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Sustainable Transport. Safe Solutions

Beeliar Shopping Centre

Proposed Development Application

TRANSPORT IMPACT ASSESSMENT



Prepared for:
Albion Park Project Pty Ltd

February 2026

Beeliar Shopping Centre

Prepared for: Albion Park Project Pty Ltd
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1 Executive summary

This Traffic Impact Assessment (TIA) has been prepared to assess the transport, traffic, parking and active transport implications of the proposed shopping centre development located on Beeliar Drive, within the City of Cockburn. The assessment has been undertaken to support the development application and to demonstrate that the proposal can be accommodated within the surrounding transport network.

The proposed development comprises a neighbourhood shopping centre including a major supermarket, specialty retail, food and beverage tenancies, consulting rooms, a service station and two fast-food pad sites, with a total net lettable area of approximately 7,855 m². Vehicle access to the site is provided via Beeliar Drive and Yangebup Road.

Traffic analysis has been undertaken for the weekday PM peak hour (3:00–4:00 pm) and the weekend midday peak hour (11:00 am–12:00 pm), representing the critical operating periods for the surrounding road network and the proposed land uses. Existing, 2028 and 2038 future year scenarios were assessed, both with and without development traffic. Traffic generation has been estimated using industry-standard shopping centre trip rates and informed by Urbii's experience and observed survey data, with allowance made for passing-trade trips.

SIDRA Intersection analysis indicates that key intersections along Beeliar Drive are already operating under heavily congested conditions during the weekday PM peak hour in future “do nothing” scenarios, with volume-to-capacity ratios exceeding 1.0 at several locations. This reflects broader background traffic growth identified in the City of Cockburn District Traffic Study (SMEC, 2023), which forecasts that Beeliar Drive will operate at V/C ratios in the order of 110–135% by 2041. The modelling demonstrates that, in this context, the proposed development results in only a modest incremental impact on intersection performance, with congestion largely driven by background traffic growth rather than development-generated demand. It is also noted that once intersections exceed practical capacity, SIDRA results can become unstable and yield excessive queuing outputs, which should be interpreted with caution.

Parking demand has been assessed against the City of Cockburn Town Planning Scheme No. 3, draft Local Planning Scheme No. 13 and the WA Planning Manual. Under these planning frameworks, the calculated parking requirement ranges from approximately 180 bays to 569 bays, depending on the applicable provisions and assumptions. The development proposes to provide 315 on-site car parking bays, equating to approximately 4.0 bays per 100 m² NLA. Based on previous parking surveys undertaken by Urbii and accepted parking generation guidance for neighbourhood shopping centres, the expected peak parking demand is in the order of 212 to 290 bays, indicating that the proposed parking supply is appropriate and sufficient for the anticipated level of demand.

Provision has been made for service vehicles and deliveries, with dedicated loading docks accessed from Yangebup Road for the main shopping centre, and separate service arrangements for the service station and fast-food pad sites. Swept path analysis has confirmed that all relevant service vehicles, including articulated fuel tankers, can safely access and manoeuvre within the site without conflict with customer traffic.

The development is well integrated with the surrounding walking, cycling and public transport networks. Existing footpaths, signalised pedestrian crossings at Beeliar Drive/Hammond Road, and a mid-block pedestrian crossing on Beeliar Drive provide safe external connectivity. New shared paths along the site frontages, a comprehensive internal pedestrian network, raised

internal roads and shared-zone treatments will enhance pedestrian safety and permeability. Bicycle parking and staff end-of-trip facilities are provided in accordance with current best practice, supporting active and sustainable transport modes.

Overall, the assessment concludes that the proposed development can be accommodated within the existing and future transport network, that its traffic and parking impacts are modest in the context of forecast background growth, and that the proposal represents an appropriate and well-integrated outcome from a traffic engineering and transport planning perspective.

2 Introduction

This Transport Impact Assessment has been prepared by Urbii on behalf of Albion Park Project Pty Ltd with regards to the proposed shopping centre development, located on Beeliar Drive, Cockburn Central within the City of Cockburn.

The subject site is situated at the north-west corner of Beeliar Drive and Kemp Road, as shown in Figure 1. The site occupies a strategically located parcel within the Cockburn Central area, benefiting from direct access to the district and regional road network, including Beeliar Drive, Hammond Road and the Kwinana Freeway. The site is also located in proximity to Cockburn Central Train Station and existing high-frequency bus services, providing opportunities for access by public transport, walking and cycling.

It is proposed to develop the site into a neighbourhood shopping centre comprising a supermarket, specialty retail tenancies, food and beverage outlets, pad sites (including fast-food and fuel uses), and associated at grade parking. The development provides a total gross lettable area of approximately 7,855 m², supported by approximately 315 on-site car parking bays, in addition to motorcycle and bicycle parking facilities.

The surrounding transport environment is characterised by Beeliar Drive operating as a key east–west distributor road, accommodating commuter, freight and public transport movements. Existing intersections in the vicinity serve a mix of residential, commercial and regional traffic demands, and are sensitive to changes in traffic generation and access arrangements. Accordingly, consideration of traffic efficiency, safety, and multimodal integration is critical to the assessment of the proposal.

The purpose of this TIA is to assess the potential impacts of the proposed development on the existing and planned transport network.

This TIA has been prepared in accordance with the Western Australian Planning Commission (WAPC) Transport Assessment Guidelines (2016) and is intended to support the Development Application for the proposed Beeliar Shopping Centre.





Figure 1: Subject site

3 Existing situation

3.1 Existing site use, access and parking

The subject site is currently vacant and comprises undeveloped land with frontage to Beeliar Drive along the southern boundary and Yangebup Road along the northern boundary, as shown in Figure 2. There are no existing buildings, formal access points or on-site parking facilities associated with the site at present.

The site is located within an established urban area characterised by a mix of commercial, community, industrial and residential land uses (refer to Figure 3 for a context plan showing surrounding land use).

To the east, the site is located approximately 1.2 km west of Cockburn Gateway Shopping Centre, a major regional retail and employment destination that generates substantial vehicular, pedestrian and public transport activity throughout the day. Further east, the Cockburn Central precinct includes Cockburn Central Train Station on the Mandurah Line, which functions as a key public transport hub for the southern metropolitan area, supported by bus interchanges and commuter parking facilities.

Also located east of the site is the Cockburn Aquatic and Recreation Centre, a significant community facility attracting regular weekday and weekend patronage.

To the south, land uses include established commercial and retail developments fronting Beeliar Drive, as well as educational facilities such as Emmanuel Catholic College, located to the south-west of the site. Emmanuel Catholic College is a notable traffic generator during weekday morning and afternoon peak periods.

To the north, land uses immediately adjoining the site along Yangebup Road are predominantly industrial and service commercial in nature, including warehouses, light industry and trade-based activities. These uses generate a mix of passenger vehicle and heavy vehicle movements, particularly during weekday business hours. Further north-east, the land use context transitions away from industrial activities toward planned and emerging residential development in the vicinity of Muriel Court.

To the west, the site is bounded by conservation and open space areas associated with Beeliar Regional Park.

There is currently no formalised vehicular or pedestrian access to the site, and no existing on-site parking supply. Access to the site would be achieved in the future via Beeliar Drive and Yangebup Road, both of which are established roads forming part of the district and local road network.

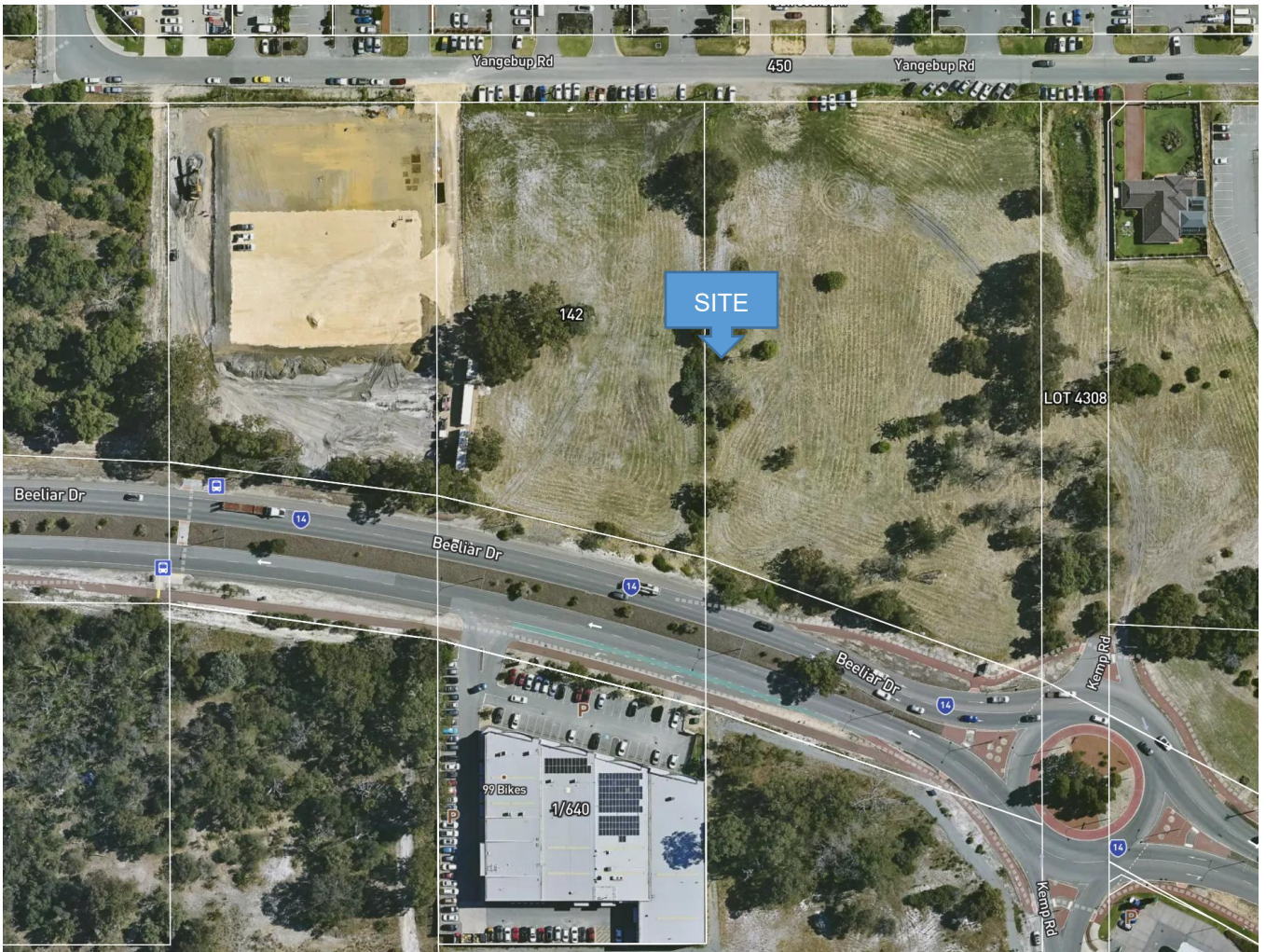


Figure 2: Existing site



Figure 3: Location context plan



3.2 Surrounding road network and traffic management on roads

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

3.2.1 Beeliar Drive

Beeliar Drive on the southern boundary of the site is an approximately 25m wide, four-lane dual carriageway road. A 7.0m wide raised and kerbed central median is provided, with integrated tree planting and street lighting.

A shared path is provided along the southern side of the road, with on-street cycling lanes provided on both sides.

Beeliar Drive is classified as a *Distributor A* road in the Main Roads WA road hierarchy (Figure 5) and operates under a posted speed limit of 70km/h (Figure 6). Distributor A roads are the responsibility of Local Government and are typically for high-capacity traffic movements between industrial, commercial and residential areas (Figure 7).

Beeliar Drive has an Other Regional Road (ORR), or blue road reservation in the Metropolitan Region Scheme (MRS). The subject site does not appear to be impacted by the ORR reservation (Figure 4).

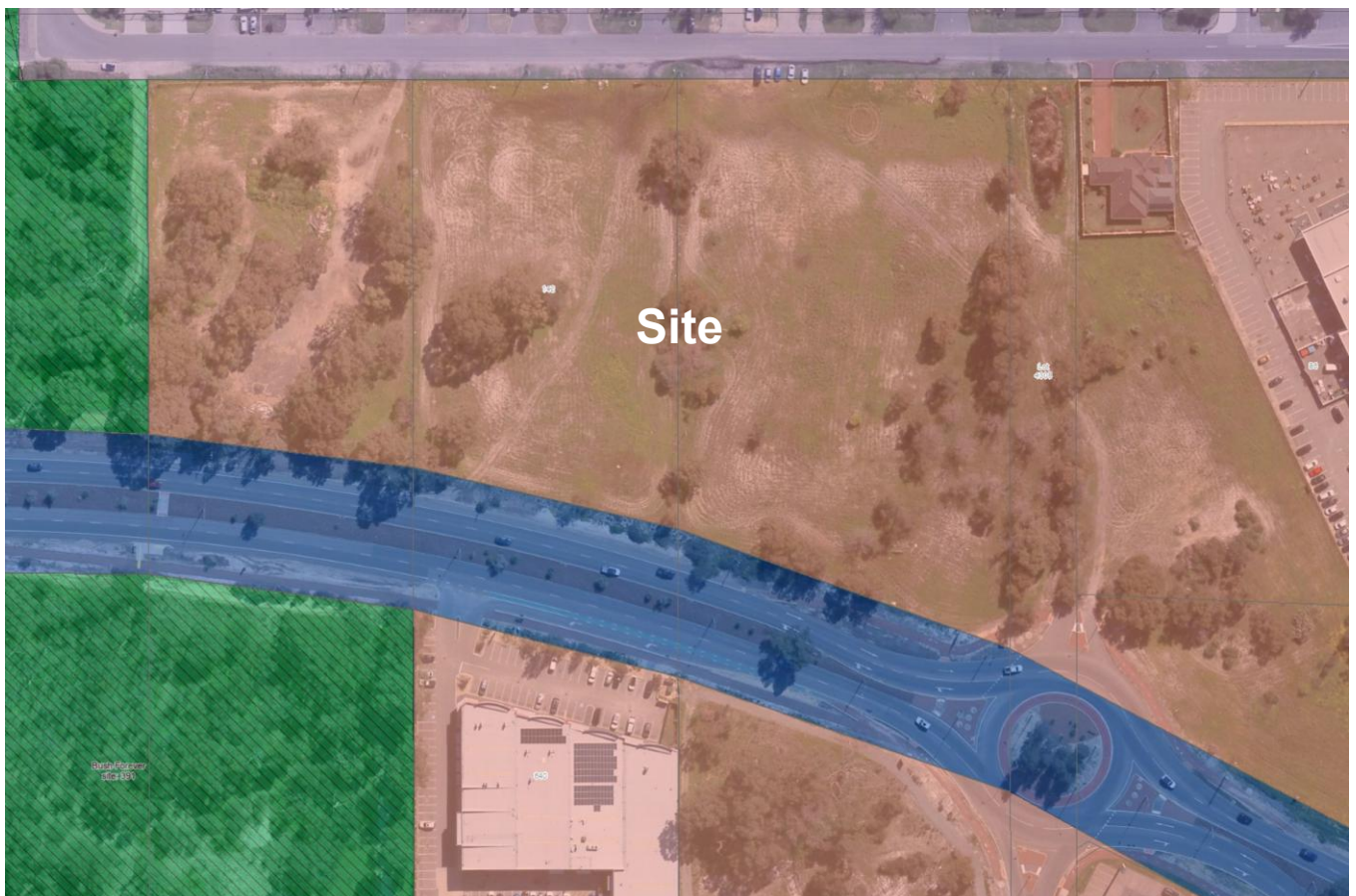


Figure 4: Metropolitan Region Scheme (MRS) – Other Regional Road ORR reservation

3.2.2 Hammond Road

Hammond Road near the subject site is an approximately 8.0m wide, two-lane undivided road. A path for walking and cycling is provided along the western side of the road.

