



Greenpool Capital

Dianella Centre PSP

Transport Impact Assessment

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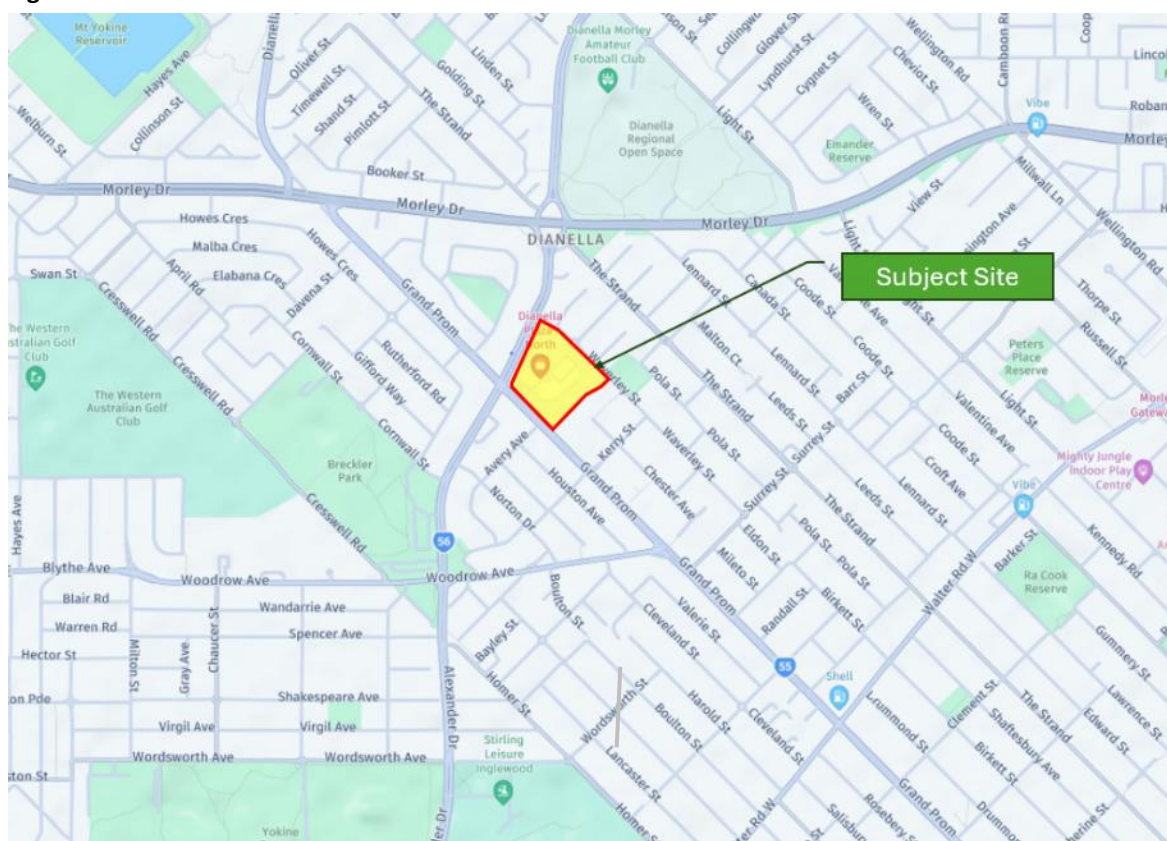
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I Introduction

I.1 Background

PJA Australia has been commissioned by Greenpool Capital (Applicant) to prepare this Transport Impact Assessment (TIA) in relation to the proposed Dianella Centre Precinct Structure Plan (PSP), Dianella, WA. The location of the Site in relation to the wider and the immediate surrounding road network is shown in **Figure 1-1**.

Figure 1-1: Site Location



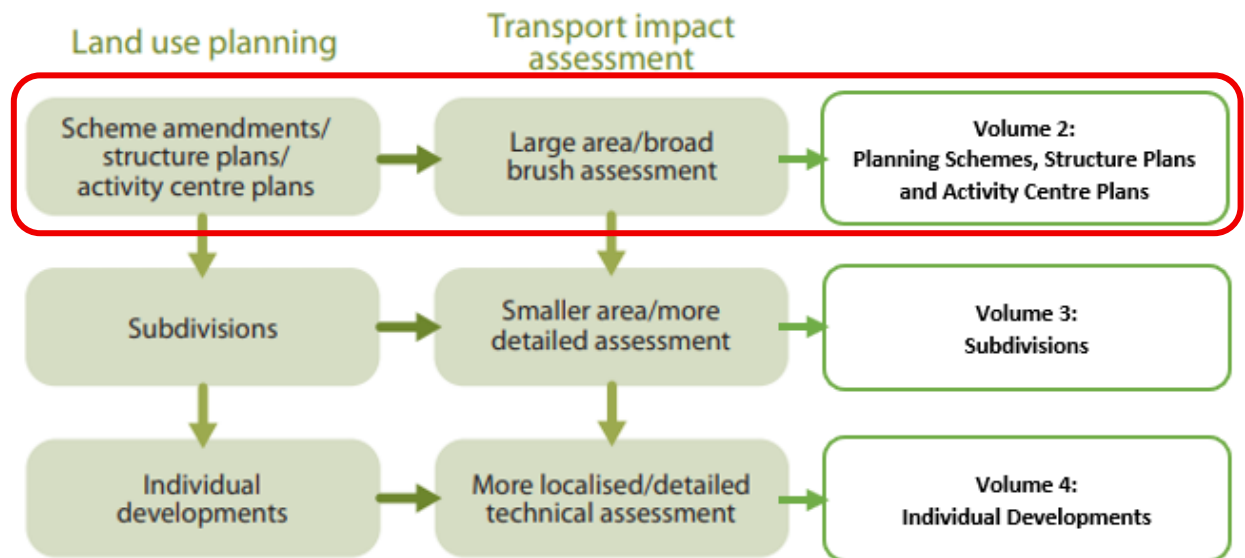
Source: Nearmap

I.2 Purpose of a Transport Impact Assessment

The planning system in Western Australia stipulates that all developments go through a process of stages to ensure that the statutory planning is consistent with the strategic planning. A more detailed assessment of the transport networks for developments is required within the land use planning stages. The Western Australian Planning Commission (WAPC) guidelines for a TIA shows the level of detail required at each stage as shown in **Figure 1-2**.



Figure 1-2: WAPC Land Use / Transport Planning Process



Source: Western Australian Planning Commission (WAPC)

The PSP forms part of an Activity Centre Plan (ACP) and would fall under *Volume 2* of the WAPC Guidelines. This means that the level of detail required at this stage allows for a *large area/broad brush* assessment of the existing and proposed transport networks to be undertaken.

The intent of this TIA is to “*assess the proposed internal transport networks with respect to accessibility, circulation and safety for all modes, that is, vehicles, public transport, pedestrians and cyclists, and the level of transport integration between the structure plan area and the surrounding land uses; determine the impacts of the traffic generated by structure plan area on the surrounding land uses and transport networks.*”.

1.3 Proposed Precinct Structure Plan

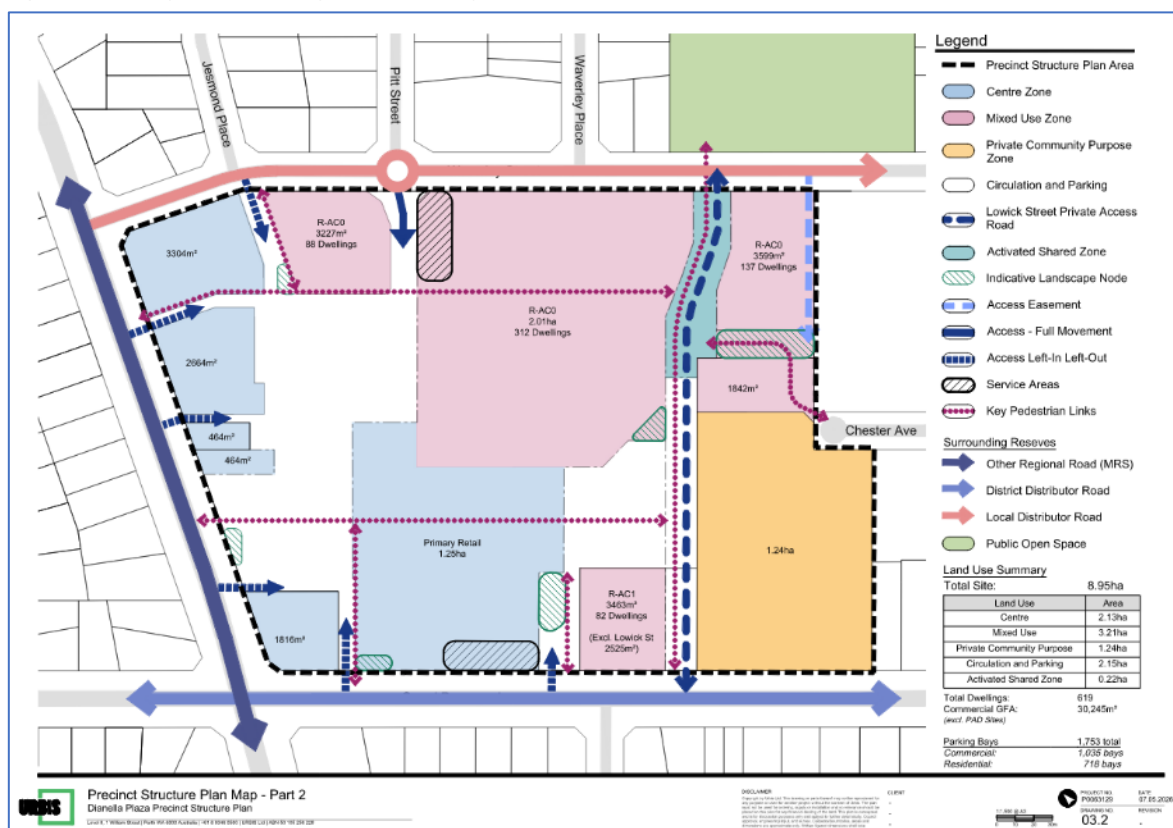
The proposed PSP consists of multiple land uses within the Site, including centre, mixed-use, private community purpose, circulation and parking, and activated shared zone. The expected yield for each land use is as below (concept plan shown in **Figure 1-3**):

- Centre 2.13ha
 - Commercial (shopping centre) GFA 30,245m²
 - Multiple PAD sites of 3,304m², 2,664m², 464m², 464m² and 1,816m²
- Mixed Use 3.21 ha
 - Residential 619 dwellings
 - Existing Stirling Libraries – Dianella

- Private Community Purpose 1.24ha
 - Existing Our Lady's Assumption School
- Circulation and Parking 1,753 bays
 - Commercial parking 1,035 bays
 - Residential parking 718 bays
 - Activated Shared Zone 0.22ha

This TIA report undertakes an analysis of the impact of the proposed PSP, specifically the impact of the combined additional generated traffic on the immediate and surrounding road network and also the car park circulation.

Figure 1-3: Proposed Development Site Layout



Source: Urbis (Concept Plan dated 07.05.2026)



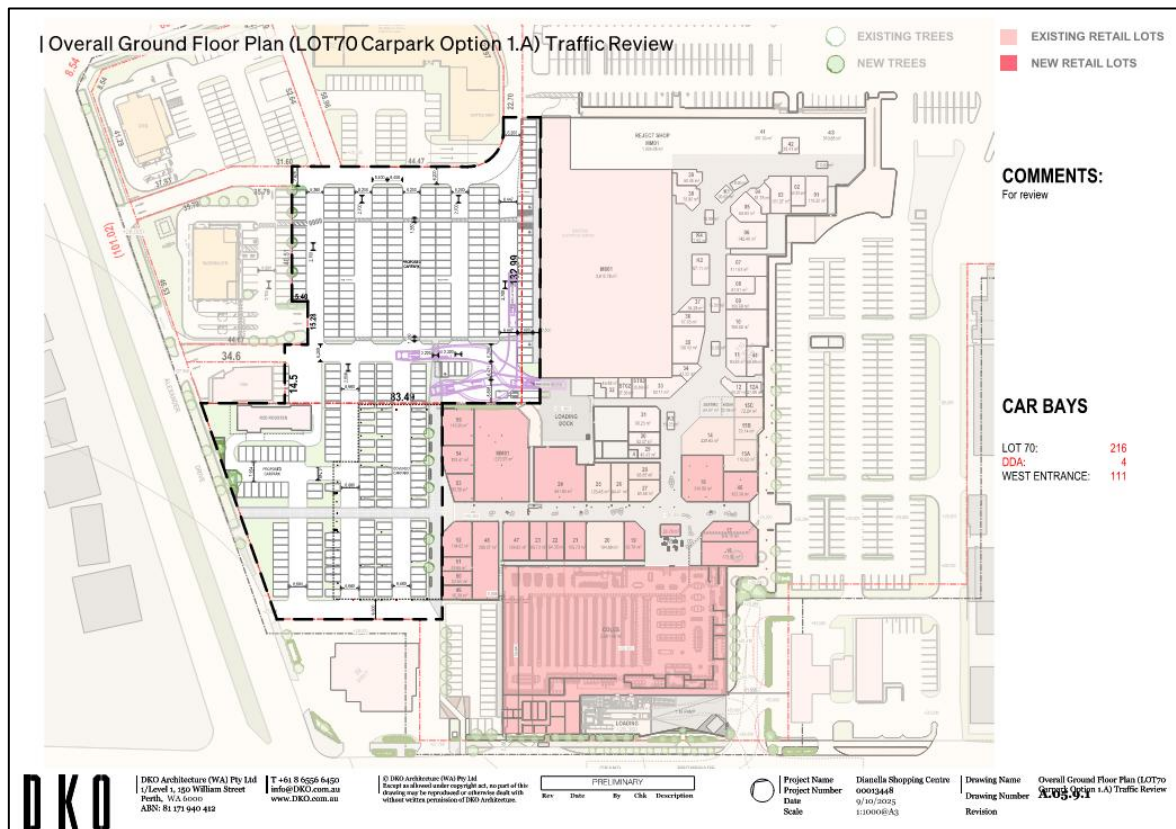
I.4 Approved Subdivision / Development Application within Site

Prior to the PSP, a subdivision application has been lodged for the Site to allow for three PAD sites within the PSP, in the north west corner of the Site on the corner of Alexander Drive and Waverley Street. The subdivision application is under assessment by WAPC, and further Development Applications (DA) are being sought for them. The subdivision is expected yield to yield the following:

- Tavern 1,200m² GFA
- Bottle Shop 200m² GFA
- Guzman Gomez Restaurant 1,220m² GFA
- McDonalds Restaurant 1,350m² GFA
- Drive Thru Coffee Shop 45m² GFA

In addition to these pad sites, a DA to relocate the Coles Store within Dianella Centre (shown in **Figure 1-4**) has been lodged and approved. The DA seeks to relocate the existing Coles Store on the western side of the shopping centre to the south, fronting Grand Promenade. The relocation results in reconfigure car park layout with additional car parking bays within the Site.

Figure 1-4: Relocation of Coles Store Within Dianella Centre



Source: DKO



1.5 Staging of Development of the PSP

The PSP is proposed to be developed in 4 stages as noted below and shown in **Figure 1-5**.

- Stage 1

This is currently being assessed and includes a new relocated Coles box and new loading dock and car park. This Stage 1 was found not to require any major upgrades to intersections etc, except for modifications to the access and egress arrangements for the service station on Grand Promenade to include full movement on Lowick Street and closure of the median gap opposite the service station

- Stage 2

This stage is likely to include development of the mixed-use development along the northern frontage of the PSP along Waverley Street. Assessment of the traffic and transport impacts of this development will be undertaken at the DA stage for this development, once yields are determined. This will inform, what transport infrastructure changes will be required to support this development. At a high level, this is likely to require an intersection upgrade of the intersection of Alexander Drive and Waverley Street.

- Stage 3

This would broadly encompass the development of the service station site on the corner of Lowick Street and Grand Promenade as well as a central mixed-use site on the western side of Lowick Street. Again, assessment of the traffic and transport impacts of this development will be undertaken at the DA stage for this development. This will inform, what transport infrastructure changes will be required to support this development.

- Stage 4

This is planned to be the development of a site on the south western corner of the Waverley Street and Pitt Street roundabout to bring the site to its full potential under the proposed PSP.



Figure 1-5: Possible Staging Plan



1.6 Planning Framework

1.6.1 Metropolitan Region Scheme

The Metropolitan Region Scheme (MRS) is the statutory land use planning scheme for the Perth Metropolitan Region. The principal functions are to reserve and zone land and control development. The MRS reflects the agreed strategic direction for land within the Metropolitan Region and is a catalyst for changes to planning controls at the local level and subsequent local area planning.

The PSP is zoned as a 'Urban' under the MRS, with Alexander Drive reserved as 'Other Regional Roads' and nearby Morley Drive as a 'Primary Regional Road'.

Figure 1-6: Metropolitan Region Scheme – Dianella Locality South



Source: Department of Planning, Lands and Heritage



1.6.2 Directions 2031 and Beyond

Directions 2031 and Beyond: Metropolitan Planning Beyond the Horizon (Directions 2031), is a high level spatial framework and strategic plan for the Perth and Peel regions. It provides a framework for the detailed planning and delivery of housing, infrastructure and services necessary to accommodate growth up until 2031 and beyond.

Within the hierarchy of activity centres established by Directions 2031, Dianella is identified as a 'District Centre'. These centres are described in the following terms: "District town centres generally serve the main weekly household shopping, service and community needs of the district. They are predominantly retail focused but may also include a limited mix of other uses such as office, medical and professional services, hospitality and entertainment and housing. Some also include or are associated with civic, community and recreational facilities." This is also a very good description of the land uses presently in and around the Dianella Precinct.

