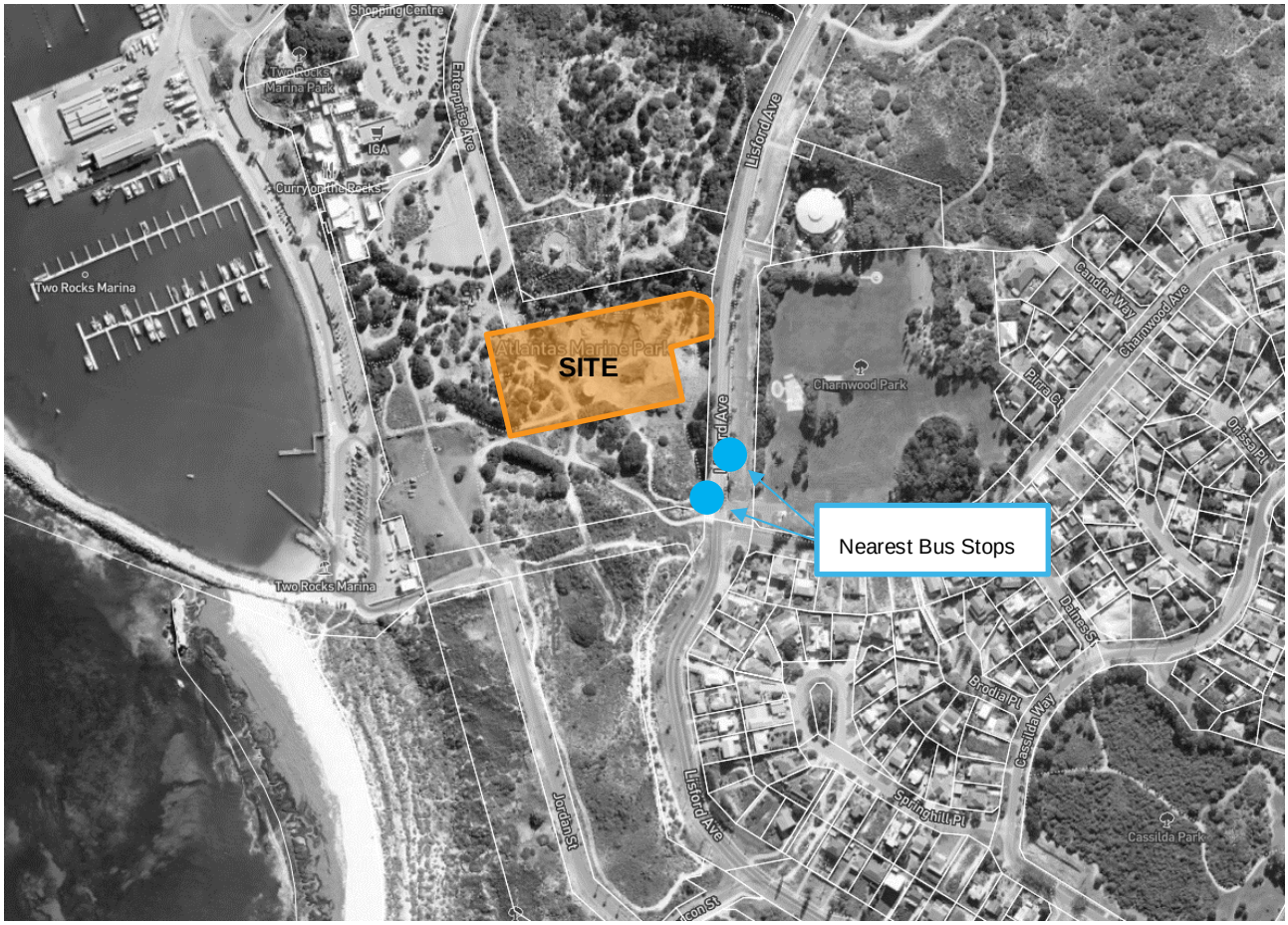
Road Name	Date	Average Two-way Daily Traffic Volume	Average Two-way AM Peak Traffic Volume (Weekday)	Average Two-way PM Peak Traffic Volume (Weekday)	Average Two-way Peak Traffic Volume (Weekend)
Lisford Ave (Sovereign Dr to Weatherly Dr)	2019	2,257	436	380	78
Charnwood Ave (East of Daines Street)	2017	223	25	26	21

Source: City of Wanneroo

2.4 Existing Public Transport Facilities

The nearest bus stops to the Site are located approximately 20 metres east of the Site, as shown in **Figure 2-4**. Bus route 490 operates from these stops along Lisford Avenue and travels to Two Rocks Shopping Centre in the north and Yanchep and Butler in the south, as shown in **Figure 2-5**.

Figure 2-4 Nearest Bus Stops



Source: MetroMap (2021)

Figure 2-5 Existing Bus Routes

Source: Transperth Network Maps (2021)

2.5 Existing Pedestrian/Cycle Network Facilities

A footpath is provided along Lisford Avenue. There are currently no other existing pedestrian and cycling facilities within the surrounding area of the Site.

2.6 Existing Crash Data

A search of the *Main Roads WA Reporting Centre* for crash data was undertaken for all recorded traffic accidents between 1 January 2016 and 31 December 2020 within the surrounding area of the subject Site. There were no recorded crashes within the surrounding area in the last 5 years.

3 Proposed Development

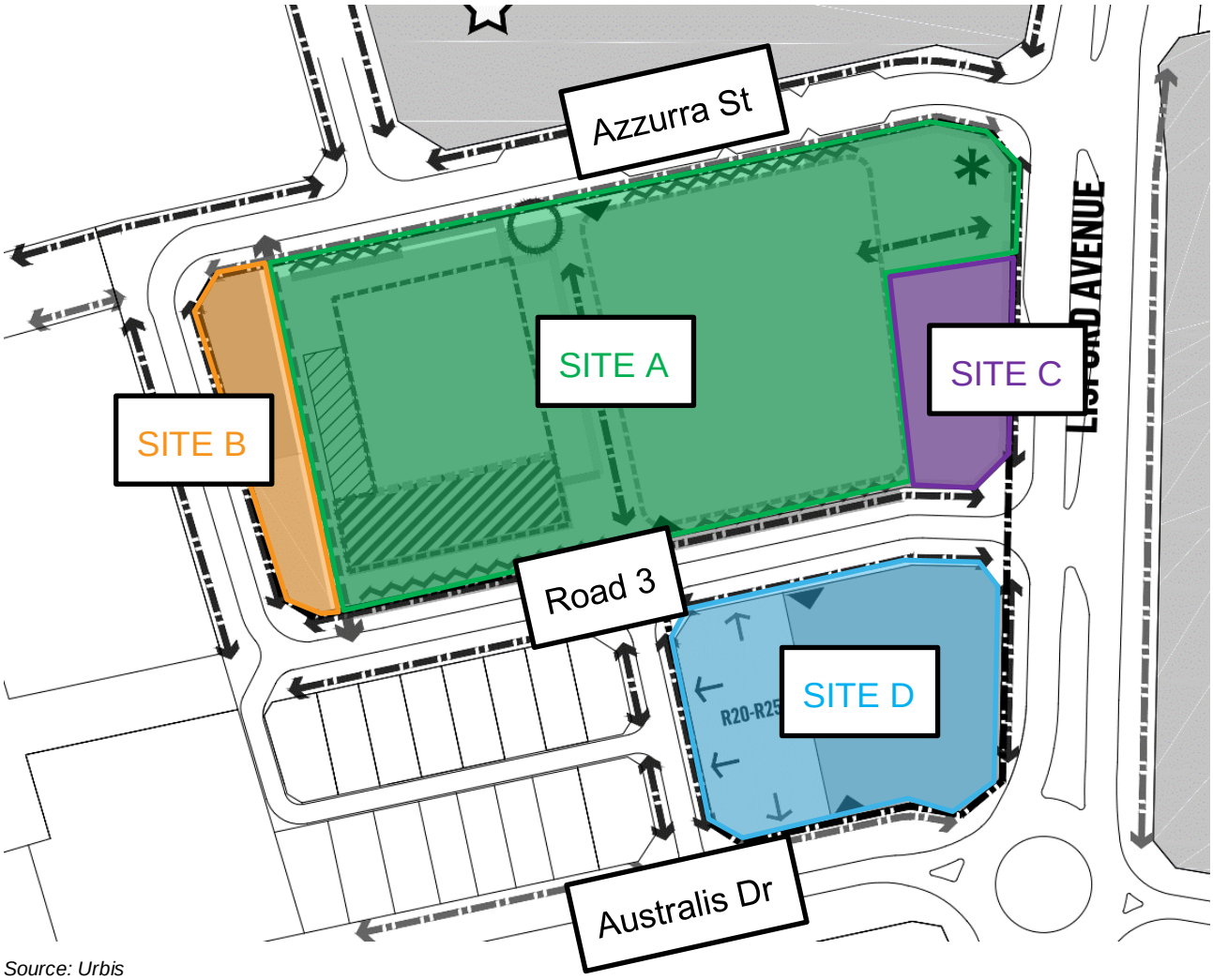
3.1 Proposed Development

The proposed LDP comprises of the following land uses:

- **Site A (Proposed Woolworths/Commercial Development Application – 4,133m^2)**
  - Supermarket
  - Liquor store
  - Café
  - Specialty retail stores
  - 242 car parking bays
- **Site B (approximately 2,000m^2)**
  - Future commercial development
  - Public open space/drainage
- **Site C (1,702m^2)**
  - Future pad site
- **Site D (approximately 4,800m^2)**
  - Future commercial development
  - Future residential development

Site A is the main focus of this development assessment with Site B, C and D to be considered in a separate development application. However, for the purposes of the traffic assessment, the anticipated traffic volumes generated by Site B, C and D will be considered.

Figure 3-1 Site Plan



Source: Urbis

3.2 Access Arrangements

3.2.1 Site A

The proposed Site access arrangement (for Site A) is shown in **Figure 3-2** and summarised below:

- Access 1 – Loading Dock Access
- Access 2 – Loading Dock and Click-and-Collect Egress
- Access 3 – Northern car park access – full movements
- Access 4 – Southern car park access – full movements

Figure 3-2 Site Access Location (Site A, B & C)