Hammond Road is classified as a *Distributor B* road in the Main Roads WA road hierarchy (Figure 5) and operates under a posted speed limit of 60km/h (Figure 6). Distributor B roads are the responsibility of Local Government and are typically for reduced capacity but high traffic volumes travelling between industrial, commercial and residential areas (Figure 7).

3.2.3 Yangebup Road

Yangebup Road near the subject site is an approximately 8.0m wide, two-lane undivided road. No footpaths are provided along the road.

Yangebup Road is classified as an *Access* road in the Main Roads WA road hierarchy, with a *Special use- industrial* designation (Figure 5) and operates under the default speed limit of 50km/h (Figure 6). Access roads are normally the responsibility of Local Government. They are predominantly for the provision of vehicle access to abutting properties (Figure 7).



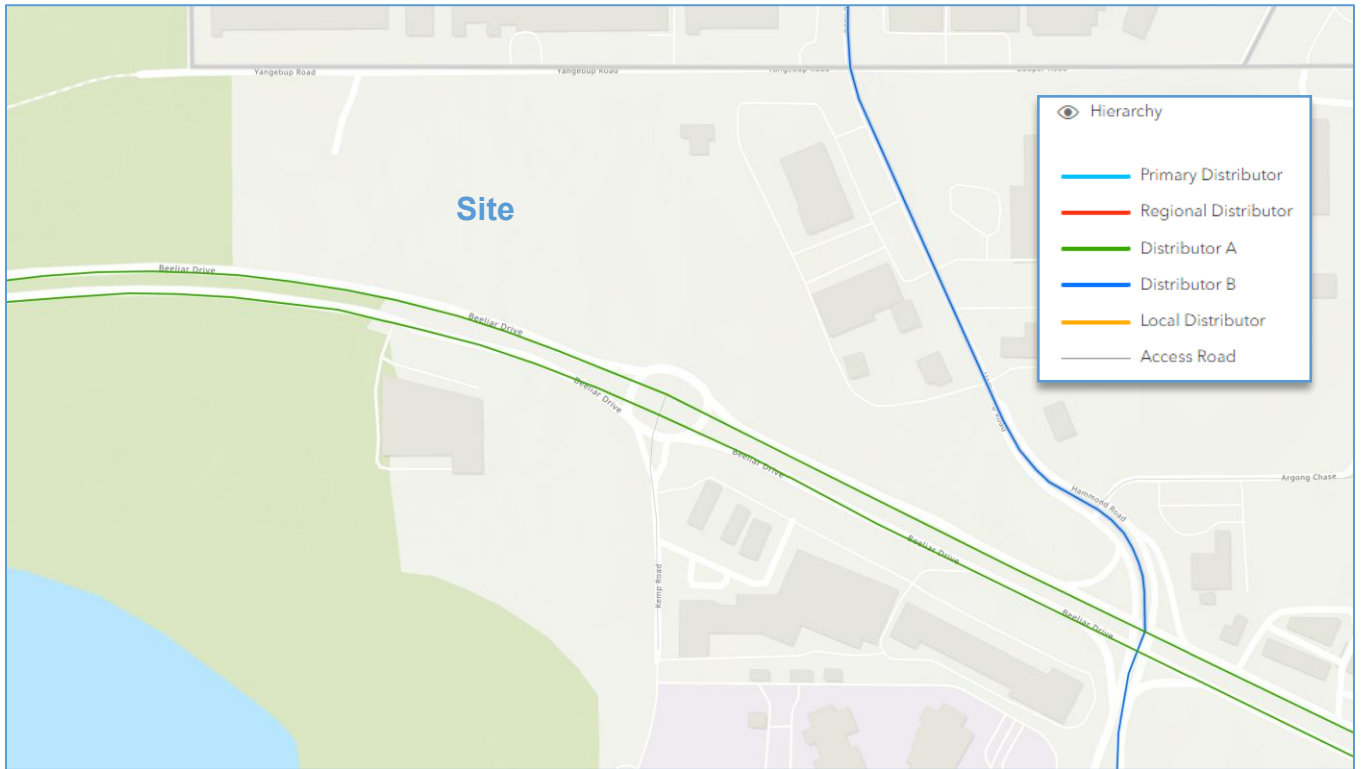


Figure 5: Main Roads WA road hierarchy plan

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

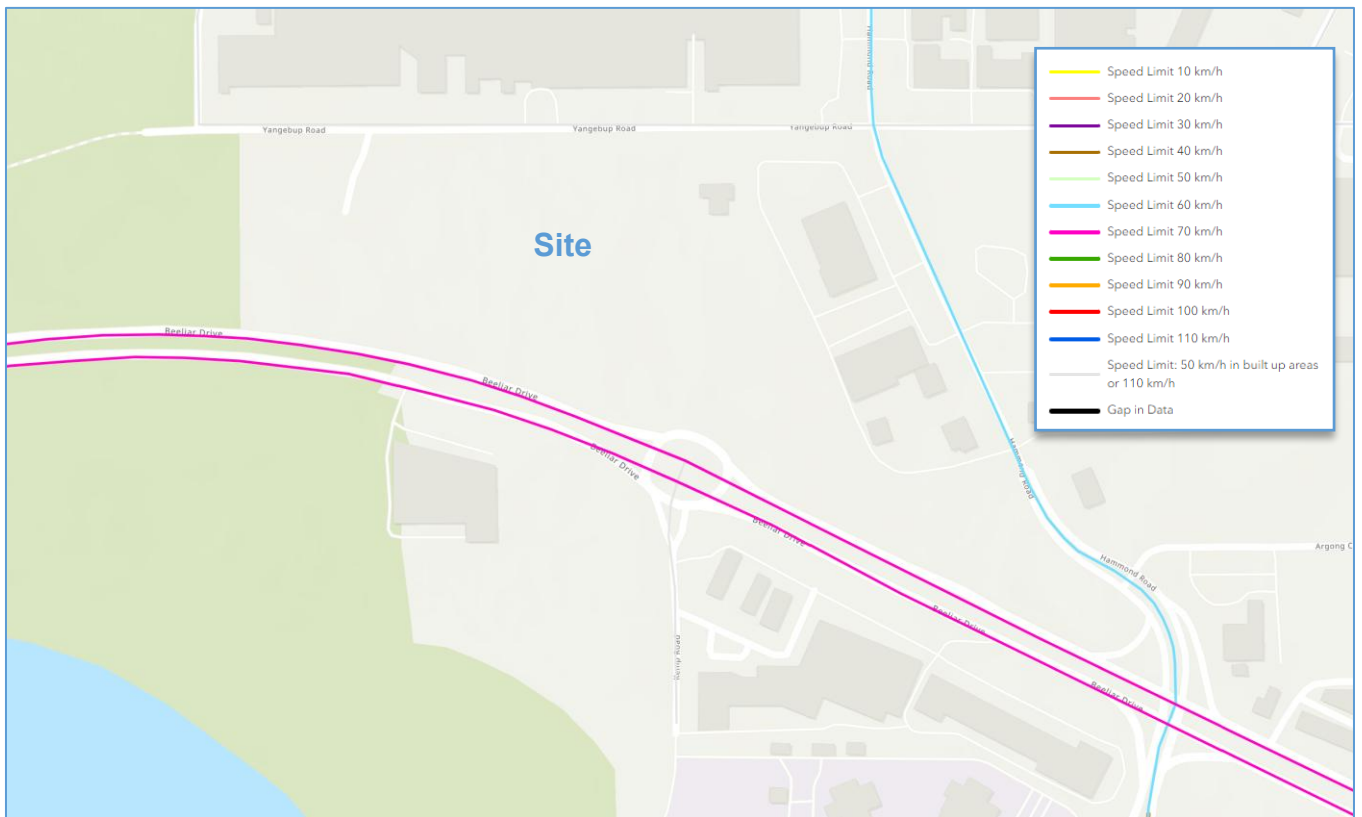


Figure 6: Main Roads WA road speed zoning plan

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

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

Figure 7: Road types and criteria for Western Australia

Source: Main Roads Western Australia D10#10992

Key local intersections in the vicinity of the subject site are shown in Figure 8 and comprise a mix of signalised and roundabout-controlled junctions that collectively manage access along the Beeliar Drive and Hammond Road corridors.

The Beeliar Drive / Hammond Road intersection is a signalised four-way intersection and forms a primary access point to the broader district road network. Beeliar Drive functions as an east–west arterial route carrying significant through traffic, while Hammond Road provides a north–south connection serving industrial, commercial and residential land uses. The intersection accommodates all turning movements under signal control and experiences high traffic demand during peak periods, particularly in the weekday PM peak. This intersection plays a critical role in managing traffic flow along Beeliar Drive and is a key contributor to overall corridor performance.

To the west of the site, the Beeliar Drive / Kemp Road intersection operates as a three-way roundabout. This intersection facilitates movements between Beeliar Drive and Kemp Road, which provides access to adjacent commercial and industrial developments. The roundabout form encourages lower vehicle speeds and provides continuous flow under lower demand conditions; however, during peak periods the roundabout is subject to high circulating volumes on Beeliar Drive, which can result in increased delays and queuing on the minor approach.

Further north, the Yangebup Road intersection provides a full-movement four-way connection serving local traffic accessing surrounding industrial and commercial land uses. This intersection operates under priority control and accommodates all turning movements. While traffic volumes



are lower than along Beeliar Drive, the intersection remains an important local access point and forms part of the immediate road network serving the subject site.

Collectively, these intersections define the local access environment for the proposed development. Their differing forms and operational characteristics reflect the hierarchy of the surrounding road network, with Beeliar Drive functioning as the dominant arterial route and Yangebup Road and Kemp Road providing supporting local and sub-arterial connections.

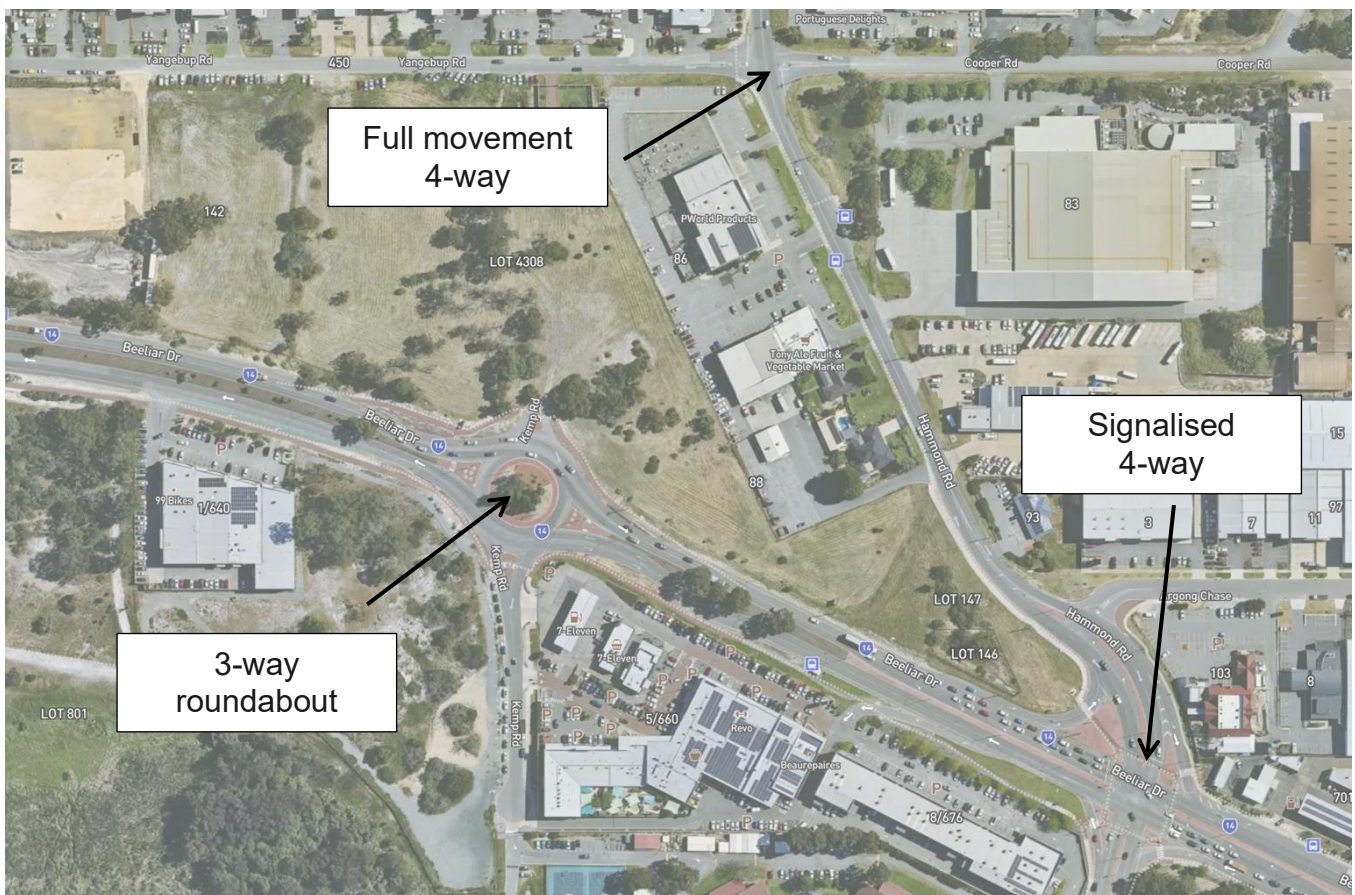


Figure 8: Key local intersections

3.3 Existing traffic volumes on roads and major intersections

Traffic volume and speed data obtained from Main Roads WA indicates Beeliar Drive carried average weekday traffic flows of around 29,700 vehicles per day (east of Hammond Road) in 2024. The weekday peak hour is from 3pm to 4pm, as detailed in Figure 9. On weekends, the peak traffic hour occurs between 11am and 12pm.

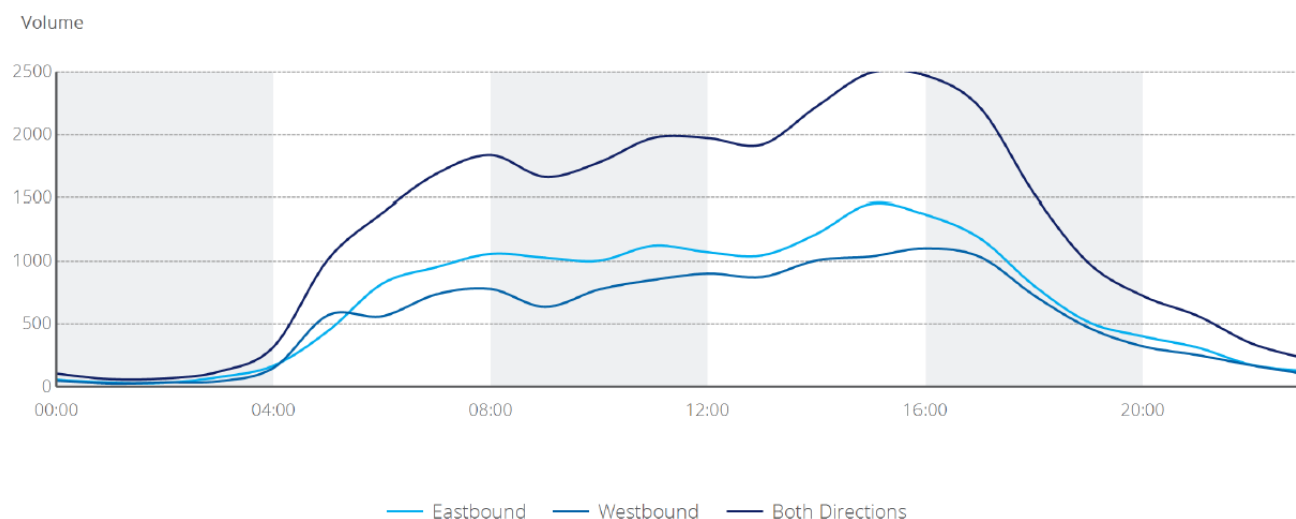


Figure 9: Hourly traffic profile – Beeliar Drive

To establish existing base traffic flows on the surrounding road network and nearby intersections, Urbii undertook a survey of turning movements at key nearby intersections.