1.6.3 Local Planning Scheme No.3

The City of Stirling Local Planning Scheme No. 3 (LPS3) zones the majority of the Dianella PSP as 'District Centre', within which a wide variety of appropriate land uses may be considered for approval. There are however, some significant sites within the centre that have quite restricted zoning, which may limit their ability to be redeveloped if necessary for the best arrangement and type of land uses to achieve a pleasant, diverse and legible centre. These are:

- The hotel site on the corner of Alexander Drive and Waverley Street. The 'Hotel' zone limits the range of uses permissible on this land.
- Service station adjacent to Our Lady's Assumption school, on Grand Promenade. This is zoned 'Service Station', which is a restricted use. Interestingly, the previous service station site on the corner of Alexander Drive and Grand Promenade is zoned 'District Centre'.
- Dianella Library, off Chester Avenue, and the Dianella Community Centre in Kerry Street are both designated Local Reserves for 'Civic' purposes. This would limit alternative uses of the land. Our Lady's Assumption school and church are zoned as 'Private Institution'. A limited range of uses may be considered within such a zone.

The surrounding residential area is Residential R30, R20 and R25. **Figure 1-7** shows the zoning under the Local Planning Scheme. The implications of the applicable zones are the subject of further discussion in later sections of this report.

Figure 1-7: City of Stirling Local Planning Scheme No. 3 – Site Zoning



Source: City of Stirling



1.6.4 Draft Local Planning Scheme No.4

The City of Stirling Draft Local Planning Scheme No. 4 (LPS4) has been prepared to replace the existing LP3 as the primary statutory document for land within the City. LPS4 seeks to rezone the Site to 'Centre' zone to allow the development of the proposed land uses.

Figure 1-8 shows the zoning under the LSP4.

Figure 1-8: City of Stirling Local Planning Scheme No. 4 – Site Zoning



Source: City of Stirling

1.7 Specific Issues

The signal-controlled intersection of Alexander Drive / Grand Promenade and priority-controlled intersection of Alexander Drive / Waverley Street have significant number of recorded crashes in the last five years.

Mast arm signals have been installed on Alexander Drive approaches in mid-2025 to address rear-end collisions.

A detailed crash data assessment is presented in **Section 2.13**.



2 Existing Situation

2.1 Existing Site Context and Land Uses

The proposed PSP is located on Lot 70 & 170 (TAB Dianella) Alexander Drive, Lot 59, 78, 100 & 110 Grand Promenade and Lot 79 Chester Avenue Coles, Dianella. The Site is bounded by Waverley Road to the north, Grand Promenade to the south and Alexander Drive to the west, situated approximately 10km north of Perth city centre.

The existing Dianella Centre, Our Lady's Assumption School, Stirling Libraries – Dianella, several restaurants and PAD sites are located within the Site as shown in **Figure 2-1**.

Figure 2-1: Site Location



Source: Nearmap 2026



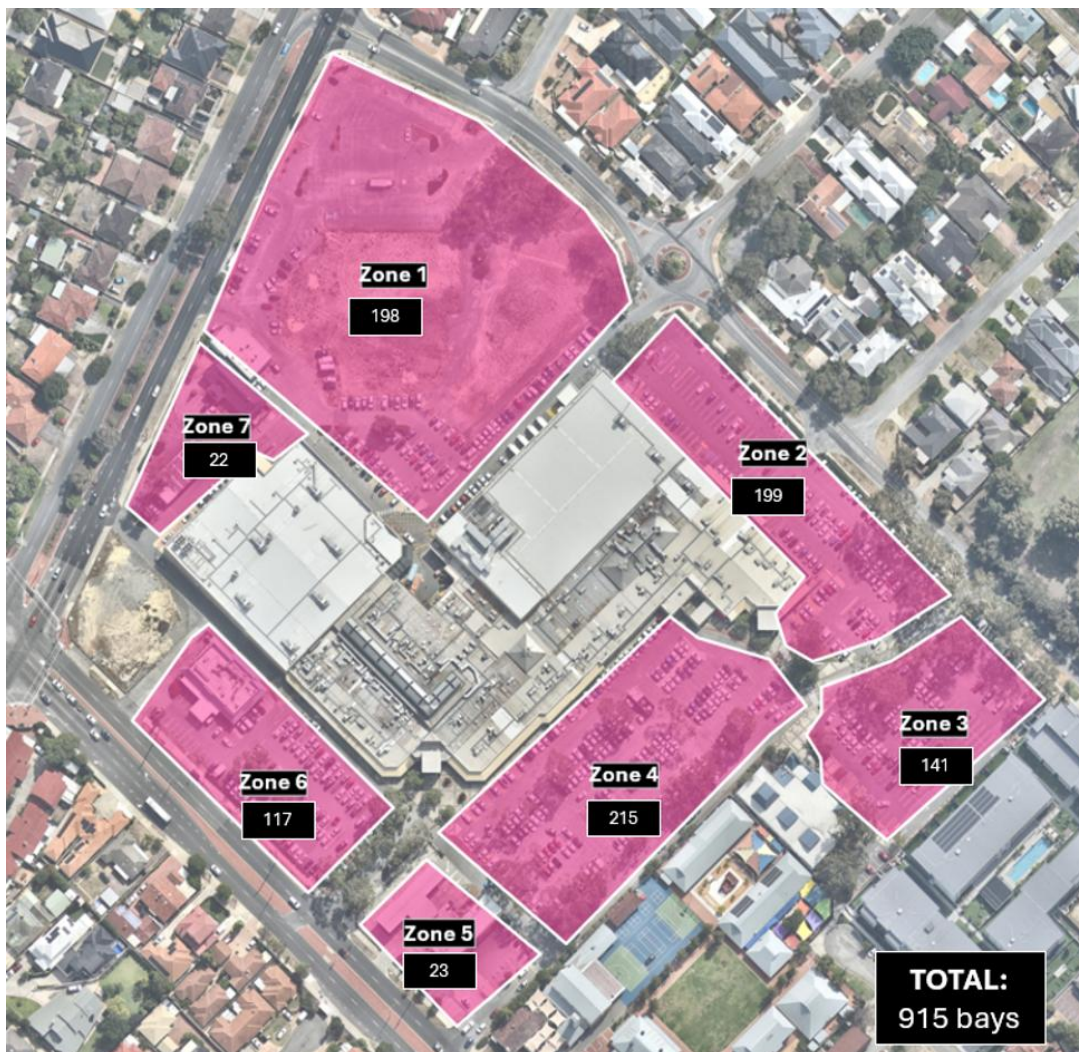
2.2 Car Parking Provision and Demand

PJA engaged *Matrix Traffic and Transport Data* (Matrix) to undertake a car park occupancy survey of the existing car park in 30-minute intervals. The occupancy survey is undertaken for the following periods:

- Thursday 23 October 2025 : 2:00 pm – 7:00 pm
- Saturday 25 October 2025 : 10:00 am – 2:00 pm

The extent of the car park survey includes the car park around Dianella Centre, pad sites and Stirling Libraries. The number of car parking bays around the site is shown in **Figure 2-2** and the analysis of car parking demands are shown in **Figure 2-3** and **Figure 2-4**.

Figure 2-2: Existing Parking Provision



Source: Google Map

Figure 2-3: Existing Car Park Occupancy Survey Results on Thursday

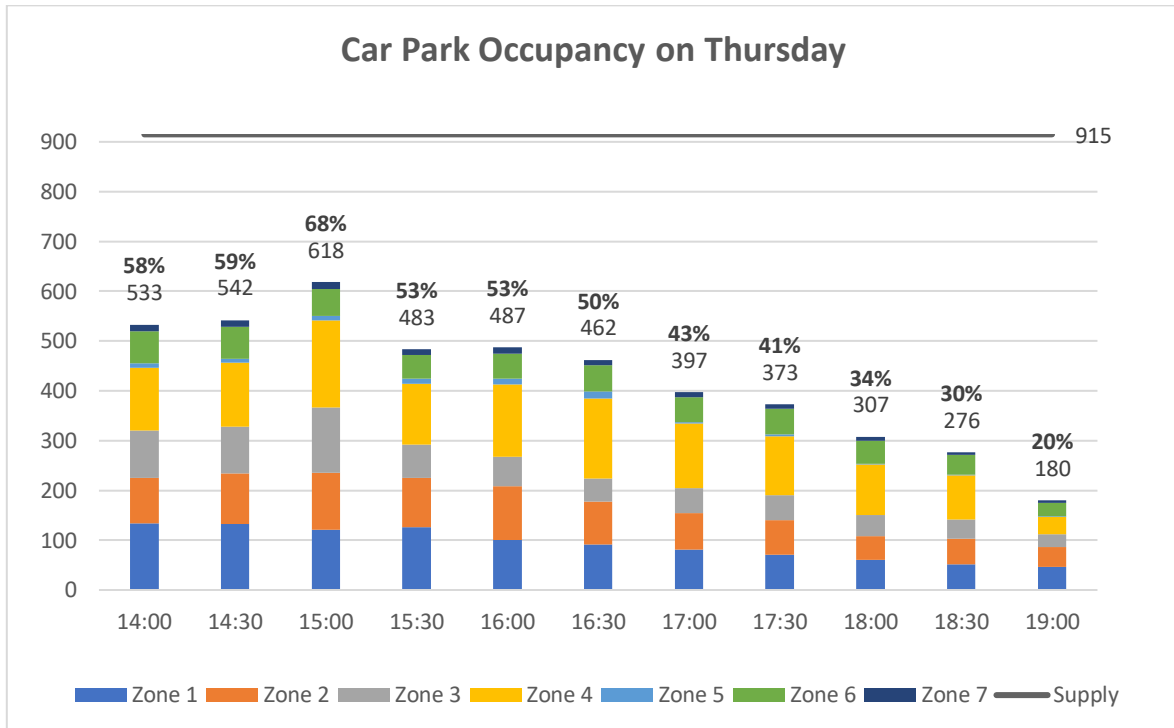
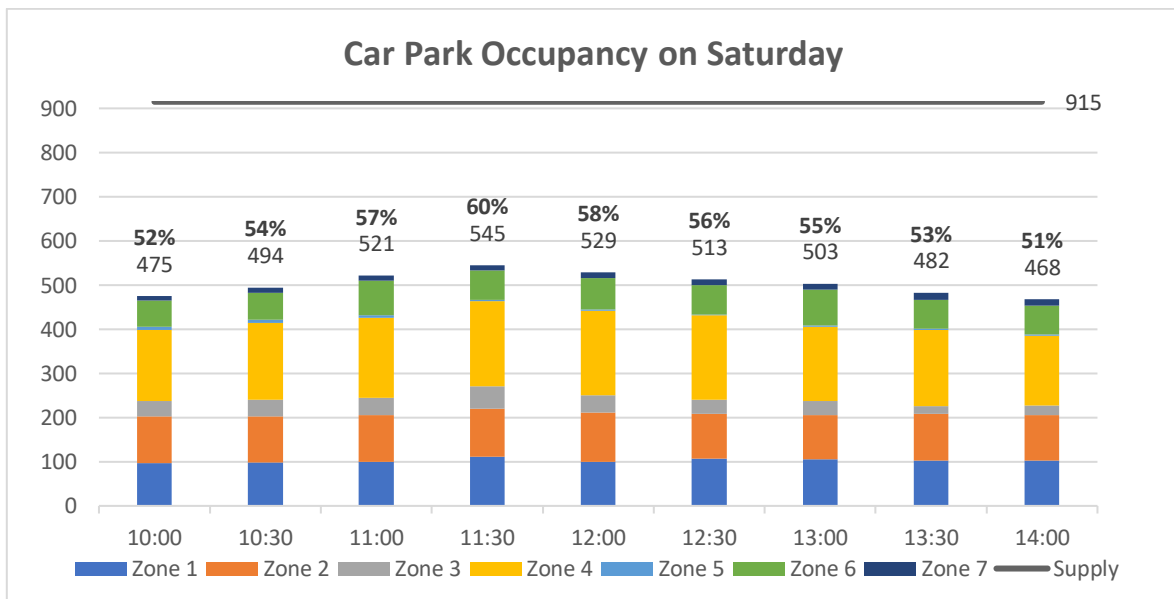


Figure 2-4: Existing Car Park Occupancy Survey Results on Saturday



The peak occupancy was observed at 3:00pm on Thursday and 11:30am on Saturday, where 68% and 60% respectively of the total supply was occupied. This indicates that there is a surplus of 293/370 bays across the Dianella PSP at the time of peak parking demand.



2.3 Bicycle Parking Provision

There is currently a rack of four and a rack of eight for bicycle parking around the entrances into the Dianella Centre for a total of 12 spaces for bicycles.

2.4 Current Access Arrangements

The Site is currently accessible via Alexander Drive, Waverley Street and Grand Promenade. The existing access arrangements are shown in **Figure 2-5**.

Figure 2-5: Current Dianella Centre Access Arrangements



Base map source: Nearmap



2.5 Traffic Generation

Based on the video survey undertaken for the Dianella PSP, the Daniella PSP is generating approximately **1,213 vehicle trips in the Thursday PM peak (4:30 pm – 5:30pm)** and **1,400 vehicle trips in the Saturday mid-day peak (11:45 am – 12:45 pm)**.

2.6 Surrounding Road Network

Alexander Drive

In terms of the Metropolitan Road Hierarchy, Alexander Drive is classed as a District Distributor (A) road under the functional road hierarchy and an Other Regional Road (ORR or Blue Road) under the MRS. It is a four-lane divided road with two extra turning lanes at the intersection with Grand Promenade.

Left in, left out entry to the centre is available on the north-south carriageway of Alexander Drive. A median prevents right turns from the Centre.

Footpaths are provided on both sides of Alexander Drive with an informal mid-block pedestrian crossing point situated between Grand Promenade and Waverley Street at the location of the existing bus stops. Signal controlled crossings are available for pedestrian at the traffic signal intersection with Grand Promenade.

Grand Promenade

Grand Promenade is also classed as a District Distributor (A) road but it is not an ORR. It is a four-lane divided road with three median breaks providing access into the Centre for west bound vehicles turning right.

Footpaths are provided on both sides of Grand Promenade with an informal mid-block pedestrian crossing point situated between Alexander Drive and Kerry Street. Signal controlled crossings are available for pedestrian at the traffic signal intersection with Alexander Drive.

Waverley Street

Waverley Street is classified as a Local Distributor road hierarchy. Waverley Street is a two-lane undivided road with five access points serving the Centre. One of the access points forms a four-way roundabout with Pitt Street and Waverley Street.



Kerry Street

Kerry Street is classed an Access Road and is also a two-lane undivided road on the south-eastern boundary of the precinct which links Grand Promenade and Waverley Street. Kerry Street forms a t-intersection with Waverley Street and there is stop sign access control and a ban of right turn exits from Kerry Street into Grand Promenade.

Kerry Street also intersects Chester Avenue, which ends as a cul-de-sac at the Our Lady's Assumption primary school west of Kerry Street.

2.7 Current Traffic Management on Frontage Streets

The traffic management on frontage streets is summarised in **Figure 2-6**. Alexander Drive and Grand Promenade are dual carriageway with central medians while Waverley Street is an undivided single carriageway. Footpath or shared path are presented on both sides of these streets.

Figure 2-6: Current Traffic Management Fronting Site



Base map source: Nearmap

2.8 Existing Traffic Volumes

2.8.1 MRWA Traffic Map – Alexander Drive and Grand Promenade

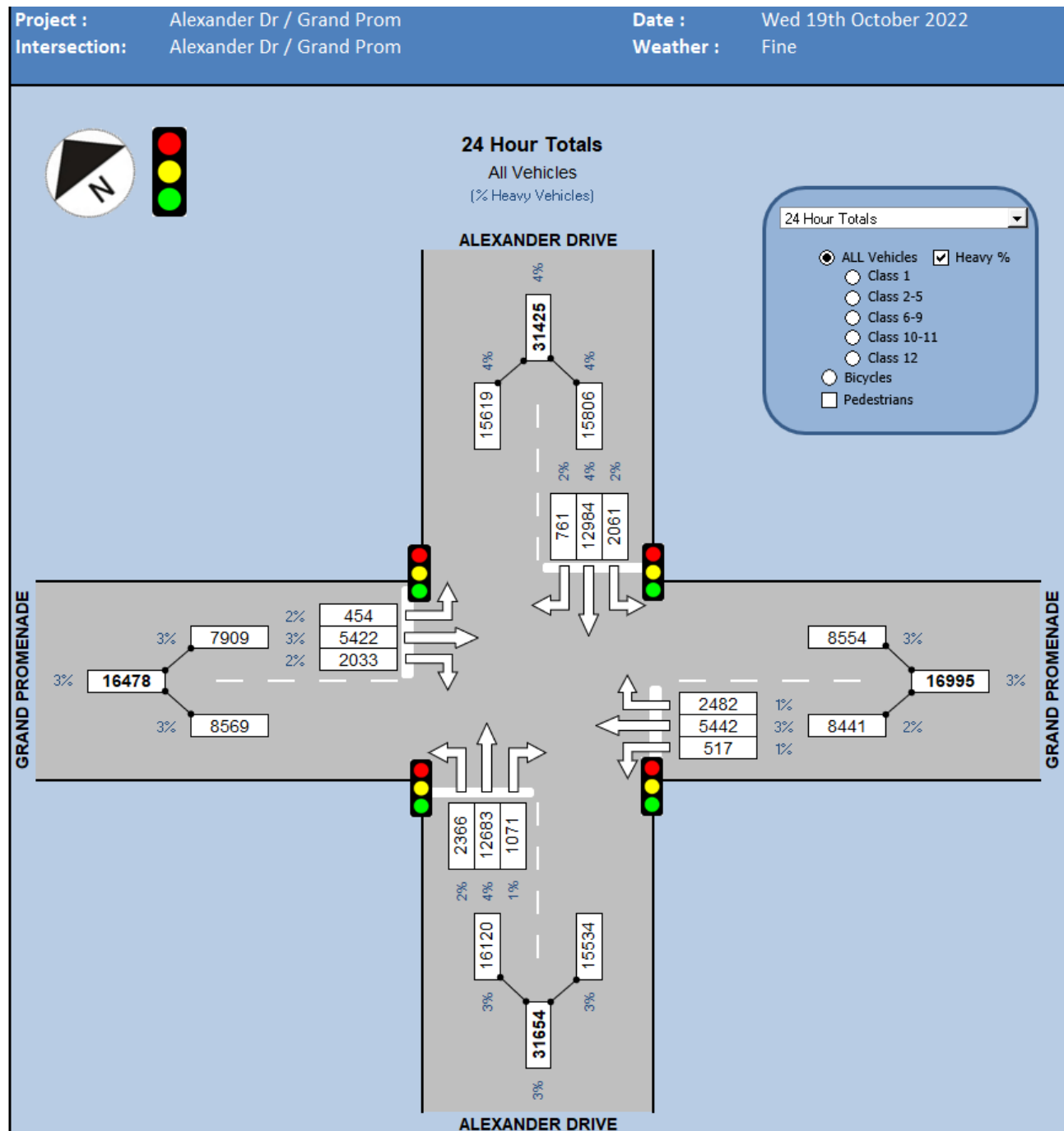
Alexander Drive intersects Grand Promenade as a signal controlled four-way intersection. As per video survey (shown in **Figure 2-7**) and SCATS Data for the intersection dated 19 October 2022 and 22 May 2026 on Main Roads WA Trafficmap respectively, Alexander Drive is recorded as carrying 31,400 vehicles per day in 2022 (Monday to Friday average), with an average of 4% heavy vehicle composition, and 31,900 vehicles per day in 2026.

