Metro Outer Development Assessment Panel Agenda

Meeting Date and Time: Wednesday, 19 August 2026; 9:30am
Meeting Number: MODAP/154
Meeting Venue: 140 William Street, Perth

A live stream will be available at the time of the meeting, via the following link:
MODAP/154 - 19 August 2026 - City of Gosnells - City of Cockburn

PART A – INTRODUCTION

1. Opening of Meeting, Welcome and Acknowledgement
2. Apologies
3. Noting of Minutes

PART B – CITY OF GOSNELLS

1. Declarations of Due Consideration
2. Disclosure of Interests
3. Form 1 DAP Applications
   - 3.1 Lot 31 (No.340) Railway Parade, Beckenham - Seventeen (17) Grouped Dwellings – DAP/26/03055
4. Form 2 DAP Applications
5. Section 31 SAT Reconsiderations

PART C – CITY OF COCKBURN

1. Declarations of Due Consideration
2. Disclosure of Interests
3. Form 1 DAP Applications
   - 3.1 Lots 1, 300, 4308, 7, and 99 Yangebup Road, Hammond Road and Beeliar Drive, Cockburn Central - Proposed Commercial Development (Neighbour Centre) – DAP/26/03070
4. Form 2 DAP Applications
5. Section 31 SAT Reconsiderations

PART D – OTHER BUSINESS

1. State Administrative Tribunal Applications and Supreme Court Appeals
2. Meeting Closure

Please note, presentations for each item will be invited prior to the items noted on the agenda and the presentation details will be contained within the related information documentation

DAP Members
Francesca Lefante (Presiding Member)
Clayton Higham (Deputy Presiding Member)
Mike Mouritz
Mayor Terresa Lynes (Part B – City of Gosnells)
Cr Saiful Islam (Part B – City of Gosnells)
Cr Tom Widenbar (Part C – City of Cockburn)
Cr Chontelle Stone (Part C – City of Cockburn)

DAP Secretariat
Tenielle Brownfield
Ashlee Kelly

PART A – INTRODUCTION

1. **Opening of Meeting, Welcome and Acknowledgement**
2. **Apologies**
3. **Noting of Minutes**

PART B – CITY OF GOSNELLS

1. Declarations of Due Consideration

2. Disclosure of Interests

3. Form 1 DAP Applications

3.1 Lot 31 (No.340) Railway Parade, Beckenham - Seventeen (17) Grouped Dwellings – DAP/26/03055

4. Form 2 DAP Applications

Nil

5. Section 31 SAT Reconsiderations

Nil

Part B – Item 3.1 - LOT NO. 31 (340) RAILWAY PARADE BECKENHAM

RESPONSIBLE AUTHORITY REPORT – FORM 1	
DAP Name:	Metro Outer DAP
DAP File No:	DAP/26/03055
LG Reference:	DA26/00025
Proposed Development:	17 Grouped Dwellings
Value of Development:	$5 million
Owner:	Jago5 Investments Pty Ltd
Applicant:	Tuscom Subdivision Consultants
Local Government Area:	City of Gosnells
Responsible Authority:	City of Gosnells
Authorising Officer:	Brenton Scambler – Manager Development Services
Application Acceptance Date:	23 January 2026

LOCATION PLAN

RESPONSIBLE AUTHORITY RECOMMENDATION

That the Metro Outer DAP resolves to **REFUSE** DAP Application reference DAP/26/03055 for seventeen (17) grouped dwellings at 340 (Lot 31) Railway Parade, Beckenham, in accordance with Clause 68 of Schedule 2 (Deemed Provisions) of the Planning and Development (Local Planning Schemes) Regulations 2015, and the City of Gosnells Local Planning Scheme No. 24, for the following reasons:

1. The proposed development is inconsistent with Residential zone objective No. 2 of Table 2 – Zone Objectives under Local Planning Scheme No. 24, as the proposal does not facilitate and encourage high-quality design, built form and streetscapes within a residential area.

2. The proposed development does not comply with clause 26(1) of Local Planning Scheme No. 24, as it is located within the Residential zone with a R100 coding and does not achieve a minimum density of R60.

3. The proposed development does not meet the following Deemed to Comply and associated Design Principles which results in an undesirable development and built form outcome within the locality:

    a. Primary Garden Area (PGA) for units 6 to 17 does not satisfy deemed-to-comply provision C1.1.1 and/or demonstrate compliance with design principle P1.1.1 of Section 1.1 - Private Open Space under Part C, of the Residential Design Codes Volume 1.

    b. The proposed storage areas for units 6 to 10, unit 11 and unit 17 do not satisfy deemed-to-comply provision C2.1.9 and/or demonstrate compliance with design principle P2.1.5 of 2.1 Size and Layout of dwellings under Part C, of the Residential Design Codes Volume 1.

    c. The functional utilities for all proposed units are not demonstrated within the development application and therefore does not satisfy deemed to comply requirement C2.5.1 and/or demonstrate compliance with design principle P2.5.1 and P2.5.2 of Section 2.5 - Utilities under Part C, of the Residential Design Codes Volume 1.

    d. The proposed site cover for units 2 to 17 does not satisfy deemed-to-comply provision C3.1.1 and/or demonstrate compliance with design principle P3.1.1 of Section 3.1 - Site Cover under Part C, of the Residential Design Codes Volume 1.

    e. The proposed primary street setback to the Head Close lot boundary does not satisfy deemed-to-comply provision C3.3.1 and/or demonstrate compliance with design principles P3.3.1 and P3.3.2 of Section 3.3 - Street setbacks under Part C, of the Residential Design Codes Volume 1.

    f. The proposed communal street setback does not satisfy deemed-to-comply provision C3.3.6 and/or demonstrate compliance with design principle P3.3.3 of Section 3.3 - Street setbacks under Part C, of the Residential Design Codes Volume 1.

g. The proposed boundary walls along the north-west and south-east boundaries of the subject site does not satisfy deemed-to-comply provision C3.4.4 and/or demonstrate compliance with design principle P3.4.4 of Section 3.4 - Lot boundary setbacks under Part C, of the Residential Design Codes Volume 1.

h. The proposed communal street design and width does not satisfy deemed-to-comply provisions C3.7.4 and C3.7.5 and/or demonstrate compliance with design principles P3.7.1, P3.7.4 and P3.7.5 of Section 3.7 - Access under Part C, of the Residential Design Codes Volume 1.