The traffic count survey was undertaken during a standard week in August 2025, on Friday from 3pm to 5pm and Saturday from 11am to 1pm.

The base peak hour traffic flows derived for analysis are detailed in Appendix D.

3.4 Existing operation of surrounding intersections

The operation of existing intersections is documented in Section 8.6 of this report.

3.5 Heavy vehicles

Beeliar Drive and Hammond Road are designated as Tandem Drive Network 4 in the Main Roads WA Restricted Access Vehicles (RAVs) network (Figure 10). As detailed in Table 1, the maximum heavy vehicle size currently permitted on Beeliar Drive and Hammond Road is 27.5m B-Doubles.

The proportion of heavy vehicles at the key signalised intersection of Beeliar Drive / Hammond Road is under 5% during the assessment peak hours.

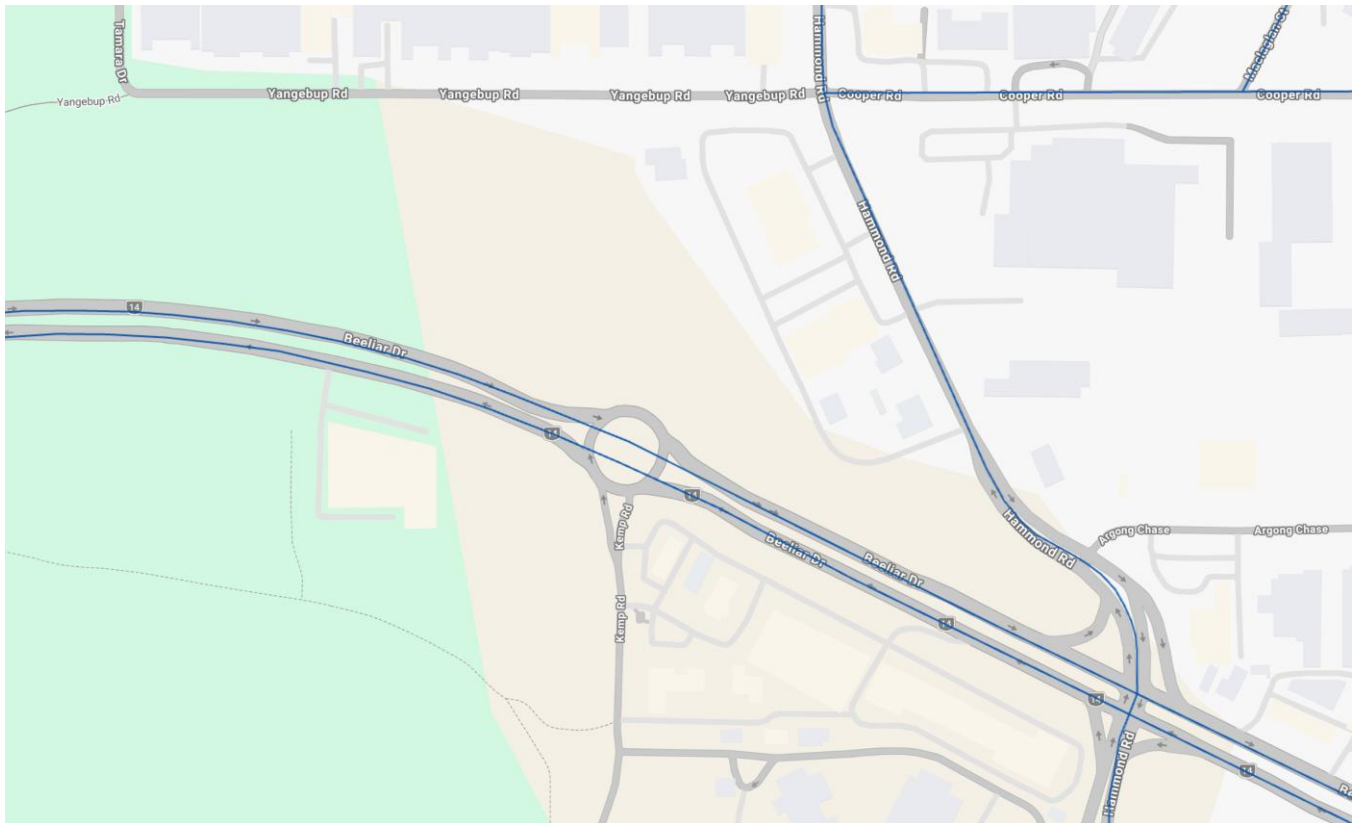


Figure 10: MRWA RAV Network status for Gngara Road

Table 1: Main Roads WA category 4 RAVs

Category 4 RAVs				
Category	Vehicle Description	Length	Max. Mass	Approved Network
4A	A-Double (Prime Mover, Semi Trailer & Dog Trailer) 	≤27.5 m	88.5 t	RAV Network 4

3.6 Public transport access

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

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

- Route 531: Cockburn Central Stn - Fremantle Stn via Marvell Av & The Grange.
- Route 532: Cockburn Central Stn - Fremantle Stn via Beeliar Dr and Hamilton Rd.

Bus services provide a viable alternative mode of transport for staff and customers of the proposed shopping centre. Bus stops are accessible on Beeliar Drive, within walking distance of the site (Figure 11). Bus services provide good coverage and connectivity to the rail network.

The public transport network plans are shown in Figures 12 & 13.

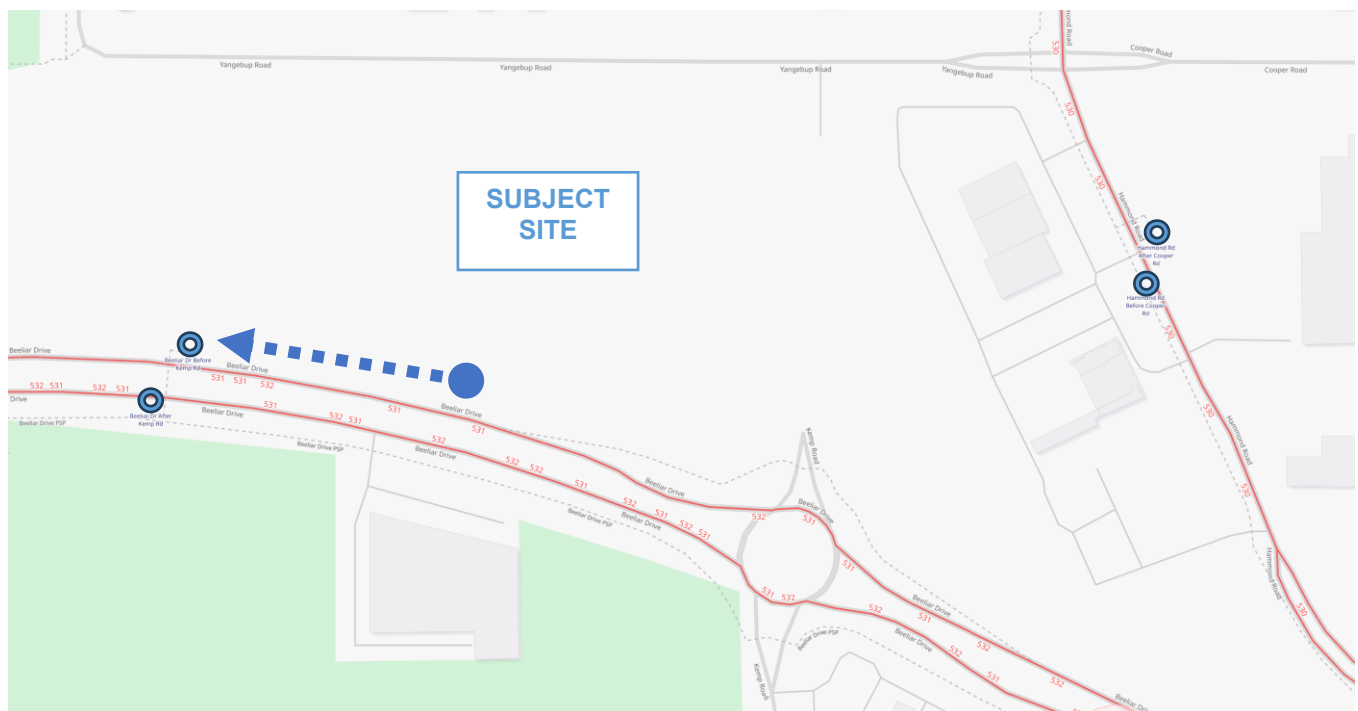


Figure 11: Walking route to bus stops

Route 530, 531 Map

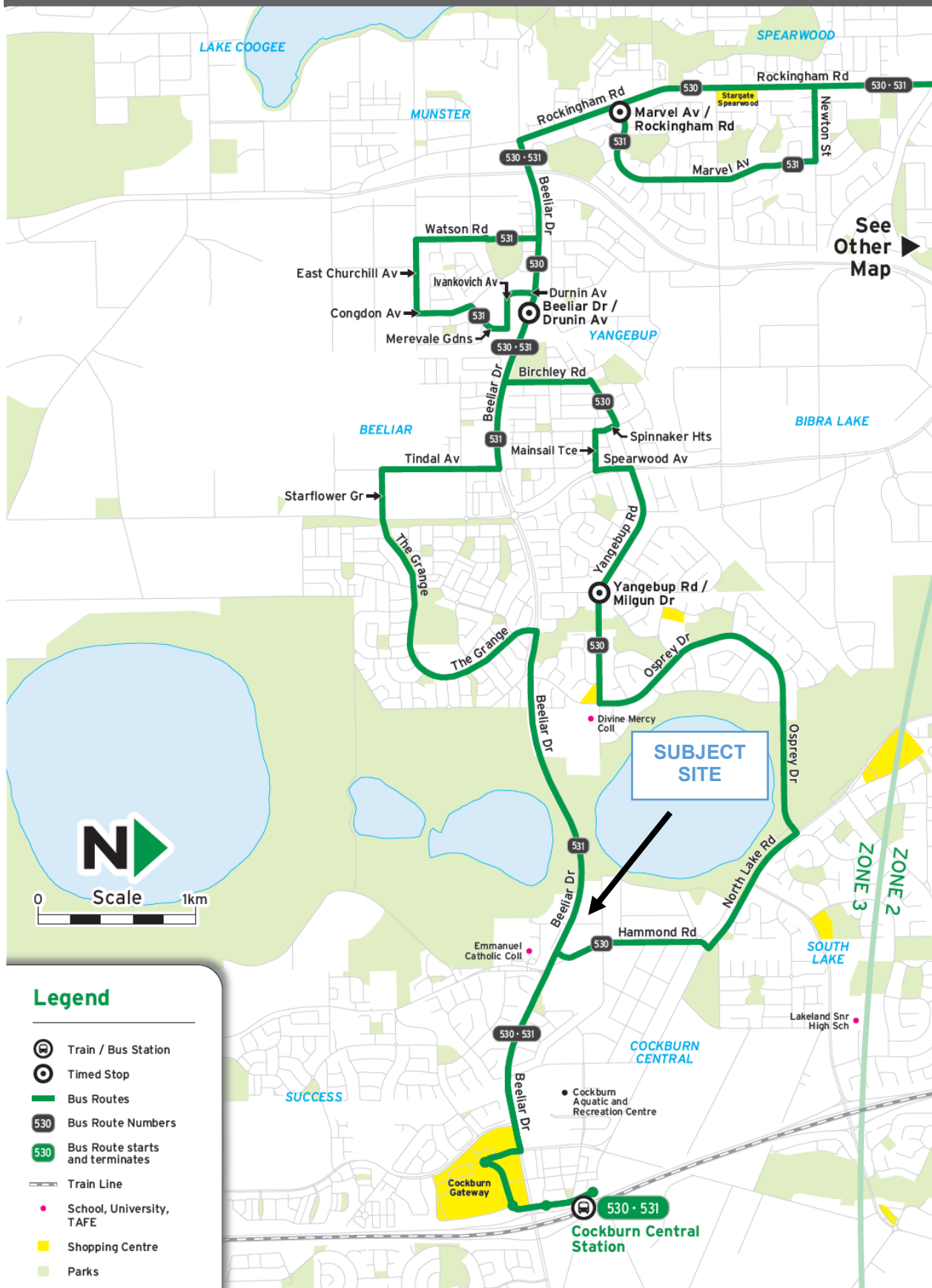


Figure 12: Transperth bus map (route 531)

Source: Transperth

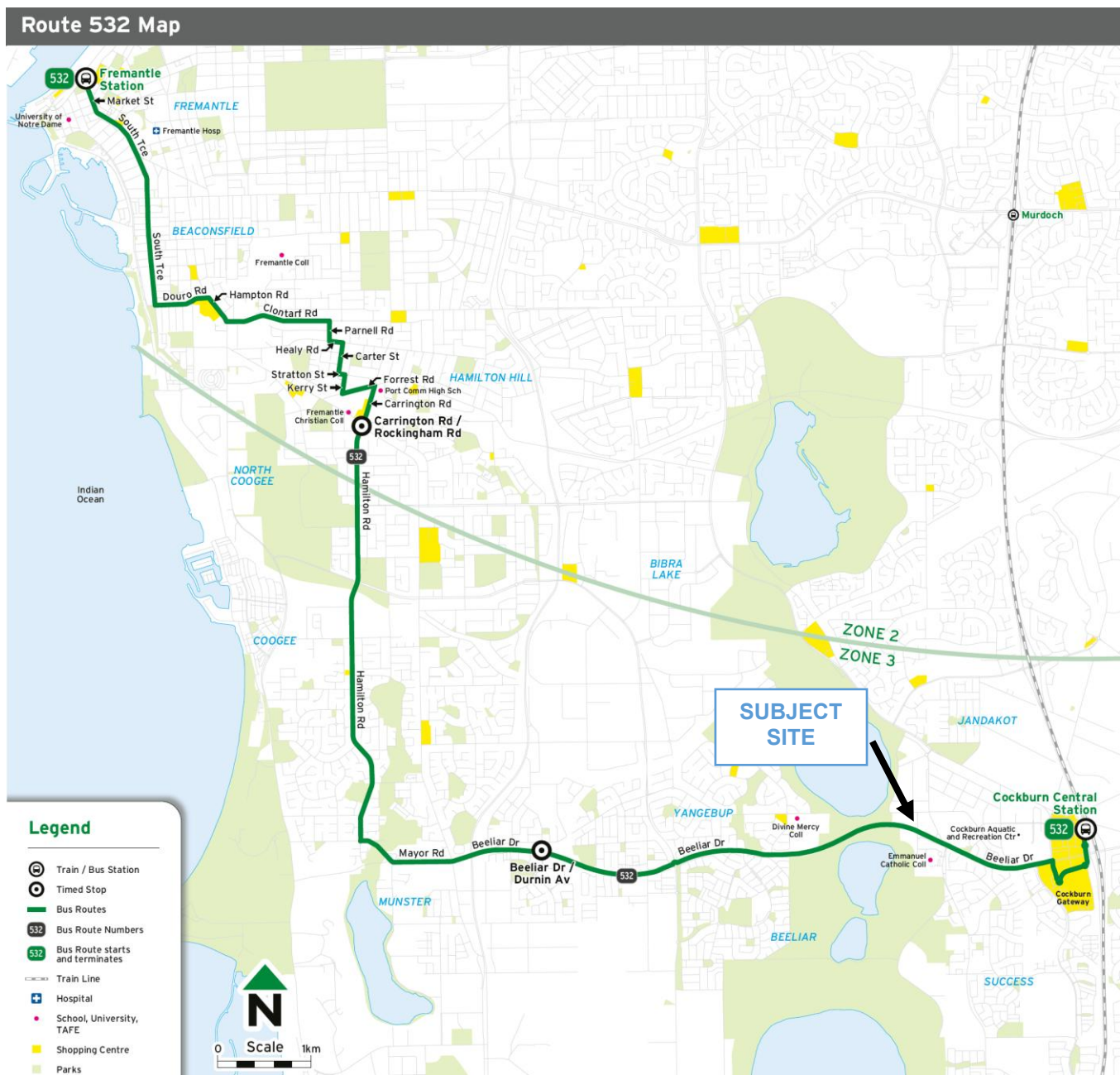


Figure 13: Transperth bus map (route 532)

Source: Transperth

3.7 Pedestrian access

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

The pedestrian environment surrounding the subject site is currently limited and reflects the undeveloped nature of the land and its interface with major roads. Along the southern frontage on Beeliar Drive, a shared path is provided on the southern side of the carriageway, forming part of the broader active transport network, connecting Cockburn Central with surrounding residential and employment areas. This shared path provides an existing pedestrian connection east–west along Beeliar Drive.