Grand Promenade is recorded as carrying 17,000 vehicles per day in 2022 (Monday to Friday average) and 16,200 vehicles per day in 2026, to the east of Alexander Drive and 16,500 vehicles per day to the west, with an average of 3% heavy vehicle composition.

The AM and PM peak hour periods at this intersection are 08:00 – 09:00 and 16:30 to 17:30 during the week. Alexander Drive carries approximately 2,500 vehicles per hour two-way in the AM peak and some 2,700 vehicles per day in the PM peak.



Figure 2-7: 2022 Traffic Volumes – Intersection of Alexander Drive / Grand Promenade



2.8.2 Surrounding Road Network

Matrix has also undertaken video surveys of the surrounding intersections to determine the existing volumes. The video survey is undertaken for the following periods:

- Thursday, 30 January 2025 (4:30pm – 5:30pm, **Figure 2-8**) & Saturday, 1 February 2025 (11:45am – 12:45pm, **Figure 2-9**)
 - Alexander Drive / Waverley Road
 - Waverley Street / Pitt Street / Site Access
 - Waverley Street / Jesmond Place (Access 1)
 - Alexander Drive / Access 2
 - Alexander Drive / Access 3
 - Alexander Drive / Access 4
- Thursday, 23 October 2025 (4:30pm – 5:30pm, **Figure 2-10**) & Saturday, 25 October 2025 (11:45am – 12:45pm, **Figure 2-11**)
 - Alexander Drive / Grand Promenade
 - Grand Promenade / Access 5
 - Grand Promenade / Access 6
 - Grand Promenade / Access 7
 - Grand Promenade / Access 8
 - Waverley Street / Access 9
 - Waverley Street / Access 10

Figure 2-8: Thursday, 30 January 2025 Existing Volumes

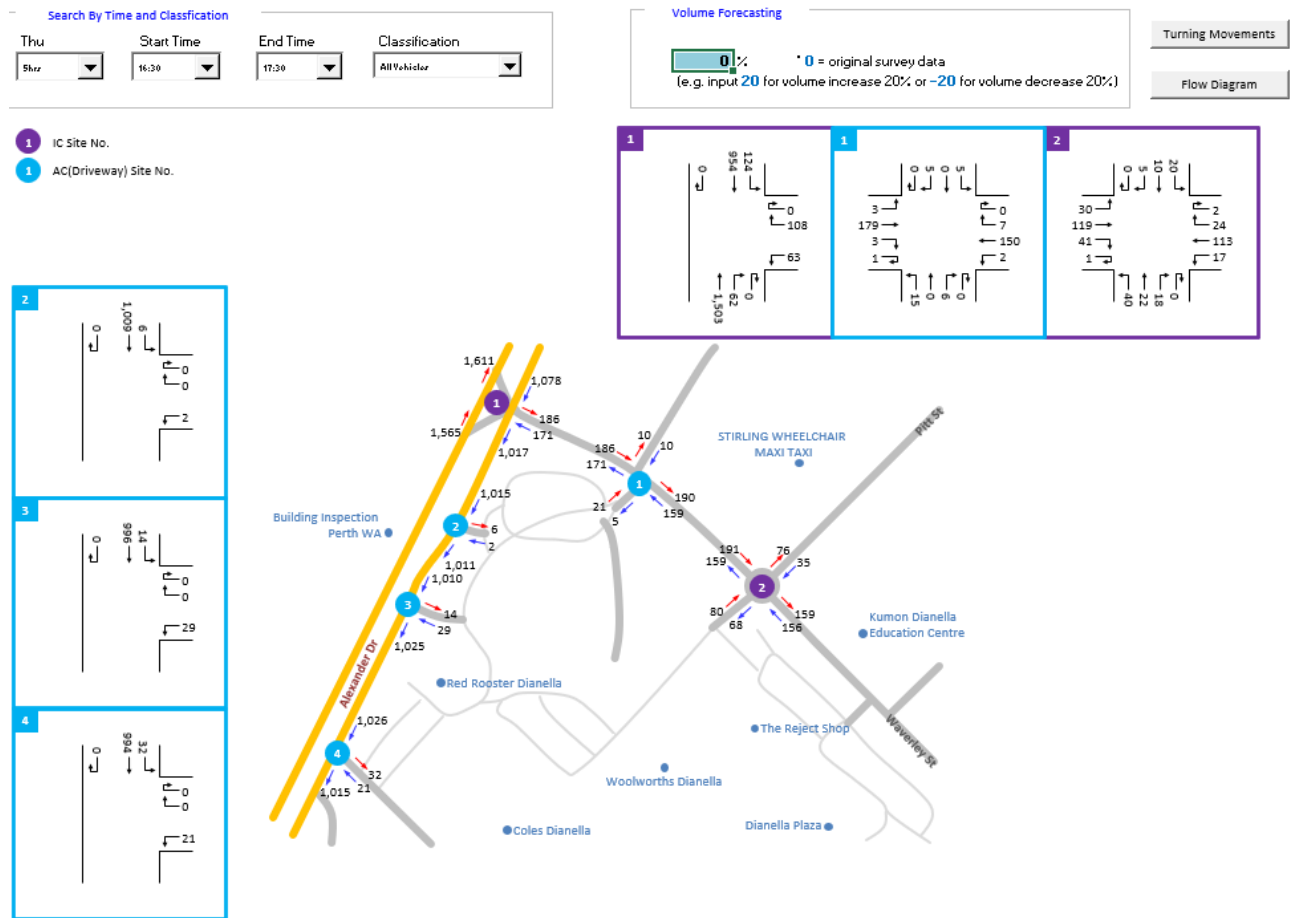


Figure 2-9: Saturday, 1 February 2025 Existing Volumes

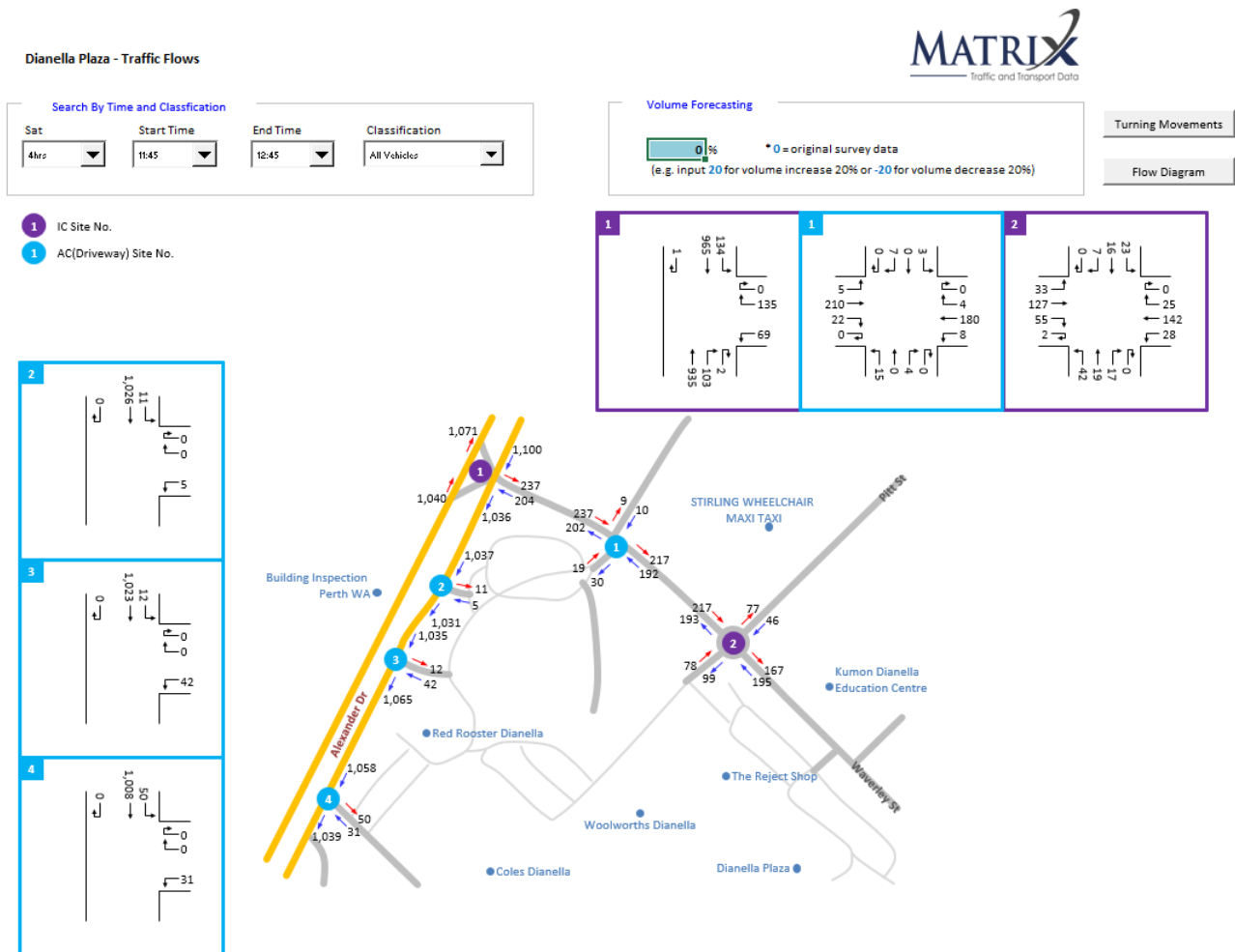




Figure 2-10: Thursday, 23 October 2025 Existing Volumes

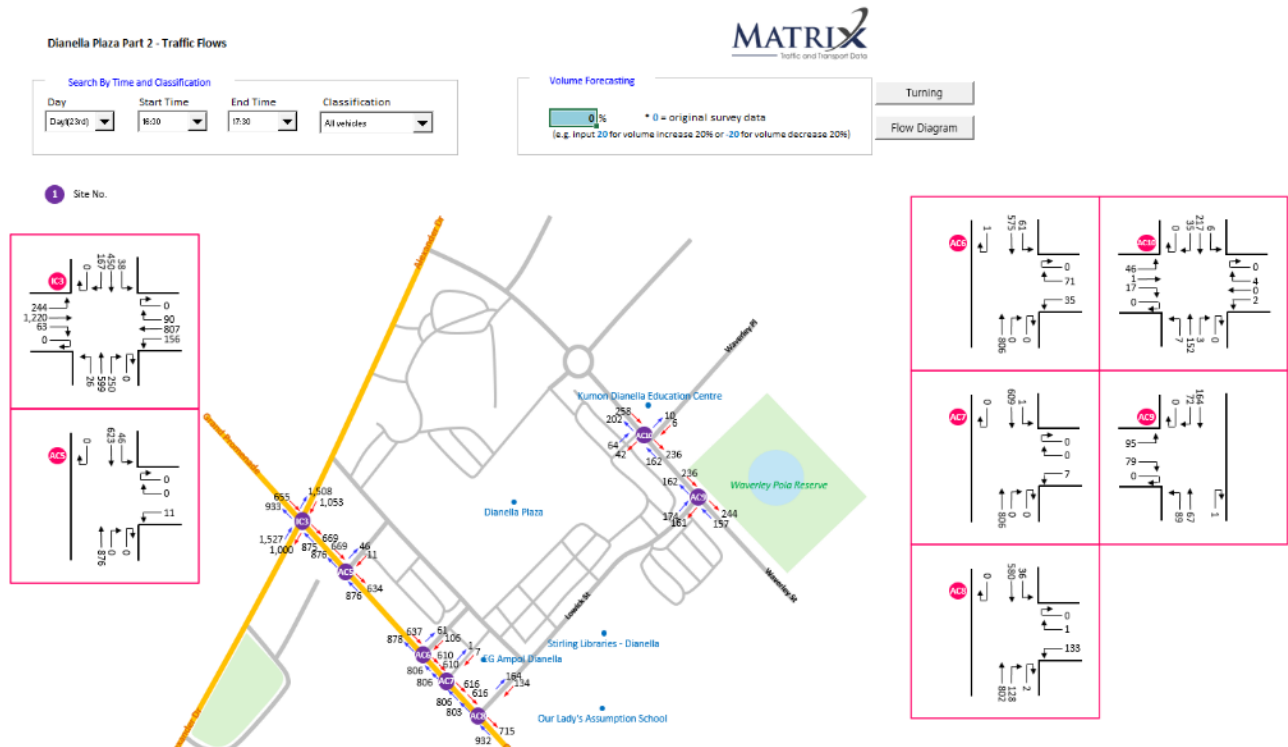
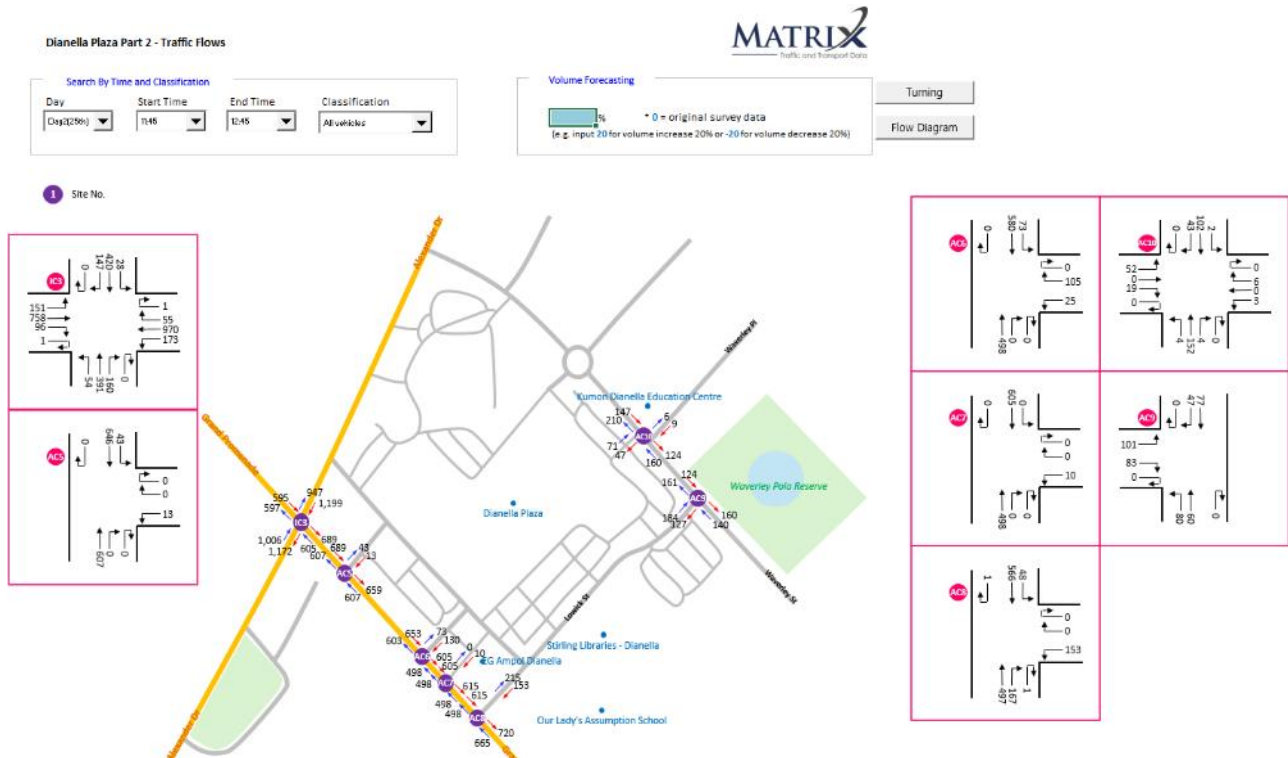


Figure 2-11: Saturday, 25 October 2025 Existing Volumes



2.9 Existing External Road Network - Traffic Modelling

SIDRA Intersection modelling of each of the following existing intersections/accesses has been undertaken to establish a baseline of the operation of the existing road network and the key intersections surrounding the Dianella PSP site.

The results of the operation and performance of each intersection is summarised in the following sections.