4. Portions of proposed Units 1 and 17 are located within a registered easement for transmission line purposes.

PROPOSAL:

The proposal involves the development of seventeen (17) Grouped Dwellings on the subject lot. Key elements of the development are summarised as follows:

- Demolition of all existing buildings and structures on-site;
- The development comprises of:
  - 11 single storey, three-bedroom dwellings;
  - 4 single storey, four-bedroom dwellings.
  - 2 two-storey, three-bedroom dwellings;
- The proposed two-storey units (Units 1 and 17) address Railway Parade, with five units addressing Head Close and all remaining units addressing the proposed communal street;
- Vehicle access for all dwellings is proposed via a central communal street accessed from Railway Parade;
- The 6m central common property incorporates a 4.8m driveway and 1.2m pedestrian path with pockets of landscaping;
- Resident car parking is located within a garage for each dwelling, and three visitor parking bays are located adjacent to Railway Parade;
- No communal open space or other shared facilities are proposed.

SUBJECT SITE AND SURROUNDS:

The subject site has total site area of 3,583m^2 and contains an existing single house and outbuilding. The subject site has two street frontages, with Railway Parade to the south-west and Head Close to the north-east. The Armadale railway line is directly opposite, with the Beckenham Railway Station located 165m south-east of the subject site. Land directly around the Beckenham station is subject to a precinct plan identifying commercial and high-density mixed-use development to support the station. The site is located approximately 40m from the boundary with the City of Canning. It is noted that there is an existing Western Power transmission line easement that extends approximately 5m into the property from the Railway Parade street boundary line for the entire width of the lot.

Beckenham is identified as a planned urban growth area supporting increased density and infill development, particularly for lots near the Beckenham Railway Station. The site is surrounded by varied housing types, including low-density single houses to the

south-east, medium-density grouped dwellings to the north-west, and high-density apartment complexes to the north-east.

BACKGROUND:

The site currently contains a timber Federation bungalow home constructed in 1914. The existing dwelling is a Category 3 heritage listing under the City of Gosnells Heritage Inventory (refer to attachment 6). A category 3 heritage listing denotes that there is no statutory requirement to retain or seek further approval for the removal of the heritage structure. In this regard, the City has no objection to the removal of the dwelling.

History of the Site

In March 2015 the Metro-East JDAP approved 42 multiple dwellings across three separate three storey apartment buildings on the site. Further, in July 2015 the Metro-East JDAP approved 58 multiple dwellings within a four-storey apartment building.

Subdivision application

The applicant has lodged a subdivision application for 17 survey-strata lots and common property. The subdivision application is currently deferred pending the outcome of the development application.

History of application

The City has been actively working with the applicant since January 2026 regarding the development proposal. The original plans proposed fifteen single storey grouped dwellings with access via a central communal street. City officers met with the proponent on several occasions to discuss concerns with the proposal, notably the proposal not meeting the minimum density assigned under the City's Local Planning Scheme as well as the several aspects of the development not meeting deemed to comply standards or providing justification against the corresponding design principle under the R-Codes. The latest set of plans (attachment 1) is the third iteration of the proposal, with many outstanding concerns having not been addressed. The aspects of the development the City does not consider appropriate are discussed within the planning assessment section of this report.

PLANNING ASSESSMENT:

PLANNING FRAMEWORK	
Region Scheme	Metropolitan Region Scheme
Region Scheme - Zone/Reserve	Urban
Local Planning Scheme	Local Planning Scheme No. 24
Local Planning Scheme - Zone	Residential R100
Lot Size	3583m^2
Existing Land Use	Single House
Heritage Status	☐ N/A ☐ State Register of Heritage Places ☐ Local Heritage List ☐ Local Heritage Area

	☒ Local Heritage Inventory
Bushfire Prone Area	No

The proposal has been assessed against the relevant planning framework including the City's Local Planning Strategy, Local Planning Scheme No. 24 and relevant state and local planning policies. The following matters have been identified as key considerations for the determination of this application.

Local Planning Strategy (LPS)

The City's LPS was adopted on the 27 August 2025. A primary objective of the City's LPS is to facilitate the development of additional and diverse housing through infill development. To assist in achieving this objective, the City aims to capitalise on the existing infill opportunities in and around activity centres and rail stations, where there are currently significant large landholdings within walkable catchments of railway stations within the City (including Beckenham railway station). The LPS seeks a consolidated form of urban development with an emphasis on the intensification of residential uses in and around activity centres.

The LPS proposed an increase in residential densities in and around activity centres and rail stations by introducing medium to high residential/ mixed use zones. The subject site and surrounding area were subsequently identified for an upcoding from R20 to R100 within a walkable catchment of Beckenham Train Station to support Transit Oriented Development (TOD). The area is currently in transition from a low density, detached character to a high-density precinct of taller buildings centred around a walkable attractive pedestrian focussed environment.

The proposed development is not considered to achieve the desired built form outcome envisaged for this area. The proposed development is focused on a central vehicle access with mostly single storey dwellings along the periphery of the site. This type of development focuses more on vehicle dependency and extensive site coverage which limits space for quality landscaping and useable private open space throughout the site. City officers consider this to be an underutilisation of the site from a density perspective and contradicts the desired development pattern within transit orientated precincts.

Local Planning Scheme No. 24

The subject site is zoned 'Residential' with an associated density code of R100 under the City of Gosnells Local Planning Scheme No. 24 (LPS 24). The objectives of the 'Residential' zone are as follows:

- To provide a range of housing and a choice of residential densities to meet the needs of the community.
- To facilitate and encourage high-quality design, built form and streetscapes throughout residential areas.
- To provide for a range of non-residential uses, which are compatible with and complementary to residential development.

City officers consider that the proposal does not achieve the residential zone objectives of the scheme as the development proposes a single housing typology consisting of 3 – 4-bedroom dwellings in a grouped dwelling/ semi-detached housing arrangement. Additionally, the development does not align with the assigned R100 density. As identified above, the site's location and zoning should facilitate higher density development that leverages a transit orientated outcome as shown within the surrounding development context.