Along the northern site frontage on Yangebup Road, pedestrian infrastructure is minimal, with discontinuous or absent footpaths and limited formal crossing facilities. The current pedestrian environment in this location reflects the predominantly industrial land uses to the north of the site, where pedestrian demand is generally low outside of business hours.

Pedestrian connectivity to the east improves closer to the Cockburn Central precinct, where a more comprehensive footpath network, signalised pedestrian crossings and shared paths are provided in association with Cockburn Central Station, Cockburn Gateway Shopping Centre and adjacent community facilities. These areas generate higher pedestrian activity levels, particularly during commuter peak periods and weekends.

The proposed development includes the provision of new footpaths along all site frontages, including Beeliar Drive and Yangebup Road, improving pedestrian connectivity and addressing existing gaps in the local footpath network. These footpaths are intended to connect with existing pedestrian infrastructure where practicable and provide safe, legible and direct routes to the shopping centre building, pad sites and public amenities.

Internal pedestrian links are proposed throughout the site, providing direct and clearly defined walking routes between car parking areas, building entries, pad sites and shared public spaces.

The proposed pedestrian network will support access to and from surrounding key attractors, including Cockburn Central Station, Cockburn Gateway Shopping Centre, Emmanuel Catholic College and nearby residential areas, and will facilitate short local walking trips as well as pedestrian movements associated with public transport use.

3.8 Bicycle access

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

The existing cycling environment in the vicinity of the subject site is well established along Beeliar Drive, which functions as an important east–west cycling corridor within the southern metropolitan area. As shown on the CycLOSM cycling infrastructure map (Figure 14), a shared path is provided on the southern side of Beeliar Drive, extending east–west through the study area and connecting to the wider Perth Bicycle Network.

In addition to the shared path, on-street cycling lanes are provided along both sides of Beeliar Drive, offering experienced cyclists an alternative on-road route and supporting direct connectivity toward Cockburn Central, Cockburn Gateway Shopping Centre, and surrounding employment and residential areas. These facilities facilitate commuter, recreational and utilitarian cycling trips and provide a continuous cycling link through the area.

At the Beeliar Drive / Kemp Road roundabout, cycling connectivity is maintained via the shared path and on-road cycling treatments north of the intersection.

Cycling infrastructure north of the site along Yangebup Road is more limited and reflects the industrial land uses in this area. Cycling demand in this location is currently lower, with cyclists generally accessing the site via Beeliar Drive rather than from the north.

The existing cycling network provides direct and legible connections between the subject site and several key attractors, including Cockburn Central Station, Cockburn Gateway Shopping Centre, Cockburn Aquatic and Recreation Centre, and surrounding employment precincts. These connections support both end-of-trip cycling associated with retail and services, as well as commuter cycling trips linked to public transport.

The shared path along Beeliar Drive also forms part of a broader regional cycling route that connects to recreational and environmental assets, including Beeliar Regional Park, further enhancing the attractiveness of cycling as a mode of access.

The proposed development includes the provision of bicycle parking facilities within the site, including a combination of visitor and secure staff bicycle parking, located in convenient and visible areas close to key building entrances. These facilities are intended to support short-stay retail trips as well as longer-stay employee cycling trips.

Internal site layouts allow for safe and direct cyclist access from Beeliar Drive to bicycle parking areas, with cyclists able to transition from the shared path or on-road facilities into the site using low-speed internal circulation routes. Cyclist movements within the site will generally occur in shared vehicle environments, with design measures intended to manage speeds and minimise conflict.

Cycling access arrangements will be designed to integrate with the existing pedestrian network and to minimise conflict between cyclists, pedestrians and vehicles. Bicycle parking facilities will be designed in accordance with relevant Australian Standards and DoT guidance, including appropriate spacing, security and weather protection where applicable.

The proposed development will therefore leverage the existing cycling infrastructure along Beeliar Drive, address gaps in end-of-trip facilities, and support cycling as a viable mode of access to the shopping centre for both customers and employees.



Figure 14: Perth bicycle network plan

Bicycle infrastructure

- Separate cycleway
- Path designated for bicycles.
- Cycle track on this side of the street
- Cycle lane on this side of the street
- Shared lane (with buses or other motor vehicles) on this side of the street
- Road shoulder open to bikes
- Double way streets for bikes (one way for cars)
- Bicycle designated road
- Steps with a bicycle-friendly ramp
- Cycle streets

Bicycle routes

- International bike route
- National bike route
- Regional bike route
- Local bike route
- Mountain bike route

The Strava cycling heatmap (Figure 15) provides an indication of relative cycling activity patterns within the broader locality based on aggregated user data.

Within the immediate vicinity of the subject site, the Strava data indicates moderate cycling activity along Beeliar Drive, consistent with the presence of on-street bicycle lanes and a shared pedestrian and cyclist path, and its role as a key east–west movement corridor linking Cockburn Central with surrounding suburbs, employment areas and recreational destinations.

Overall, the Strava heatmap supports the conclusion that existing cycling demand in the vicinity of the site is concentrated along higher-order routes, with more limited cycling activity on local streets.

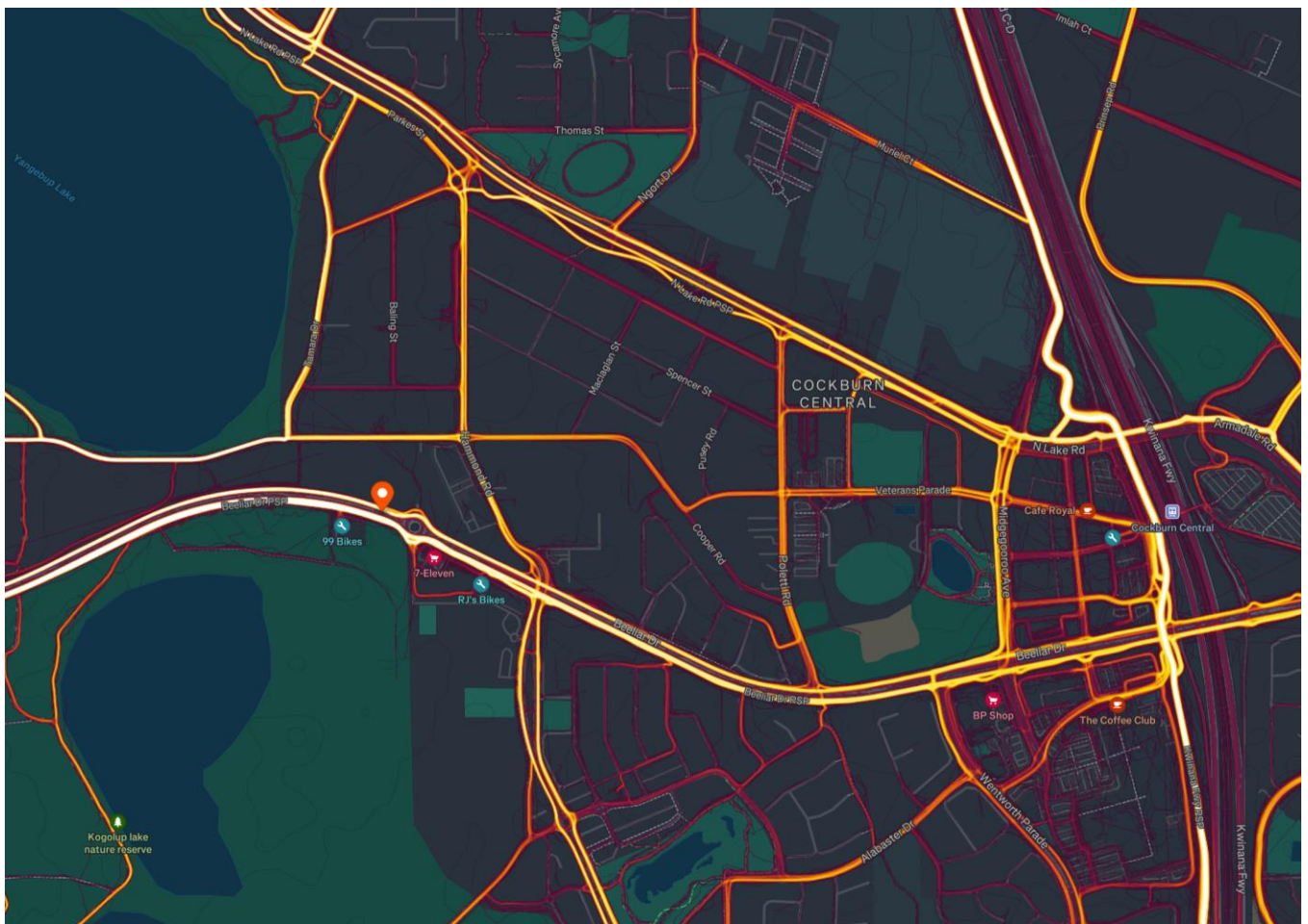


Figure 15: Strava cycling heatmap

3.9 Crash data and safety

A review of reported crash data for the five-year period 2020 to 2024 was undertaken using information obtained from Main Roads Western Australia (MRWA). The analysis considers crashes within the vicinity of the subject site, as summarised in Table 2, with the spatial distribution of crashes illustrated in Figure 16.

3.9.1 Summary of Crash History

A total of 100 reported crashes occurred within the study area during the five-year period. The majority of crashes were of low to moderate severity, with no fatal or hospital-level injury crashes recorded. The crash severity profile is dominated by property damage only (PDO) crashes, comprising 44% PDO major and 25% PDO minor, while 31% of crashes resulted in medical-level injuries.

The absence of fatal and hospitalisation crashes indicates that, while crashes occur within the study area, the overall safety performance of the road network is generally consistent with expectations for an urban arterial environment carrying moderate to high traffic volumes.

3.9.2 Spatial Distribution and Key Locations

Crash occurrences are highly concentrated at major intersections, with approximately 57% of crashes recorded at the signalised intersection of Beeliar Drive / Hammond Road. A further 25% of crashes occurred at the Beeliar Drive / Kemp Road roundabout. These locations function as key nodes on the district road network and accommodate high traffic volumes, multiple turning movements, public transport and pedestrian activity, which inherently increases crash exposure.

In contrast, the mid-block sections of Beeliar Drive adjacent to the subject site exhibit a comparatively lower crash frequency, indicating no existing localised crash pattern directly attributable to the site frontage.

3.9.3 Crash Types and Contributing Factors

The most common crash types recorded within the study area are rear-end crashes (55%), followed by right-angle (15%) and sideswipe same direction crashes (13%). This distribution is typical of arterial road environments where traffic signals, roundabouts and congestion related speed variations are present. Rear-end crashes, in particular, are commonly associated with stop start conditions and do not typically indicate systemic design or safety deficiencies.

The majority of crashes occurred under dry conditions (80%) and during daylight hours (68%), suggesting that adverse weather or lighting conditions are not primary contributing factors. No pedestrian or cyclist injury crashes were recorded within the study area over the five-year period, indicating a relatively low risk profile for vulnerable road users in the vicinity.

3.9.4 Implications for the Proposed Development

The proposed development is not expected to significantly impact road safety outcomes for the surrounding network. Key reasons for this include:

- No direct access is proposed to high-risk locations, with site access designed to be appropriately spaced from the Beeliar Drive / Hammond Road signalised intersection.
- Traffic generated by the development will be distributed across the surrounding network rather than concentrated at a single access point, reducing the potential for conflict.
- The predominant crash types in the area are related to existing network operations rather than site-specific access arrangements.
- The development includes clear internal circulation, appropriate access geometry and controlled entry and exit points, which will reduce the potential for conflict between vehicles, pedestrians and cyclists.
- Improved pedestrian and cyclist infrastructure along the site frontages will enhance safety for vulnerable road users compared to the existing undeveloped condition.

3.9.5 Safety Conclusion

Based on the review of historical crash data and the proposed access arrangements, the development is not expected to result in a material increase in crash risk or severity within the surrounding road network. The existing crash patterns reflect the function of Beeliar Drive and adjacent intersections as high-volume arterial facilities, rather than deficiencies that would be exacerbated by the proposal.

Subject to detailed design and approval by the relevant road authorities, the proposed development can be accommodated within the existing road network without compromising road safety.





Figure 16: 5-year crash map in the locality (2020-2024)

Source: MRWA crash mapping tool.

Table 2: 5-year crash history in the locality (2020-2024)

Severity	No.	%
Fatal	0	0
Hospital	0	0
Medical	31	31.00
PDO Major	44	44.00
PDO Minor	25	25.00
Year	No.	%
2020	12	12.00
2021	22	22.00
2022	22	22.00
2023	25	25.00
2024	19	19.00
Nature	No.	%
Head On	0	0
Hit Animal	0	0
Hit Object	2	2.00
Hit Pedestrian	0	0
Non Collision	3	3.00
Not Known	0	0
Other / Unknown	3	3.00
Rear End	55	55.00
Right Angle	15	15.00
Right Turn Thru	9	9.00
Sideswipe Opposite Dirn	0	0
Sideswipe Same Dirn	13	13.00
Light	No.	%
Dark - Street Lights Not Provided	0	0
Dark - Street Lights Off	0	0
Dark - Street Lights On	9	9.00
Dawn Or Dusk	3	3.00
Daylight	68	68.00
Not Known	0	0
Other / Unknown	20	20.00
Conditions	No.	%
Dry	80	80.00
Not Known	0	0
Other / Unknown	4	4.00
Wet	16	16.00
Alignment	No.	%
Curve	18	18.00
Not Known	0	0
Other / Unknown	49	49.00
Straight	33	33.00
Total	100	



4 Proposed development

The proposed development comprises the construction of a neighbourhood shopping centre on the subject site, including a supermarket, a range of specialty retail and food and beverage tenancies, pad site developments, and associated at-grade parking and servicing infrastructure. The proposal is intended to provide a local retail and services hub to support surrounding residential, employment and community uses.