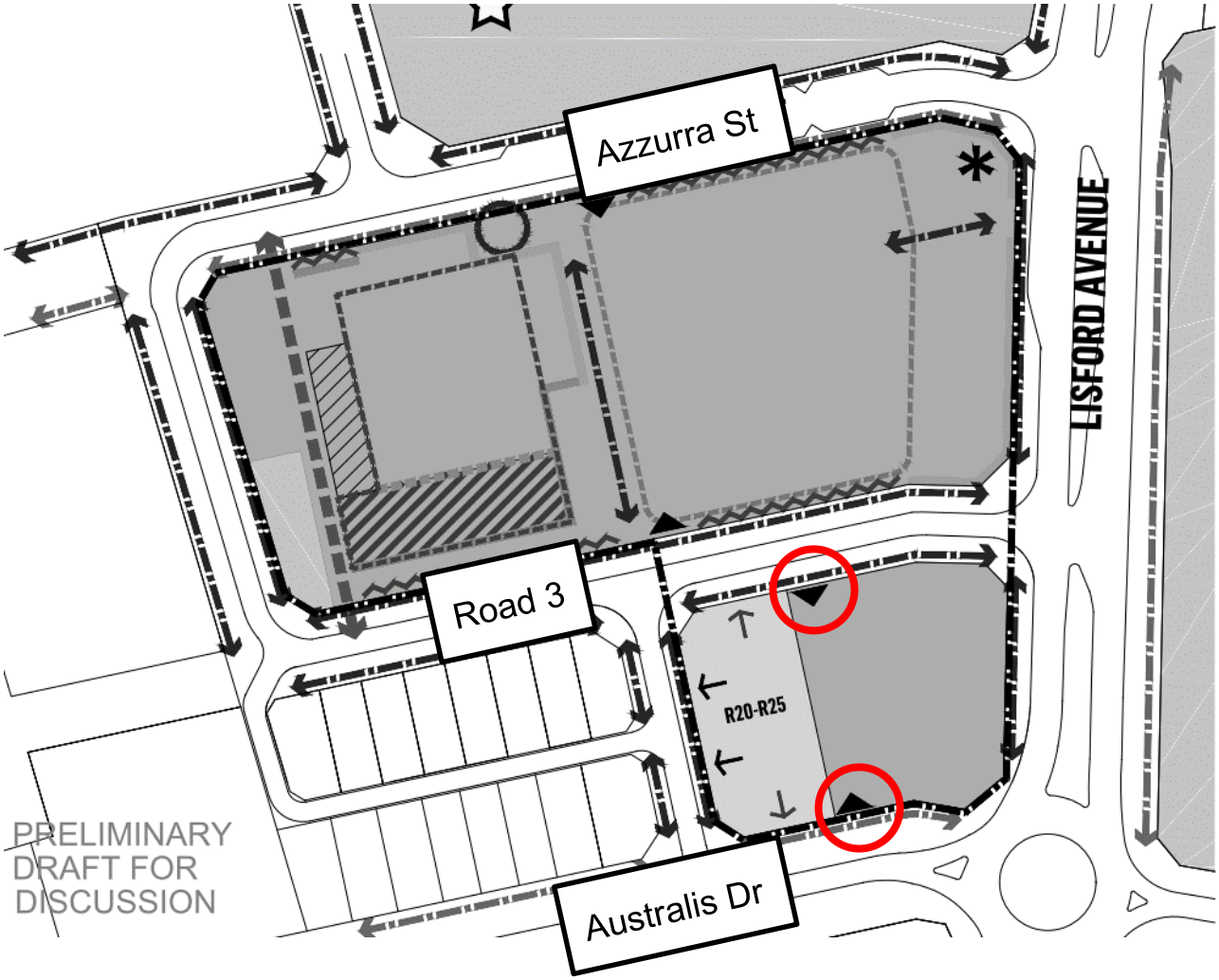
Source: Brown Falconer (2021)

3.2.2 Site B, C & D

For the purpose of the transport assessment, it is assumed that vehicle access for Site B and C will be via the Site A accesses.

Site D residential lots will have access to their respective frontages and the commercial component will have access to Road 3 to the north and Australis Drive to the south as shown in **Figure 3-3**.

Figure 3-3 Site Access Location (Site D)



3.3 Servicing

Servicing for Site A will be undertaken primarily via the north-south laneway located at the rear of the supermarket. This laneway provides access to the loading docks and may also be used for servicing the 'Future Commercial' site.

The largest vehicles anticipated the access the Site are 19m semi-trailers, delivering goods to the supermarket. Typically, these vehicles would arrive and depart 2-3 times per weekday, subject to scheduling with other nearby supermarkets. To suit the layout the loading dock, the 19m semi-trailers will operate in an anti-clockwise direction around the perimeter of the Site, and reverse into the loading dock from the laneway.

A swept path analysis was conducted for the 19m semi-trailer and this is shown in **Figure 3-4** through **Figure 3-7**. Larger versions are provided at **Appendix C**.

Servicing for Site B will generally be handled by smaller delivery vehicles, with the City's waste truck likely to be the largest vehicle needing to access the site. Details of waste collection and servicing for these sites will be determined through later planning stages.

Figure 3-4 Swept Paths for a 19m Semi-trailer (Loading Dock 1 IN)

Figure 3-5 Swept Paths for a 19m Semi-trailer (Loading Dock 1 OUT)

Figure 3-6 Swept Paths for a 19m Semi-trailer (Loading Dock 2 IN)

Figure 3-7 Swept Paths for a 19m Semi-trailer (Loading Dock 2 OUT)

4 Parking Supply (For Site A)

A reduction in the standard car parking requirements of the *City of Wanneroo District Planning Scheme No. 2* is proposed for the Two Rocks Town Centre, given that parking can be shared by different land uses that have different peak operating times.

As per the *SKM Two Rocks Town Centre Traffic and Transport Report* (January 2014) parking for land uses within the Two Rocks Town Centre, have been assessed based on a 25% reduction in parking rate, if 75% of non-residential parking in the town centre is provided as public parking.

The Statutory parking requirements, in accordance with the *City of Wanneroo Two Rocks Town Centre Structure Plan (2014)* have been considered in the context of the proposed development (Site A) and are summarised below in **Table 4-1**. The parking requirements for Site B, C and D will be determined as part of a future development application.

Table 4-1 Car Parking Provision and Requirements

Development Classification	Requirements	Yield	Parking Required	Parking Provided
Retail (Supermarket – Woolworths expansion included)	4.6 bays per 100 GLFA	4,791m^2	221	242
Total			**221**	**242**

221 car parking bays are proposed on-site. Based on the above, the proposed on-site car parking is compliant with the requirements.

4.2 Bicycle Parking Requirements

The City of Wanneroo does not have statutory requirements for the provision of bicycle parking.

For Site A, a total of 10 long-stay bicycle parking bays have been provided for supermarket/retail employees. This quantum is sufficient to provide for a 10% cycling mode share for 100 employees, which is significantly in excess of the anticipated employee numbers for this Site. Short stay bicycle parking for customers should be provided in the form of U-rails, located conveniently near the entry points to the buildings.

Bicycle parking requirements for Site B, C and D will be determined as part of a future development application.

5 Changes to Surrounding Transport Network

5.1 Road Network

The *Two Rocks Town Centre Structure Plan* proposes a number of future changes to the existing road network, as shown in **Figure 5-1**.

Additional road network changes include:

- Australis Drive to be connected to Lisford Avenue to form the western extension of Charnwood Avenue. This intersection is proposed with roundabout control;
- Three new connections from internal streets to Lisford Avenue are proposed between Charnwood Avenue and Sovereign Drive; and
- Enterprise Avenue is proposed to connect south to Australis Drive.

Some of these road connections will be delivered in the short term as part of subdivision works being undertaken to facilitate the development of this LDP.

Figure 5-1 Proposed Road Network Changes

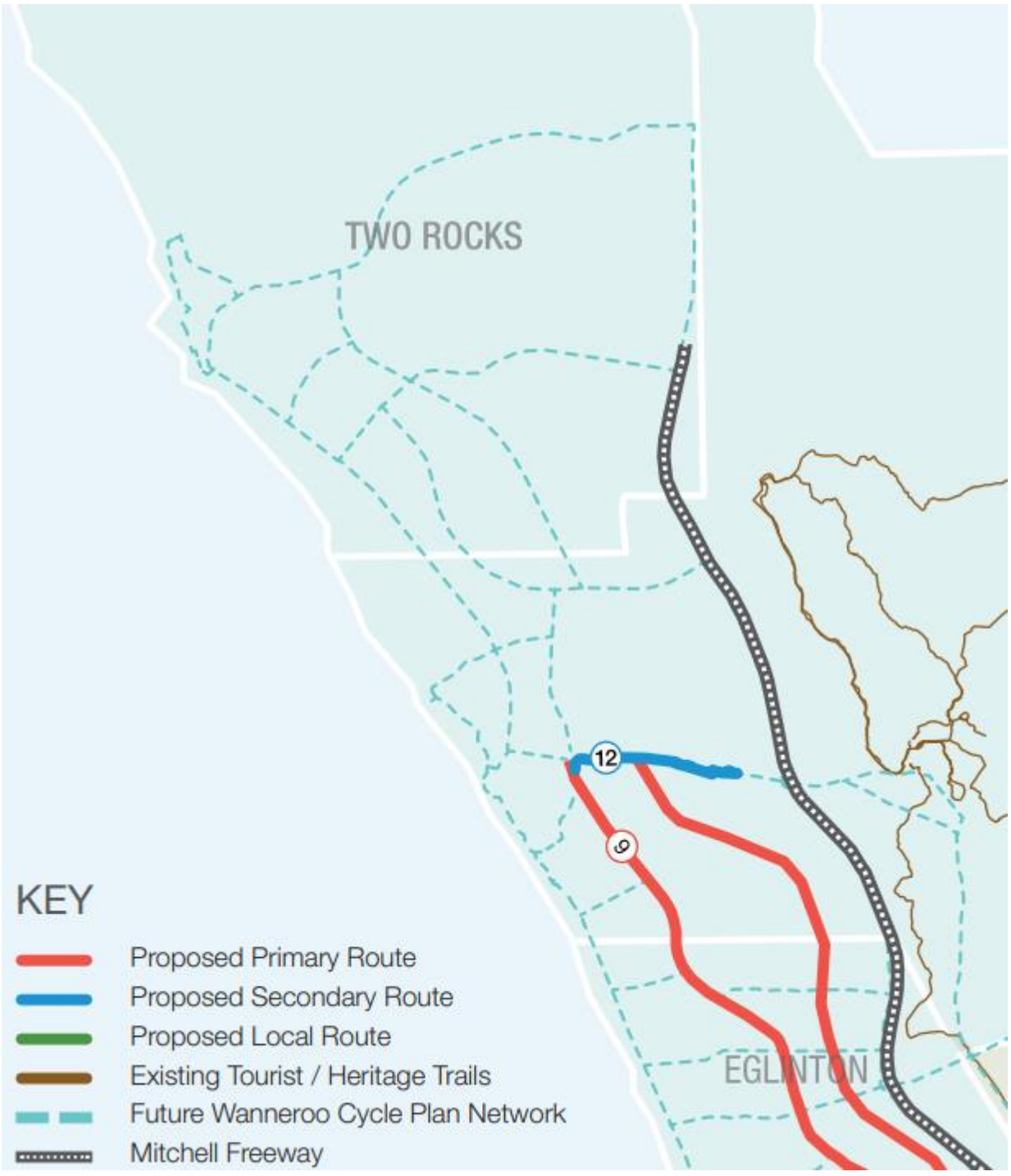
Source: City of Wanneroo Two Rocks Town Centre Structure Plan

5.2 Pedestrian/Cycle Networks

Cardno contacted the City of Wanneroo and confirm no changes are proposed to the pedestrian/cycle network facilities within the short term. However, the City of Wanneroo Bicycle Plan identified Lisford Avenue as a key cycling corridor with **Figure 5-2** showing the proposed future network.

Design drawings prepared by JTSI and provided to Cardno indicate that footpaths will be provided on all internal streets within the LDP area.