Furthermore, Clause 26 (1) of LPS 24 requires where an area is identified with density codes of R80 to R160 (inclusive), any development and/or subdivision is to achieve a minimum density of R60. The proposed development achieves a maximum average site area of 210m^2 aligning with an R50 density. In consideration of the above and the strategic location of the subject site, the City does not consider a variation to Clause 26 of LPS 24 is appropriate in this instance.

As discussed in the following sections of this report, there are several design elements of the proposal which do not satisfy the relevant deemed-to-comply provisions and corresponding design principles. As such, the City is of the opinion that the proposal does not encourage high-quality design or built form and does not enhance the existing streetscape.

Residential Design Codes Volume 1 (Part C)

The proposal includes grouped dwellings within a R100 code, which are required to be assessed against Part C of the Residential Design Codes. The table below outlines the design elements of the proposal that do not achieve the deemed-to-comply standards:

Design Element	DtC Requirement	Proposal	Assessment
1.1 Private Open Space: Primary Garden Area (PGA)	• Minimum PGA of 30m^2 (units 6 to 10) • minimum PGA of 25m^2 (units 11 to 17) • PGA to be located behind the primary street setback area	• Units 6 to 10: 19m^2 of PGA located in the primary street setback areas; • Units 11 to 16: 25m^2 • Unit 17: 16m^2 located in the front setback area	Does not satisfy deemed to comply standard
2.1 Size and layout of dwellings (Storage)	• Minimum 4m^2 storage area. • Minimum 1.5m storage area dimension and minimum 2.1m storage height	• Units 6 to 10: 3.7m^2 storage area. • Units 11 and 17: 3m^2 storage area (The calculated Store area does not include floorspace area set aside for bin storage)	Does not satisfy deemed to comply standard
2.5 Utilities (Functional utilities)	• Located behind the primary street setback and not visible from the primary street.	• Proposal does not demonstrate the location of functional utilities i.e. a/c units, clothes drying areas	Does not satisfy deemed to comply standard

	• Integrated into the design of the development. • Not visually obtrusive and minimise the impact of noise sources	and hot water systems.	
3.1 Site Cover	• Maximum 70% site cover.	• Site cover of 71% to 75% (units 2 to 10 and 17) • Site cover of 80% to 81% (units 11 to 16)	Does not satisfy deemed to comply standard
3.3 Street setbacks	• Primary street setback – 2m • Communal street setback - 0.5 metres	• Primary street setback –1.5m (Head Close). • Communal street setback – nil	Does not satisfy deemed to comply standard
3.4 Lot boundary setbacks (Boundary Walls)	• Boundary walls are located behind the street setback	• Boundary walls to north-west and southeast boundaries located within the street setback area (Head Close)	Does not satisfy deemed to comply standard
3.7 Access	• Driveways designed to allow vehicles to exit to the street in forward gear. • Driveways designed to allow vehicles to pass in opposite directions. Passing points are to be provided at least every 30m with driveways to be minimum 5.5m wide for a minimum 6.3m length (excluding manoeuvring tapers)	• Aisle width will not allow vehicles to exit in forward gear; manoeuvring area does not comply with AS2890.1. • Driveway portion of the communal street equates to maximum 4.8m width – suitable for only one way access.	Does not satisfy deemed to comply standard

Table 1: Deemed-to-comply assessment of relevant design elements.

The design elements that do not meet the deemed-to-comply provisions and require a design principles assessment are discussed below:

Primary Garden Area (PGA):

Units 6 to 10 and 17 propose two garden spaces within each lot, the proponent has designated the primary space within the front setback area.

The applicant states that the 19m^2 PGA is located within the front setback for the abovementioned units to maximise solar access and provide a functional outdoor living space directly connected to the dwelling's main living area. Additionally, the PGA

facilitates passive surveillance of the street through direct sightlines from major habitable room windows and the dwelling entrance, contributing to community safety and an active streetscape. The applicant further states the front garden presentation contributes positively to the streetscape by providing soft landscaping and reducing the visual dominance of built form.

As no fencing details have been provided, City officers consider that the location of the of the private open space within the front setback area is not appropriate. The location of private open space for these units does not provide a sufficient level of privacy to residents as it is open to the street and consequently there is no appropriate demarcation between an exclusive space for residents and the wider public. This space is rather considered as the primary entrance to each unit and is unlikely to be used by residents for private recreational purposes. Furthermore, Units 6 – 10 and 17 are 3 – 4 bedrooms and are likely to be occupied by families. In this regard the City does not consider the split PGA areas to be of a sufficient size, dimension and location to be useable for the intended occupants. Taking into consideration the design of the dwelling, it is more likely for residents to use the 9m^2 secondary private open space as the PGA.

Units 11 to 16 propose a consolidated PGA to the rear of each dwelling of a sufficient area. However, the PGA is located on the southern side of units 2, 4, 11, 13, and 15 and are not located to maximise the northern sun. Furthermore, whilst the PGA for units 1, 3, 12, 14 and 16 are located to gain access the northern sun, due to the location of the dwellings and dividing fences, significant portions of these areas are likely to be shadowed during the winter months.

In consideration of the proposed PGA's for the development the City does not consider that these areas sufficiently address the relevant design principles under Clause P1.1.1 of the R-Codes.

Storage

The proposed storage areas for units 6 – 10, 11 and 17 do not meet the deemed to comply criteria in that the storage areas are less than 4m^2. Units 6 – 10 provide a storage area of 3.7m^2, and units 11 and 17 provide a 3m^2 storage area (excluding the area occupied by proposed bin storage). The applicant contests that all storage areas comply with the R-Codes requirements. All units that propose a reduction in storage space are 3-bedroom dwellings which will likely comprise of a space for a small family. The City considers this storage space as inadequate for the intended number of occupants and subsequently should be increased in area to meet the deemed to comply standard.

Functional utilities:

The applicant has not demonstrated the location of the functional utilities such as a/c units, hot water systems or clothes drying areas. Given the application proposes 17 dwelling units with boundary-to-boundary construction, there are potential for visual, noise, heat and air quality impacts from these utilities on the development site and adjoining neighbours. In this regard, without this information being provided the City is unable to assess these components of the development.