The development provides a total net lettable area of approximately 7,855m², comprising a supermarket, mini-major tenancy, specialty retail, food and beverage outlets, fast-food tenancies, consulting rooms and a fuel station located on a separate pad site. The layout includes multiple building forms arranged around internal circulation areas and public spaces, with active frontages oriented toward internal pedestrian routes.

Vehicular access to the site is proposed from Beeliar Drive and Yangebup Road, with access points designed to separate customer traffic, service vehicles and fuel station movements where practicable. Internal connectivity is provided to the adjoining properties to the east and west of the site, to promote cross-trade between integrated land uses.

Internal circulation roads provide access to parking areas, pad sites and service docks, with vehicle speeds managed through geometry and layout to support safe operation.

The development includes provision for approximately 315 car parking bays, including accessible bays, motorcycle parking and designated short-stay parking associated with retail and food uses. Bicycle parking facilities are also proposed, including both visitor and secure staff bicycle parking, to support active transport access.

Pedestrian access is provided via new footpaths along all site frontages, with internal pedestrian links connecting parking areas, building entrances and pad sites. These connections are designed to integrate with existing and planned pedestrian infrastructure in the surrounding area and to support safe and legible pedestrian movement through the site.

Service and delivery activities are accommodated via dedicated loading areas designed to cater for rigid and articulated service vehicles, with turning movements and swept paths considered as part of the site layout. Servicing is generally separated from primary customer access areas to minimise conflict.

The proposed development plans are included in Appendix A.

5 Vehicle access

5.1 Development access strategy

Vehicular access to the proposed development has been designed to provide safe, efficient and legible access while maintaining the function and performance of the surrounding road network. The access strategy responds to the arterial role of Beeliar Drive, the local function of Yangebup Road, and the presence of adjacent existing and future developments. The overall access arrangement is illustrated in Figure 17.

Primary External Access

Primary customer and service vehicle access to the site is provided via Beeliar Drive and Yangebup Road, which accommodates two new full-movement T-intersections located toward the western and eastern extents of the site frontage.

The development provides a planned fourth (northern) leg, which is intended to connect to the existing Beeliar Drive / Kemp Road roundabout via a proposed internal link. This link will operate as a private car park circulation roadway, also providing internal connectivity between the subject site and the adjoining eastern property. The connection is not intended to function as a public road and will primarily support shared access arrangements and internal traffic redistribution between developments.

These access points provide direct and convenient access to the development.

Loading Dock and Service Access

Dedicated access to the supermarket and shared loading docks is provided from Yangebup Road via a series of restricted crossovers designed for service vehicles only. A total of four crossovers are proposed to facilitate loading dock access and manoeuvring, while restricting general customer traffic from using these access points.

This arrangement separates heavy vehicle movements from customer parking areas and internal circulation routes, reducing the potential for conflict and improving overall site safety and operational efficiency. Heavy vehicle movements are accommodated fully within the site and do not require reversing onto public roads.

Internal Circulation and Roundabout Connections

An internal four-way roundabout is proposed toward the eastern portion of the site, forming a key node within the internal circulation network. This roundabout will also provide access to future development to the east of the site.

Connection to Adjacent Western Site

A direct internal vehicle connection is proposed to the adjacent western site, which is planned to accommodate a REVO gym. This connection enables reciprocal access between developments and allows vehicles to circulate internally between sites without re-entering the external road network.

This approach supports efficient land use integration, reduces unnecessary turning movements at external intersections, and aligns with contemporary access planning principles for adjacent commercial developments.

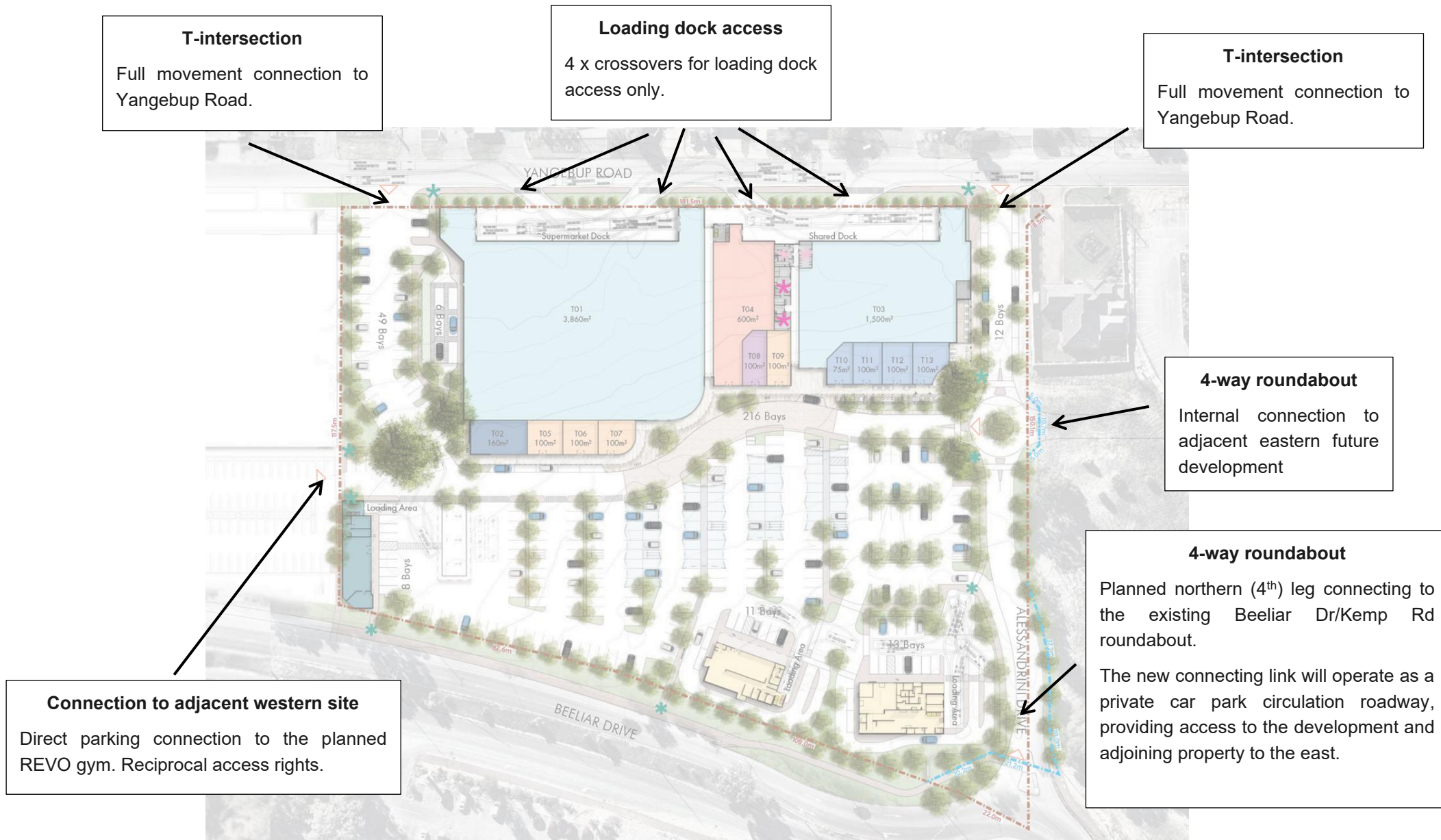


Figure 17: Development access strategy

5.2 Roundabout sightline assessment

A sight distance assessment has been undertaken for the proposed internal roundabout arrangements in accordance with the Austroads Guide to Road Design Part 4B: Roundabouts. The assessment considers the minimum sight distance requirements for approaching and entering vehicles to safely identify circulating traffic and accept an appropriate gap.

Sight distance requirements have been assessed with a focus on Criteria 1 and Criteria 2, which are relevant to the proposed low-speed internal roundabout environment (Figure 18).

Criterion 1 – Approach Sight Distance

Criterion 1 requires the provision of adequate approach sight distance for vehicles approaching the roundabout, based on the design speed of the approach roadway. This ensures that drivers can perceive the roundabout in sufficient time to safely decelerate and prepare to give way to circulating traffic.

For the proposed roundabout, a design speed of 50 km/h has been adopted for the approach legs. Based on this design speed, the minimum approach sight distance requirement is 55 metres, in accordance with Austroads guidance.

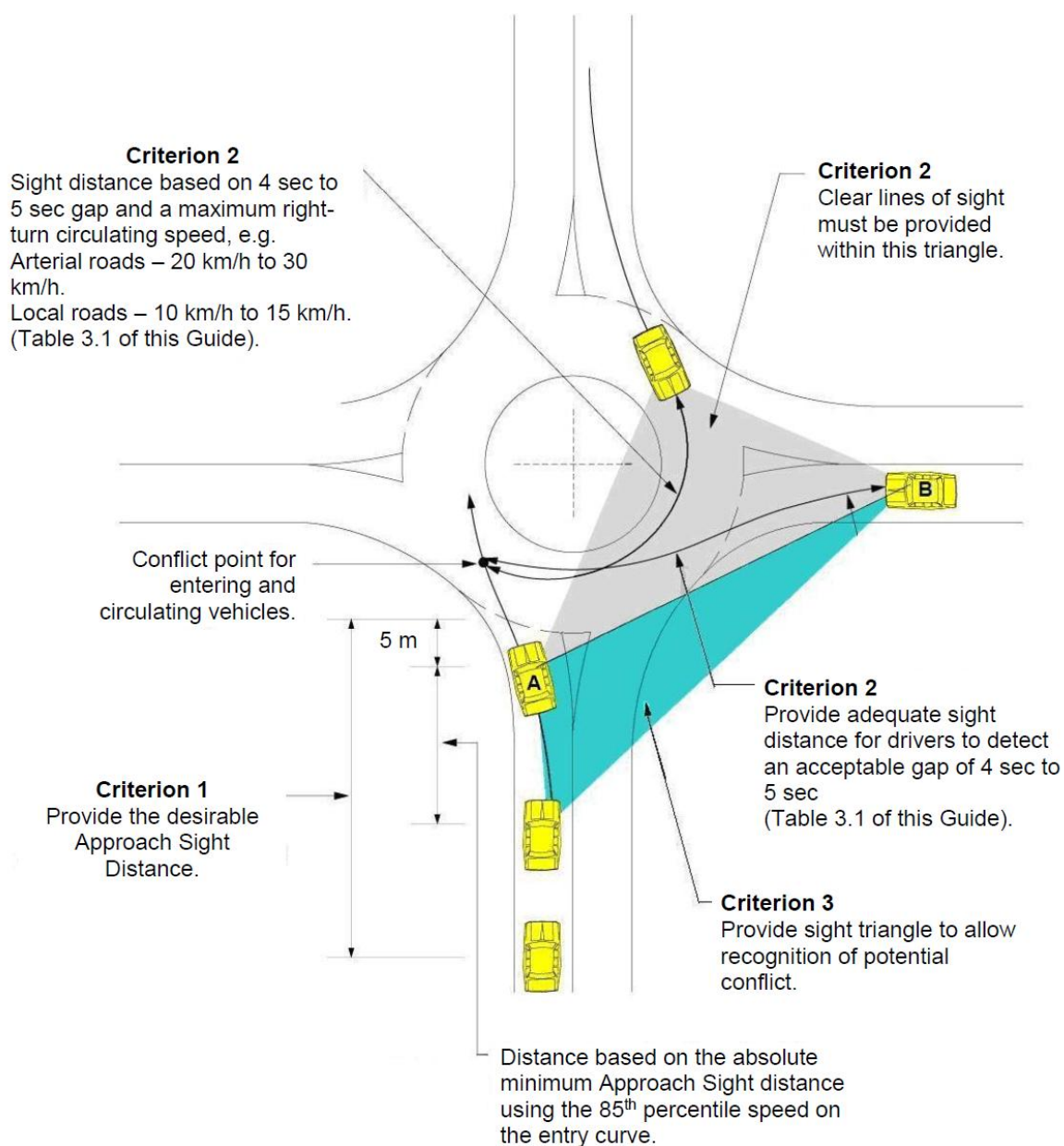
Review of the proposed layout indicates that the required 55 m approach sight distance can be achieved on all roundabout approaches. Sight lines are not obstructed by landscaping, built form or infrastructure within the critical sight envelopes. Detailed sight distance diagrams demonstrating compliance with Criterion 1 are provided in Appendix B.

Criterion 2 – Sight Distance to Circulating Traffic

Criterion 2 requires that entering drivers have adequate sight distance to detect circulating vehicles and identify an acceptable gap for entry. This sight distance is based on a gap acceptance time of 4 to 5 seconds and the circulating speed of vehicles within the roundabout.

The proposed roundabout is designed as a low-speed local roundabout, with a circulating speed of approximately 20 km/h. Based on this circulating speed, the minimum sight distance requirement for Criterion 2 is 22 metres, measured to the conflict point between entering and circulating vehicles.

The proposed geometry, including entry deflection and central island layout, provides clear sight triangles in excess of the 22 m minimum requirement on all approaches. The design ensures that drivers approaching the roundabout have unobstructed views of circulating traffic within the critical sight triangle, consistent with Austroads guidance. Sight distance diagrams demonstrating compliance with Criterion 2 are included in Appendix B.



Note: Values for approach sight distance are provided in Table 3.1 of AGRD Part 4A.

Source: Adapted from Department of Main Roads (2006).

Figure 18: Sight distance criteria for roundabouts

Source: Guide to Road Design Part 4B: Roundabouts

5.3 Roundabout and main street design

5.3.1 Internal Roundabout Design

The proposed internal roundabout forms a key element of the site circulation network and is intended to operate as a low-speed traffic control device that prioritises safety, legibility and efficient internal vehicle movement.

The roundabout will be designed to accommodate passenger vehicles and light commercial vehicles, which represent the predominant vehicle types expected to use the internal circulation network. Larger service, waste collection and delivery vehicles will access the site directly from Yangebup Road and will not be required to circulate through the roundabout, thereby reducing the need to oversize the roundabout geometry and helping to maintain low operating speeds.

The roundabout will be designed to operate at low speeds, consistent with its internal site function and proximity to pedestrian activity. Entry geometry, deflection and circulating lane widths will be configured to discourage high-speed movements and to reinforce yielding behaviour at all approaches, optimising safety for all users.

Potential roundabout design features may include, but are not limited to:

- Compact or mini-roundabout geometry with reduced inscribed circle diameter;
- Tight entry radii and appropriate deflection to control approach and circulating speeds;
- Raised platform or mountable apron treatments where appropriate;
- Clear pavement markings and signage to reinforce priority and low-speed operation;
- Contrasting pavement colours or textures to emphasise the roundabout environment; and
- Lighting designed to support visibility during night-time operation.

The central island will be designed to maintain clear sightlines in accordance with Austroads requirements. High or visually opaque vegetation will be avoided, and landscaping within the central island will be limited to low-height planting or ground cover to ensure that drivers have unobstructed views of circulating traffic and potential conflicts.

The detailed roundabout design will be confirmed at the detailed civil design stage and subject to approval by the relevant authorities. The roundabout may potentially utilise a compact or mini-roundabout design format, consistent with the principles adopted under the Main Roads WA Urban Road Safety Program, which promotes low-speed intersection treatments to reduce crash severity and improve overall safety outcomes.



5.3.2 Main East–West Car Park Aisle (Main Street)

The primary east-west car park aisle, which provides direct access to the main shopping centre entry, is intended to function as a shared movement environment (Figure 19).

A portion of this aisle, particularly in front of the main shopping centre entry, is proposed to be raised and differentiated through the use of contrasting pavement colours, textures and materials. This treatment will visually narrow the roadway, reinforce pedestrian priority and make pedestrian crossing points more intuitive and legible for drivers.