Figure 5-2 Wanneroo Future Cycling Network Map



Source: City of Wanneroo Cycle Plan

5.3 Public Transport Networks

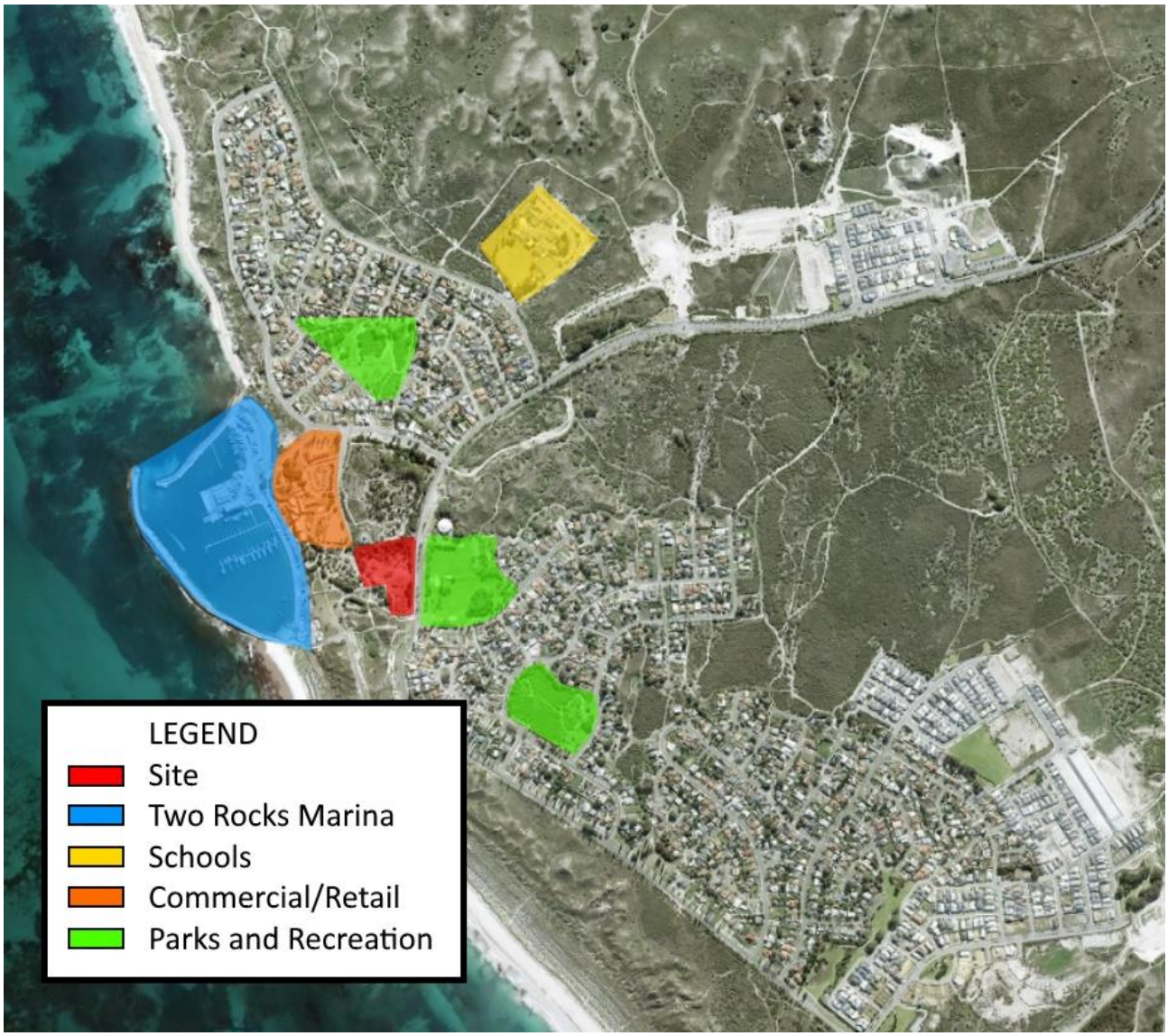
Cardno contacted the Public Transport Authority and were advised that there are no proposed changes to the network in this area in the short term. It is likely that changes to bus routes in the area will occur when the Yanchep Rail Extension commences operations in late-2023.

6 Integration with Surrounding Area

6.1 Major Attractors/Generators

The surrounding attractors/generators within close proximity to the Site are shown below in **Figure 6-1**.

Figure 6-1 Key Attractors/Generators within the Surrounding Area



Source: Metromap (2021)

7 Analysis of Transport Network

7.1 Assessment Years and Time Period

Peak times selected are 8:00 AM to 9:00 AM and 2:00 PM to 3:00 PM respectively for the morning and afternoon peak periods on weekdays and 12:00 PM to 1:00 PM as the peak hour on weekends, based on mid-block traffic volume data provided by the City of Wanneroo.

The following model scenarios have therefore been analysed as part of this assessment:

- Scenario 1 – 2021 Existing Traffic without Development (AM, PM and Weekend)
- Scenario 2 – 2024 Traffic with Development (AM, PM and Weekend)
- Scenario 3 – 2034 Traffic with Development (AM, PM and Weekend)

7.2 Key Assumptions

The following provides a list of assumptions use in the assessment.

- Heavy vehicle volumes are based on the traffic data obtained from the City of Wanneroo.
- Lisford Avenue/Azzurra and Lisford Avenue/Road 3 intersection layouts are in accordance with designs prepared by JTSI and provided to Cardno.
- The *Two Rocks Town Centre Structure Plan* shows that the Lisford Avenue/Charnwood Avenue Intersection will be upgraded to a 4 way roundabout in the future which has been applied to the future assessment (Scenario 3).
- The opening year and full LDP traffic of the development for the purposes of the traffic assessment (Scenario 2 and 3) is assumed to be as follows:
  - Scenario 2 – Opening year traffic consists of Site A which includes the supermarket (excluding expansion), liquor store, speciality stores and the retail/commercial.
  - Scenario 3 – Full LDP traffic consists of the following:
    - Site A: supermarket (with expansion), liquor store, speciality stores, retail/commercial
    - Site B: future commercial
    - Site C: future pad site
    - Site D: residential and commercial.

7.3 Development Trip Generation

Trip generation has been calculated for the proposed development utilising trip generation rates from the *Institute of Transportation Engineers (ITE) "Trip Generation" 10th Ed* and *RTA Guide to Traffic Generating Developments*. **Table 7-2** provides the trip generation rate during the Weekday AM, Weekday PM, and Weekend peak hours, **Table 7-3** outlines the directional distribution acquired from ITE for the proposed development and **Table 7-4** states the total trip generation for the proposed development.

Table 7-1 Development Yield Summary

Land Use	Yield (Opening Year: Site A)	Yield (Full LDP: Site A, B, C & D)
Supermarket & liquor	2,942 sqm 200 sqm	3,600 sqm 200 sqm
Café	85 sqm	85 sqm
Retail (Non-food retail)	906 sqm	2,525 sqm
Commercial	0 sqm	658 sqm
Residential	0 dwelling	5 dwellings*

** the number of dwellings has been assumed based on the residential zoning (R20-25) as indicated in the LDP*

Table 7-2 Trip Generation Rates

Land Use	Source	Weekday AM Peak	Weekday PM Peak	Weekend Peak
Supermarket & liquor	ITE 850	7.18 per 100 sqm	8.18 per 100 sqm	11.13 per 100 sqm
Café	WAPC Vol 5	10.00 per 100 sqm*	2.50 per 100 sqm*	10.00 per 100 sqm~
Retail (Non-food retail)	WAPC Vol 5	1.25 per 100 sqm	4.00 per 100 sqm	4.00 per 100 sqm~
Commercial	ITE 710	1.58 per 100 sqm	1.53 per 100 sqm	0.57 per 100 sqm
Residential	ITE 210	0.76 per dwelling	1.00 per dwelling	0.93 per dwelling

** The AM and PM peak rates were switched for the café to be more representative of day to day business operations and customer behaviour for cafés.*
~ No weekend rates. Max weekday rate used

Table 7-3 Directional Distribution

Land Use	Weekday AM Peak		Weekday PM Peak		Weekend Peak	
	In	Out	In	Out	In	Out
Supermarket & liquor	52%	48%	52%	48%	51%	49%
Café	50%*	50%*	80%*	20%*	50%*	50%*
Retail (Non-food retail)	50%*	50%*	80%*	20%*	50%*	50%*
Commercial	88%	12%	17%	83%	54%	46%
Residential	26%	74%	64%	36%	54%	46%

** rates sourced from ITE rates of same land use*

Table 7-4 Total Trip Generation – Opening Year Traffic (Site A)

Land Use	Weekday AM Peak		Weekday PM Peak		Weekend Peak	
	In	Out	In	Out	In	Out
Supermarket & liquor	117	108	134	123	117	108
Café	4	4	2	0	4	4
Retail (Non-food retail)	9	2	18	18	9	2
Total	**131**	**115**	**153**	**142**	**201**	**194**
	246		**295**		**395**	

Table 7-5 Total Trip Generation – Full LDP Traffic (Site A, B, C & D)

Land Use	Weekday AM Peak		Weekday PM Peak		Weekend Peak	
	In	Out	In	Out	In	Out
Site A						
Supermarket & liquor	142	131	162	149	216	207
Café	4	4	2	0	4	4
Retail (Non-food retail)	26	7	52	52	52	52
Commercial	9	1	2	8	2	2
Site B						
Retail (Non-food retail)	1	3	3	2	3	2
Residential	30	8	60	60	60	60
Total	**212**	**153**	**280**	**272**	**337**	**327**
	365		**552**		**664**	

The opening year development represents a two-way trip generation of approximately 246 vehicles during the weekday AM peak hour, 295 vehicles during the weekday PM peak hour and 395 vehicles during the weekend peak hour.

The full LDP development represents a two-way trip generation of approximately 365 vehicles during the weekday AM peak hour, 552 vehicles during the weekday PM peak hour and 664 vehicles during the weekend peak hour.

7.4 Development Trip Distribution

The overall trip distribution used for the development traffic are detailed in **Figure 7-1** and **Figure 7-3**. For the inbound and outbound trips respectively. The development distribution considers the following:

- Location of the development and vehicle access points relative to the surrounding area.
- Driver behaviour based on the local and arterial road network.
- Traffic to and from this development during the peak hours being predominantly local (within the Two Rocks area).

Figure 7-1 Development Trip Distribution Inbound (Opening Year: Site A)

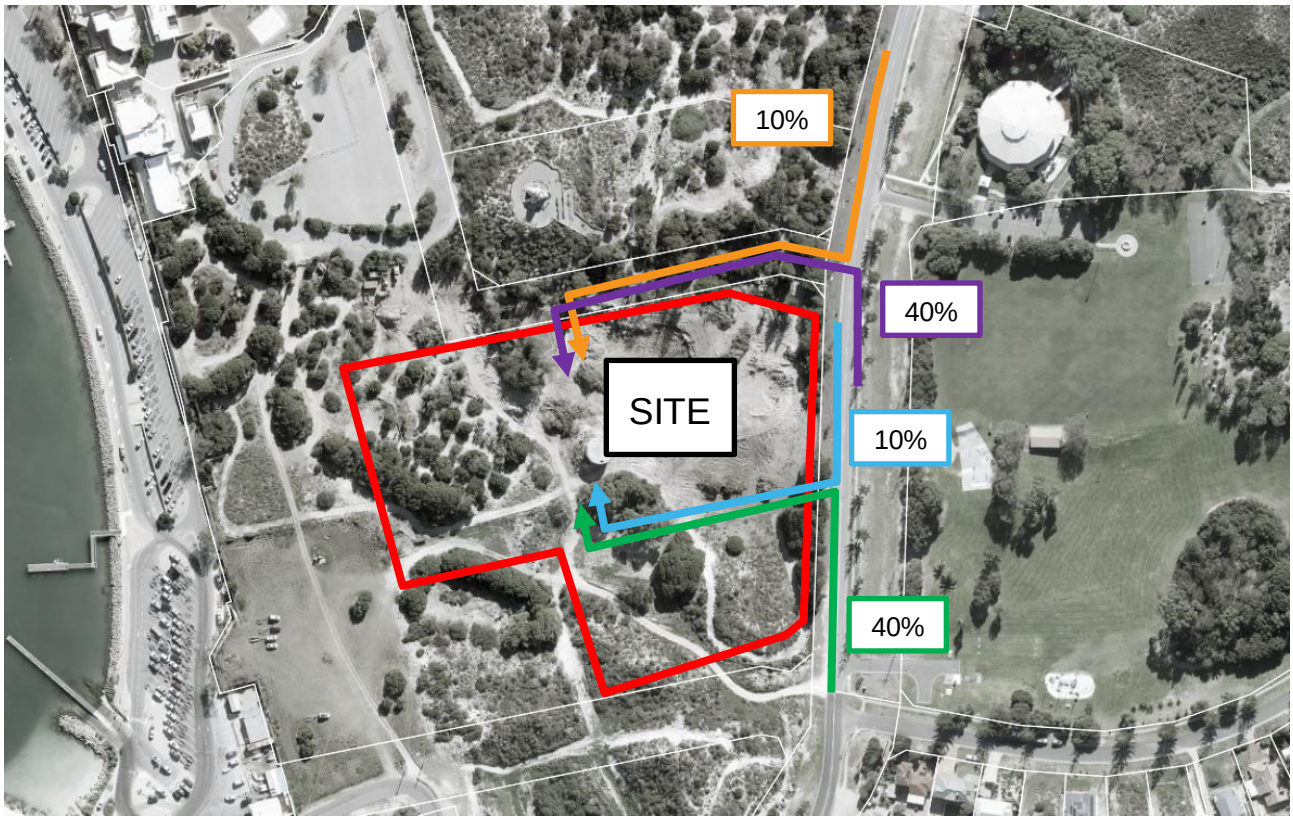


Figure 7-2 Development Trip Distribution Outbound (Opening Year: Site A)