Figure 2-12: 2025 Thursday PM Peak Existing Condition (Degree of Saturation/DOS and Level of Service/LOS)

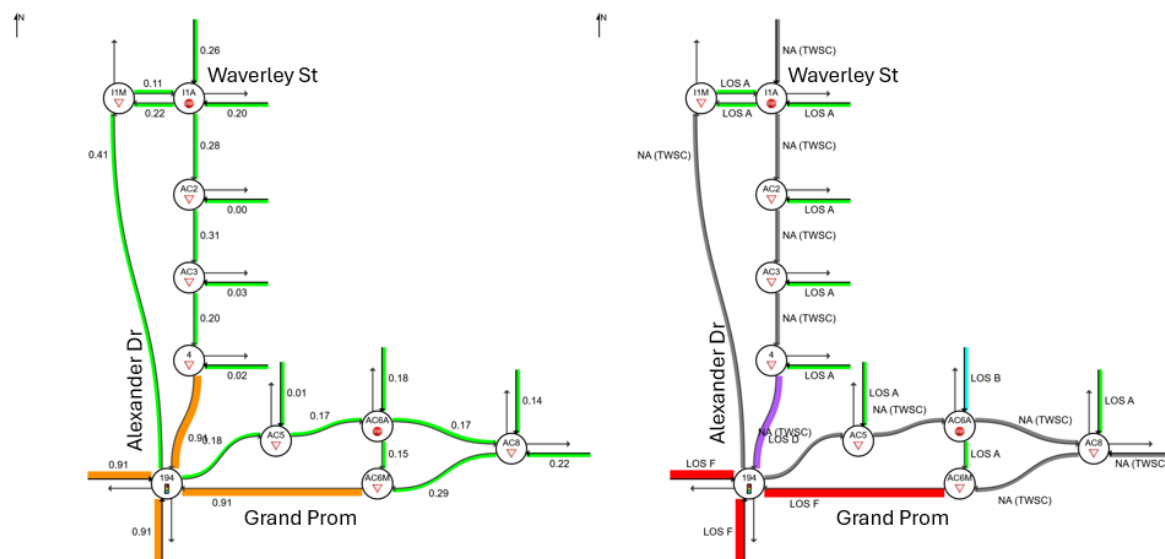
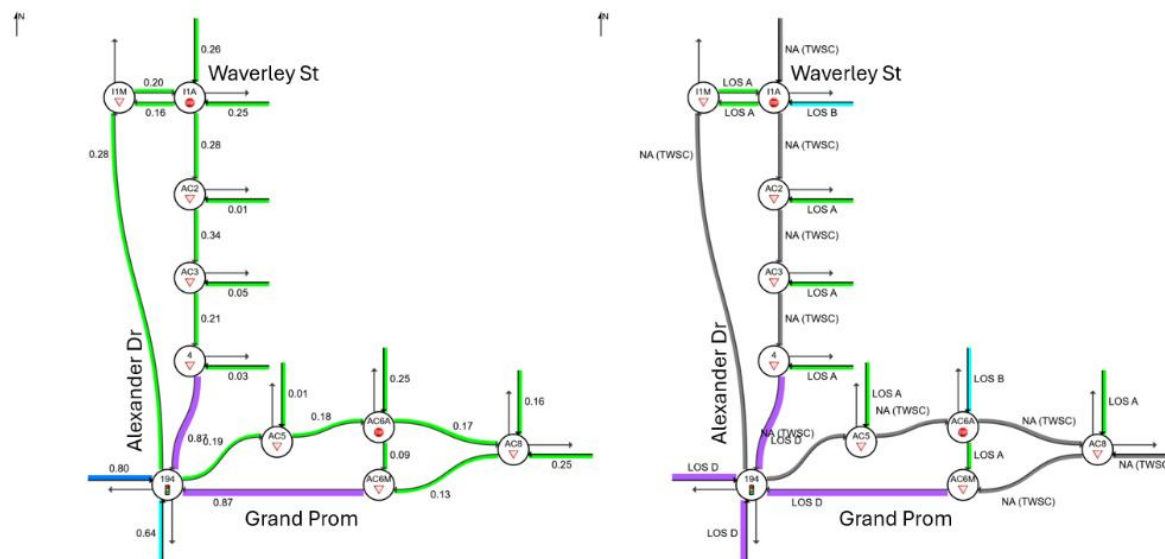


Figure 2-13: 2025 Saturday Mid-Day Peak Existing Condition (Degree of Saturation/DOS and Level of Service/LOS)





As shown in the figures above, the existing road network is currently operating within capacity in both Thursday and Saturday peak periods, this based on DoS of the approaches to intersections. Delays of the intersection of Grand Promenade and Alexander Drive result in a LoS of F for these approaches under current peak flows.

During Thursday PM peak, the intersection of Alexander Drive and Grand Promenade is operating close to its capacity. All the access points are operating with Level of Service B or better (≤ 15 s delay), with the exception of signalised intersection of Alexander Drive / Grand Promenade as noted above. The east, south and west approaches of the signalised intersection are operating at LOS F (delay > 80 s).

In the Saturday peak, all access points are operating satisfactorily with acceptable LOS D or better (delay < 55 s).

2.10 Existing Active Travel Network Surrounding Site

The cycling environment around Dianella PSP is depicted on the Perth Bicycle Network (PBN) Maps published by the Department of Planning (**Figure 2-16**). A high-level assessment has been made of the roads' suitability for cycling on the basis of a good, medium or poor road. Both Alexander Drive and Grand Promenade are not promoted as 'Good Road Riding Environments', with no specific on-road infrastructure present on the multi-lane roads

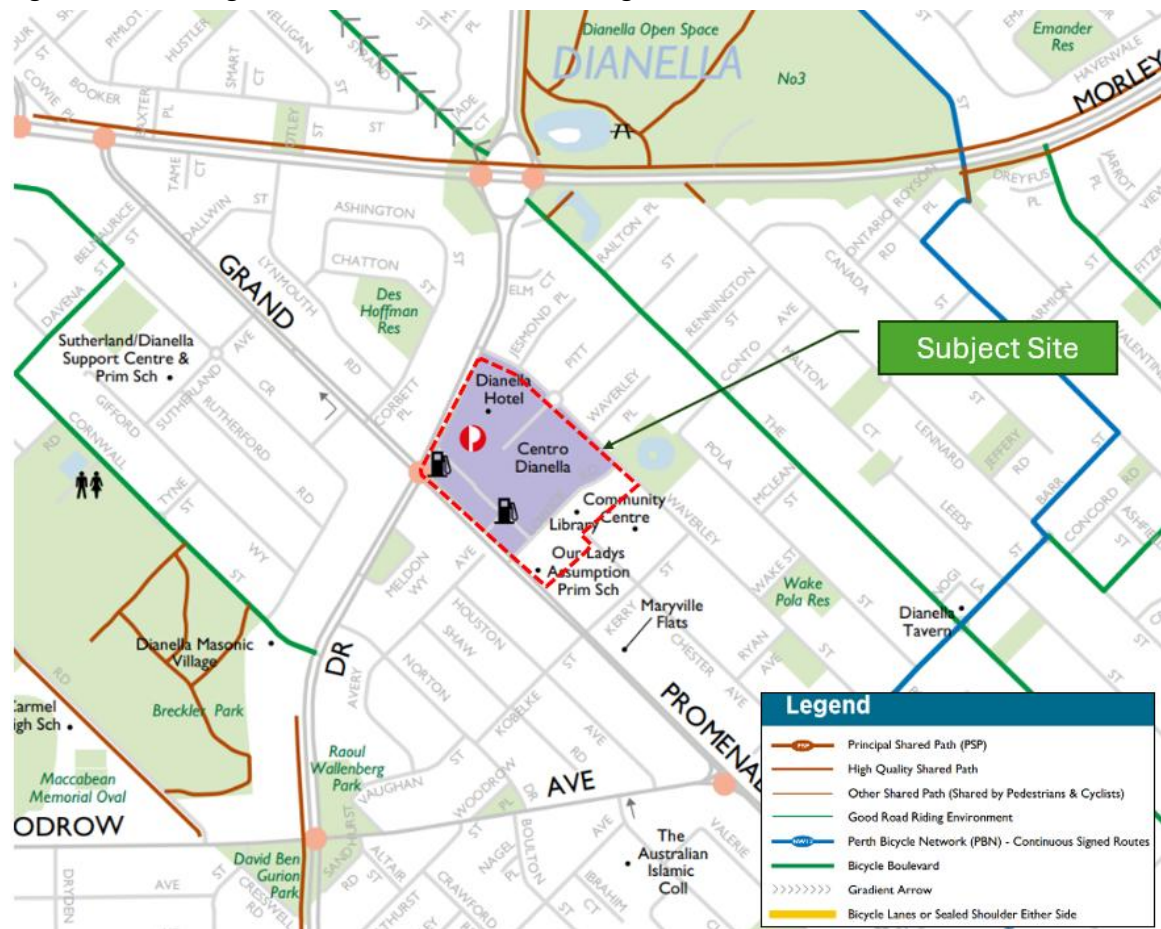
To the north-west and south-east The Strand is allocated as a 'Good Road Riding Environment' with on-road cycle lanes (unprotected – white line separation) in both directions. A shared path along the northern side of Morley Drive provides access from the east and west in a strategic sense.

The local streets such as Pitt Street and Rennington Street provide an alternative route to/from the Morley Drive shared path and whilst they do not provide any further specific cycle infrastructure, the low-traffic volume nature of these residential access streets would provide confident cyclists with a relatively low level of exposure to vehicular traffic and less confident cyclists could legally use the available footpaths surrounding the site.

PBN route NW7 connects to Dianella Open Space, which provides links to the Centre from the north-west/north-east via a shared path connecting to The Strand. From the south-east and southwest,

PBN routes NE4 and NE6 are in close proximity but do not coherently link to the Centre. Similarly a shared path provides access northward along Alexander Drive but this terminates at Cornwall Street before making any connection to the Centre. Generally there is a lack of direct connections to the centre from regional cycle routes.

Figure 2-14: Existing Active Travel Network Surrounding Site



Source: Department of Transport and Major Infrastructure

2.11 Perth and Peel Long-Term Cycle Network

The Department of Transport and Major Infrastructure's (DTMI) Long Term Cycle Network (LTCN) is a long-term vision for the metropolitan bicycle network, designating routes by function according to the WA Cycling Network Hierarchy.

Within the vicinity of development site, the following future cycle routes are identified within the LTCN as either Local Routes, Secondary Routes or Primary Routes.

- Alexander Drive – Primary Route
- Brook Street / Morley Drive – Local Route
- Howe Crescent / Corbett Place / Grand Promenade – Secondary Route (Connecting to Alexander Drive)

The proposed development is well located to take advantage of the existing and future proposed cycling and walking infrastructure as part of the LTCN aspirations.

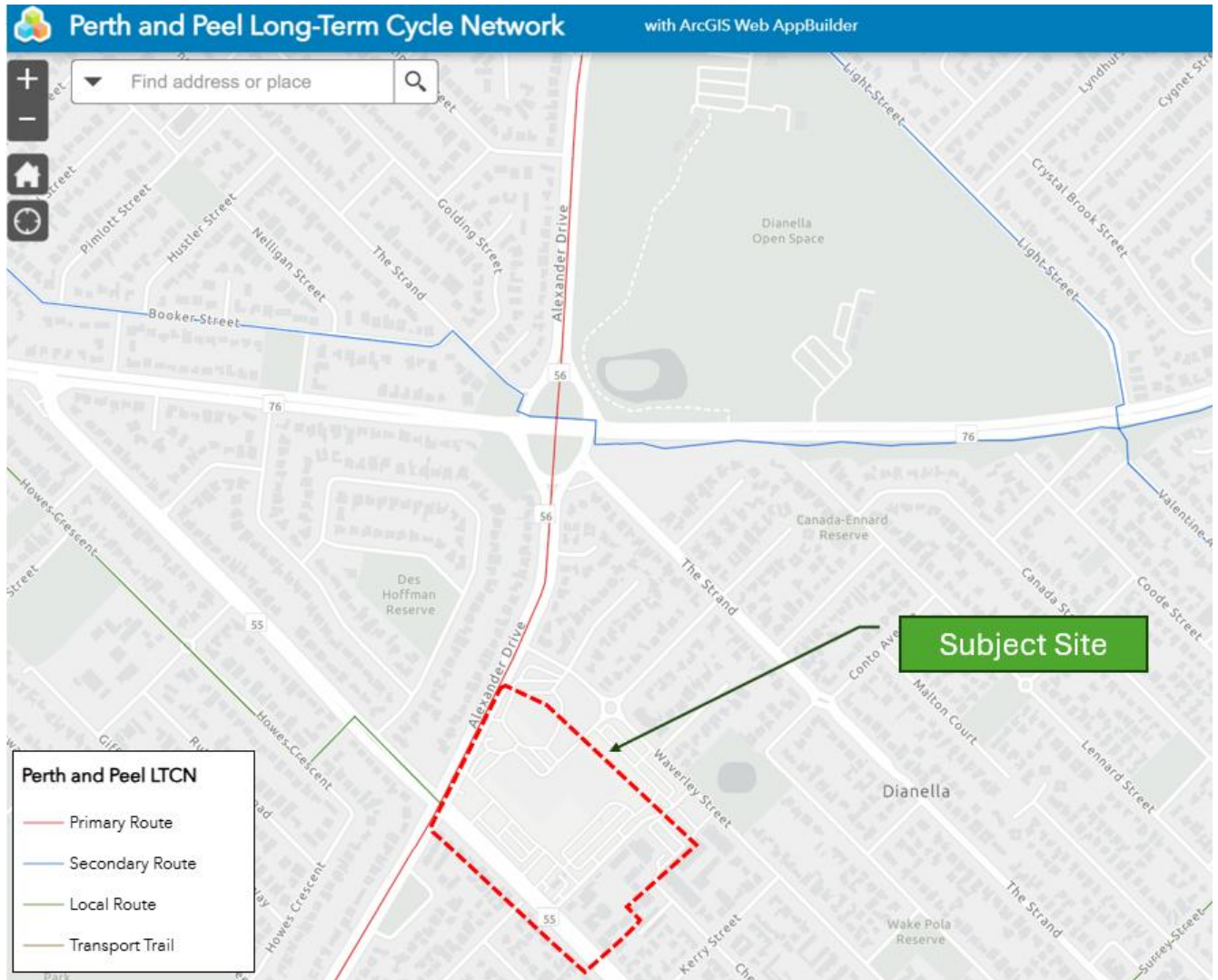


The Western Australian Cycling Network Hierarchy designates routes by their function, rather than built form. Function considers the type of activities that take place along a route, and the level of demand (existing and potential). The built form of a route is based on the characteristics of the environment, including space availability, topography, traffic conditions (speed, volumes), primary users, and so on. When considering appropriate built forms for primary, secondary and local routes, an all ages and abilities design philosophy should be adopted.

Figure 2-15: Western Australian Cycling Network Hierarchy

	1. PRIMARY ROUTE	2. SECONDARY ROUTE	3. LOCAL ROUTE
Function	Primary routes are high demand corridors that connect major destinations of regional importance. They form the spine of the cycle network and are often located adjacent to major roads, rail corridors, rivers and ocean foreshores. Primary routes are vital to all sorts of bike riding, including medium or long-distance commuting / utility, recreational, training and tourism trips.	Secondary routes have a moderate level of demand, providing connectivity between primary routes and major activity centres such as shopping precincts, industrial areas or major health, education, sporting and civic facilities. Secondary routes support a large proportion of commuting and utility type trips, but are used by all types of bike riders, including children and novice riders.	Local routes experience a lower level of demand than primary and secondary routes, but provide critical access to higher order routes, local amenities and recreational spaces. Predominantly located in local residential areas, local routes often support the start or end of each trip, and as such need to cater for the needs of users of all ages and abilities.
Design Philosophy	An <u>all ages and abilities</u> design philosophy is about creating places and facilities that are safe, comfortable and convenient for as many people as possible. By planning for and designing infrastructure that caters for the youngest and most vulnerable users, we create a walking and bike riding network that everyone can use. At the heart of this approach is fairness and enabling all people to use the network regardless of age, physical ability or the wheels they use.		
Form	All routes can take a number of different forms and are designed to suit the environment in which they are located. These forms include: • Bicycle only, shared and/or separated paths; • Protected bicycle lanes (uni or bi-directional, depending on the environment); and • Safe active streets Principal Shared Paths (PSPs) are often built along primary routes. A PSP is a high quality shared path built to MRWA PSP standard which generally means the path will be 4m wide, have adequate lighting and be grade separated at intersections (where possible). In some locations, quiet residential streets incorporating signage and wayfinding may be appropriate for local routes.		