The design intent is to clearly signal to drivers that this section of the aisle is a pedestrian focused environment where vehicle speeds are expected to be low. The raised treatment will also provide vertical traffic calming and improve accessibility for pedestrians moving between parking areas and the shopping centre entrance.

It is recommended that this section of the aisle be designated as a 10 km/h shared zone, supported by appropriate signage, pavement markings and surface treatments. This approach is consistent with best practice for retail car parks and supports safe interaction between vehicles, pedestrians and cyclists in areas of high foot traffic.



Figure 19: Flush main car park aisle

Source: Place Fabric

6 Changes to surrounding transport networks

Information from relevant planning documents, Main Roads WA, Department of Transport and / or information provided by the Local Government Authority, has been reviewed for planned changes to the surrounding transport network.

6.1 Hammond Road Upgrade (Beeliar Drive to North Lake Road)

The City of Cockburn District Traffic Study identifies the need to upgrade Hammond Road between Beeliar Drive and North Lake Road through the provision of an additional traffic lane in each direction. While the Scenario 1 “City Upgrades” list nominates this corridor upgrade as a longer-term improvement (2041), the District Traffic Study further notes through Scenario 6 modelling that this upgrade is required by 2031 to support forecast traffic growth and maintain acceptable operational performance.

Accordingly, the District Traffic Study indicates that capacity upgrades to the Hammond Road corridor are likely to be required within the medium-term planning horizon, which is relevant to the subject site due to its proximity to the Beeliar Drive / Hammond Road intersection and its reliance on Hammond Road as a key north–south distributor route. This planned widening would improve network resilience and assist in accommodating cumulative background growth and development-related traffic within the Cockburn Central district.

6.2 Beeliar Drive / Dunraven Drive Intersection Upgrade

The City of Cockburn is currently progressing road network improvements at the Beeliar Drive / Dunraven Drive intersection, which includes the installation of new traffic signals. This project is intended to improve traffic operation and road safety at the intersection by providing clearer traffic control and improved movement definition for all road users.

The project is being delivered in two stages:

- Stage 1 (FY2025): design of the new traffic signal system, with consideration of traffic flow, pedestrian safety and accessibility; and
- Stage 2 (FY2026): installation and commissioning of the new traffic signals.

The project is funded through the State Black Spot Program in partnership with the City of Cockburn and is anticipated to be completed by mid-2026.

This upgrade is relevant to the subject site as it will contribute to improved safety and operational performance along the Beeliar Drive corridor and will support the ongoing development and traffic growth within the Cockburn Central area.



7 Integration with surrounding area

The proposed Beeliar Shopping Centre has been developed with consideration to the broader Hammond Road North Structure Plan area and demonstrates a high level of integration with the planned land use and transport network framework. The proposal comprises a total retail floorspace of 7,855 m², which is consistent with the Structure Plan intent and is closely aligned with the nominated maximum retail floorspace of 8,100 m². This ensures that the proposed development scale remains within the anticipated activity centre function envisaged for the locality.

A key element of integration with the surrounding area is the provision of the internal north-south link road extending between Beeliar Drive and Yangebup Road. This road connection is consistent with the Structure Plan access hierarchy and is expected to provide an important internal movement corridor to support future development of adjoining landholdings and improve permeability within the precinct.

It is noted that the development proposal includes the north-south link road as a private internal road, rather than being constructed and ceded as a public road. While this differs from the likely long-term intent of the Structure Plan, the proposal retains the functional connectivity outcomes required to support internal circulation and future access opportunities.

The Structure Plan identifies a 4-way intersection arrangement to support movements between the internal north-south link and the eastern and western development parcels. This functional arrangement is retained within the development proposal. However, the proposal includes the provision of a roundabout treatment at this location to improve traffic flow, reduce vehicle delay, and enhance safety outcomes through lower-speed intersection operation and reduced conflict severity compared to a priority-controlled cross-intersection.

Overall, the proposed development is considered to make a significant contribution toward the delivery of transport infrastructure identified within the Structure Plan. This includes:

- construction of the internal north-south link road between Beeliar Drive and Yangebup Road;
- provision of a shared path along the Beeliar Drive frontage to support pedestrian and cyclist access; and
- provision of a footpath along the Yangebup Road frontage to improve connectivity to the surrounding road network and future development parcels.

These infrastructure works represent a substantial step toward implementing the Structure Plan transport framework and will support improved access, internal circulation and active transport connectivity for both the proposed shopping centre development and the broader structure plan area.

8 Traffic assessment

8.1 Assessment period

Two time periods are considered in the traffic assessment:

- Weekday PM peak hour: 3pm to 4pm.
- Weekend midday peak hour: 11am to 12pm.

The analysis was undertaken for the following scenarios:

- Existing situation (without proposed development traffic).
- 2028 (existing geometry without development traffic).
- 2028 (existing geometry with development traffic included).
- 2038 (existing geometry without development traffic).
- 2038 (existing geometry with development traffic included).

The TIA assumes that the development will be completed by 2028. The assessment has been undertaken on the basis that the eastern parcel of the Structure Plan area is not expected to be substantially redeveloped within the 10-year post-development assessment horizon adopted for the proposed shopping centre.

Accordingly, any traffic currently generated by existing industrial and commercial uses on the eastern parcel is assumed to remain broadly consistent during the assessment period. This existing traffic demand is therefore considered to be appropriately captured within the baseline traffic surveys used to establish existing traffic conditions and has been incorporated in the future-year modelling through the application of background traffic growth.

8.2 Existing traffic flows

To establish existing base traffic flows on the surrounding road network and nearby intersections, Urbii undertook a survey of turning movements at key nearby intersections.

The traffic count survey was undertaken during a standard week in August 2025, on Friday from 3pm to 5pm and Saturday from 11am to 1pm.

The base peak hour traffic flows derived for analysis are detailed in Appendix D.



8.3 Development traffic generation

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

- TfNSW *Trip Generation and Parking Demand Surveys of Shopping Centre Analysis* Report, September 2011.

The trip generation rates adopted are detailed in Table 3. *Shopping Centres* in the TfNSW guide include a wide range of land uses integrated into one centre. This includes supermarkets, slow and fast trade retail, food and beverage, medical and other offices. Therefore, the trip rate for *Shopping Centre* was applied to the entire site.

Table 3: Adopted trip rates for traffic generation

Land use	Trip rate source	Daily rate	Weekday Peak Hour	Weekend Peak Hour	IN	OUT
Shopping Centre (0 - 20,000m ²)	TfNSW	61 trips per 100m ²	6.7 trips per 100m ²	7.5 trips per 100m ²	50%	50%

The proposed shopping centre has a floor area of approximately 7,855 m². For the purpose of this traffic impact assessment, the floor area has been conservatively rounded up to **8,000 m²** to ensure that traffic generation estimates represent a robust upper-bound scenario. This approach provides allowance for minor design refinements, tenancy layout changes, and potential increases in lettable area that may occur during detailed design stages, without requiring the traffic modelling to be revisited.

The estimated traffic generation of the proposed development is detailed in Table 4. The proposed development is estimated to generate a total of 4,880 vehicles per day (vpd), 536 vehicles in the weekday peak hour and 600 vehicles in the weekend peak hour. The net increase in traffic is **+2,635vpd**, **+288vph** (weekday) and **+324vph** (weekend).

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

Surveys presented in the TfNSW Shopping Centre Analysis Report recorded an average passing trade rate of 46%, which was adopted in the analysis.

Table 4: Daily and peak hour traffic generation – proposed development

Shopping Centre Trips	GLFA (m ²)	Daily Trips	Weekday Peak	Weekend Peak	WD Peak		WE Peak	
					IN	OUT	IN	OUT
Primary Trips (54%)	-	2635	288	324	144	144	162	162
Passing Trade (46%)	-	2245	248	276	124	124	138	138
Total Shopping Centre Trips	8000	4880	536	600	268	268	300	300

Note: Primary/passing trade values rounded and balanced to maintain total peak-hour trips.

8.4 Trip distribution and assignment

8.4.1 Passing trade distribution

Passing trade traffic was assumed to be 70% eastbound and 30% westbound diverted traffic on Beeliar Drive. This is considered appropriate due to the nearby Cockburn Gateway Shopping Centre capturing a higher portion of westbound retail passing trade.

8.4.2 Primary trips

The primary trip distribution was adapted from the Hammond Road North Structure Plan, with some minor adjustments made to allow for cross trade between the proposed shopping centre development, and the adjoining sites to the west and east.

The following distribution was adopted:

- 5% to and from the internal connection to the west.
- 10% to and from the internal connection to the east.
- 15% to and from Hammond Road north.
- 15% to and from Hammond Road south.
- 20% to and from Beeliar Drive west.
- 20% to and from Beeliar Drive east.
- 5% to and from Kemp Road.
- 5% to and from Cooper Road east.
- 5% to and from Yangebup Road west.

The assumed trip distribution and assignment of trips is detailed in the traffic volume diagrams in Appendix D.

8.5 10-year post development forecasting

Forecasting background traffic volumes for the 10-year post development scenario is a complex exercise. Transport demand forecasting is shifting from fixed forecasts to 'scenario modelling.' Scenario modelling recognises that there are multiple known and unknown disrupters to transport behaviour in the coming years, for example:

- Increased work from home activity;
- Increased popularity of micromobility devices such as e-scooters;
- Increased provision of public transport such as light rail and trackless trams;
- Electric Vehicles;
- Autonomous Vehicles; and,
- Government Net Zero emission targets.

This TIA adopts a background traffic annual growth rate of 2.50%, which is based on information provided in the City of Cockburn District Traffic Study.

8.6 Analysis of intersections and development access

SIDRA Intersection modelling has been undertaken to assess the operational performance of key intersections surrounding the proposed development under existing and future-year traffic conditions. The analysis includes both weekday (WD) and weekend (WE) peak hour scenarios, with comparisons between future year background traffic growth (“without dev”) and future year traffic including the proposed development (“with dev”).

It is noted that the Beeliar Drive corridor already experiences significant congestion, particularly during the weekday PM peak period, and this is reflected in the modelling outputs which show several intersections operating at or above practical capacity even under the existing base year scenario.

A key output of SIDRA modelling is the degree of saturation (v/c ratio). In general, once an intersection exceeds a v/c ratio of 1.0, demand exceeds capacity and the modelled results can become unstable. Under these conditions, SIDRA may predict rapidly increasing queues and delays which are highly sensitive to small changes in input volumes, lane utilisation, arrival patterns and signal phasing. Accordingly, results for scenarios exceeding $v/c > 1.0$ should be interpreted as an indication of oversaturated conditions and excessive queuing, rather than as precise queue lengths.

Overall, the SIDRA results indicate that the broader road network constraints are primarily driven by background traffic growth and existing congestion on Beeliar Drive, with the proposed development generating only a modest incremental change in intersection performance.

A network model was developed with multiple connected intersections. The network sites are listed in Table 5. An image of the model network is shown in Figure 20.

Table 5: SIDRA network sites

SITES IN NETWORK		
Site ID	CCG ID	Site Name
 1	NA	Beeliar Dr / Kemp Rd
 2	NA	Beeliar Dr / Hammond Rd
 3	NA	Hammond Rd / Yangebup Rd / Cooper Rd
 4	NA	Shopping Centre Roundabout
 5	NA	Yangebup Rd / NS Link Rd

The results of the SIDRA analysis are summarised in Table 6, with detailed SIDRA outputs provided in Appendix E.

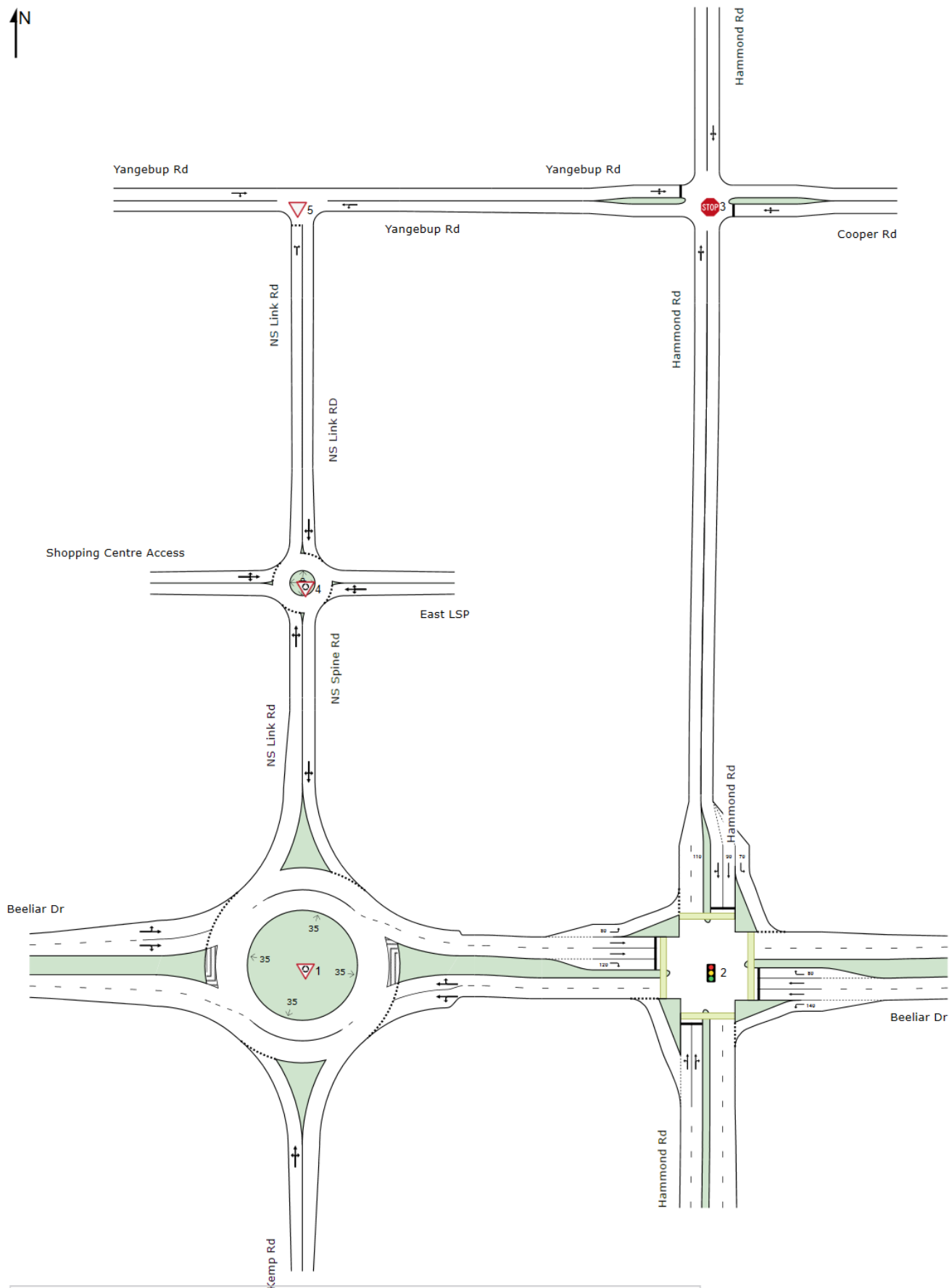


Figure 20: SIDRA network model

Table 6: Summary of SIDRA analysis results

Site 1 - Beeliar Dr / Kemp Rd Roundabout				
Scenario	v/c	Ave Delay (sec)	LoS	95% Queue (m)
2025 Existing WD Peak Hour	1.044	29.2	C	322.2
2028 WD Peak Hour - without dev	1.17	82.7	F	757
2028 WD Peak Hour - with dev	1.226	102.3	F	948.9
2038 WD Peak Hour - without dev	1.632	312.6	F	2228.7
2038 WD Peak Hour - with dev	1.691	330.8	F	2387.1
2025 Existing WE Peak Hour	0.41	5.4	A	16.8
2028 WE Peak Hour - without dev	0.446	5.5	A	19.3
2028 WE Peak Hour - with dev	0.482	6.3	A	23.2
2038 WE Peak Hour - without dev	1.047	30.5	C	337
2038 WE Peak Hour - with dev	1.099	51	E	521.6