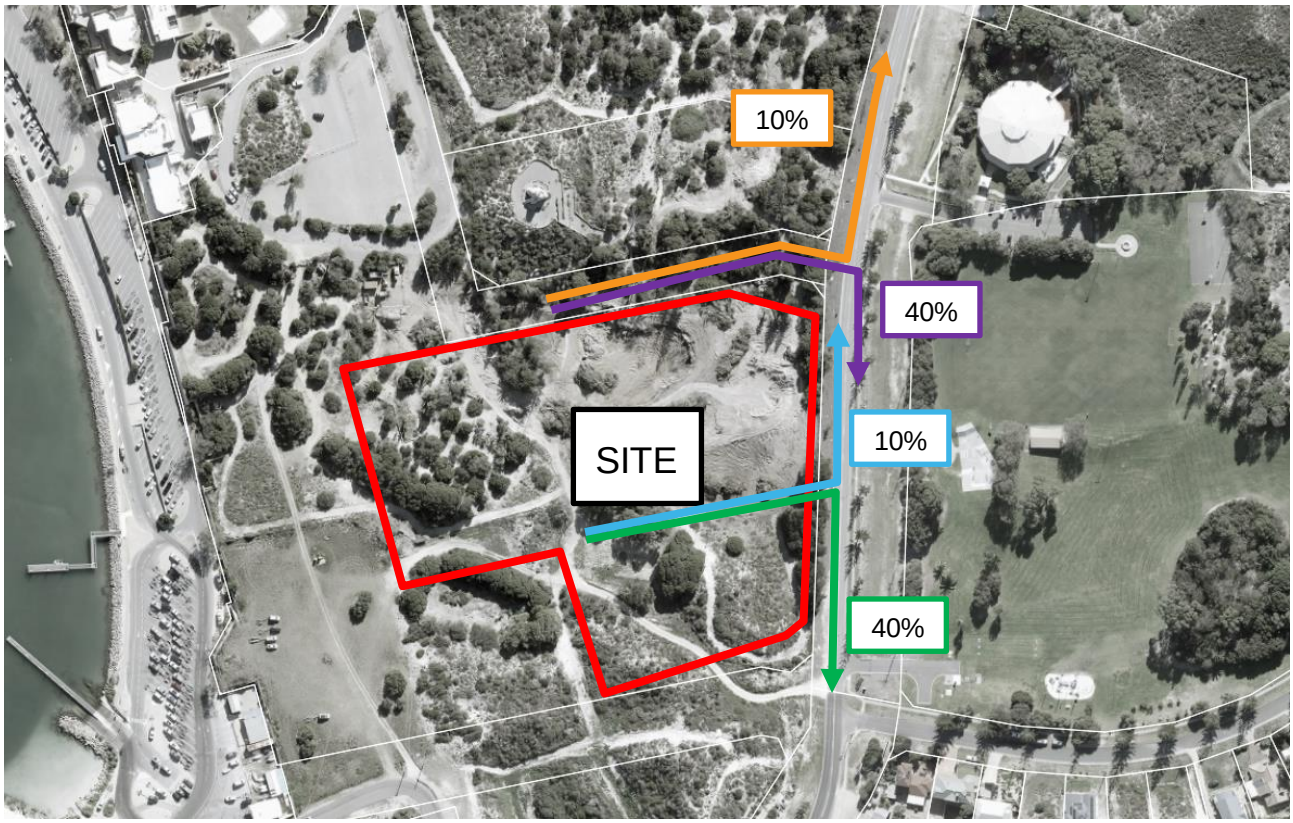


Figure 7-3 Development Trip Distribution Inbound (Full LDP: Site A, B, C & D)

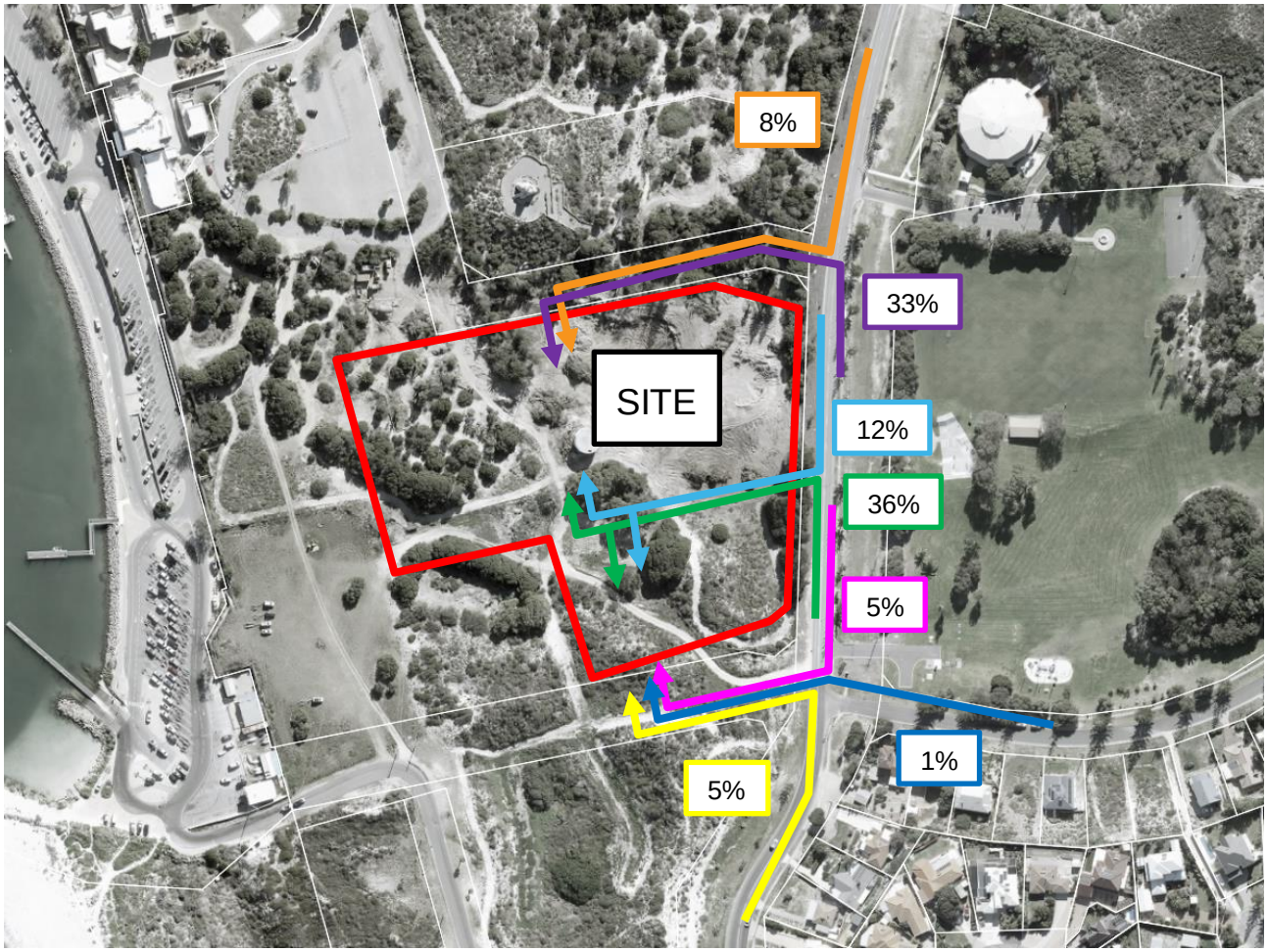
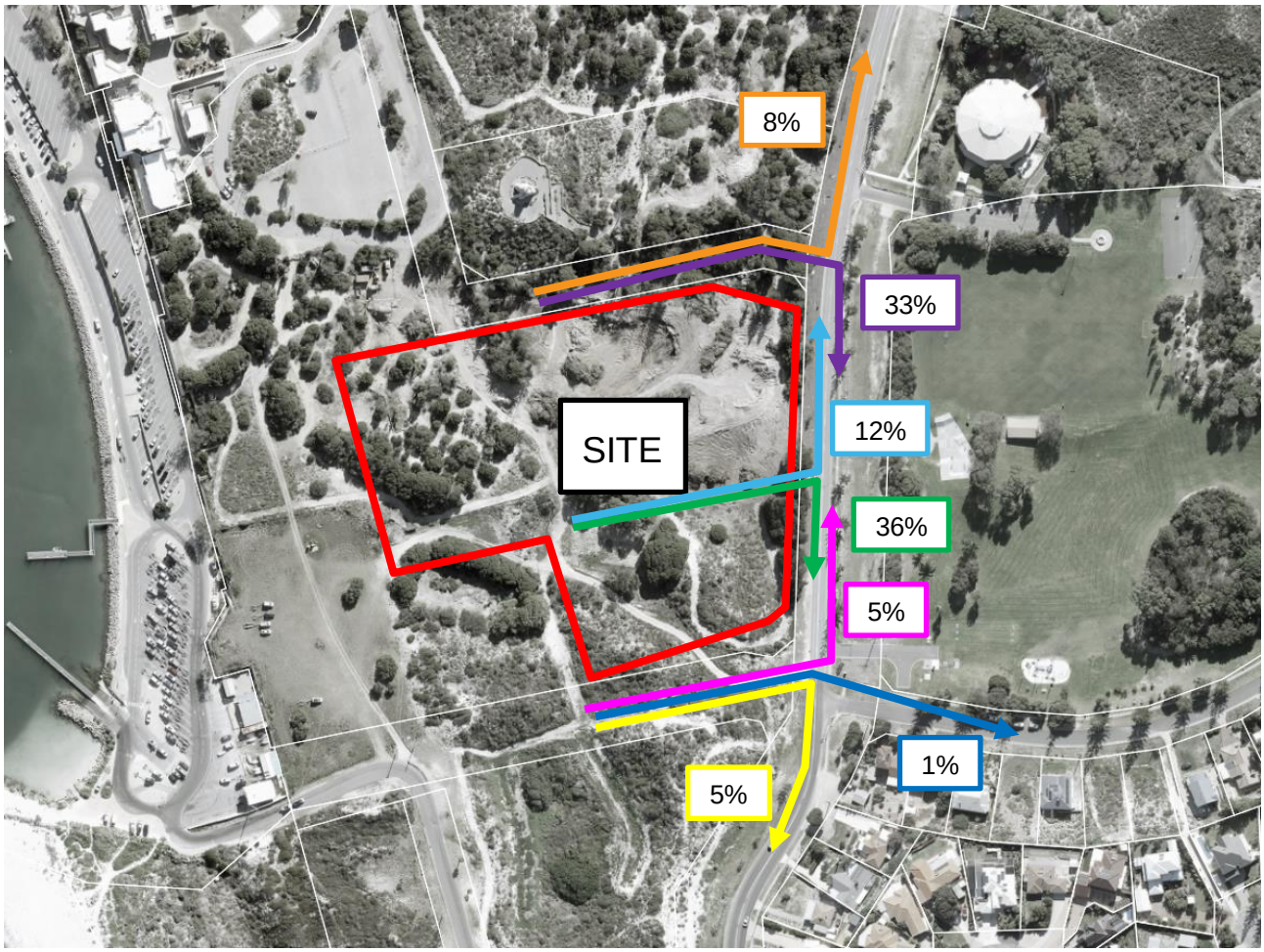