Figure 2-16: Department of Transport's Long Term Cycle Network, Surrounding the Site





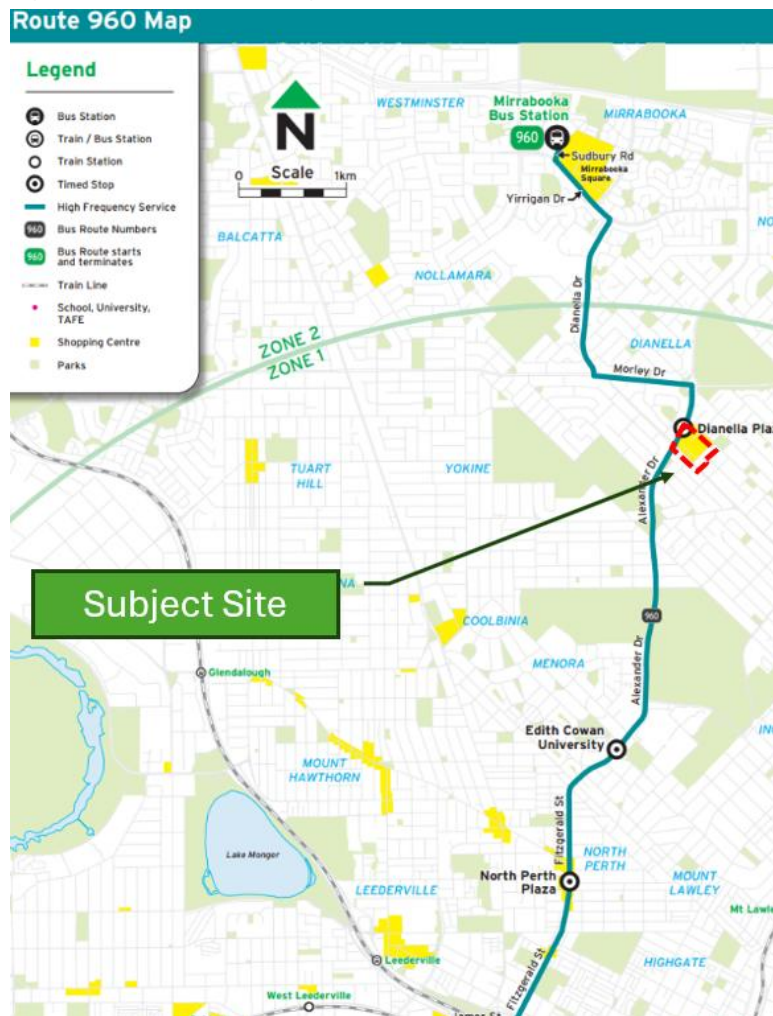
2.12 Existing Public Transport Provision

The following bus service routes pass by the site on either Alexander Drive and/or Grand Promenade stopping at the existing bus stops on each road respectively:

Bus Services Passing Dianella PSP on Alexandr Drive:

- **960** - Mirrabooka Bus Station - Curtin University Bus Stn via Alexander Dr
- **360** - Perth Busport - Alexander Heights via Alexander Dr, Illawarra Cr North & The Avenue
- **20** - Galleria Bus Station - Edith Cowan University Mt Lawley via Alexander Dr

Figure 2-17: Bus Route Map – Service 960



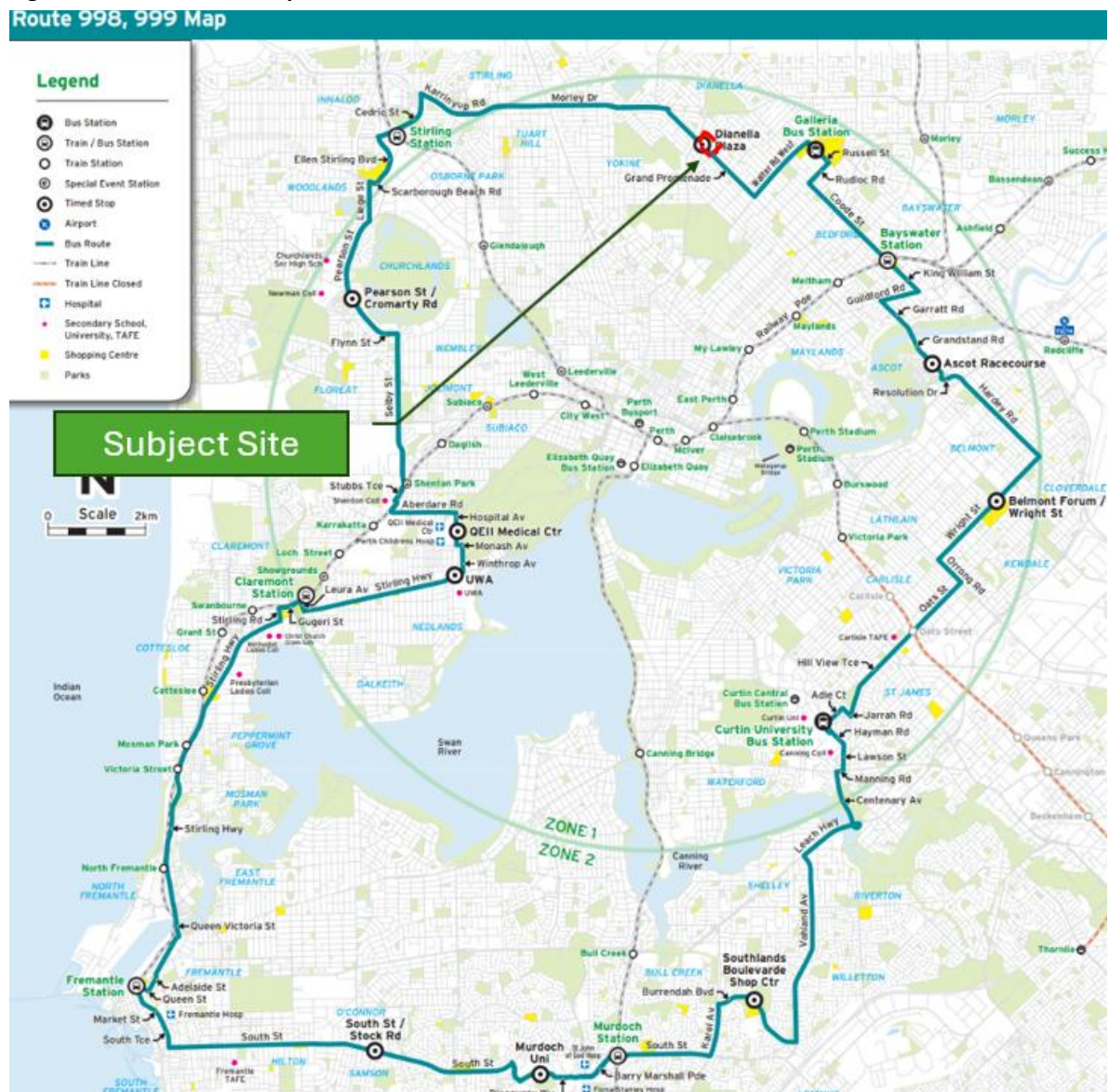
Bus Services Passing Dianella PSP on Grand Promenade:

- 67 - Perth - Mirrabooka Bus Stn via Beaufort St & Grand Promenade
- 998 - CircleRoute – Clockwise
- 998 - CircleRoute – Counter-Clockwise

The Dianella PSP is serviced by an excellent level of bus transport options, particularly the express services 960 and 998 which provide a frequency of bus every 10 to 15 minutes throughout the day Monday to Friday and up to half hourly intervals on Saturdays.

An extract of the 960 and 998 bus routes is shown on **Figure 2-21** and **Figure 2-22**.

Figure 2-18: Bus Route Map – Service 998





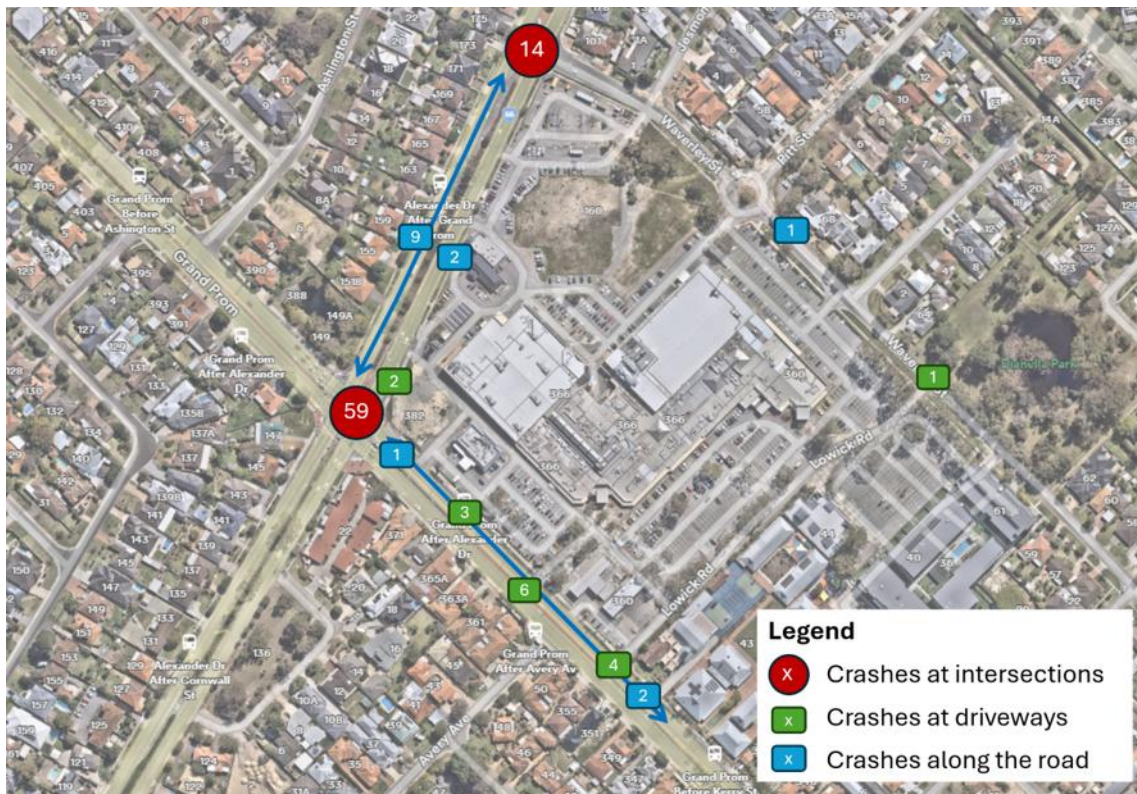
2.13 Existing Crash Data Assessment

A search of the Main Roads WA Reporting Centre for crash data surrounding the site was undertaken. This search covered all recorded traffic accidents for the most recently available five-year reporting period between 1 January 2020 and 31 December 2024 for the following roads surrounding the site:

- Alexander Drive
- Grand Promenade
- Waverley Road
- All site access driveways

The summary of the recorded crash data for the surrounding is shown in **Figure 2-19**.

Figure 2-19: Historic 5-year Crash Data Extract Surrounding Site



Source: Nearmap & Main Roads WA Crash Map

Alexander Drive / Grand Promenade Signal Controlled Intersection

- 59 crashes in total, comprising:
 - 2 Hospitalisation
 - 20 Medical Treatment Required
 - 22 PDO Major
 - 15 PDO Minor

The hospitalisation involved right-turn-thru movements which suggest running a red light. 70% of the Medical crashes involved rear-end collisions. 45% of the PDO major crashes involved rear-end, with right-turn-thru and right-angle crashes making up most of the remainder of the PDO major crashes. 87% of the PDO minor crashes involved rear-end, with side-swipes making up the remainder of PDO minor crashes.

There appears to be an existing trend of rear-end crashes occurring at this intersection resulting in a range of severity consequences.

Alexander Drive / Waverley Street Priority Controlled Intersection

- 17 crashes in total, comprising:
 - 1 Hospitalisation
 - 4 Medical Treatment Required
 - 6 PDO Major
 - 3 PDO Minor

The hospitalisation and medical crashes involved right-turn-thru and right-angle crashes. 8 out of the 9 PDO crashes involved right-angle, with rear-end making up the remaining of the PDO crashes. Of the right angle crashes 8 involved vehicles turning from the median into the northbound traffic lanes of Alexander Drive.

Waverley Street / Access 8 (Lowick Street) Priority Controlled Intersection

- 1 crash only, PDO Minor

While the crash happened at the intersection, the crash actually involved rear-end from the Site.



Alexander Drive between Grand Promenade and Waverley Road:

- 2 crashes in total at driveways, involved 2 PDO Major only
- 11 crashes in total along Alexander Drive, comprising:
 - 1 Hospitalisation
 - 5 Medical Treatment Required
 - 4 PDO Major
 - 1 PDO Minor

Of these crashes, the hospitalisation crash involved rear-end crash due to driver's health condition. Four of the Medical crashes involved side-swipe same direction incident while the other one involved a pedestrian on scooter being hit by a car while crossing the road. The other PDO crashes involved side-swipes from the same direction, right angle and rear-end crash type.

Grand Promenade between Alexander Drive and Eastern Site Access

- 13 crashes in total at driveways, comprising:
 - 1 Hospitalisations
 - 2 Medical Treatment Required
 - 6 PDO Major
 - 4 PDO Minor

All the crashes involved right-angle crash.

- 3 crashes in total along Grand Promenade, comprising:
 - 1 Hospitalisations
 - 1 PDO Major
 - 1 PDO Minor

The hospitalisation crash involved pedestrian being hit on Grand Promenade. The medical crash involved rear-end into a vehicle that stopped at the middle of the road to make an illegal u-turn. The PDO crashes involved rear-end and sideswipe from the same direction.

Waverley Road between Alexander Drive and Eastern Site Access

- 1 crash in total, comprising:
 - 1 PDO Major

The potential impact of the proposed development of the site at the Dianella PSP on the existing crash rates is discussed further in this report at **Section 8.1**.



3 Changes to Internal Transport Network

3.1 Vehicular Access Arrangements

The PSP proposes to retain all the existing access intersections, but some of these will be repurposed for different uses. These are discussed in **Section 3.1**.

Service vehicle access to the relocated Coles loading area is primarily expected to be via the existing access to the west of the EG Ampol along Grand Promenade. Access to the existing loading area for Woolworths will remain via the roundabout at Waverley Street / Pitt Street. This access is currently used by 19m semi-trailers and the swept paths of these vehicles able to use the wide circulatory roadway and the roundabout's annulus to turn right after approaching from Alexander Drive.

Swept paths have been checked and confirmed that semi-trailers up to 19m can access the loading bays. The swept paths can be found in **Appendix B**. This access point from Grand Promenade for the proposed Coles loading dock is currently two-way for general traffic but it will revert to an entry and exit from the proposed Coles loading dock. Access to the service station will be gained via Lowick Street and exit via this same street or via the current service station crossover direct onto Grand Promenade.

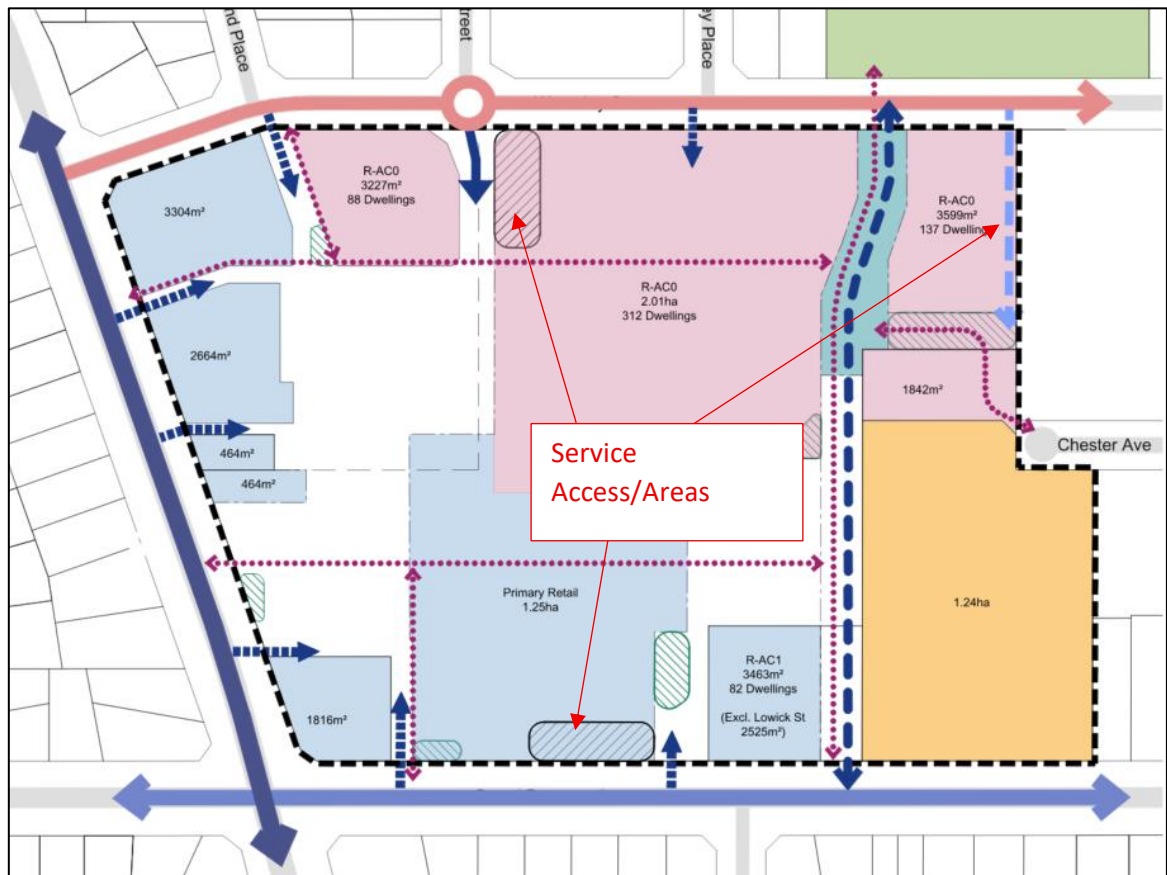
Access to a proposed loading dock area south of Waverley Street opposite the Pitt Street access roundabout is also proposed to be provided. This will allow semi-trailer sized trucks that may currently access the current loading dock area to reverse into this proposed loading dock area. Swept paths of this movement is also shown in **Appendix B**. These vehicles would then exit onto Alexander Drive as they currently do along the north side of the current TAB site.

Servicing of the mixed-use development along Lowick Street will be provided either through use of dedicated short term/loading bays near these sites (not within the Activated Shared Zone) or via the Access Easement along the eastern boundary of the PSP area, accessed from Waverley Street.

Refer to **Figure 3-1**.



Figure 3-1: Service Access/Areas



3.2 Parking Provision

As shown in **Figure 2-2**, the current parking provision across the Dianella Centre PSP area has a total of 915 car bays. The redevelopment of the Dianella Centre in line with the PSP will modify the existing car park layout throughout the centre.

With a proposed modification of the commercial car park layout and the addition of residential car bays, these will bring the total parking provision to approximately 1,753 consisting of 1,035 bays for commercial use and 718 bays for private residential use.

The parking required for the various land uses within the City's jurisdiction are outlined in the City's LPS3, Parking and Access Policy 6.7. This is discussed in more detail later in this report.