Site cover

Within a R100 coded area the deemed to comply maximum site coverage is 70%. The application proposes a site coverage of 71% to 75% for units 2 - 10 and 17, and a site cover of 80% to 81% for units 11 – 16. The applicant has sought to demonstrate compliance with the relevant design principles by stating there are significant constraints associated with accommodating the proposed 17 dwellings on the site. Additionally, reducing site cover would result in the loss of functional living spaces, car parking, garden areas, or the introduction of additional two-storey development. This would diminish the overall liveability of the dwellings and adversely affect the project's feasibility. The applicant further states that most of the dwellings are single storey which assists in reducing visual bulk, maintaining residential amenity and providing a more affordable built form.

Site cover for units 1 to 10 and 17 range between 71% to 75%. Whilst the site coverage for these units represents a minor variation to the deemed to comply requirement, when viewing the proposal holistically, this further demonstrates the significant extent of site coverage, scale and overall bulk of the development. Also noting the orientation of the PGA's does not result in optimal winter solar access for these areas. In this regard whilst, the departure from the deemed to comply standard for these units is relatively minor the resultant outcome on the ground is undesirable.

The proposed site coverage for units 11 to 16 range from 80% to 81% which is a significant departure from deemed to comply standard. In this regard, the building bulk in terms of site coverage is substantial and provides limited opportunities for quality landscaping and space between buildings. Furthermore, the proposed PGA's proposed are close to the minimum areas required and provide minimal opportunities for solar access. In consideration of the above the City is of the opinion that the proposal does not sufficiently demonstrate compliance with the relevant design principles.

Street setbacks

The subject site is serviced by two road reserves, Railway Parade and Head Close. The Residential Design Codes Vol. 1, definition for 'primary street' the sole or principal public road that provides access to the major entry (front door) to the dwelling or building.

The applicant has stated that in the context of the development Head Close should not be treated as a primary street as development has been intentionally designed with Railway Parade as the primary street frontage. Railway Parade is the higher-order road and provides the principal address and streetscape presentation for the development. Additionally, the applicant contests that Railway Parade contains dwellings that establish the development's primary interface with the public realm. In contrast, Head Close functions as a secondary street frontage to the site. Furthermore, the applicant states that the proposed nil garage setbacks does not compromise vehicle access, manoeuvrability, pedestrian safety or the operation of the communal street.

The design proposes the major entry for units 1 and 17 directly onto Railway Parade, with units 2 – 5 and units 11 – 16 gaining primary access from the communal driveway. Whilst the garages of units 6 to 10 gain access from the communal driveway, the major

pedestrian entry is via Head Close. As such, it is the City's opinion that both Railway Parade and Head Close are to be considered and assessed as the primary street for this development.

The primary street setback from Railway Parade for unit 17 is proposed at 1.7m (in lieu of the deemed to comply minimum setback of 2m), this is considered relatively minor as it relates to a small portion of the dwelling intruding within the setback area. The City's main concern relates to the proposed 1.5m primary street setback for units 6 – 10 to Head Close. The portion of building bulk for these units forward of the 2m setback equates to approximately 46% of the Head Close lot frontage. In the City's opinion a 1.5m setback does not provide a sufficient area for quality landscaping. Additionally, the portion of these units which is setback further from the street is proposed as the PGA which minimises the privacy options for future occupants.

The development context along Head Close incorporates secondary street setbacks along both edges of the street. Development on the opposite side of the road is setback approximately 5m, providing an exemplar for the future streetscape quality the City is seeking to achieve for this street.

Regarding the proposed nil garage setback to units 1 to 5 and 11 to 17 from the communal street, this will likely have negative impacts both on sightlines and building bulk with the communal street being dominated by garage walls, building façades and possible solid fencing. The design of units 1 to 5 locates the PGA space between each unit's garage. Given the PGA space is solely for unit occupants, it is likely that a dividing fence will be constructed to enclose the PGA for occupant privacy. This will contribute negatively to the streetscape and appearance of dwellings.

Lot boundary setbacks: Boundary walls

The deemed to comply requirement is for boundary walls to be located behind the street setback area. The application proposes boundary walls for units 6 - 10 with a setback of 1.5m to Head Close, in lieu of the required 2m. In this regard the proposed boundary walls extend 500mm into the street setback area. The applicant states that as Head Close should be interpreted as the secondary street, a setback of 1.5m meets the deemed to comply requirement for boundary walls.

As previously discussed, as the primary entry for units 6 -10 is obtained via Head Close, this is considered a primary street. As such the proposed boundary walls for these units are required to be assessed against the corresponding design principle. As the boundary wall for unit 6 is located on the north-western boundary there will be impacts on solar access to the main PGA. Additionally, the proposed boundary walls for units 6 and 10 creates a courtyard that is enclosed on all sides. This will likely obstruct solar access to these PGA's and the adjoining primary living space. Furthermore, combined with the proposed reduction in street setback, the proposed boundary walls could have an impact on the intended future streetscape of Head Close.

Car Parking and Access

Each dwelling satisfies the R-Codes deemed to comply requirement for the number of parking bays with 1 parking bay being provided for units 2 – 16 and 2 parking bays being provided for units 1 and 17. As per the R-Codes, parking spaces and

manoeuvring areas are to be designed in accordance with the requirements of Australian Standard AS2890.1. The development complies with the single garage parking space dimensions, however, the adjacent manoeuvring space is not compliant. AS2890.1 requires that where a minimum 2.7m doorway width is provided, the apron width (the common access leg) should have a minimum width of 6.3m to any wall or other barrier higher than 150mm. Due to the overall width of the proposed communal street being 6m and nil setbacks proposed for garages the minimum 6.3m clear area is not achieved.

The applicant has provided a swept path analysis for the proposal which they state demonstrates that all vehicles can enter and exit the proposed garages with no conflict. However, the City has identified several areas of conflict on the swept path plan where vehicles are traversing over proposed garden areas, and conflicting with garage pillars and adjoining dwellings.

The application proposes a 6m wide communal street comprised of a 4.8m driveway, 1.2m pedestrian path and two 1m wide landscaping strips. The applicant has stated that the proposed communal street poses no sightline issues and that the garage and building setbacks do not compromise vehicle access, manoeuvrability, pedestrian safety or the operation of the communal street.

As discussed above the City has identified several areas of conflict with manoeuvring from garages into the communal street. As the development proposes more than 5 dwellings, passing points should be provided to allow the safe passing of vehicles within the development. The proposed 4.8m wide communal street does not allow for the safe passing of vehicles unless the adjoining 1.2m pedestrian path is utilised by vehicles. The R-Codes deemed to comply requirements specify that where grouped dwellings of 10 or more units are proposed, pedestrian paths should be clearly delineated and separate from the vehicle access areas.