Figure 7-4 Development Trip Distribution Outbound (Full LDP: Site A, B, C & D)



7.5 Intersection Performance

Analysis of the traffic impacts of the proposed development has been carried out for the following intersections:

- Lisford Avenue/Azzurra Street Intersection
- Lisford Avenue/Road 3 Intersection
- Lisford Avenue/Charnwood Avenue Intersection

The identified intersections have been analysed using the SIDRA analysis program. This program calculates the performance of intersections based on input parameters, including geometry and traffic volumes. As an output SIDRA provides values for the Degree of Saturation (DOS), queue lengths, delays, level of service, and 95th Percentile Queue. These parameters are defined as follows:

- Degree of Saturation (DOS): is the ratio of the arrival traffic flow to the capacity of the approach during the same period. The theoretical intersection capacity is exceeded for an un-signalized intersection where DOS > 0.80;
- 95% Queue: is the statistical estimate of the queue length up to or below which 95% of all observed queues would be expected;
- Average Delay: is the average of all travel time delays for vehicles through the intersection. An unsignalised intersection can be considered to be operating at capacity where the average delay exceeds 40 seconds for any movement; and
- Level of Service (LOS): is the qualitative measure describing operational conditions within a traffic stream and the perception by motorists and/or passengers. The different levels of service can generally be described as shown in **Table 7-6**.

Table 7-6 Level of Service (LoS) Performance Criteria

LOS	Description	Signalised Intersection	Unsignalised Intersection
A	Free-flow operations (best condition)	≤10 sec	≤10 sec
B	Reasonable free-flow operations	10-20 sec	10-15 sec
C	At or near free-flow operations	20-35 sec	15-25 sec
D	Decreasing free-flow levels	35-55 sec	25-35 sec
E	Operations at capacity	55-80 sec	35-50 sec
F	A breakdown in vehicular flow (worst condition)	≥80 sec	≥50 sec

A LOS exceeding these values indicates that the road section is exceeding its practical capacity. Above these values, users of the intersection are likely to experience unsatisfactory queueing and delays during the peak hour periods.

7.6 SIDRA Analysis Results

7.6.1 Scenario 1

Figure 7-5 shows SIDRA layout of the Lisford Avenue/Charnwood Avenue intersection and **Table 7-7** provides a summary of the SIDRA results.

Figure 7-5 SIDRA Layout for Lisford Avenue/Charnwood Ave Intersection

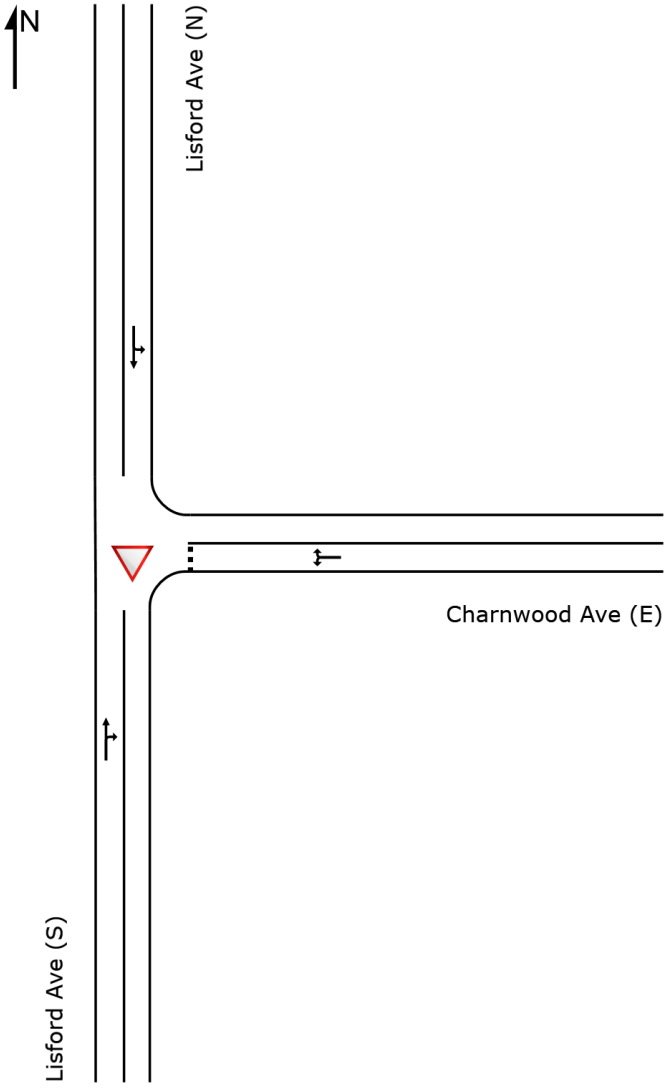


Table 7-7 Lisford Avenue/Charnwood Avenue Intersection – Scenario 1

Intersection Approach		AM				PM				Weekend			
		DOS	Delay (s)	LOS	Ave. Back of Queue (m)	DOS	Delay (s)	LOS	Ave. Back of Queue (m)	DOS	Delay (s)	LOS	Ave. Back of Queue (m)
Lisford Ave (S)	T	0.125	0	A	0.4	0.125	0	A	0.4	0.048	0	A	0.2
	R	0.125	4.9	A	0.4	0.125	4.7	A	0.4	0.048	4.2	A	0.2
Charnwood Ave (E)	L	0.017	6.3	A	0.4	0.013	6.1	A	0.3	0.01	5.8	A	0.2
	R	0.017	7.4	A	0.4	0.013	7.1	A	0.3	0.01	6	A	0.2
Lisford Ave (N)	L	0.135	4.5	A	0	0.102	4.5	A	0	0.047	4.5	A	0
	T	0.135	0	A	0	0.102	0	A	0	0.047	0	A	0
All vehicles		0.135	0.4	A	0.4	0.125	0.4	A	0.4	0.048	0.6	A	0.2

7.6.2 Scenario 2

Figure 7-6 shows SIDRA layout of the Lisford Avenue/Azzurra Street intersection and **Table 7-8** provides a summary of the SIDRA results.

Figure 7-6 SIDRA Layout for Lisford Avenue/Azzurra Street Intersection

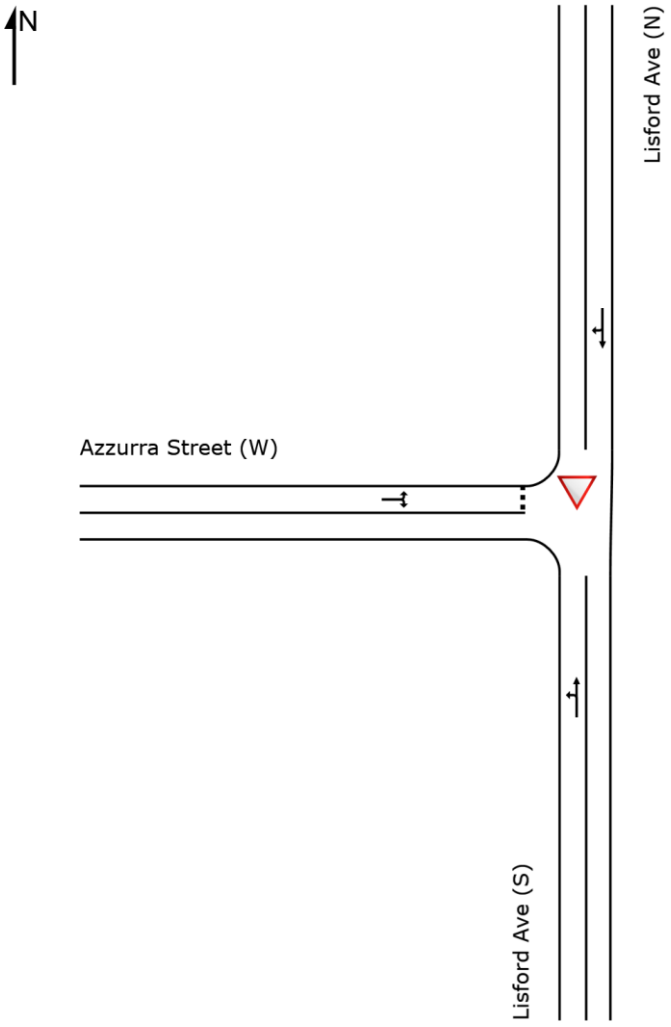


Table 7-8 Lisford Avenue/Azzurra Street Intersection – Scenario 2

Intersection Approach		AM				PM				Weekend			
		DOS	Delay (s)	LOS	Ave. Back of Queue (m)	DOS	Delay (s)	LOS	Ave. Back of Queue (m)	DOS	Delay (s)	LOS	Ave. Back of Queue (m)
Lisford Ave (S)	L	0.17	4.1	A	0	0.177	4.1	A	0	0.113	4.1	A	0
	T	0.17	0	A	0	0.177	0	A	0	0.113	0	A	0
Lisford Ave (N)	T	0.157	0.1	A	0.4	0.125	0.1	A	0.4	0.073	0.2	A	0.5
	R	0.157	5.7	A	0.4	0.125	5.7	A	0.4	0.073	5.1	A	0.5
Azzurra Street (W)	L	0.076	5.5	A	0.8	0.089	5.5	A	0.9	0.097	5	A	1
	R	0.076	7.3	A	0.8	0.089	7	A	0.9	0.097	5.7	A	1
All vehicles		0.17	1.1	A	0.8	0.177	1.4	A	0.9	0.113	2.4	A	1

Figure 7-7 shows SIDRA layout of the Lisford Avenue/Road 3 intersection and **Table 7-9** provides a summary of the SIDRA results.