Site 2 - Beeliar Dr / Hammond Rd Signals				
Scenario	v/c	Ave Delay (sec)	LoS	95% Queue (m)
2025 Existing WD Peak Hour	1.058	101.8	F	477.7
2028 WD Peak Hour - without dev	1.08	114.1	F	485.2
2028 WD Peak Hour - with dev	1.087	118.9	F	487.5
2038 WD Peak Hour - without dev	1.241	222.8	F	701.7
2038 WD Peak Hour - with dev	1.257	232.1	F	731
2025 Existing WE Peak Hour	0.844	38	D	199.3
2028 WE Peak Hour - without dev	0.861	42.6	D	239.1
2028 WE Peak Hour - with dev	0.88	48.1	D	271
2038 WE Peak Hour - without dev	1.058	84.8	F	476.7
2038 WE Peak Hour - with dev	1.066	88.8	F	478

Site 3 - Hammond Rd / Yangebup Rd / Cooper Rd 4-way				
Scenario	v/c	Ave Delay (sec)	LoS	95% Queue (m)
2025 Existing WD Peak Hour	0.356	2.8	N/A	6.4
2028 WD Peak Hour - without dev	0.384	3.1	N/A	8
2028 WD Peak Hour - with dev	0.405	3.9	N/A	11.4
2038 WD Peak Hour - without dev	1.016	9.7	N/A	42.5
2038 WD Peak Hour - with dev	1.147	18.8	N/A	99.3
2025 Existing WE Peak Hour	0.242	1.6	N/A	2
2028 WE Peak Hour - without dev	0.261	1.7	N/A	2.4
2028 WE Peak Hour - with dev	0.282	2.3	N/A	3.8
2038 WE Peak Hour - without dev	0.337	2.1	N/A	4.2
2038 WE Peak Hour - with dev	0.361	2.9	N/A	6.8

Site 4 - Internal Shopping Centre Roundabout				
Scenario	v/c	Ave Delay (sec)	LoS	95% Queue (m)
2028 WD Peak Hour - with dev	0.156	5.3	A	5.8
2038 WD Peak Hour - with dev	0.155	5.3	A	5.9
2028 WE Peak Hour - with dev	0.174	5.2	A	6.6
2038 WE Peak Hour - with dev	0.173	5.3	A	6.6

Site 5 - Yangebup Rd / NS Link Rd T-intersection				
Scenario	v/c	Ave Delay (sec)	LoS	95% Queue (m)
2028 WD Peak Hour - with dev	0.043	0.9	N/A	0.3
2038 WD Peak Hour - with dev	0.057	0.8	N/A	0.3
2028 WE Peak Hour - with dev	0.039	1.1	N/A	0.3
2038 WE Peak Hour - with dev	0.044	1	N/A	0.3

8.6.1 Site 1 – Beeliar Drive / Kemp Road Roundabout

The SIDRA results indicate that the Beeliar Drive / Kemp Road roundabout is already operating under congested conditions during the existing weekday (WD) peak hour, with a v/c ratio of 1.044, average delay of 29.2 seconds, and a 95th percentile queue of 322 m (LoS C).

In the 2028 weekday peak hour, the intersection is forecast to operate under significant oversaturated conditions due to background growth, with a v/c ratio increasing to 1.17 without development, and 1.226 with development. Average delay increases from 82.7 seconds to 102.3 seconds, and queue lengths increase from 757 m to 949 m with the development included.

In the longer-term 2038 weekday scenario, the roundabout becomes heavily over-capacity under both scenarios ($v/c > 1.6$). The modelling indicates that queues increase substantially due to network saturation, reaching approximately 2,229 m without development and 2,387 m with development.

The weekend (WE) peak hour performs acceptably in 2025 and 2028, but becomes constrained in the 2038 scenario, with v/c increasing to 1.047 without development and 1.099 with development.

Overall, the modelling indicates that the roundabout is already constrained under weekday peak conditions and is expected to worsen due to background growth. The proposed development results in a measurable increase in demand. However, the intersection is already operating at or beyond capacity, driven by the broader Beeliar Drive corridor congestion rather than the incremental development traffic.

8.6.2 Site 2 – Beeliar Drive / Hammond Road Signals

The SIDRA results indicate that the Beeliar Drive / Hammond Road signalised intersection is already operating under highly congested conditions during the existing weekday (WD) peak hour, with a v/c ratio of 1.058, average delay of 101.8 seconds, and a 95th percentile queue of approximately 478 m (LoS F).

The 2028 weekday peak hour scenario indicates continued oversaturation due to background growth, with a v/c ratio of 1.08 without development and 1.087 with development. Average delay increases from 114.1 seconds to 118.9 seconds when development traffic is included, indicating only a modest incremental impact.

In the 2038 weekday scenario, the intersection becomes increasingly constrained with v/c ratios of 1.241 without development and 1.257 with development, and delays exceeding 220 seconds under both cases.

The weekend peak hour results show that the intersection operates near capacity in the existing year ($v/c = 0.844$, LoS D) and becomes oversaturated in 2038 ($v/c > 1.05$).

These results confirm that the Beeliar Drive / Hammond Road intersection is already subject to substantial operational constraints, particularly during weekday peak periods. The development contributes only a small increase in v/c ratio and delay, indicating that the performance issues at this intersection are primarily driven by background traffic growth and corridor congestion rather than the proposed shopping centre development.

8.6.3 Site 3 – Hammond Road / Yangebup Road / Cooper Road (4-way)

The SIDRA outputs indicate that the Hammond Road / Yangebup Road / Cooper Road intersection performs well under existing and near-term future scenarios.

Under the existing weekday peak hour, the intersection operates efficiently with a v/c ratio of 0.356, average delay of 2.8 seconds, and a 95th percentile queue of 6.4 m.

In 2028, the development results in only a minor increase in v/c ratio from 0.384 without development to 0.405 with development, and average delay increases from 3.1 seconds to 3.9 seconds, which remains indicative of good operational performance.

In the 2038 weekday scenario, background growth causes the intersection to approach capacity, with v/c increasing to 1.016 without development and 1.147 with development. Under these conditions, average delay increases to 18.8 seconds with development traffic and queues increase to approximately 99 m.

The weekend peak hour scenarios remain well within capacity in all assessed years, with v/c ratios below 0.4 even in 2038.

Overall, the results suggest that this intersection is not currently constrained and is expected to operate satisfactorily in the near term. While the development contributes to higher demand in the 2038 weekday scenario, the intersection performance remains reasonable, and the predicted congestion is primarily reflective of long-term background growth.

8.6.4 Site 4 – Internal Shopping Centre Roundabout

The SIDRA modelling indicates that the proposed internal shopping centre roundabout will operate with a high level of efficiency in both weekday and weekend peak periods.

In the 2028 weekday peak hour, the intersection operates with a v/c ratio of 0.156, average delay of 5.3 seconds, and queue lengths of approximately 6 m (LoS A).

The 2038 results remain almost unchanged, with v/c ratios continuing at approximately 0.155, confirming that the internal circulation network is expected to operate with substantial spare capacity.

Weekend peak hour results also remain within LoS A, with v/c ratios below 0.18 and minimal queuing.

These results confirm that the internal roundabout design is suitable for the projected development traffic demands and will provide efficient traffic circulation within the shopping centre access network.

8.6.5 Site 5 – Yangebup Road / North–South Link Road T-intersection

The SIDRA results indicate that the Yangebup Road / North–South Link Road T-intersection will operate at a very low degree of saturation under all assessed scenarios.

In 2028, the weekday peak hour v/c ratio is only 0.043, with average delay less than 1 second and negligible queueing.

Similarly, the 2038 weekday scenario indicates a v/c ratio of 0.057, with minimal delay and queues of approximately 0.3 m. Weekend peak conditions remain similarly low in both years.

This confirms that the proposed site access arrangement to Yangebup Road is expected to operate efficiently and will not create adverse impacts to the surrounding network.

8.6.6 Summary of SIDRA assessment findings

The SIDRA modelling indicates that key intersections along the Beeliar Drive corridor are already experiencing significant congestion, particularly during the weekday peak hour. This is reflected by the existing-year v/c ratios exceeding 1.0 at both the Beeliar Drive / Kemp Road roundabout and the Beeliar Drive / Hammond Road signals.

The future-year modelling demonstrates that background traffic growth will further exacerbate congestion on Beeliar Drive, resulting in widespread oversaturated conditions by 2038 regardless of the proposed development.

The incremental impact of the proposed development is generally modest, with only minor increases in v/c ratio and delay across the external intersections when comparing “without development” and “with development” scenarios. The internal shopping centre road network performs at a high level of service, confirming that the access strategy and internal intersection arrangements are appropriately designed to accommodate the forecast traffic demand.

Overall, the SIDRA modelling indicates that the Beeliar Drive corridor intersections are already operating under congested and in some cases oversaturated conditions during the weekday peak period, and that intersection performance is expected to deteriorate further over time due to background traffic growth. The assessment demonstrates that the proposed shopping centre development results in only a modest increase in traffic demand and does not materially change the operational outcome of the wider network, particularly at the Beeliar Drive / Hammond Road signals and Beeliar Drive / Kemp Road roundabout where congestion is already significant. Accordingly, the modelling suggests that future intersection upgrades along Beeliar Drive will be primarily driven by regional growth and existing capacity constraints, rather than the proposed development in isolation.



8.7 Consistency with the City of Cockburn District Traffic Study

The City of Cockburn District Traffic Study (2023), prepared by SMEC, identifies Beeliar Drive as a key east–west arterial that is forecast to operate under significantly congested conditions in the future “Do Nothing” scenario. Several sections of Beeliar Drive are predicted to operate with V/C ratios in the order of 110 to 135 during the weekday PM peak by 2041, indicating that traffic demand is expected to exceed practical road capacity during peak periods. Under these conditions, congestion, extended queuing and unreliable travel times are anticipated, even in the absence of additional site-specific development.

The findings of the District Traffic Study are consistent with the results of the SIDRA intersection analysis undertaken for this assessment. The SIDRA modelling demonstrates that key intersections along Beeliar Drive, including the Beeliar Drive / Hammond Road signals and the Beeliar Drive / Kemp Road roundabout, are already operating close to or above practical capacity during the weekday PM peak hour. In several scenarios, V/C ratios approach or exceed 1.0, reflecting saturated or oversaturated conditions where intersection performance becomes increasingly unstable and queues can grow rapidly.

Importantly, the SIDRA results show that the incremental impact of the proposed shopping centre development on Beeliar Drive operations is modest when compared with the scale of congestion driven by background traffic growth. While the development contributes additional traffic to the network, it does not fundamentally change the operational outcome of the Beeliar Drive corridor, which is already constrained in the future year scenarios assessed. This outcome is consistent with the District Traffic Study, which indicates that future capacity upgrades to Beeliar Drive will be required to address regional growth pressures rather than being attributable to any single development.

Accordingly, both the District Traffic Study and the project-specific SIDRA modelling point to the same conclusion, future congestion on Beeliar Drive is primarily a function of broader network demand growth, and the proposed development represents only a small proportion of total future traffic demand within the corridor.

8.8 Impact on neighbouring areas

The proposed shopping centre development is not expected to result in adverse traffic impacts on surrounding residential or industrial areas. The site is directly accessed from the existing arterial and distributor road network, including Beeliar Drive and Yangebup Road, which are intended to accommodate higher traffic volumes and provide efficient regional connectivity. As a result, development traffic is expected to be largely contained within the strategic road network, rather than dispersing through local residential streets.

Internal access arrangements have been designed to provide clear and legible entry and exit points. The traffic modelling indicates that while the surrounding road network is already operating under constrained conditions during peak periods, the additional traffic generated by the proposed development represents a modest increase relative to existing and future background traffic volumes. Consequently, the development is not anticipated to materially change traffic patterns or levels of service on neighbouring local streets beyond those already forecast due to background growth.

8.9 Traffic noise and vibration

The proposed development is not expected to result in significant changes to traffic noise or vibration impacts within the surrounding area. The majority of development-generated traffic will utilise Beeliar Drive and Yangebup Road, both of which currently experience high traffic volumes and are designed to accommodate arterial network movements. The incremental increase in traffic attributable to the development is small relative to existing and forecast background traffic and is therefore unlikely to result in perceptible changes in road traffic noise levels.

No changes to road alignment, speed environment, or heavy vehicle proportions are proposed that would materially alter vibration characteristics on the surrounding road network. Vehicle types generated by the development are expected to be predominantly light passenger vehicles, with limited heavy vehicle activity associated primarily with servicing and deliveries during off-peak periods. On this basis, traffic-related noise and vibration impacts are anticipated to remain consistent with existing conditions, and no additional mitigation measures are considered necessary from a traffic perspective.



9 Parking demand and supply

9.1 Policy Context and Parking Requirements

Parking requirements for the proposed shopping centre development have been assessed by the project Town Planner, with reference to the following statutory and policy documents:

- City of Cockburn Town Planning Scheme No. 3 (TPS3).
- City of Cockburn Draft Local Planning Scheme No. 13 (Draft LPS13).
- WA Planning Manual – Parking guidance.

Under TPS3, parking requirements are determined on a tenancy-by-tenancy basis, having regard to individual land use classifications, floor areas, seating numbers, practitioner numbers and service station components. Based on the adopted assumptions and the proposed tenancy mix, TPS3 generates a total parking requirement of approximately 569 parking bays.

Draft LPS13 adopts revised and generally reduced parking ratios for retail and commercial development, reflecting contemporary planning objectives and the opportunity for shared parking across mixed-use centres. Application of the Draft LPS13 parking rates to the proposed development results in a parking requirement of approximately 530 parking bays.

The WA Planning Manual provides broader guidance on parking provision, encouraging a performance-based approach that considers actual parking demand, land use mix, shared parking potential and site context. Application of the relevant guidance to the proposed development results in a parking requirement of approximately 180 parking bays, reflecting the Manual's emphasis on demand-based provision rather than prescriptive minimums.

Based on the above, the statutory and policy-based parking requirement for the proposed development ranges from approximately 180 bays to 569 bays, depending on the planning framework applied. This wide range reflects the differing objectives of each document, from the more prescriptive requirements of TPS3 to the demand-responsive and performance-based approach promoted by the WA Planning Manual.

9.2 Proposed Parking Supply

The proposed development will provide a total of 315 on-site car parking bays, in addition to allowance for drive-through queuing/stacking where applicable.

Based on the proposed gross leasable floor area of approximately 7,855 m², this equates to an overall parking provision rate of approximately **4.0 bays per 100 m² NLA**.

This parking supply is considered consistent with typical suburban supermarket-based centres, particularly where a significant proportion of customers are expected to arrive by private vehicle.

9.3 Estimated Parking Demand

In addition to the statutory parking rates described above, an engineering-based parking demand estimate has been undertaken with reference to previous shopping centre parking utilisation surveys undertaken by Urbii, and typical demand ranges documented in parking generation guidance.

Based on industry experience and observed demand profiles at comparable centres, typical peak parking accumulation for a centre of this size is generally in the order of **2.7 to 3.7 bays per 100 m² NLA**.

Applying this demand range to the proposed development (7,855 m² NLA) indicates an expected peak parking demand of approximately **212 to 290 bays**.