The City is therefore of the opinion that the communal street does not propose any passing points for vehicles to safely traverse to and from the dwellings. In addition, the nil setback of garages to the communal street provides unsafe manoeuvrability in and out of each unit. The entire access leg is likely to be utilised for vehicle movement which conflicts with the 1.2m pedestrian path. This will result in potential safety concerns for residents and visitors to the site. As such, the proposal does not provide safe and legible access for vehicle and pedestrian movement.

Western Power easement

The subject site is affected by an easement for power transmission line purposes, extending approximately 5.2m to 5.4m from the Railway Parade property boundary. The adjacent Railway Parade verge contains related utility infrastructure, including a 132kV overhead transmission line and a low-voltage distribution line.

The proposal includes development within the easement area. However, the applicant has not provided information explaining how the easement will be addressed, nor has advice from Western Power been provided confirming whether the proposed development is suitable in this location.

In the absence of evidence that Western Power supports the location of dwellings within the easement, a precautionary approach is required to avoid potential risks

associated with the proximity of the proposed structures to electricity infrastructure. On this basis, the City does not support the proposed structures within the existing easement.

CONSULTATION:

PUBLIC CONSULTATION

As per Local Planning Policy 4.1 – Public Consultation, this application did not require consultation with adjoining owners/occupiers.

REFERRALS/CONSULTATION WITH GOVERNMENT/SERVICE AGENCIES

No referrals were required a part of this application.

DESIGN REVIEW PANEL ADVICE

As per Local Planning Policy 4.12 – Design Review, this application did not require advice from the Design Review Panel.

CONCLUSION:

As outlined in this report, the proposed development does not align with the requirements of the relevant planning framework, specifically

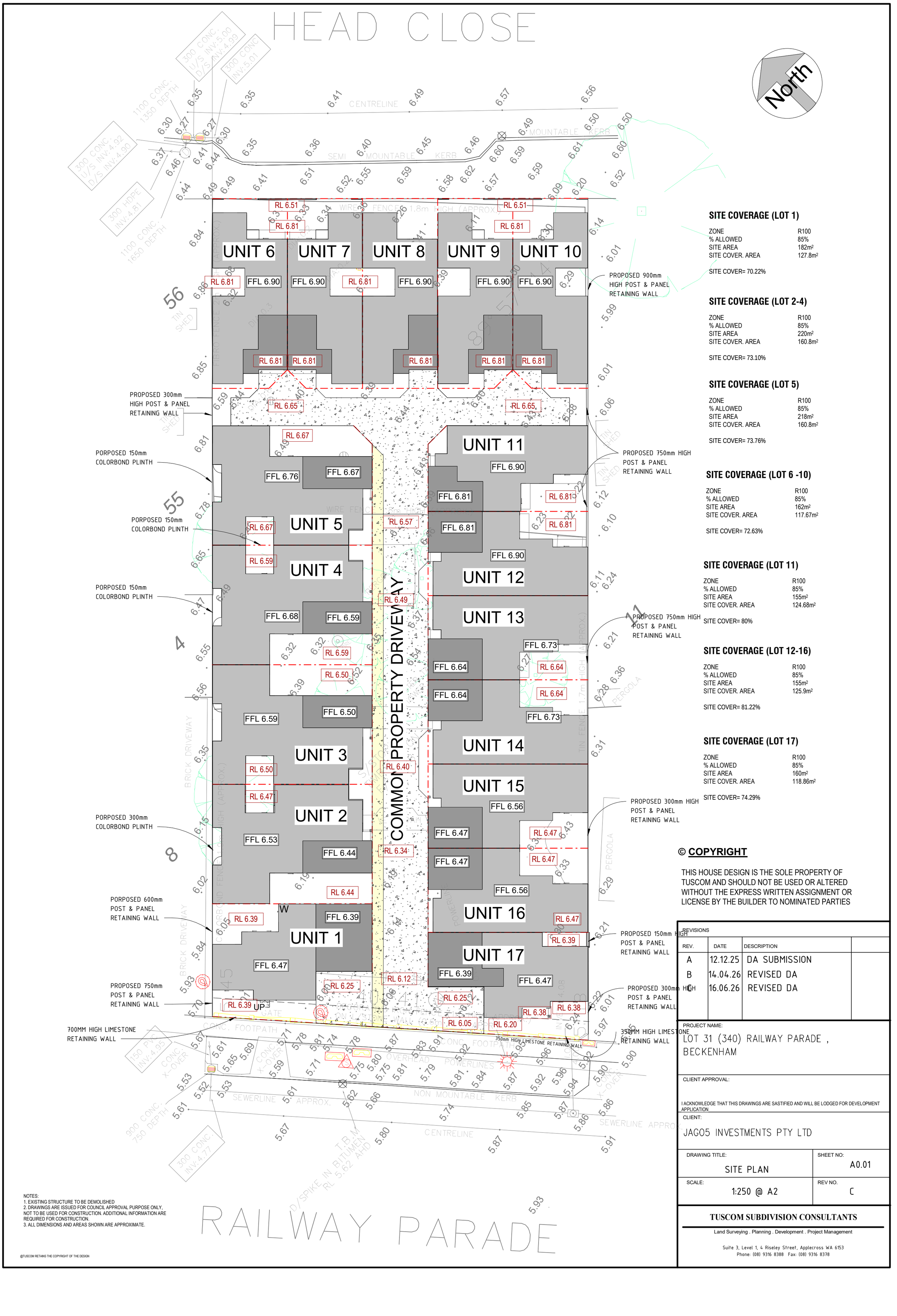
- the City's Local Planning Strategy;
- Local Planning Scheme No. 24; and
- extensive elements of the R Codes, Part C, Volume 1.

The City has engaged with the applicant on several occasions throughout the assessment process to discuss areas of concern and failures to satisfy the deemed to comply requirements or demonstrate compliance with the relevant design principles. Subsequently, the applicant has amended the development plans on 3 occasions. The latest revised plans and information provided by the applicant does not demonstrate compliance with the relevant design principles of the R-Codes or address the City's concerns with the development. As such the development is recommended for refusal.