Figure 7-7 SIDRA Layout for Lisford Avenue/Road 3 Intersection

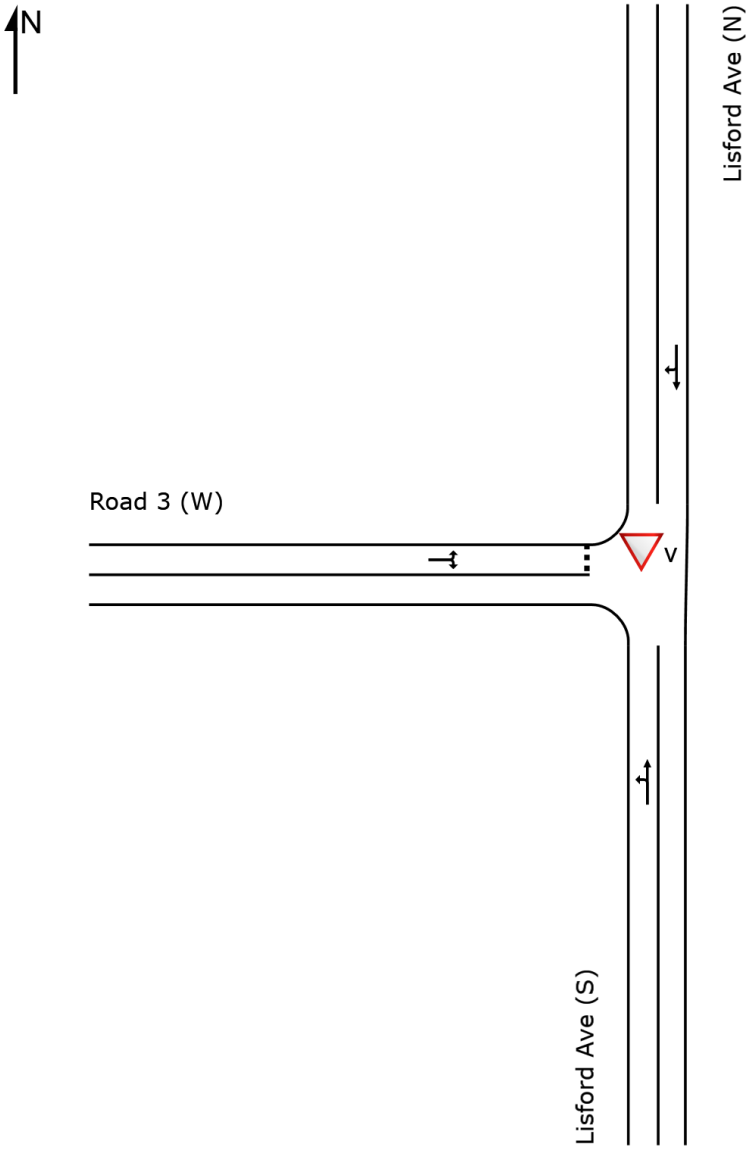


Table 7-9 Lisford Avenue/Road 3 Intersection – Scenario 2

Intersection Approach		AM				PM				Weekend			
		DOS	Delay (s)	LOS	Ave. Back of Queue (m)	DOS	Delay (s)	LOS	Ave. Back of Queue (m)	DOS	Delay (s)	LOS	Ave. Back of Queue (m)
Lisford Ave (S)	L	0.192	5.5	A	0	0.203	5.5	A	0	0.147	5.5	A	0
	T	0.192	0	A	0	0.203	0	A	0	0.147	0	A	0
Lisford Ave (N)	T	0.176	0.1	A	0.4	0.149	0.2	A	0.5	0.106	0.2	A	0.5
	R	0.176	5.6	A	0.4	0.149	5.6	A	0.5	0.106	5	A	0.5
Road 3 (W)	L	0.082	5.6	A	0.8	0.098	5.7	A	1	0.108	5.2	A	1.1
	R	0.082	7.8	A	0.8	0.098	7.6	A	1	0.108	6.4	A	1.1
All vehicles		0.192	1.2	A	0.8	0.203	1.4	A	1	0.147	2.2	A	1.1

For Scenario 2, the intersection of Lisford Avenue/Charnwood Avenue remains unchanged from **Figure 7-5**. **Table 7-10** provides a summary of the SIDRA results.

Table 7-10 Lisford Avenue/Charnwood Avenue Intersection – Scenario 2

Intersection Approach		AM				PM				Weekend			
		DOS	Delay (s)	LOS	Ave. Back of Queue (m)	DOS	Delay (s)	LOS	Ave. Back of Queue (m)	DOS	Delay (s)	LOS	Ave. Back of Queue (m)
Lisford Ave (S)	T	0.19	0	A	0.2	0.201	0	A	0.2	0.141	0	A	0.2
	R	0.19	7.1	A	0.2	0.201	6.8	A	0.2	0.141	6.4	A	0.2
Charnwood Ave (E)	L	0.021	6.7	A	0.2	0.018	6.5	A	0.2	0.013	6.3	A	0.1
	R	0.021	9	A	0.2	0.018	8.8	A	0.2	0.013	7.6	A	0.1
Lisford Ave (N)	L	0.195	5.5	A	0	0.172	5.5	A	0	0.139	5.5	A	0
	T	0.195	0	A	0	0.172	0	A	0	0.139	0	A	0
All vehicles		0.195	0.3	A	0.2	0.201	0.3	A	0.2	0.141	0.3	A	0.2

7.6.3 Scenario 3

For Scenario 3, the intersection of Lisford Avenue/Azzurra Street remains unchanged from **Figure 7-6**. **Table 7-11** provides a summary of the SIDRA results.

Table 7-11 Lisford Avenue/Azzurra Street Intersection – Scenario 3

Intersection Approach		AM				PM				Weekend			
		DOS	Delay (s)	LOS	Ave. Back of Queue (m)	DOS	Delay (s)	LOS	Ave. Back of Queue (m)	DOS	Delay (s)	LOS	Ave. Back of Queue (m)
Lisford Ave (S)	L	0.21	4.1	A	0	0.238	4.1	A	0	0.162	4.1	A	0
	T	0.21	0	A	0	0.238	0	A	0	0.162	0	A	0
Lisford Ave (N)	T	0.2	0.2	A	0.6	0.173	0.3	A	0.8	0.11	0.3	A	0.7
	R	0.2	6.3	A	0.6	0.173	6.5	A	0.8	0.11	5.5	A	0.7
Azzurra Street (W)	L	0.108	5.7	A	1.1	0.159	5.9	A	1.6	0.149	5.2	A	1.6
	R	0.108	8.4	A	1.1	0.159	8.5	A	1.6	0.149	6.5	A	1.6
All vehicles		0.21	1.3	A	1.1	0.238	1.7	A	1.6	0.162	2.5	A	1.6

For Scenario 3, the intersection of Lisford Avenue/Road 3 remains unchanged from **Figure 7-7**. **Table 7-12** provides a summary of the SIDRA results.

Table 7-12 Lisford Avenue/Road 3 Intersection – Scenario 3

Intersection Approach		AM				PM				Weekend			
		DOS	Delay (s)	LOS	Ave. Back of Queue (m)	DOS	Delay (s)	LOS	Ave. Back of Queue (m)	DOS	Delay (s)	LOS	Ave. Back of Queue (m)
Lisford Ave (S)	L	0.246	5.5	A	0	0.276	5.5	A	0	0.21	5.5	A	0
	T	0.246	0	A	0	0.276	0	A	0	0.21	0	A	0
Lisford Ave (N)	T	0.225	0.2	A	0.9	0.215	0.5	A	1.3	0.161	0.4	A	1.2
	R	0.225	6.3	A	0.9	0.215	6.7	A	1.3	0.161	5.6	A	1.2
Road 3 (W)	L	0.128	6	A	1.3	0.221	6.3	A	2.3	0.204	5.5	A	2.2
	R	0.128	9.3	A	1.3	0.221	9.9	A	2.3	0.204	7.7	A	2.2
All vehicles		0.246	1.5	A	1.3	0.276	2.2	A	2.3	0.21	2.8	A	2.2

For Scenario 3, the intersection of Lisford Avenue/Charnwood Avenue is upgraded to a 4 way roundabout (with a new western approach, Australis Drive) as shown in **Figure 7-8**. **Table 7-13** provides a summary of the SIDRA results.

Figure 7-8 SIDRA Layout for Lisford Avenue/Charnwood Avenue/Australis Drive Intersection

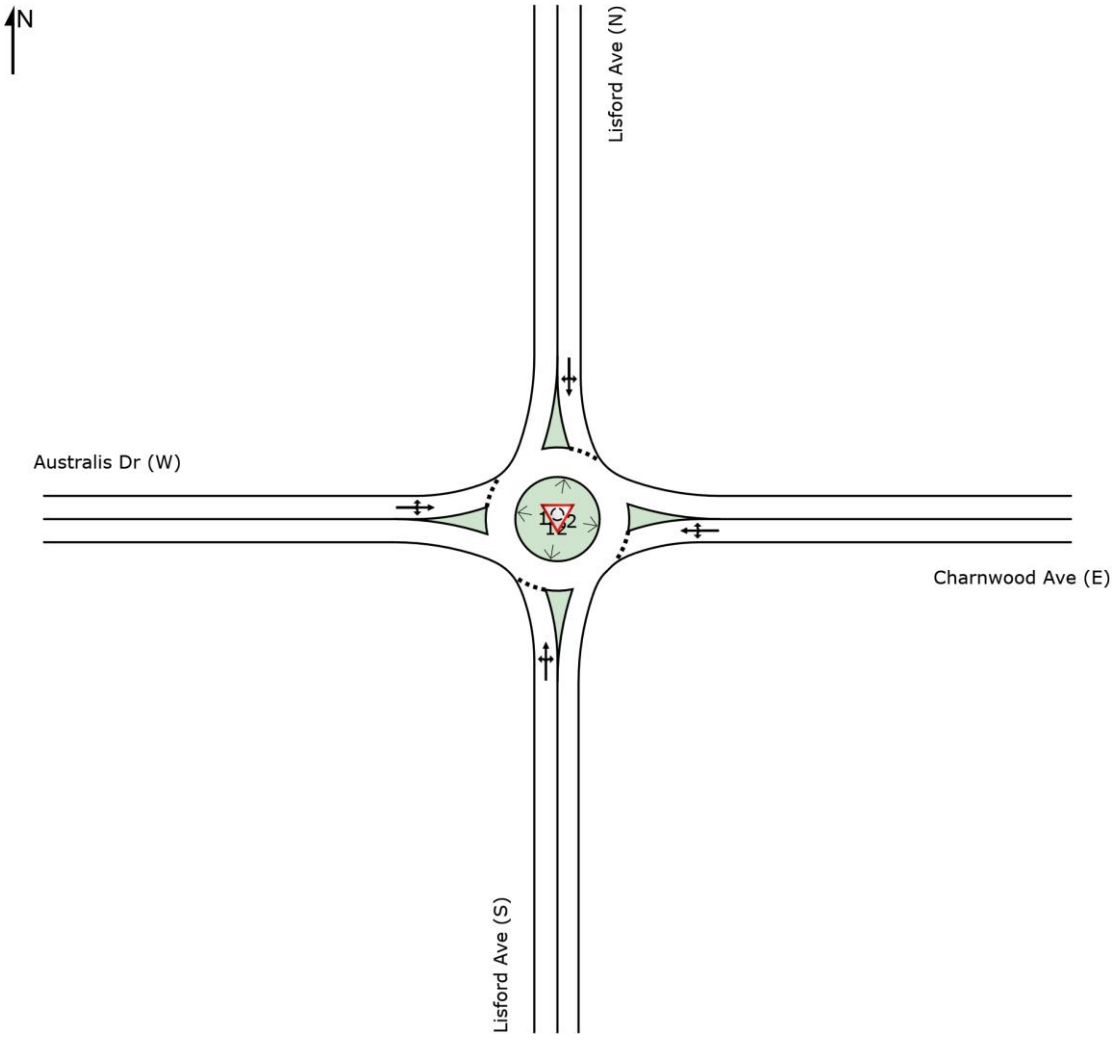


Table 7-13 Lisford Avenue/Charnwood Ave Intersection – Scenario 3

Intersection Approach		AM				PM				Weekend			
		DOS	Delay (s)	LOS	Ave. Back of Queue (m)	DOS	Delay (s)	LOS	Ave. Back of Queue (m)	DOS	Delay (s)	LOS	Ave. Back of Queue (m)
Lisford Ave (S)	L	0.301	4.7	A	7	0.345	4.8	A	8.2	0.257	4.8	A	5.4
	T	0.301	4.8	A	7	0.345	4.9	A	8.2	0.257	4.8	A	5.4
	R	0.301	8.4	A	7	0.345	8.5	A	8.2	0.257	8.4	A	5.4
Charnwood Ave (E)	L	0.026	6.2	A	0.4	0.026	6.3	A	0.5	0.022	5.7	A	0.4
	T	0.026	6.2	A	0.4	0.026	6.3	A	0.5	0.022	5.8	A	0.4
	R	0.026	10.4	B	0.4	0.026	10.5	B	0.5	0.022	9.9	A	0.4
Lisford Ave (N)	L	0.282	4.3	A	6.3	0.303	4.4	A	7.4	0.252	4.4	A	5.7
	T	0.282	4.5	A	6.3	0.303	4.7	A	7.4	0.252	4.7	A	5.7
	R	0.282	8.3	A	6.3	0.303	8.4	A	7.4	0.252	8.4	A	5.7
Australis Dr (W)	L	0.009	6.2	A	0.1	0.049	6.7	A	0.8	0.043	5.7	A	0.7
	T	0.009	6.2	A	0.1	0.049	6.7	A	0.8	0.043	5.7	A	0.7
	R	0.009	9.8	A	0.1	0.049	10.3	B	0.8	0.043	9.3	A	0.7
All vehicles		0.301	4.8	A	7	0.345	5.1	A	8.2	0.257	5.1	A	5.7

7.7 Analysis Summary

A summary of the SIDRA results are as follows:

- The Lisford Avenue/Azzurra Street intersection operates at an acceptable level of service for all scenarios.
- The Lisford Avenue/Road 3 intersection operates at an acceptable level of service for all scenarios.
- The Lisford Avenue/Charnwood Avenue intersection operates at an acceptable level of service for all scenarios.