This corresponds with typical peak trading conditions, where car park utilisation commonly reaches approximately 70% to 90% of available supply.

On this basis, the proposed supply of 315 bays is considered sufficient to accommodate forecast peak parking demand, while also providing an appropriate allowance for variations in demand due to seasonal conditions, tenancy turnover, and short-term peak surges during weekend trading periods.

9.4 Discussion

Although the proposed supply does not meet the higher draft scheme-based calculated requirement (approximately 569 bays), the scheme requirement is considered conservative for this location and tenancy mix, particularly given that it applies high parking ratios to retail floorspace without accounting for shared demand characteristics, turnover efficiency, and the integrated nature of modern shopping centres.

Overall, the proposed provision of 315 on-site parking bays is considered appropriate for the scale and function of the shopping centre development. While the calculated parking requirements vary significantly depending on the planning document applied, the proposed supply aligns closely with engineering-based demand estimates derived from comparable shopping centre parking surveys and recognised parking generation guidance.

The proposed parking supply is therefore expected to accommodate typical peak parking demand with a reasonable allowance for variability in trading conditions and is considered suitable to support the efficient and safe operation of the development without resulting in an oversupply of parking.

10 Provision for service vehicles

Provision for service, delivery and waste collection vehicles has been incorporated into the site layout to ensure safe and efficient operation of the proposed development, while minimising interaction between service vehicles and customer traffic.

Main shopping centre building

Loading docks servicing the main shopping centre building are located at the rear of the development and are accessed via dedicated service vehicle crossovers on Yangebup Road. These loading facilities accommodate deliveries, waste collection and other service vehicles associated with the supermarket and specialty retail tenancies. The location and access arrangement ensure that service vehicle movements are segregated from customer parking areas and internal circulation aisles, thereby reducing potential conflicts and improving overall site safety and efficiency.

Swept path analysis has been undertaken for a 19.0 m Articulated Vehicle (AV) to confirm that service vehicles can safely enter, manoeuvre within, and exit the loading dock areas in a forward gear where practicable.

Fuel station pad site

The fuel station pad site is provided with a dedicated loading bay to accommodate delivery and waste collection vehicles. Swept path analysis has been undertaken for an 8.8 m Medium Rigid Vehicle (MRV) in accordance with AS 2890.2 to confirm satisfactory access, circulation and egress within the site.

Fuel deliveries to the service station are expected to be undertaken by a 19.0 m Articulated Vehicle (fuel tanker). These deliveries are anticipated to occur outside of peak trading periods of the shopping centre to minimise interaction with customer traffic. Swept path analysis for the fuel tanker movement has been undertaken and demonstrates that the vehicle can safely access and service the site. Service vehicle access to the fuel station is provided via the western crossover on Yangebup Road.

Fast-food pad sites

Each of the two fast-food pad sites is provided with a dedicated delivery and waste servicing bay, located to allow service vehicles to operate independently of customer parking and queuing areas. One fast-food site is designed to accommodate servicing by an 8.8 m Medium Rigid Vehicle (MRV), while the other site is designed to accommodate a 12.5 m Heavy Rigid Vehicle (HRV) to reflect anticipated delivery requirements. Swept path analysis has been undertaken for each vehicle type and confirms that service vehicle movements can be undertaken safely and efficiently.

Swept path diagrams demonstrating service vehicle access and manoeuvrability for all relevant vehicle types are provided in Appendix F.

11 Public transport assessment

The subject site is located within an established urban area that is serviced by existing public transport infrastructure, primarily bus services operating along Beeliar Drive and surrounding arterial roads. These services provide connections to nearby activity centres, residential areas and the broader metropolitan public transport network.

Bus stops are located along Beeliar Drive in proximity to the site, providing convenient access to the development for public transport users. These stops are positioned on both sides of Beeliar Drive and are supported by existing pedestrian infrastructure, enabling safe and legible access between the bus stops and the site. The availability of stops in close proximity to the development supports public transport as a viable travel mode for staff and customers.

Pedestrian access between the site and nearby bus stops is facilitated by formal crossing opportunities, including the signalised pedestrian crossings at the Beeliar Drive / Hammond Road intersection, as well as a mid-block pedestrian crossing on Beeliar Drive located near the existing bus stop facilities. These crossing points improve connectivity and reduce walking distances for public transport users accessing the site.

The proposed development will further enhance public transport accessibility through the delivery of new shared paths along the Beeliar Drive and Yangebup Road frontages, providing improved pedestrian connections between bus stops and the site. These shared paths will integrate with the existing footpath network and support safe, continuous access for public transport patrons.

Overall, the site benefits from an appropriate level of public transport accessibility for a suburban activity centre of this scale. The combination of nearby bus services, existing crossing infrastructure and the proposed pedestrian upgrades associated with the development will support public transport use and provide safe and convenient access between the site and surrounding public transport facilities.



12 Walking assessment

The subject site is located within an established urban area that is supported by existing pedestrian infrastructure along Beeliar Drive, Hammond Road and surrounding local roads. Existing footpaths and shared paths provide walking connectivity between nearby residential areas, commercial land uses and public transport facilities, and form an important component of access to the proposed shopping centre.

Pedestrian crossing opportunities in the vicinity of the site are currently provided at the signalised Beeliar Drive / Hammond Road intersection, which includes formal pedestrian signal phases allowing safe and controlled crossings of both Beeliar Drive and Hammond Road. This intersection represents the primary controlled pedestrian crossing point within the local area and provides a key link for pedestrians accessing the site from surrounding neighbourhoods.

A mid-block pedestrian crossing on Beeliar Drive is also provided in proximity to existing bus stops on both sides of the road. This facility improves pedestrian accessibility to public transport by reducing walking distances and enabling more direct pedestrian desire line movements between bus stops and surrounding land uses.

The proposed development will significantly enhance walking accessibility through the provision of new pedestrian infrastructure along the site frontages. This includes the construction of shared paths along the Beeliar Drive and Yangebup Road frontages, which will integrate the development into the existing and future active transport network and improve pedestrian connectivity to adjacent land uses and public transport facilities.

Within the site, a comprehensive internal pedestrian network is proposed, comprising footpaths and clearly defined pedestrian crossings that connect external shared paths to the shopping centre buildings, pad sites and parking areas. Pedestrian movements across internal roads and parking aisles are facilitated through the use of raised pavement treatments, clear line marking and contrasting surface finishes to enhance visibility and priority for pedestrians.

In addition, portions of the internal road network are designed as a shared zone / low-speed environment, providing a pedestrian-friendly layout that prioritises safe and convenient pedestrian movement across internal drive aisles. This approach supports comfortable customer circulation between parking areas and retail frontages and encourages walking as a convenient access mode within the site.

Overall, the proposed development provides a high level of pedestrian accessibility and integrates effectively with existing walking infrastructure in the surrounding area. The combination of external shared paths, formal crossing opportunities and a well-connected internal pedestrian network supports safe, legible and convenient pedestrian access to and within the site.

13 Cycling assessment

13.1 Cycling network

The subject site is located on Beeliar Drive within the City of Cockburn, approximately 1.5km west of Cockburn Central. The surrounding road network comprises a combination of arterial and distributor roads, with cycling infrastructure provided along key corridors including Beeliar Drive and Hammond Road. Beeliar Drive forms an important east-west movement corridor and provides connectivity between residential areas such as Beeliar, Yangebup and Success.

Cycling access to the site will be supported by the existing shared path infrastructure along Beeliar Drive, which provides a continuous route for both commuter and recreational cycling movements. The Hammond Road corridor also provides strategic north-south connectivity and links to regional cycling infrastructure extending toward Cockburn Central and surrounding suburbs.

The proposed development will construct shared paths along the Beeliar Drive and Yangebup Road frontages, improving connectivity for cycling along these routes. These shared paths will integrate with the internal circulation network and provide convenient access between the external path network, bicycle parking facilities, and the shopping centre entrances.

13.2 Bicycle parking and end of trip facilities

The development includes the provision of bicycle parking facilities to support cycling as an alternative mode of access for customers and staff. Based on the latest concept plan, a total of 68 bicycle bays are proposed, comprising:

- 44 visitor bicycle bays, and
- 24 secure staff bicycle bays.

The bicycle parking areas are distributed across the site and positioned to provide convenient access to the main shopping centre entrances and pad site tenancies. The secure staff bicycle parking will support longer-stay commuter cycling trips, while the visitor bicycle bays will cater for short-duration trips associated with shopping and casual dining.

The provision of secure bicycle parking is considered appropriate given the scale of the development and is consistent with contemporary best practice for encouraging sustainable transport mode share. The bicycle facilities will also complement the walking network and shared path infrastructure proposed along the development frontages.

In addition to bicycle parking, staff end-of-trip facilities are provided within the development to support commuter cycling. These facilities include showers, change rooms and lockers, and are centrally located between Tenancies T03 and T04, providing convenient access for staff working across the shopping centre. The provision of end-of-trip amenities is consistent with best practice for encouraging active transport and supports cycling as a viable mode of travel for employees, particularly for longer-distance commuting trips.

13.3 Sustainable transport catchment

The subject site is well located to support sustainable and active modes of transport for both customers and staff, with strong connectivity to the surrounding residential catchment and key activity centres. The site is situated on Beeliar Drive, a key east–west movement corridor that provides direct access to a well-established local road and shared path network serving the suburbs of Beeliar, Yangebup, Success, Cockburn Central and surrounding areas.

As illustrated in Figure 21, the 8km cycling and micromobility isochrone equates to a comfortable 20–25 minute trip. This catchment encompasses a broad area including Beeliar, Yangebup, Success, Atwell, Bibra Lake, Spearwood, Coolbellup, Cockburn Central and parts of Jandakot. Within this area there are numerous residential neighbourhoods, schools, local centres, employment areas and recreational destinations, supporting the practicality of cycling and other micromobility modes for both commuting and shopping trips.

The surrounding road and path network includes a combination of on-road bicycle facilities and off-road shared paths, including key east–west and north–south routes that provide direct and legible connections to the site. The proximity of the development to Cockburn Central and other major activity nodes further strengthens its role within the local sustainable transport network. These connections enable continuous and off-road travel for cycling, reducing conflicts with vehicular traffic and improving safety and comfort.

The integration of the proposed development with this broader cycling and micromobility catchment supports mode shift away from private vehicle trips for shorter journeys. In combination with the on-site bicycle parking, end-of-trip facilities and internal shared path connections, the development is well positioned to accommodate and encourage sustainable transport choices consistent with contemporary transport and land-use planning objectives.

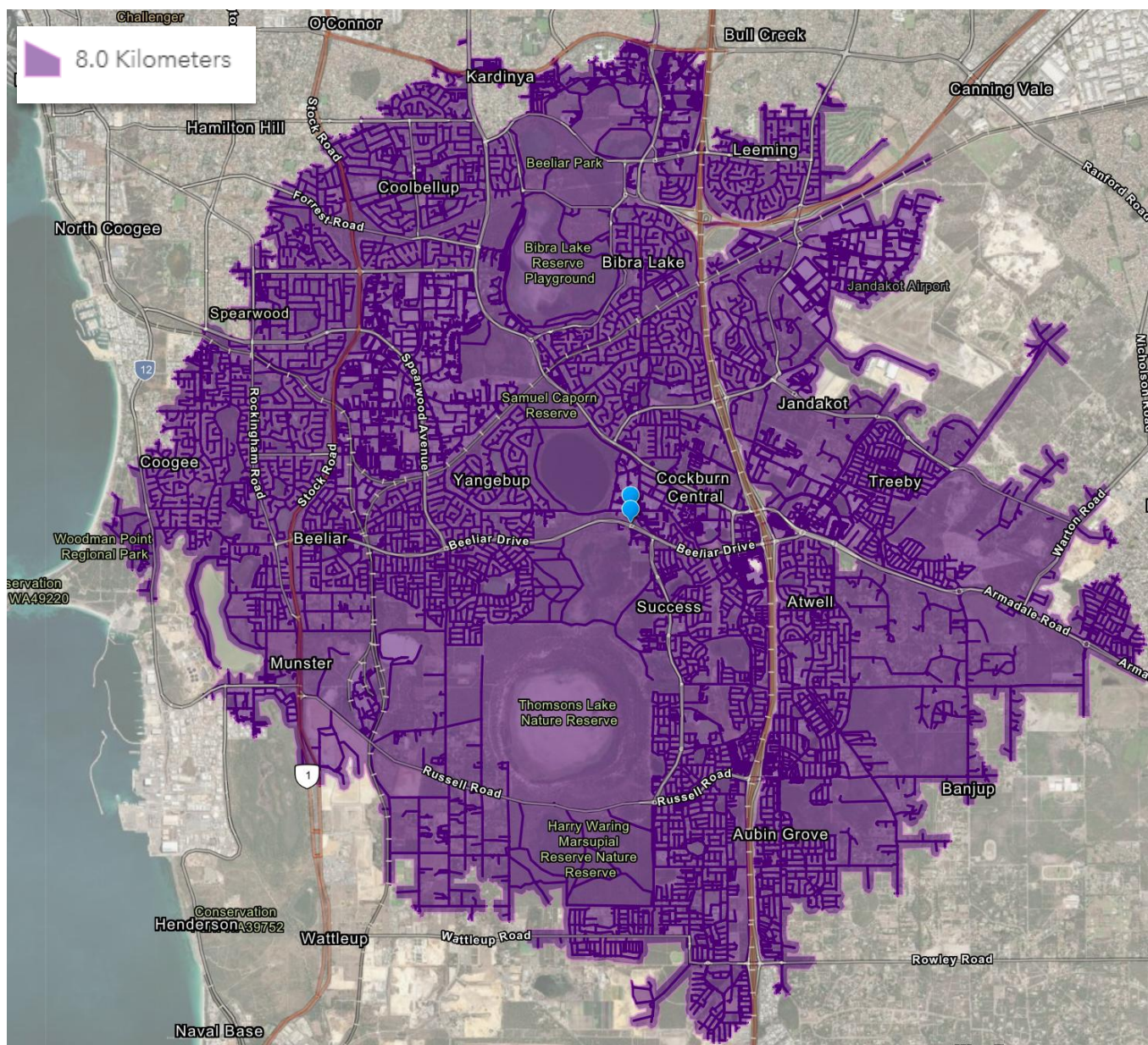


Figure 21: Cycling and micromobility catchment

14 Conclusion

This Traffic Impact Assessment has examined the transport implications of the proposed shopping centre development within the City of Cockburn, with consideration given to traffic operations, site access, parking provision, service vehicle movements and opportunities for walking, cycling and public transport use.

The assessment confirms that the surrounding road network, particularly along Beeliar Drive, already experiences a high level of congestion during peak periods as a result of existing and forecast background traffic growth. This broader network constraint is consistent with strategic traffic planning undertaken for the area. The additional traffic generated by the proposed development represents a relatively small increase in demand and does not materially change the overall performance of the surrounding intersections.

The proposed access arrangements, internal road layout and servicing strategy have been designed to safely and efficiently accommodate customer, delivery and waste collection vehicles, with clear separation between service and customer movements. Parking provision has been assessed against relevant planning frameworks and industry experience and is considered appropriate for the scale and function of the development, with sufficient capacity to meet anticipated customer demand.

The development is well positioned to support sustainable transport choices. Existing public transport services, pedestrian crossing facilities and surrounding footpath infrastructure provide a strong foundation for non-car access. These are further enhanced by the proposed internal pedestrian network, shared paths along the site frontage, bicycle parking and staff end-of-trip facilities, which collectively improve connectivity, safety and convenience for pedestrians and cyclists.

Overall, the assessment concludes that the proposed development can be accommodated within the existing and planned transport network and that it represents an appropriate and well-considered outcome from a traffic and transport perspective.