ATTACHMENTS

1. Development Plans
   - Site Plan – A0.01
   - Landscape Calculation – A0.02
   - Landscape Plan
   - Vehicle Swept Path Plan
   - Unit 1 to unit 17 Floor Plans – A1.01 to A1.07
   - Unit 1 to unit 17 Elevations – A2.01 to A2.10
2. Applicant Cover Letter
3. SPP 7.0 Design of the Built Environment Assessment
4. Waste Management Plan
5. Transport Impact Statement
6. City of Gosnells Heritage Survey 2024

Attachment 1



SITE COVERAGE (LOT 1)

ZONE	R100
% ALLOWED	85%
SITE AREA	182m²
SITE COVER. AREA	127.8m²

SITE COVER= 70.22%

SITE COVERAGE (LOT 2-4)

ZONE	R100
% ALLOWED	85%
SITE AREA	220m²
SITE COVER. AREA	160.8m²

SITE COVER= 73.10%

SITE COVERAGE (LOT 5)

ZONE	R100
% ALLOWED	85%
SITE AREA	218m²
SITE COVER. AREA	160.8m²

SITE COVER= 73.76%

SITE COVERAGE (LOT 6 -10)

ZONE	R100
% ALLOWED	85%
SITE AREA	162m²
SITE COVER. AREA	117.67m²

SITE COVER= 72.63%

SITE COVERAGE (LOT 11)

ZONE	R100
% ALLOWED	85%
SITE AREA	155m²
SITE COVER. AREA	124.68m²

SITE COVER= 80%

SITE COVERAGE (LOT 12-16)

ZONE	R100
% ALLOWED	85%
SITE AREA	155m²
SITE COVER. AREA	125.9m²

SITE COVER= 81.22%

SITE COVERAGE (LOT 17)

ZONE	R100
% ALLOWED	85%
SITE AREA	160m²
SITE COVER. AREA	118.86m²

SITE COVER= 74.29%

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REVISIONS

REV.	DATE	DESCRIPTION	
A	12.12.25	DA SUBMISSION	
B	14.04.26	REVISED DA	
C	16.06.26	REVISED DA	

PROJECT NAME:
LOT 31 (340) RAILWAY PARADE , BECKENHAM

CLIENT APPROVAL:

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CLIENT:
JAGO5 INVESTMENTS PTY LTD

DRAWING TITLE:	SHEET NO:
SITE PLAN	A0.01
SCALE: 1:250 @ A2	REV NO. C

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HEAD CLOSE

OUTDOOR LIVING AREA (OLA- UNIT 1)
TOTAL OLA= 38m²

LANDSCAPE CALCULATION
REQUIRED LANDSCAPE: 15% of 182m²= 27.30m²
PROVIDED LANDSCAPE: 49.80m²= 27.36%

OUTDOOR LIVING AREA (OLA- UNIT 2-4)
TOTAL OLA= 45m²

LANDSCAPE CALCULATION
REQUIRED LANDSCAPE: 15% of 220m²= 33m²
PROVIDED LANDSCAPE: 39.9m²= 18.13%

OUTDOOR LIVING AREA (OLA- UNIT 5)
TOTAL OLA= 43m²

LANDSCAPE CALCULATION
REQUIRED LANDSCAPE: 15% of 218m²= 32.7m²
PROVIDED LANDSCAPE: 39.90m²= 18.30%

OUTDOOR LIVING AREA (OLA- UNIT 6 & 10)
TOTAL OLA= 30m²

LANDSCAPE CALCULATION
REQUIRED LANDSCAPE: 15% of 162m²= 24.30m²
PROVIDED LANDSCAPE: 27.40m²= 16.91%

OUTDOOR LIVING AREA (OLA- UNIT 11)
TOTAL OLA= 25m²

LANDSCAPE CALCULATION
REQUIRED LANDSCAPE: 15% of 155m²= 23.25m²
PROVIDED LANDSCAPE: 24.98m²= 16.11%

OUTDOOR LIVING AREA (OLA- UNIT 12-16)
TOTAL OLA= 25m²

LANDSCAPE CALCULATION
REQUIRED LANDSCAPE: 15% of 155m²= 23.25m²
PROVIDED LANDSCAPE: 24.01m²= 15.49%

OUTDOOR LIVING AREA (OLA- UNIT 17)
TOTAL OLA= 32m²

LANDSCAPE CALCULATION
REQUIRED LANDSCAPE: 15% of 160m²= 24m²
PROVIDED LANDSCAPE: 33.60m²= 21.0%

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RAILWAY PARADE

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REV.	DATE	DESCRIPTION
A	12.12.25	DA SUBMISSION
B	14.04.26	REVISED DA
C	16.06.26	REVISED DA

PROJECT NAME:
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DRAWING TITLE:	SHEET NO:
LANDSCAPE CALCULATION	A0.02
SCALE: 1:200 @ A2	REV NO. C

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SERVICING LEGEND

⊕ PROPOSED LOCATION FOR WATER CORPORATION SUBMETER

PROPOSED LOCATION FOR LETTER BOX FACING HEAD CLOSE

HEAD CLOSE

RAILWAY PARADE

North

LANDSCAPING NOTES:

-Final species to be nominated in consultation with council if required & subjected to availability.

-If species is not available at the time of planting, an alternative species of similar size is to be selected .

-9m² deepsoil area (shown black dashed), is proposed on all lots.

-All 9m² deepsoil area are 3m x 3m in dimension (shown black dashed), unless annotated otherwise.

IRRIGATION NOTES:

-All garden beds to be irrigated. Install a sub-mulch drip system for all garden beds and recessed sprinkles for turf areas.

-The contractor is responsible for layout design and installation of irrigation system.

-At time of completion the irrigation system shall be fully automated, working efficiently and efficiently and effectively and watering times programmed.

LANDSCAPING LEGEND

- Bitumen Paving (Driveway)
- Bitumen Paving (Pedestrian Walkway)
- Ground cover/Mulch
- Deep soil area
- Tile Paving
- Turf - Existing Verge

	SPECIES	COMMON NAME	QUANTITIES
PLANTS			
	Pimelia Rosea	Rose Banjine	36
	Carissa Macrocarpa	Desert Star	50
	Dianella Tasmanica	Tasred	48
TREES			
	Banksia Attenuata	Candle Banksia	12 + 6
	Eucalyptus Torquata	Coral Gum	12 + 2

SERVICING LEGEND

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DRAWING TITLE:
LANDSCAPE PLAN

SHEET NO:

SCALE:
1:300 @ A3

REV NO.