In conclusion, the proposed road network is able to satisfactorily accommodate the estimated traffic generated by the LDP.

8 Conclusions and Summary

This Transport Impact Assessment outlines the transport aspects of the proposed Site A and Local Development Plan focusing on traffic operations, loading vehicle operations, access and the provision of car parking.

This assessment has been prepared in accordance with the *WAPC Transport Impact Assessment Guidelines for Developments: Volume 3 – Subdivisions (2016).*

The following are conclusions about Site A and proposed LDP:

- The proposed LDP comprises of the following:
  - **Site A (Proposed Woolworths/Commercial Development Application – 4,133m^2)**
    - Supermarket
    - Liquor store
    - Café
    - Specialty retail stores
    - 242 car parking bays
  - **Site B (approximately 2,000m^2)**
    - Future commercial development
    - Public open space/drainage
  - **Site C (1,702m^2)**
    - Future pad site
  - **Site D (approximately 4,800m^2)**
    - Future commercial development
    - Future residential development
- The opening year development (comprising of Site A) represents a two-way trip generation of approximately 246 vehicles during the weekday AM peak hour, 295 vehicles during the weekday PM peak hour and 395 vehicles during the weekend peak hour.
- The full LDP development (comprising of Site A, B, C & D) represents a two-way trip generation of approximately 365 vehicles during the weekday AM peak hour, 552 vehicles during the weekday PM peak hour and 664 vehicles during the weekend peak hour.
- The SIDRA assessment shows that all intersections operate at an acceptable level of service for all scenarios.
- Parking supply for Site A is sufficient for the proposed development.

APPENDIX

A

WAPC CHECKLIST

ITEM	PROVIDED	COMMENTS
Summary		
Introduction/Background	Section 1	
Subdivision proposal		
regional context	Section 3	
proposed land uses	Section 3	
table of land uses and quantities	Section 3	
major attractors/generators	Section 3	
specific issues	N/A	
Existing situation		
existing land uses within structure plan	Section 2	
existing land uses within 800 metres of subdivision	Section 2	
existing road network within subdivision	Section 2	
existing pedestrian/cycle networks within subdivision	Section 2	
existing public transport services within structure plan area	Section 2	
existing road network within 2 (or 5) km of subdivision	Section 2	
traffic flows on roads within subdivision area (PM and/or AM peak hours)	Section 2	
traffic flows on roads within 2 (or 5) km of within subdivision area (AM and/ or PM peak hours)	Section 2	
existing pedestrian/cycle networks within 800m of subdivision	Section 2	
existing public transport services within 800m of subdivision area	Section 2	
Proposed internal transport networks		
changes/additions to existing road network or proposed new road network	N/A	
road reservation widths	N/A	
road cross-sections & speed limits	N/A	
intersection controls	N/A	
pedestrian/cycle networks and crossing facilities	N/A	
public transport routes	N/A	
Changes to external transport networks		
road network	Section 5	
intersection controls	N/A	
pedestrian/cycle networks and crossing facilities	Section 5	
public transport services	Section 5	
Integration with surrounding area		
trip attractors/generators within 800 metres	Section 6	
proposed changes to land uses within 800 metres	N/A	
travel desire lines from structure plan to these attractors/generators	N/A	

ITEM	PROVIDED	COMMENTS
adequacy of external transport networks	N/A	
deficiencies in external transport networks	N/A	
remedial measures to address deficiencies	N/A	
Analysis of internal transport networks		
assessment year(s) and time period(s)	Section 7	
subdivision generated traffic	Section 7	
extraneous (through) traffic	Section 7	
design traffic flows (that is, total traffic)	Section 7	
road cross-sections	N/A	
intersection sight distances	N/A	
intersection operation and method of control	N/A	
frontage access strategy	N/A	
pedestrian/cycle networks	N/A	
safe walk/cycle to school assessment (residential subdivisions only)	N/A	
pedestrian permeability & efficiency	N/A	
access to public transport	N/A	
Analysis of external transport networks		
base flows for assessment year(s)	Section 7	
total traffic flows	Section 7	
road cross-sections	N/A	
intersection layouts & controls	Section 7	
pedestrian/cycle networks	N/A	
Safety issues		
Identify issues	N/A	
Remedial measures	N/A	
Conclusions	Section 8	

APPENDIX B

SITE PLANS

DA ISSUE

ISSUED FOR DEVELOPMENT APPROVAL

Rev.	Amendment	Date
A	FOR INFORMATION	24/11/20
B	FOR INFORMATION	17/02/21
C	FOR INFORMATION	05/03/21
D	FOR INFORMATION	09/03/21
E	FOR CLIENT ISSUE	18/03/21
F	FOR INFORMATION	19/03/21
G	FOR INFORMATION	23/03/21
H	FOR CLIENT REVIEW	25/06/21
J	DRP PRESENTATION	08/07/21
K	DRP PRESENTATION 2	20/07/21
L	ISSUE FOR REVIEW	16/08/21
M	ISSUE FOR REVIEW	01/09/21
N	FOR REVIEW	09/09/21
P	FOR REVIEW	13/09/21
Q	FOR REVIEW	14/09/21
R	FOR CLIENT APPROVAL	17/09/21
S	FOR CLIENT APPROVAL	06/10/21
T	DA ISSUE	15/10/21

SITE PLAN

1 : 500

0 5 10 15 20

1:500

WOOLWORTHS SITE

TOTAL SITE AREA	16929m2
SITE AREA	15227m2
WOOLWORTHS (WITH EXPANSION)	3600m2
WOOLWORTHS (WITHOUT EXPANSION)	2942m2
FUTURE EXPANSION - INCL. OFFICE MEZZANINE	658m2
CAFE	85m2
SPECIALTY 1 (LIQUOR)	200m2
SPECIALTY 2	82m2
SPECIALTY 3	78m2
SPECIALTY 4	151m2
RETAIL / COMMERICAL	595 m2
TOTAL AREA	**4791m2**
PARKING REQUIRED WW - 5 BAYS/100m2 GLA	**240 BAYS**

FUTURE PAD SITE

SITE AREA	1702 m2

PARKING PROVIDED

GENERAL	226 BAYS
STREET PARKING	10 BAYS
PICKUP	6 BAYS
TOTAL	**242 BAYS**

BROWN FALCONER

9/300 Rokeby Road, Subiaco, Western Australia 6004
Telephone : 08 6382 0303 ABN 65 007 846 586
brownfalconer.com.au

FABCOT PTY LTD

WOOLWORTHS TWO ROCKS

SITE PLAN

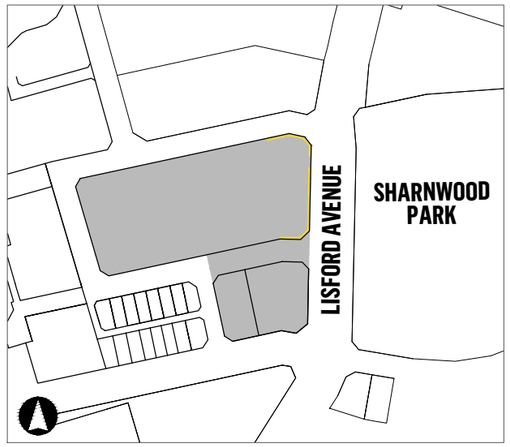
Scale	As indicated		
Drawn	DF	Checked	MJ
Date	15/10/21		
Job No.	2020050		
Dwg No.	**3353 02**	Rev:	**T** A1 SHEET

MAIN STREET

LISFORD AVENUE

R20-R25

LOCATION PLAN



LOCATION PLAN

- LDP APPLICATION AREA
- ACTIVE FRONTAGE
- SEMI-ACTIVE FRONTAGE
- ATTRACTIVE FRONTAGE
- INTERIM ATTRACTIVE FRONTAGE
- LANDSCAPE FRONTAGE
- PRIMARY BUILDING ORIENTATION RESIDENTIAL DEVELOPMENT
- SECONDARY BUILDING ORIENTATION RESIDENTIAL DEVELOPMENT
- INDICATIVE BUILDING EMPHASIS LOCATION
- COMMERCIAL ZONE
- RESIDENTIAL ZONE
- PUBLIC OPEN SPACE AND DRAINAGE
- PUBLIC REALM NODE
- KING NEPTUNE STATUE
- SHARED PATH LINKAGES
- PEDESTRIAN LINKAGES
- INDICATIVE VEHICLE ACCESS - FULL MOVEMENT
- SERVICE LANE
- INDICATIVE SERVICE ZONE
- INDICATIVE CAR PARK AND CIRCULATION AREA
- INDICATIVE SUPERMARKET PRIORITY ZONE
- FUTURE EXPANSION AREA

ENDORSEMENT TABLE

This Local Development Plan has been approved by Council under clause 52(1)(a) of the Deemed Provisions of District Planning Scheme No.2

Manager Approval Services
City of Wanneroo

Date

URBIS

Precinct C Local Development Plan

Part Lot 9702 Enterprise Avenue, Two Rocks

Level 14, The Quadrant, 1 William Street | Perth WA 6000 Australia | +61 8 9346 0500 | URBIS Pty Ltd | ABN 50 105 256 228

CLIENT

Woolworths

1:1000 @ A3

0 10 20 m

PROJECT NO. P0027502

DATE 08.10.2021

DRAWING NO. 01.1

REVISION E

LDP PROVISIONS

The standards of the City of Wanneroo District Planning Scheme No.2 (DPS 2) and relevant policies are refined where detailed on this Local Development Plan (LDP).

This LDP is made pursuant to Part 6 of Schedule 2 - Deemed Provisions for Local Planning Schemes, of the *Planning and Development (Local Planning Schemes) Regulations 2015*, and the Two Rocks Town Centre Structure Plan (Structure Plan).

VISION

The overall intent of the LDP is to facilitate the development of Precinct C as a high-quality, retail and service focused centre comprising a diversity of land uses. The precinct will be highly accessible to the surrounding community by walking and cycling and will be a central meeting place for the Two Rocks community.

Central to the precinct is the delivery of a convenience shopping precinct, providing opportunities for community gathering and social activity. The LDP allows for the expansion of the proposed retail use in the future, incorporating suitable provisions requiring a high-quality landscaping solution in the interim to ensure an attractive southern interface. The LDP has been designed to maximise views to the King Neptune statue to the north as well as north-west to the Marina.