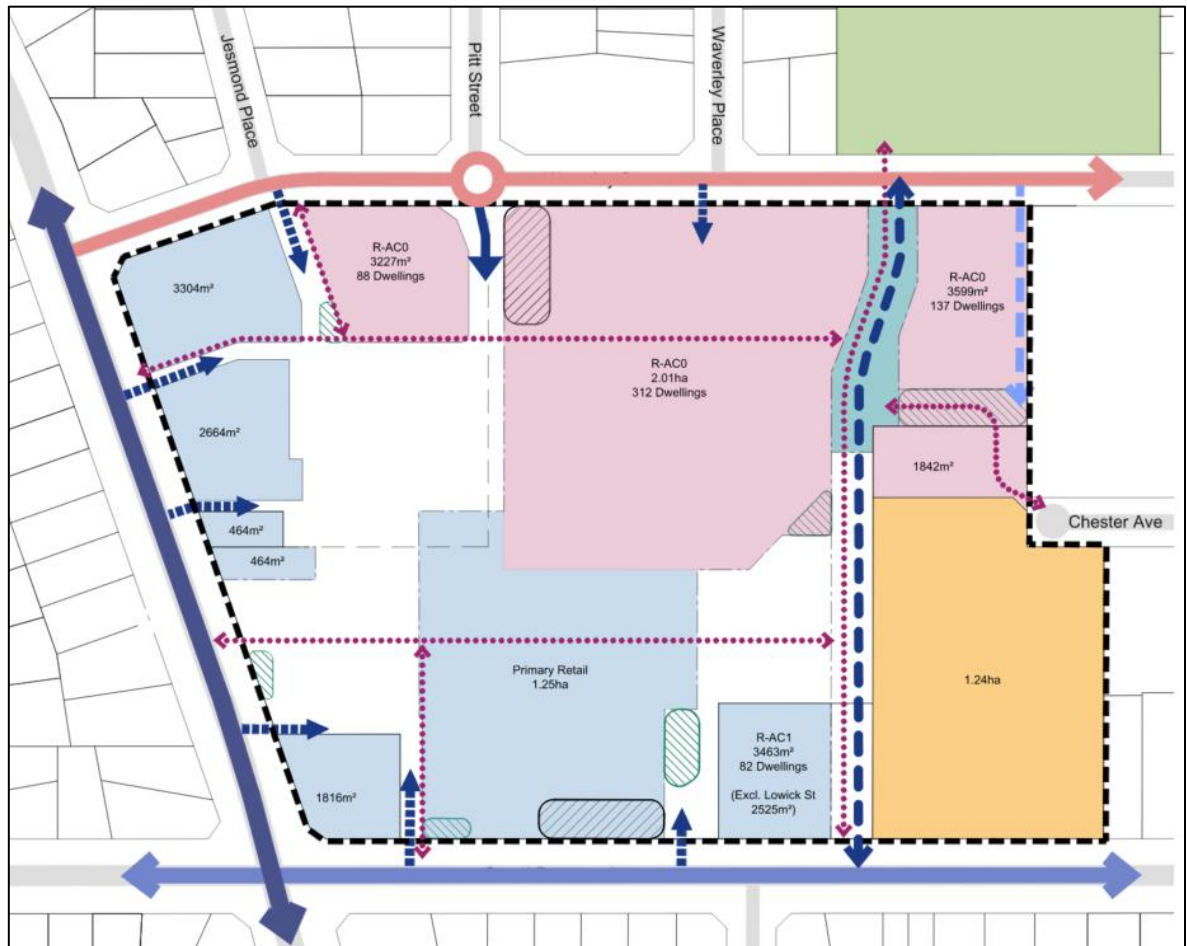
3.3 Road Network and Intersections Controls

The proposed internal road network will remain as private road with all intersections operate as priority-controlled intersections.

3.4 Pedestrian Network

The proposed PSP has planned for several key pedestrian links through the area. These are shown below in **Figure 3-2** with purple dotted lines.

Figure 3-2: Pedestrian Network



These connections link to bus stops located on Alexander Drive and Grand Promenade and provides connectivity through the commercial and mixed-use areas. These then connect with the north-south link proposed along Lowick Street connecting Waverley Street with Grand Promenade.

Connectivity is to be maintained from the PSP back to Chester Avenue.

3.5 Specific Issues

There are no specific transport issues that were initially identified in relation to the proposed development, prior to this assessment apart from ensuring that the road network can support the proposed development.



4 Changes to the External Transport Network

4.1 Road Network Upgrades

The City of Stirling has a continuous program of major projects and works taking place in the City. Interrogation of the City's latest online information confirms there are no major projects or works currently scheduled or taking place in the immediate vicinity of the Dianella Centre PSP.

4.2 Intersection Controls

As proposed under the DA for the relocation of Coles store, the Coles loading area will be located to the west of the EG Ampol along Grand Promenade. Thus, the existing left-in/left-out/right-out access will be converted to left-in/left-out and will be used for service vehicle access only.

The right-out movement will be moved to the existing left-in/left-out/right-in access between EG Ampol and Our Lady's Catholic Church. The access will be reconfigured as a full movement priority-controlled T-junction with two-stage right-turn.

The TIA prepared by PJA for the Coles store DA has identified existing safety constraint at the intersection of Alexander Drive and Waverley Street, this predominantly being current rear end crashes, typical for traffic signals. It is noted that the intersection is expected to perform within capacity up to 2036. While the increase in traffic by the DA would result in longer delay for right turn vehicles, the delay is not to a level that may increase crashes as delays are expected to be within WAPC thresholds.

The current intersection of Jesmond Place and Waverley Street with the current existing driveway opposite it is suggested to be modified to include a raised plateau to reduce vehicle speeds through this intersection. The traffic flows expected at this location are expected to be mostly to and from the south via the driveway with a very low volume of traffic turning to and from Jesmond Place as this is a cul-de-sac with approximately 10 vehicles an hour, 1 every 6 minutes exiting Jesmond Place, in both a Thursday PM peak and a Saturday midday peak. Traffic moving to and from the crossover are expected to be to and from the direction of Alexander Drive with little to no right turn from the driveway onto Waverley Street.

The proposed PSP or subsequent redevelopment stages would greatly increase the traffic at the intersection of Alexander Drive and Waverley Street. This would likely to increase the likelihood of crash at the intersection. As such, the intersection will be considered to be upgraded to a signalised intersection, in conjunction with City of Stirling and possibly under the Black Spot Funding Program. The timing of the upgrade will be assessed under the development application for further stages.

The summary of the changes to external intersections are shown in **Figure 4-1**.



Figure 4-1: Changes to External Intersections



Map source: Nearmap

4.3 Pedestrian/Cycle Networks

DTMI:

As previously mentioned in **Section 2.10**, DTMI's Long Term Cycle Network (LTCN) sets out a long-term vision for the metropolitan bicycle network, designating routes by function according to the WA Cycling Network Hierarchy.

Within the vicinity of development site, the following future cycle routes are identified within the LTCN as either Local Routes, Secondary Routes or Primary Routes.

- Alexander Drive – Primary Route
- Brook Street/Morley Drive – Local Route
- Howe Crescent/Corbett Place/Grand Promenade – Secondary Route (Connecting to Alexander Drive)



Community Infrastructure Plan 2023-2033

Through the City of Stirling's Community Infrastructure Plan 2023-2033, the City has committed to various goals and objectives to guide the development of future pedestrian and cycling infrastructure by ensuring strategies and bike plans be completed and that financial investment is advocated for at all levels of Government.

Goals 2 and 5 below outline the City's commitment to these objectives with timeframes of 2025 for completing the City-wide mountain bike plan and advocating for investment as an on-going commitment.

Goal 2:

Deliver a strategic approach to the provision and improvement of community infrastructure to ensure we have a blueprint for future community needs.

How will we achieve this?	Timeframe	
Develop localised community infrastructure plans to identify gaps in service provision across the City for each infrastructure type to guide the City's annual and longer-term financial planning.	Complete the City's Community Infrastructure Action Plan.	2023
	Update the Skate and BMX Facilities Strategy implementation plan and complete the City-wide mountain bike plan.	2025

Goal 5:

Advocate for increased investment in community infrastructure planning through better integration at all levels of government.

How will we achieve this?	Timeframe	
Advocate across the sector and to State and Commonwealth governments to ensure future urban planning and other relevant planning frameworks capture community infrastructure planning as an essential component and considers density and population growth in an integrated manner.	• Advocate for increased financial investment in community infrastructure provision across State and Commonwealth sectors.	Ongoing
	• Seek funding for community infrastructure provision and improvements to ensure our community has better access to quality community infrastructure that meets their needs.	Ongoing



The PSP proposes two key upgrades to the pedestrian network on Waverley Street as follows:

- Widening of the footpath on the south side of Waverley Street from the current 1.2m wide footpath to a more appropriate width, suggested to be at least 1.8m to 2.0m. This is to cater for the expected increased pedestrian demands walking along Waverley Street with the proposed mixed use development along the northern side of the PSP.
- Provision of pedestrian crossing facilities at the intersection of Lowick Street and Waverley Street. This might take the form on a raise intersection safety platform and/or pedestrian islands, this to provide connectivity from the PSP to the POS at Waverley Pola Reserve



5 Integration with Surrounding Area

5.1 Surrounding Attractors / Generators

Dianella Centre is well located to regional attractions, with the CBD, Swan River and beaches all within an easy drive for employment and recreation. It is central to larger district and regional retail centres (3.8km Inglewood District Centre, 4km to Mirrabooka Regional Centre and 3.5km to Morley Strategic Metropolitan Centre). It is well placed to capture much of the immediate district's weekly retail expenditure.

An audit of retail services in the precinct's surroundings was conducted based on the Department of Planning Land Use and Employment Survey (2008) and the Property Council of Australia - Western Australian Shopping Centre Directory 2009. **Figure 5-1** illustrates the location of Dianella and surrounding centres as well as the supermarket brands associated with each centre.

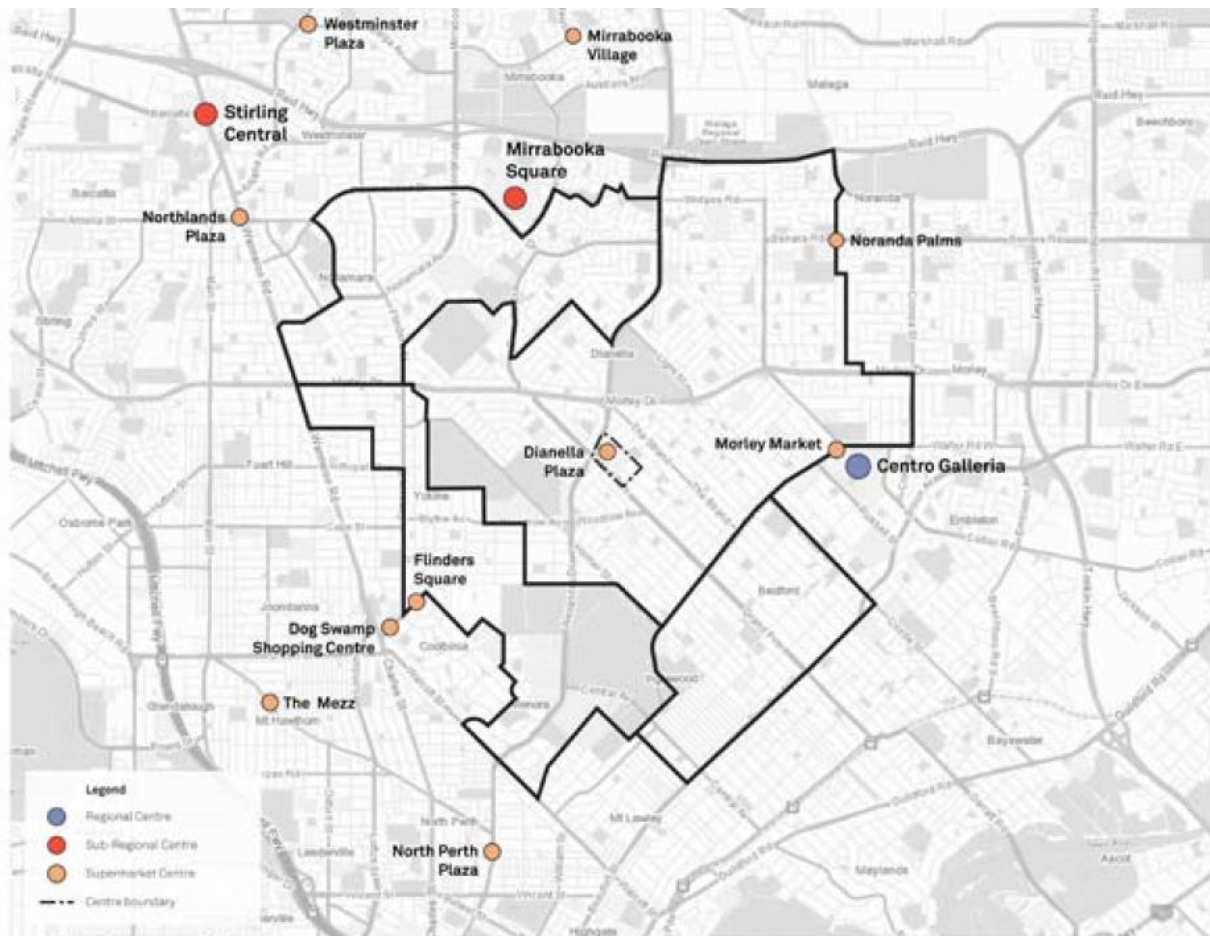
The Dianella PSP is located in close proximity to several regional open space areas that cater for many active and passive recreational activities, including an 18-hole golf course and an Olympic size swimming pool. At the local scale there is a well distributed network of neighbourhood parks with Waverley Pola Reserve located immediately north of the PSP, opposite the intersection of Waverley Street and Lowick Street.

A mix of private and public primary schools is well distributed across the district. With the changing age and cultural demographic of Dianella some historical public schools including the Dianella Primary School have become private. Students living in Dianella attending public secondary schools travel to Morley, John Forrest or Mt Lawley Senior High Schools.

There are limited community/civic facilities within the district, notwithstanding that the Dianella Library and Dianella Community Centre are both located within the PSP and in close proximity to the Dianella Centre shopping centre. To access other community facilities, residents have to travel to Inglewood, Mirrabooka or beyond. **Figure 5-2** shows the relative location of other attractors.

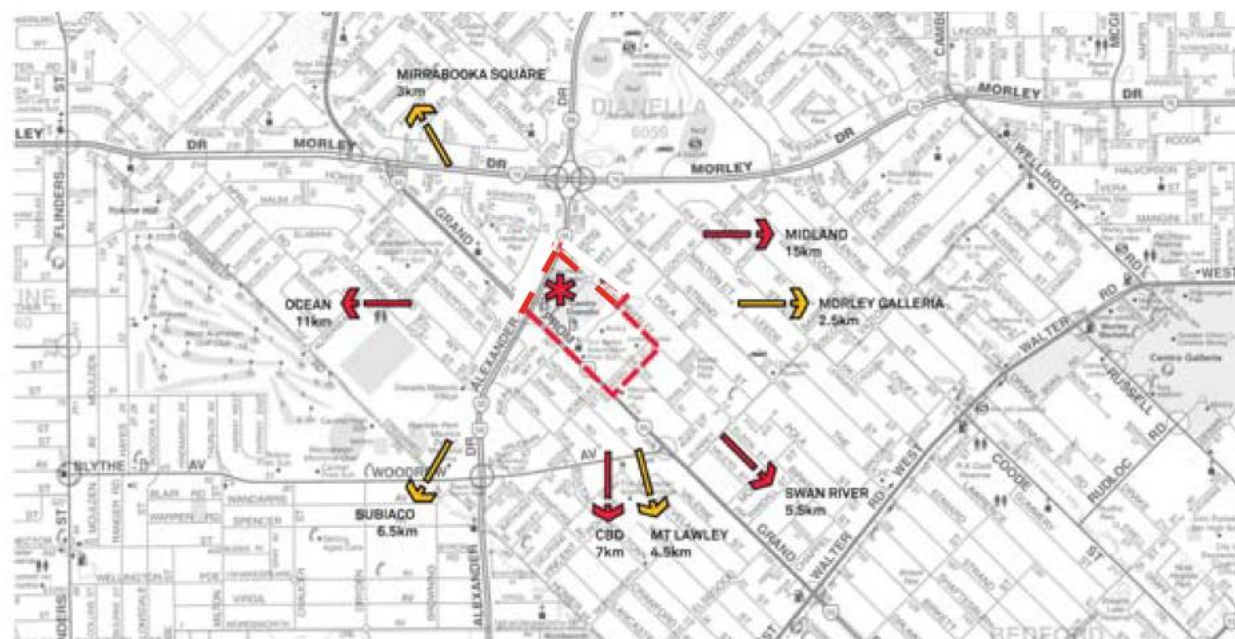


Figure 5-1: Location of Dianella and Surrounding Centres



06_Main and Secondary Trade Areas in 2006 - Based on Urbis 2008 report

Figure 5-2: Location of Other Attractors



07_Attractors



5.2 Level of Overall Accessibility and Integration

There is a good level of cycling and pedestrian movement network presently surrounding the proposed development site, however cycling infrastructure is lacking in the immediate vicinity surrounding the Centre. Generally, there is a lack of direct connections to the centre from regional cycle routes.

The proposals contained within the Department of Transport's Long Term Cycle Plan for improved cyclist infrastructure on Alexander Drive will integrate with the future land uses proposed at the development site.

Generally, the development site is well positioned to take advantage of the future facilities proposed within the surrounding areas.

5.3 Access to Public Transport

The Dianella Centre PSP is serviced by an excellent level of bus transport options, particularly the high-frequency services 960 and 998/999 which provide a frequency of bus every 10 to 15 minutes throughout the day Monday to Friday and up to half hourly intervals on Saturdays. The development site is well located to take advantage of this existing transport provision.

Bus stops are located on Alexander Drive for Route 960 running from Mirrabooka Bus Station, through the Perth CBD and then to the Curtin University Bus Station. 100% of the PSP area is located within 400m of these stops with the majority of the PSP within 250m.

Bus stops are also located on Grand Promenade these for Circle Routes 998/999. Again, 100% of the PSP area is located within 400m of these stops with the majority of the PSP within 250m.

These bus stops are to be accessed via connections from the Alexander Drive and Grand Promenade paths to key pedestrian links initially into the Primary Retail area of the PSP. There is then a further linkage to the Lowick Street NS key pedestrian link to connect with the mixed use zone along Waverley Street. Refer to **Figure 5-3**.



6 Analysis of External Transport Networks – Assessment Parameters

6.1 Assessment Years

In accordance with the WAPC Transport Impact Assessment Guidelines, the assessment years will generally be the year of full development (ultimate year).

On this basis, an assessment of the ultimate development was undertaken for full development in 2036.

As such, the assessment year is defined as follows:

- 2036 ‘Design Year Horizon’

6.2 Assessment Time Periods

The assessment time periods will be consistent with the identified Thursday PM peak and Saturday peak periods on the surrounding road network, taken from the traffic surveys commissioned in January/February 2025 which are:

- 16:30 to 17:30 – Thursday
- 11:45 to 12:45 – Saturday

As discussed previously in Section 2.7, an AM peak assessment was not undertaken as the development is commercial and industry surveys denote the highest site traffic generation in the PM peak and Saturday midday period.

Mixed developments (shopping centre, fast food, restaurant etc) such as this will have lower traffic flows during the AM peak as one of the fast-food restaurants will have lower patronage whilst the tavern and drive-through will not be expected to be operating during the AM peak. Also, the main centre will typically open after the AM peak hour. This approach is in accordance with the guidance provided in the WAPC publication Transport Impact Assessment guidelines, Part 5, Technical Guidance.