Active frontages will be provided to key areas of Azzurra Street (main street) (particularly around the eastern permitter of the proposed retail use, at the sites main entry). In particular, a public realm node is located at the site entrance on Azzurra Street, which will become a community focal point, incorporating alfresco dining and landscape elements such as seating and child play. Opportunities for buildings with landmark elements have also been identified to assist with legibility and wayfinding.

The LDP proposes a Public Open Space (POS) and Drainage area to the south-west of the LDP area to promote better use of core of the centre. The location of the POS has been designed and located in accordance with the broader water management strategy for the Two Rocks Town Centre Structure Plan area.

Residential development is provided to the south of the LDP area in the form of single residential lots. This will provide a suitable transition to future residential land south of the LDP area, within Precinct E.

DESIGN ELEMENTS

STREET FRONTAGES

The LDP provides for 4 façade types. These are distributed through the LDP to ensure that activity and built form is scaled and designed to respond to the relevant street context and foster the correct experience for users of the street.

The façade standards apply only to non-residential development. Residential development is to be as per the Residential Design Codes, or as provided for in DPS 2 and the Structure Plan.

1. *Active Frontage*

This frontage type is concentrated around the main street, where a high level of activation and clear visual engagement with pedestrians is promoted. Active frontage areas should be designed generally in accordance with the following:

- Default nil setback to street. Setbacks are permitted where required to accommodate alfresco dining, a landscaped edge or similar activities. No vehicle parking is permitted in the setback area between the property boundary and the built form.
- Minimum façade height of 5.2 metres to provide an appropriate scale and create a sense of enclosure for the pedestrian environment.
- Minimum floor to ceiling height of 3.6 metres on the ground floor.
- 70% ground floor glazing target, with 50% of glazed area to be unobscured.
- Continuous awnings provided along active frontages, which are to be integral to the design and functionality of the building, except where an awning is not practical.
- Awnings are to have a minimum height clearance of 3.0 metres from footpath/pavement level and be 2.6 metres deep.

2. *Semi-Active Frontage*

This frontage type relates to areas intended to reflect an urban character but does not necessarily accommodate highly active functions. Semi-active frontages shall be designed generally in accordance with the following:

- Setbacks shall be provided to ensure a sense of enclosure to the street.
- Minimum façade height of 5.2 metres.
- Minimum floor to ceiling height of 3.6 metres on the ground floor for non-residential uses.
- 50% ground floor glazing target.

3. *Attractive Frontage*

This frontage type is intended to ensure good design outcomes for areas where design limitations associated with 'big box' retail environments and service areas may occur, such as loading areas and inactive walls. Attractive frontages should be designed generally in accordance with the following:

- All walls to be appropriately treated to create visual interest in the built form through material choice and articulation.
- Application of CPTED principles through material selection is encouraged.
- Continuous built form is encouraged where achievable.
- Opportunities for public art integration into facades and/or buildings are encouraged.
- The 'Interim Attractive Frontage' shall provide an attractive frontage until such time as expansion occurs.

4. Landscape Frontage

This frontage type is to be provided where there are no opportunities for a built form street interface. Landscape frontages are intended to provide a high amenity streetscape that is attractive and encourages pedestrian movement through the following:

- Inclusion of statement trees such as Norfolk Island Pines and Cotton Palms as a reference to the site history.
- Verge landscape treatment around the perimeter of the site including hardy native verge planting with coastal groundcover species.
- Inclusion of feature seating and garden beds at key locations to encourage community gathering.

OPEN SPACE, DRAINAGE AND LANDSCAPE

5. Public Open Space to be located in accordance with nominated location.
6. The 'Public Open Space and Drainage' area shall be designed in accordance with the Urban Water Management Plan prepared by RPS (dated 09 September 2021).
7. Water Sensitive Urban Design principles shall be applied to any drainage incorporated in the 'Public Open Space and Drainage' area.
8. The intent of the 'Public Realm Node' is to provide opportunities for community gathering and social activity on the main street, including high quality public realm elements (such as seating, shaded areas and children's play).
9. The 'Future Expansion Area' shall be appropriately landscaped to ensure a suitable southern interface until such time as the retail use is expanded.
10. Trees shall be provided in the 'Indicative Car Park and Circulation Area' at a rate of 1 tree per 10 bays.

BUILDING EMPHASIS LOCATIONS

11. Identified locations should generally include:
    - A variety of heights to parapets or more pronounced facades.
    - Architectural features such as detailed panels, vertical and horizontal lines and glazing.
    - Address both frontages to the street and/or public realm.

SCREENING SERVICES

12. All external services shall be incorporated into the building design where possible.
13. Services shall be a similar colour to the roof and screened from adjacent streets and/or the public realm.
14. All service areas (bin storage etc.) and loading docks shall be incorporated into the building design and appropriately screened from the public realm to ensure potential noise and odour impacts are minimised.

SIGNAGE

15. A Signage Strategy for the centre shall be required as a condition of approval, outlining the nature and extent of signage across the site. The strategy will ensure consistency in design and scale of signage.

BUSHFIRE MANAGEMENT

16. Bushfire mitigation measures shall apply in accordance with the Bushfire Management Plan prepared by Bushfire Prone Planning (dated 06 October 2021).

CLIENT
Woolworths

1:1000 @ A3
10 20 m

PROJECT NO. P0027502
DATE 08.10.2021
DRAWING NO. 01.2
REVISION E

APPENDIX C

SWEPT PATHS

AZZURRA STREET

ROAD 3

LISFORD AVENUE

CANOPY LINE SHOWN DASHED

HERITAGE PLAQUE

10 BIKE RACKS

BOUNDARY

URBAN SEATING / LANDSCAPED STRIP

RETAINING WALL

RETAIL / COMMERCIAL
595 m²
FFL 9.85

BINS

SHARED PEDESTRIAN / VEHICLE

226 CAR BAYS

FUTURE PAD SITE
1702 m²
(SUBJECT TO SEPERATE DEVELOPMENT APPLICATION)

FUTURE DEVELOPMENT. NOT A PART OF THIS APPLICATION

PARKLET

AMENITIES (& EDT)

SPEC 4
151 m²

CAFE
85 m²

AIR LOCK

MALL
139 m²

CANOPY OVER

F&V

PUMP

FIRE. T

SUB. ST.

LOADING DOCK

B.O.H

WOOLWORTHS
2942 m²
FFL 8.70
TRADING
2144m²

SPEC 1
200 m²
FFL 8.70
(LIQUOR)

SPEC 2
82 m²

SPEC 3
78 m²

4 x SHORT TERM BAYS

SPEC BIN ST.

PICK UP

FUTURE FULFILL'T LOADING

FFL 8.60
PICK UP

FUTURE FULFILL'T BOH

FUTURE COMMERCIAL (SUBJECT TO SEPERATE DEVELOPMENT APPLICATION)

REFUSE AREA (BINS)

DECORATIVE SCREEN

P.O.S / DRAINAGE

+7.00

+8.00

+8.41

SHOWN DASHED

A Z Z U R R A S T R E E T

HERITAGE PLAQUE

10 BIKE RACKS

URBAN SEATING / LANDSCAPED STRIP

RETAINING WALL

RETAIL / COMMERCIAL
595 m²
FFL 9.85

BINS

SPEC 4
151 m²

AMENITIES
(& EOT)

PARKLET

BOUNDARY

SHARED PEDESTRIAN / VEHICLE

CAFE
85 m²

AIR LOCK

MALL
139 m²

CANOPY OVER

226 CAR BAYS

FUTURE PAD SITE
1702 m²
(SUBJECT TO SEPERATE
DEVELOPMENT APPLICATION)

FUTURE
COMMERCIAL
(SUBJECT TO SEPERATE
DEVELOPMENT
APPLICATION)

PUMP

FIRE. T

SUB. ST.

LOADING DOCK

B.O.H

F&V

WOOLWORTHS
2942 m²
FFL 8.70
TRADING
2144m²

SPEC 1
200 m²
FFL 8.70
(LIQUOR)

SPEC 2
82 m²

SPEC 3
78 m²

4 x SHORT TERM BAYS

REFUSE AREA
(BINS)

CANOPY OVER

SPEC BIN ST.

FUTURE
FULFILL'T
LOADING

PICK UP

DECORATIVE
SCREEN

P.O.S / DRAINAGE

FFL 8.60
PICK UP

FUTURE FULFILL'T
BOH

R O A D 3

L I S F O R D A V E N U E

FUTURE
DEVELOPMENT.
NOT A PART OF THIS
APPLICATION

FUTURE EXPANSION 458m² ZONE

AZZURRA STREET

HERITAGE PLAQUE

10 BIKE RACKS

CANOPY LINE SHOWN DASHED

URBAN SEATING / LANDSCAPED STRIP

RETAINING WALL

BOUNDARY

PARKLET

AMENITIES (& EOT)

SPEC 4 151 m²

CAFE 85 m²

AIR LOCK

MALL 139 m²

CANOPY OVER

F&V

PUMP

FIRE. T

SUB. ST.

LOADING DOCK

B.O.H

WOOLWORTHS 2942 m²

FFL 8.70

TRADING 2144m²

SPEC 1 200 m² FFL 8.70 (LIQUOR)

SPEC 2 82 m²

SPEC 3 78 m²

SPEC BIN ST.

4 X SHORT TERM BAYS

SHARED PEDESTRIAN / VEHICLE

226 CAR BAYS

BINS

RETAIL / COMMERCIAL 595 m² FFL 9.85

FUTURE PAD SITE 1702 m² (SUBJECT TO SEPERATE DEVELOPMENT APPLICATION)

FUTURE COMMERCIAL (SUBJECT TO SEPERATE DEVELOPMENT APPLICATION)

REFUSE AREA (BINS)

DECORATIVE SCREEN

P.O.S / DRAINAGE

FUTURE FULFILL'T LOADING

PICK UP

FUTURE FULFILL'T BOH

FFL 8.60 PICK UP

FUTURE DEVELOPMENT. NOT A PART OF THIS APPLICATION

FUTURE EXPANSION 458m² ZONE

ROAD 3

LISFORD AVENUE

AZZURRA STREET

HERITAGE PLAQUE

10 BIKE RACKS

BOUNDARY

PARKLET

AMENITIES & EDT

SPEC 4
151 m²

F&V

CAFE
85 m²

AIR LOCK

MALL
139 m²

CANOPY OVER

SPEC 1
200 m²
FFL 8.70
(LIQUOR)

SPEC 2
82 m²

SPEC 3
78 m²

WOOLWORTHS
2942 m²
FFL 8.70
TRADING
2144m²

B.O.H

PUMP

FIRE. T

SUB. ST.

LOADING DOCK

REFUSE AREA
(BINS)

CANOPY OVER

FUTURE
COMMERCIAL
(SUBJECT TO SEPERATE
DEVELOPMENT
APPLICATION)

DECORATIVE
SCREEN

P.O.S / DRAINAGE

PICK UP

SPEC BIN ST.

FUTURE
FULFILL'T
LOADING

FUTURE FULFILL'T
BOH

FFL 8.60
PICK UP

4 x SHORT TERM BAYS

SHARED PEDESTRIAN / VEHICLE

226 CAR BAYS

URBAN SEATING / LANDSCAPED STRIP

RETAINING WALL

BINS

RETAIL / COMMERCIAL
595 m²
FFL 9.85

FUTURE PAD SITE
1702 m²
(SUBJECT TO SEPERATE
DEVELOPMENT APPLICATION)

FUTURE
DEVELOPMENT.
NOT A PART OF THIS
APPLICATION

LISFORD AVENUE

ROAD 3

FUTURE EXPANSION 458m² ZONE

E PLAN