While the residential land use within the PSP will generate trips during the AM peak, that is only approximately 15% of the total trips generated by the PSP.



6.3 Traffic Growth

An interrogation of available traffic data from Main Roads WA's reporting centre for the nearby count sites with long term data available (Grand Promenade and Alexander Drive) has revealed that traffic has been decreasing over periods extending back to 2006 to 2010. For the period 2006 to 2020 there has been an average decrease in traffic volume of -0.3% across 15-20 years. The existing 2022 and 2026 traffic flows at the intersection of Alexander Drive and Grand Promenade discussed in Section 2.8.1 also shows that the traffic flows in 2026 is similar or less than the traffic flows in 2022.

It could be reasonable for no material traffic growth to be assumed over the next 10-year period, and beyond. However, in order to achieve a robust assessment and test the resilience of the future road network immediately surrounding the site, this TIA assumes a rate of 1% traffic growth per annum to 2036. This is considered a robust assessment of traffic growth up to 2036 as the current noted sites have shown that traffic flows have been decreasing over the last 15-20 years.

6.4 Traffic Scenario for Assessment

In order to establish the relative impact of the proposed development on the operation of the surrounding road infrastructure, a single time horizon assessment scenario was undertaken as part of this TIA.

The following traffic assessment scenarios have been included:

Scenario– 2036 Design Year Horizon:

Assumed Traffic Composition Includes:

- 2036 Road Network Traffic Volumes (2025 traffic + growth).
- Traffic generation from the proposed ALL pad sites, effect of the supermarket relocation, increase of shopping centre GFA and residential apartments.
- Assessment undertaken on key external intersections surrounding the site, including but not limited to:
 - Alexander Dive/Waverley Street – Priority-Controlled T-junction & Signalised Intersection;
 - Waverley Street/Pitt Street/Site Access – Roundabout Controlled Intersection
 - Waverley Street/Jesmond Place/Site Access – 4-way intersection
 - Grand Promenade/Site Access 8 (Lowick Street) – Priority-Controlled T-junction



6.5 Proposed Traffic Generation

In relation to the potential development scenario, traffic generation have been derived based on the change in the Dianella Centre's gross floor area and the number of residential car parking bays. With reference to **Table 6-1**, the proposed PSP will increase the shopping centre's gross floor area from 18,616 m² to 30,971 m², approximately 66.4%. As such, the existing turning movements in and out of the Dianella PSP is expected to increase by the same factor to derive the proposed traffic generation, resulting in additional 538 vehicles per hour by the shopping centre in both the Thursday PM peak and Saturday mid-day peak.

Table 6-1: Change in Development Yield – Dianella Centre

Development	Gross Floor Area (GFA) Size
Existing Dianella Centre	18,616m ²
Dianella Centre with Coles Store Relocation	30,971m ²

Reference is made to the Institute of Transportation Engineers (ITE) *Trip Generation Manual (9th Edition)*, WAPC TIA Guidelines and Transport for NSW's *Guide to Transport Impact Assessment (NSW)* for the trip generation rate for the residential apartment development. The generation rates adopted in the assessment are shown in **Table 6-2**. The total expected vehicle trips generated by the development is shown in **Table 6-3**. The trip rate for Saturday peak has adopted the same trip rate in the AM peak as a robust test pushing more traffic through intersections, exiting the PSP area.

Table 6-2: Adopted Trip Generation Rate

Land Use	Units	Daily Trip	Sat Trip	Sat In	Sat Out	PM Trip	PM In	PM Out	Source
Resident	Vehicle	3.34	0.24	16%	84%	0.32	66%	34%	ITE (Resd/Condo/Townhouse 230)

Table 6-3: Trips Generation

Land Use	Units	Quantity	Daily Trip	Sat Trip	Sat In	Sat Out	PM Trip	PM In	PM Out
Resi.	Vehicle	718	1,198	172	28	145	230	152	77

With the above, the proposed PSP is expected to generate up to additional **768 vehicles per hour** during busiest peak.



7 Analysis of External Transport Networks – Intersection Assessments

7.1 Introduction

This section of the TIA presents the analysis of the existing road network around the Dianella PSP. The following scenarios have been assessed in this assessment:

- 2036 Thursday Base Case (background traffic only)
- 2036 Thursday & Saturday Future Case (existing Alexander Drive / Waverley Street intersection layout) (with proposed PSP)
- 2036 Thursday & Saturday Future Case (proposed new Signals at Alexander Drive / Waverley Street intersection) (with proposed PSP)

7.2 Impact on Intersections

Across each of the following four assessment scenarios, the SIDRA Intersection capacity results for each approach are presented in the form of Degree of Saturation (DOS), Average Delay, Level of Service (LOS) and 95th Percentile Queue. These characteristics 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-signalised 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 is considered to be operated at capacity where the average delay exceeds 45 seconds for any individual movement.
- **Level of Service (LOS):** is the qualitative measure describing operational conditions within a traffic stream and the perception by motorists and/or passengers.



7.3 Assessment Results – 2036 Thursday & Saturday Base Case

Under this scenario, the surrounding road network has been assessed in SIDRA Intersection and the results are provided in **Figure 7-1** and **Figure 7-2**.

Figure 7-1: 2036 Thursday PM Peak Base Case Condition (DoS & LoS)

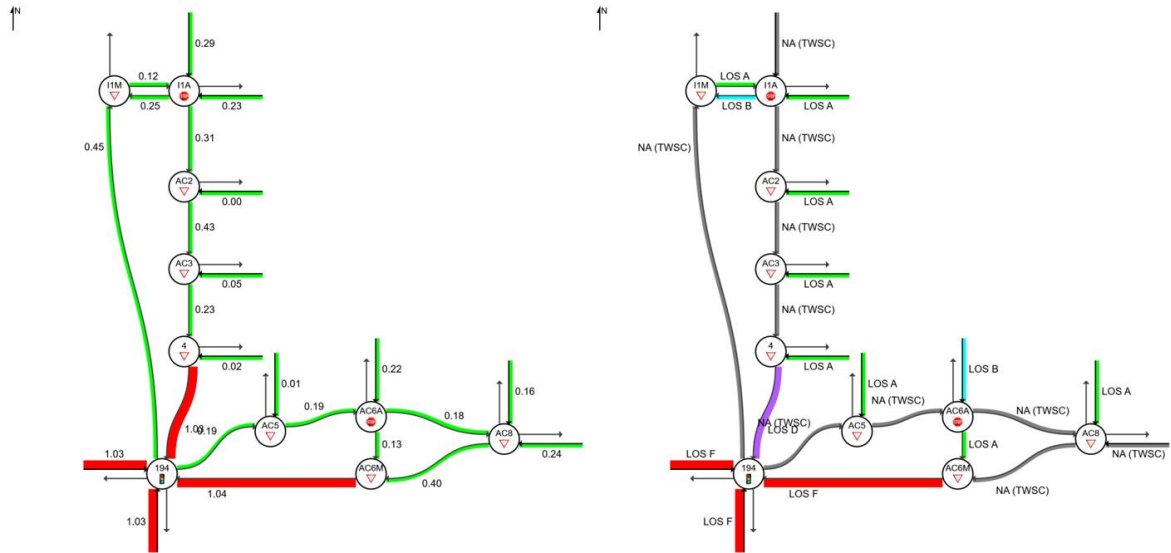
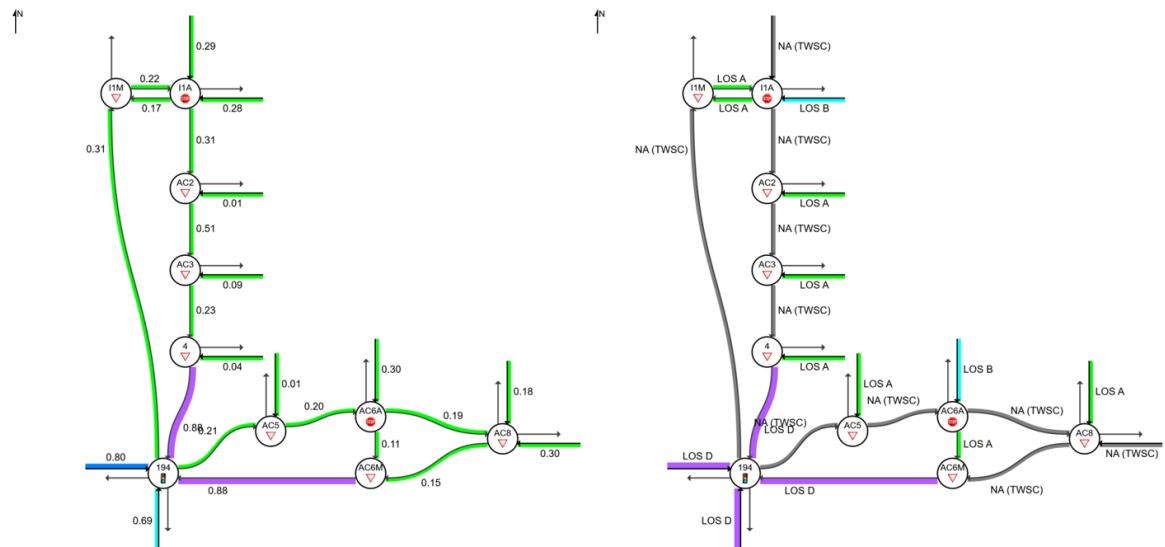


Figure 7-2: 2036 Saturday Mid-Day Peak Base Case Condition





As demonstrated above, the existing road network is expected to operate beyond capacity during Thursday peak, as expected based on the existing condition. The intersection of Alexander Drive / Grand Promenade is expected to operate with Degree of Saturation of 1.04. The queue along Alexander Drive northbound approach is expected to be 697m long, almost tailing back to the intersection at Woodrow Avenue. The queue along Alexander Drive southbound approach is expected to be 242m, tailing back to the intersection at Waverley Street.

Other than that, the other access points are operating with Level of Service B or better ($\leq 15s$ delay), with the exception of signalised intersection of Alexander Drive / Grand Promenade. The east, south and west approaches of the signalised intersection are operating at LOS F (delay $> 80s$).

In the Saturday peak, all access points are operating satisfactorily with acceptable LOS D or better (delay $< 55s$).

This shows that the background traffic growth on the existing road network may cause the intersection of Alexander Drive / Grand Promenade to fail by 2036.

7.4 Assessment Results – 2036 Thursday & Saturday Future Case (no Signals)

The 2036 future case (no signals) has been assessed with the inclusion of proposed changes to external intersections discussed in **Section 4.2**, except for the potential new traffic signals at the intersection of Alexander Drive / Waverley Street. The road network set up in SIDRA Intersection for the scenario is shown in **Figure 7-3**. Under this scenario, the surrounding road network has been assessed in SIDRA Intersection and the results are provided in **Figure 7-4** and **Figure 7-5**.

Figure 7-3: Proposed PSP Road Network without Signals

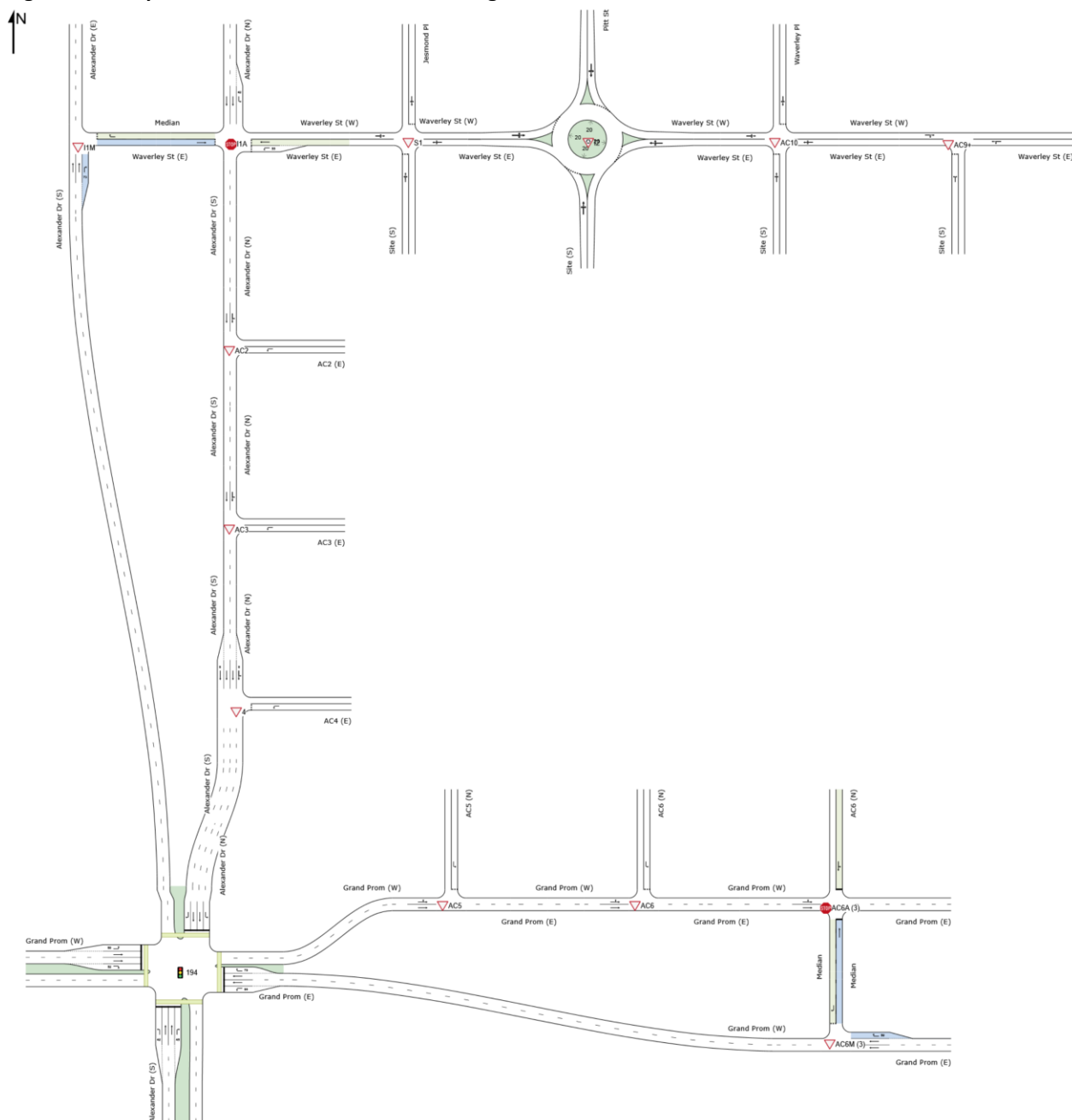
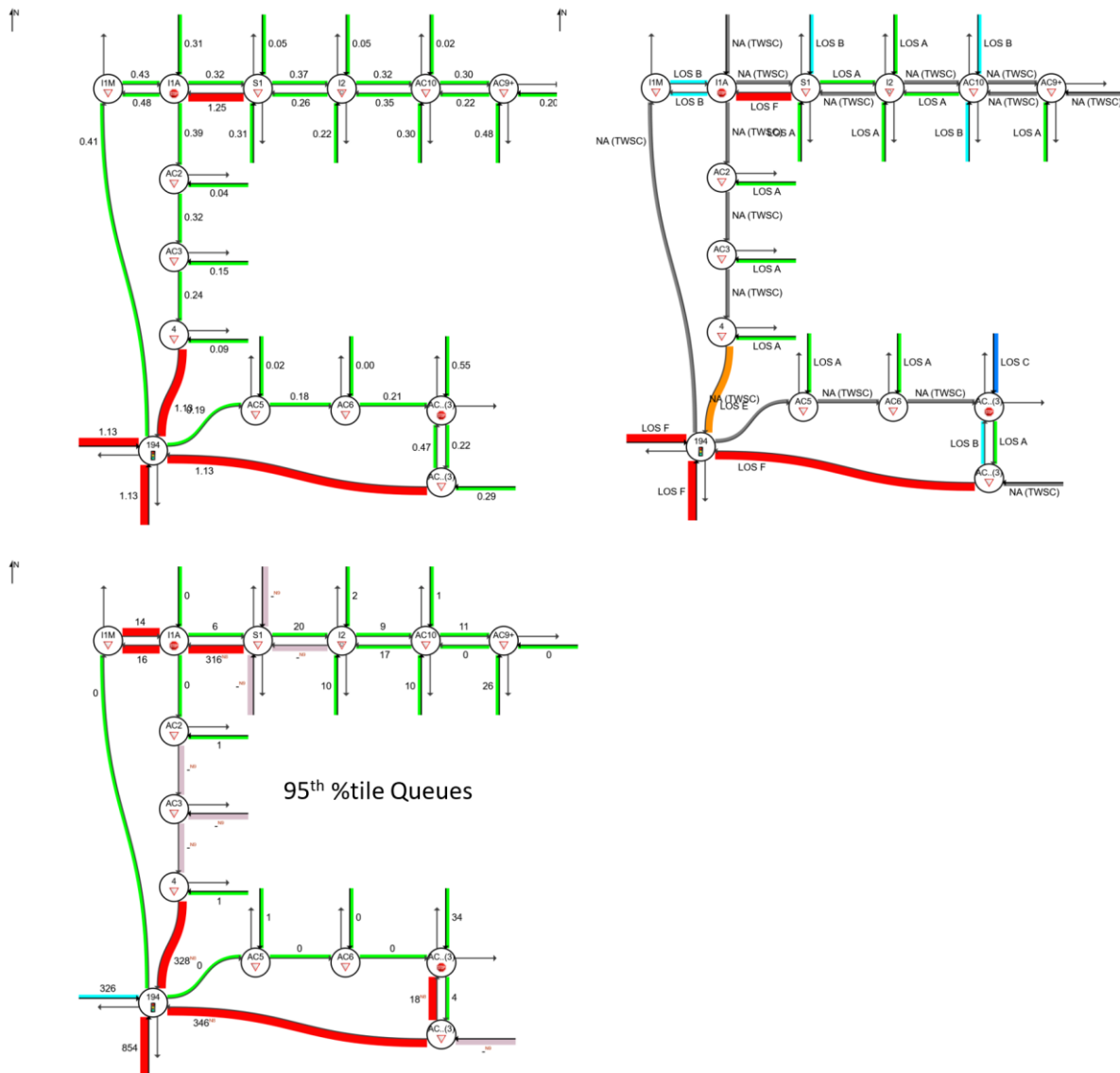




Figure 7-4: 2036 Thursday PM Peak Future Case (no Signals) Condition



As for the Saturday midday peak, the intersection of Alexander Drive / Grand Promenade is still expected to operate within capacity. However, Grand Promenade approaches will operate at LOS F with queues of 439m long on Alexander Drive southbound approach. The intersection of Alexander Drive / Waverley Street is also expected to operate beyond capacity with a 400m long queue.



7.5 Assessment Results – 2036 Thursday & Saturday Future Case (with Signals)

The 2036 future case (with signals) has been assessed with the inclusion of potential new traffic signals at Alexander Drive and Waverley Street along with the other proposed changes to external intersections. The road network set up in SIDRA Intersection for the scenario is shown in **Figure 7-6**. Under this scenario, the surrounding road network has been assessed in SIDRA Intersection and the results are provided in **Figure 7-7** and **Figure 7-8**.

Figure 7-6: Proposed PSP Road Network with Signals

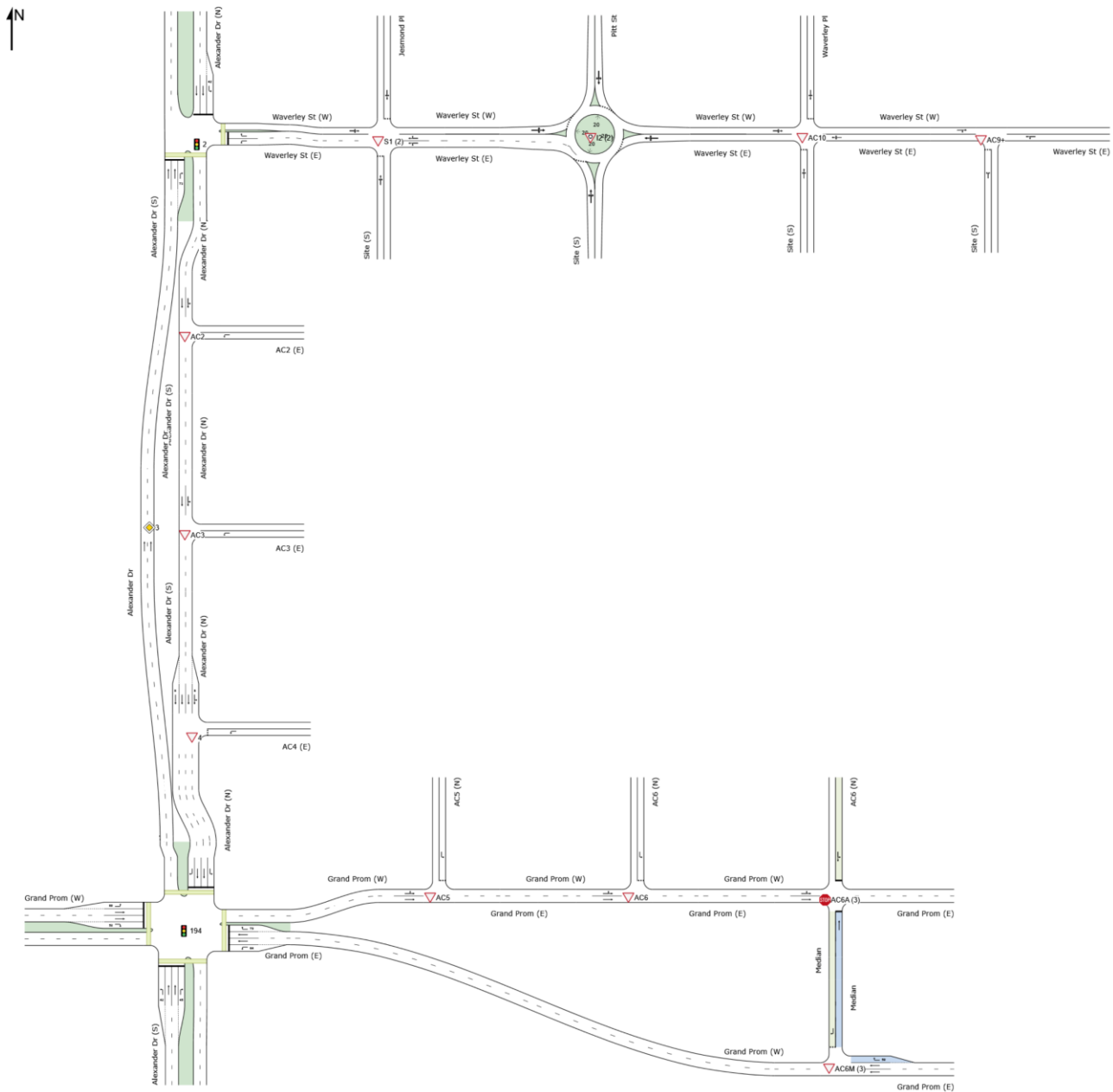




Figure 7-7: 2036 PM Peak Future Case (with Signals) Condition



Figure 7-8: 2036 Saturday Mid-Day Peak Future Case (with Signals) Condition





With the proposed new traffic signals at Alexander Drive / Waverley Street, the intersection is expected to operate within capacity and LOS E in both Thursday and Saturday peak periods. However, the queues along Waverley Street may queue beyond the roundabout at Pitt Street.

As such, this shows that the failure of the intersection of Alexander Drive / Grand Promenade is caused by the assumed 1% background traffic growth, which is noted to be higher to the slightly negative traffic growth historically recorded, and not the proposed development. This suggests that the intersection of Alexander Drive / Grand Promenade and Alexander Drive corridors may need to be upgraded with a possible upgrade to three lanes on each direction to accommodate the traffic growth. The potential traffic signals at intersection of Alexander Drive / Waverley Street can accommodate the impact of the proposed PSP.



8 Road Safety Issues

8.1 Impact of the Development on Road Safety Issues

Alexander Drive / Grand Promenade Signal Controlled Intersection:

The current existing crash trend at the signal-controlled intersection of Alexander Drive / Grand Promenade shows that 64% of Medical crashes involving rear-end shunt type. 59% of the PDO major crashes and 92% of the PDO minor involved rear-end collisions.

This existing crash trend at this location is typical of signalised intersections under moderate to high traffic flows, where there are a high number of rear end type crashes. This crash type has been addressed with the installation of mast arm signals on Alexander Drive approaches and in mid 2025 the installation of mast arm traffic signals on the Grand Promenade approaches. This treatment may begin to reduce these crashes as traffic data for 2025 is yet to be released.

The traffic signals presently allow filter right turns on all approaches and there may be an issue related to gap selection for right turn vehicles across oncoming traffic and these are mostly occurring outside peak periods. This is a current recurring issue and not related to the proposed development.

Alexander Drive / Waverley Road Priority Controlled Intersection:

The unsignalised T-intersection of Alexander Drive and Waverley Street would experience an increase in delays for right turn vehicles which would cause drivers to accept shorter gaps

The potential new traffic signals at the intersection would reduce the number of conflict points and likelihood of crashes.



9 Parking Assessment

9.1 Car Parking Requirement

The City of Stirling's 'Policy 6.7: Parking and Access' sets out the requirements for access and parking provisions for non-residential development (including commercial and mixed-use developments) under their LPS3. The required amount of parking for residential apartments is covered by the Residential Design Codes Volume 2 for Apartments.

In general, the parking ratios vary across different commercial use types and locations (within the commercial category and activity centre type). The existing Dianella Centre falls within the **Dianella Centre District Centre (DC1)** and is covered under Table 1 Activity Centre Car Parking Ratios under this policy where a ratio of **1 space per 25m² GFA** is required.

Under WAPC guidance provided in the WA Planning Manual Non-Residential Car Parking Rates in Perth and Peel. This sets out minimum and maximum parking rates for district centres, these being 1 space per 100m² as a minimum and 1 space per 25m² as a maximum.

Based on the expected 30,245m² GFA for the Dianella Centre PSP, a total of **1,209 commercial car parking spaces** is required based on the City of Stirling's parking policy, which is at the maximum limit now suggested by WAPC guidance. The minimum rate suggested by the WAPC guidance would suggest 302 bays could be provided on that basis. It is recommended that the WAPC parking rates are adopted for the site, as these present best practice standards, and intended to deliver a state-wide consistent approach to provision of parking and in this case, no more than 1,209 commercial car parking spaces should be provided at a rate of no more than **1 space per 25m² GFA**.

As discussed in **Section 3.2**, the modified car park layout will have a **car parking provision of 1,035 commercial spaces, this is at a rate of approximately 1 space per 30m²**, this slightly less than the City's requirement and the maximum suggested by WAPC guidance. This shows that the Dianella District Centre proposes an appropriate amount of commercial car parking spaces.

It is further noted that the current peak parking demand for the current 18,616m² GFA recorded at 618 parked cars or a generation rate of approximately 1 space per 30m². On a demand basis the proposed 30,245m² GFA is expected to generate approximately 1,010 parked cars on a Thursday PM, thus there is expected to be approximately 25 empty parking spaces at these times.

For the residential component of the PSP, the 619 dwellings proposed are currently proposed to have 718 parking spaces, thus an average parking provision of approximately 1.16 space per dwelling. The location of the residential development places it within proximity of a high frequency bus route and within a district centre and thus would fall within Location A in consideration as to the amount of parking required under the Residential Design Codes Volume 2 for Apartments.



On this basis and assuming 25% of apartments were one bedroom, the residential development would need to provide approximately 665 residential parking bays inclusive of residents and visitors. With 718 residential parking spaces proposed, the residential component is expected to have surplus parking with approximately 50-55 more parking spaces above the minimum required.

Based on the above it is concluded that an appropriate amount of parking has been proposed for the PSP to cater for both the commercial and residential parking demands.

9.2 Motorcycle Parking Provision

In accordance with the City of Stirling's 'Policy 6.7: Parking and Access', parking should be provided at a rate of 1 space per 1,000m² for a development in excess of a total of 500m² GFA. On this basis, the Dianella Centre would require 30 motorcycle parking spaces based on the GFA of the entire site.

9.3 Bicycle Parking Provision

In accordance with the City of Stirling's 'Policy 6.7: Parking and Access', bicycle parking should be provided at a rate of 1 space per 200m² for a development in excess of a total of 10,000m² GFA. On this basis, the Dianella Centre would require 152 bicycle parking spaces based on the GFA of the entire site. The PSP is proposing to increase the number of non-residential car parking bays by about 120 bays from 915 bays to 1,035 bays equating to an increase of about 13% in non-commercial parking bays.

This rate of provision is high when considered to say the Perth CBD where a rate of 1 per 500m² is adopted for non-residential developments. A further consideration is the location of the proposed development, which is not located with immediate access to high standard bike facilities such as regional and principal shared paths.

A more reasonable rate of bike parking is suggested in the region of 1 per 400 to 500m² and on this basis 60-75 bike spaces should be provided with this divided between public access in the public realm and secure bike parking for employees. The 1 per 400m² is somewhat support by the City's policy as this is the rate for "other" type developments not being a "shop". If there were to be in excess of 10 secure employee spaces then end-of-trip facilities would need to be considered in accordance with the City's policy.



10 Conclusions

10.1 Summary of Key Findings

This Transport Impact Assessment evaluates the proposed Dianella Centre PSP, in accordance with Western Australian Planning Commission (WAPC) guidelines. The assessment considers existing transport conditions, projected traffic impacts, road safety, and the integration with surrounding transport networks.

- **Existing Conditions:** The existing Dianella Centre is located at the intersection of Alexander Drive and Waverley Street, approximately 10 km north of the Perth CBD. The surrounding road network includes Alexander Drive (classified as a District Distributor A), Grand Promenade, Waverley Street, and Kerry Street.
- **Traffic Impact:** The development is anticipated to generate approximately 768 additional vehicle movements during peak hours, a substantial portion of which will be pass-by trips. The critical intersection of Alexander Drive / Waverley Street is expected to require signalisation by 2036.
- **Parking and Access:** The proposed development and pad sites will increase the total car parking spaces to 1,753 spaces to cater for commercial and residential demands. This is considered appropriate and in line with current observed demands and current guidance for District Centres.
- **Active and Public Transport Integration:** Currently, the site has limited active travel connectivity; however, future enhancements along Alexander Drive under the Long-Term Cycle Network (LTCN) will improve accessibility. Public transport access is robust, with high-frequency bus services (routes 960 and 998) operating near the site.

10.2 Conclusion and Recommendations

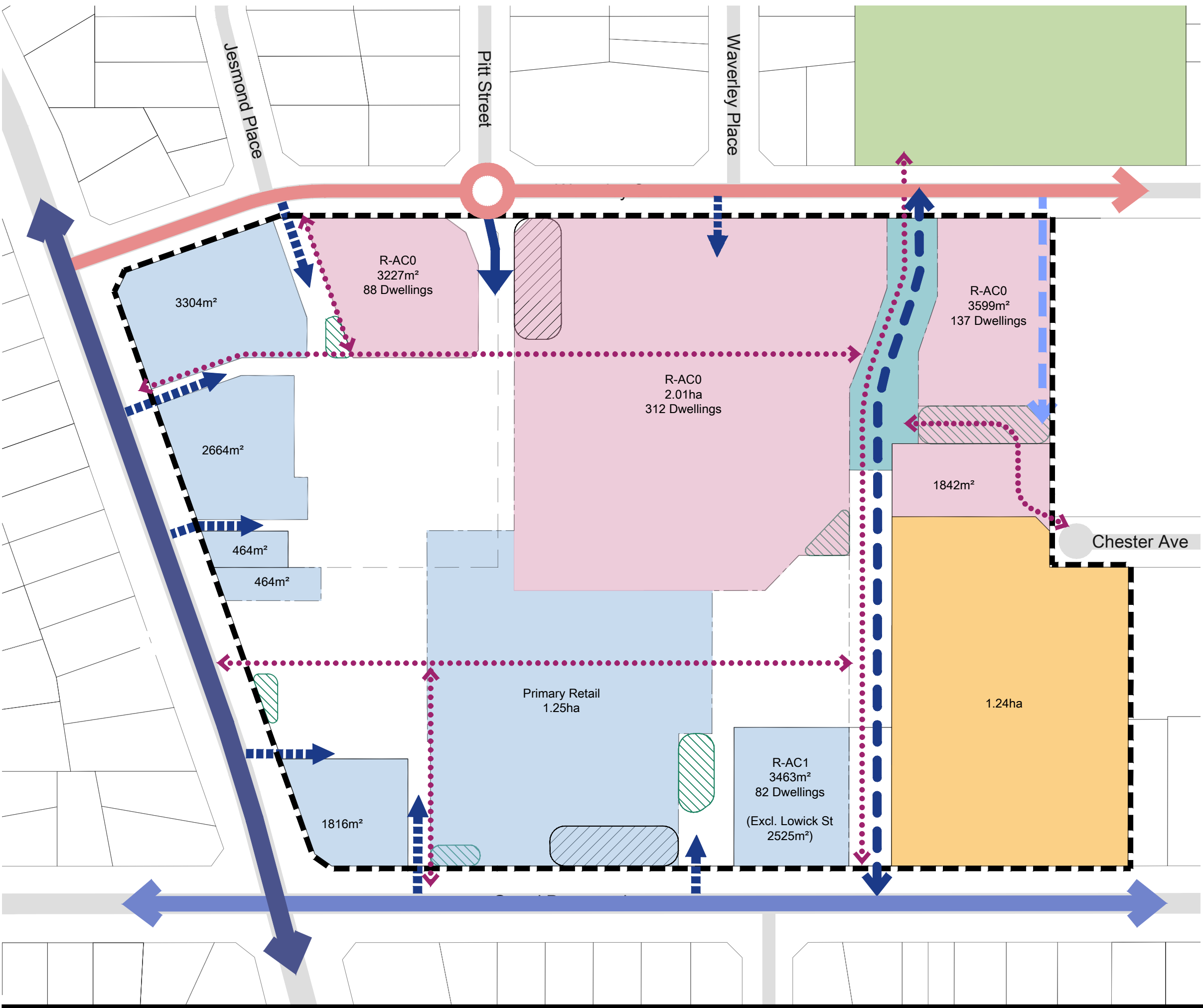
The assessment concludes that the proposed development can be accommodated within the existing and future road network with manageable impacts. Key recommendations include:

- **Active Travel Enhancements:** It is recommended to coordinate with the City of Stirling to expedite the implementation of Long-Term Cycle Network (LTCN) infrastructure along Alexander Drive, which will improve cycling/active travel connectivity.
- **Parking Management:** While adequate parking provision has been planned, ongoing monitoring of parking demand and user patterns is recommended.

Overall, the proposed development aligns with transport planning objectives and is expected to integrate effectively with the surrounding area while maintaining acceptable traffic and transportation outcomes.



Appendix A Master Plan



Legend

Precinct Structure Plan Area

Centre Zone

Mixed Use Zone

Private Community Purpose Zone

Circulation and Parking

Lowick Street Private Access Road

Activated Shared Zone

Indicative Landscape Node

Access Easement

Access - Full Movement

Access Left-In Left-Out

Service Areas

Key Pedestrian Links

Surrounding Reseves

Other Regional Road (MRS)

District Distributor Road

Local Distributor Road

Public Open Space

Land Use Summary

Total Site:

8.95ha

Land Use	Area
Centre	2.38ha
Mixed Use	2.96ha
Private Community Purpose	1.24ha
Circulation and Parking	2.15ha
Activated Shared Zone	0.22ha

Total Dwellings:

619

Commercial GFA:

30,245m²

(excl. PAD Sites)

Parking Bays

1,753 total

Commercial:

1,035 bays

Residential:

718 bays



Precinct Structure Plan Map - Part 2
Dianella Plaza Precinct Structure Plan

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DRAWING NO.

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DATE

21.05.2026

REVISION

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Appendix B Swept Paths