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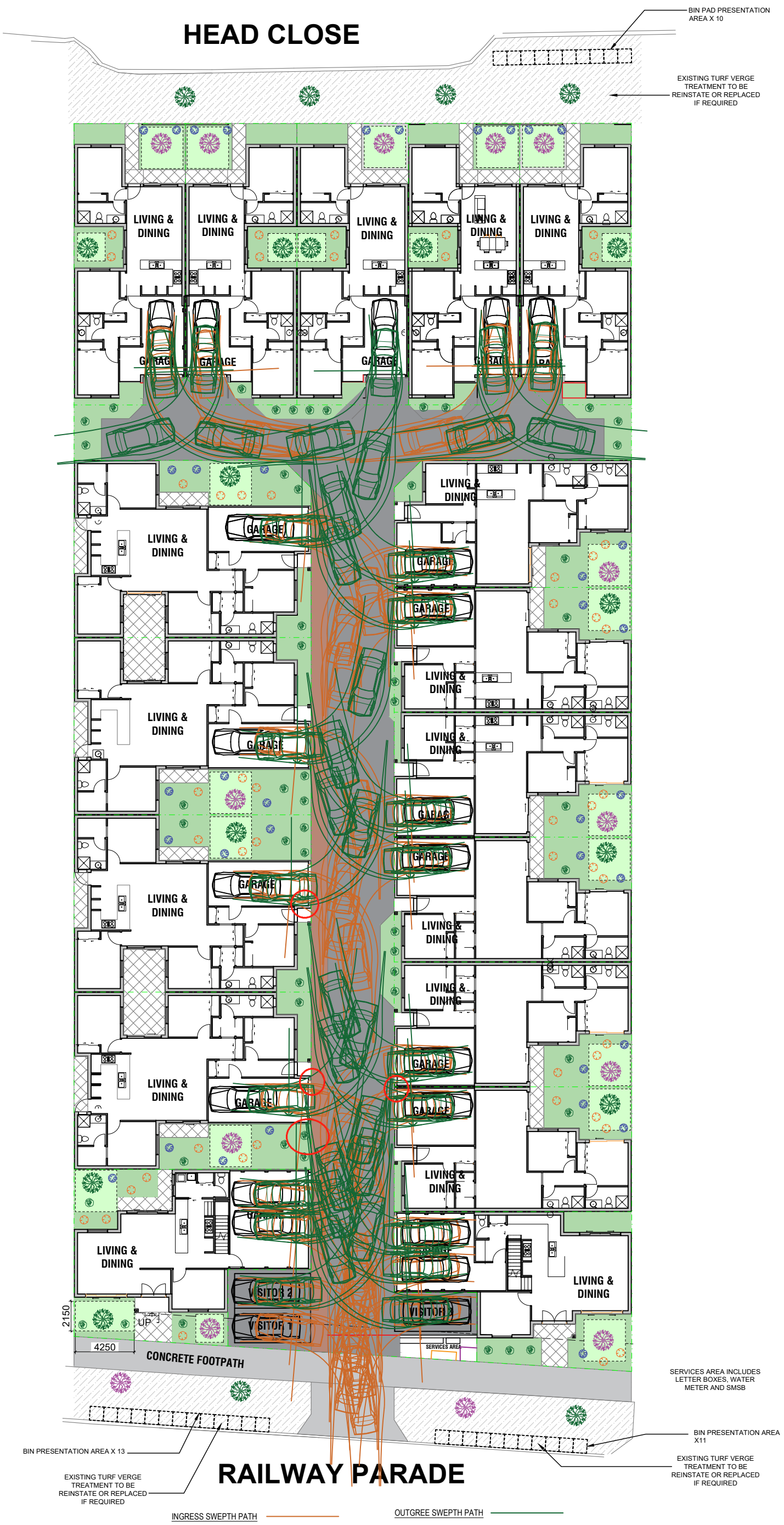

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DRAWING TITLE:
VEHICLE SWEPTH PLAN

SHEET NO:

SCALE:
1:300 @ A3

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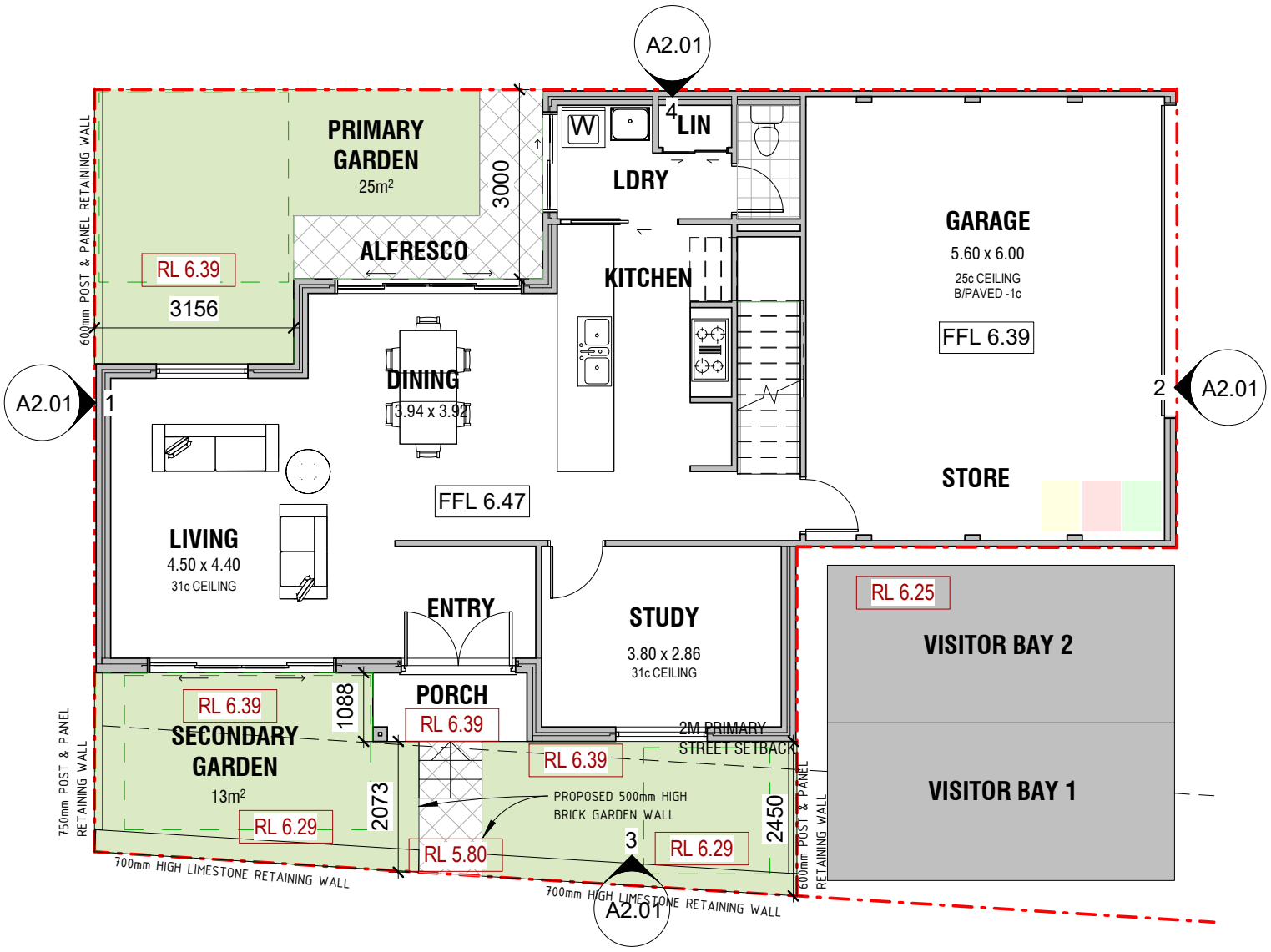
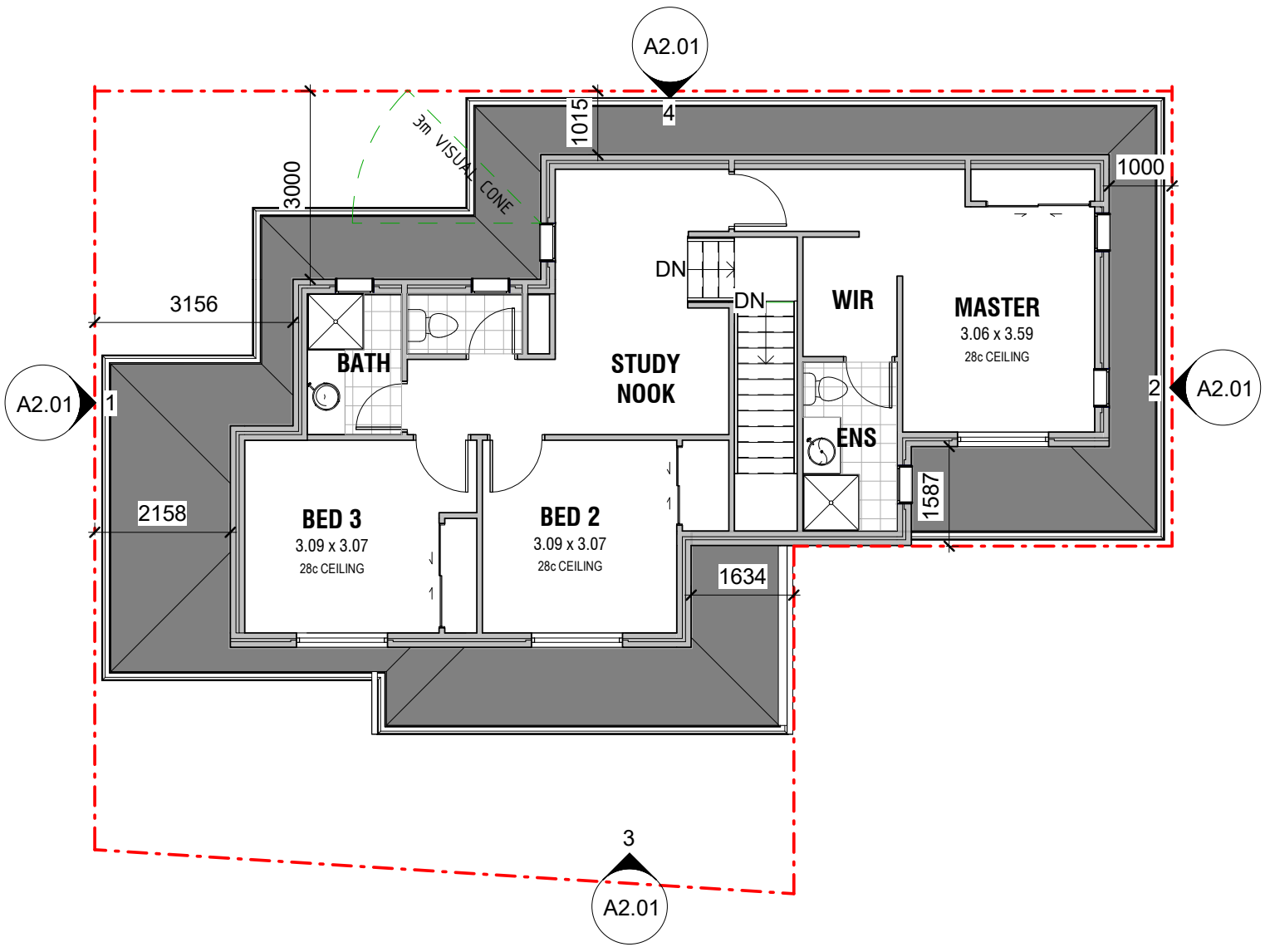


UNIT 1 GROUND FLOOR PLAN

SCALE 1:100



UNIT 1 FIRST FLOOR PLAN

SCALE 1:100

UNIT 1	
LOCATION	**AREA**
GROUND	82.79m²
GARAGE	33.60m²
ALFRESCO	5.90m²
PORCH	2.67m²
STORE	5.60m²
FIRST	81.66m²
TOTAL	212.22m²

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UNIT 1 FLOOR PLANS	A1.01
SCALE: 1:100 @ A3	REV NO. C

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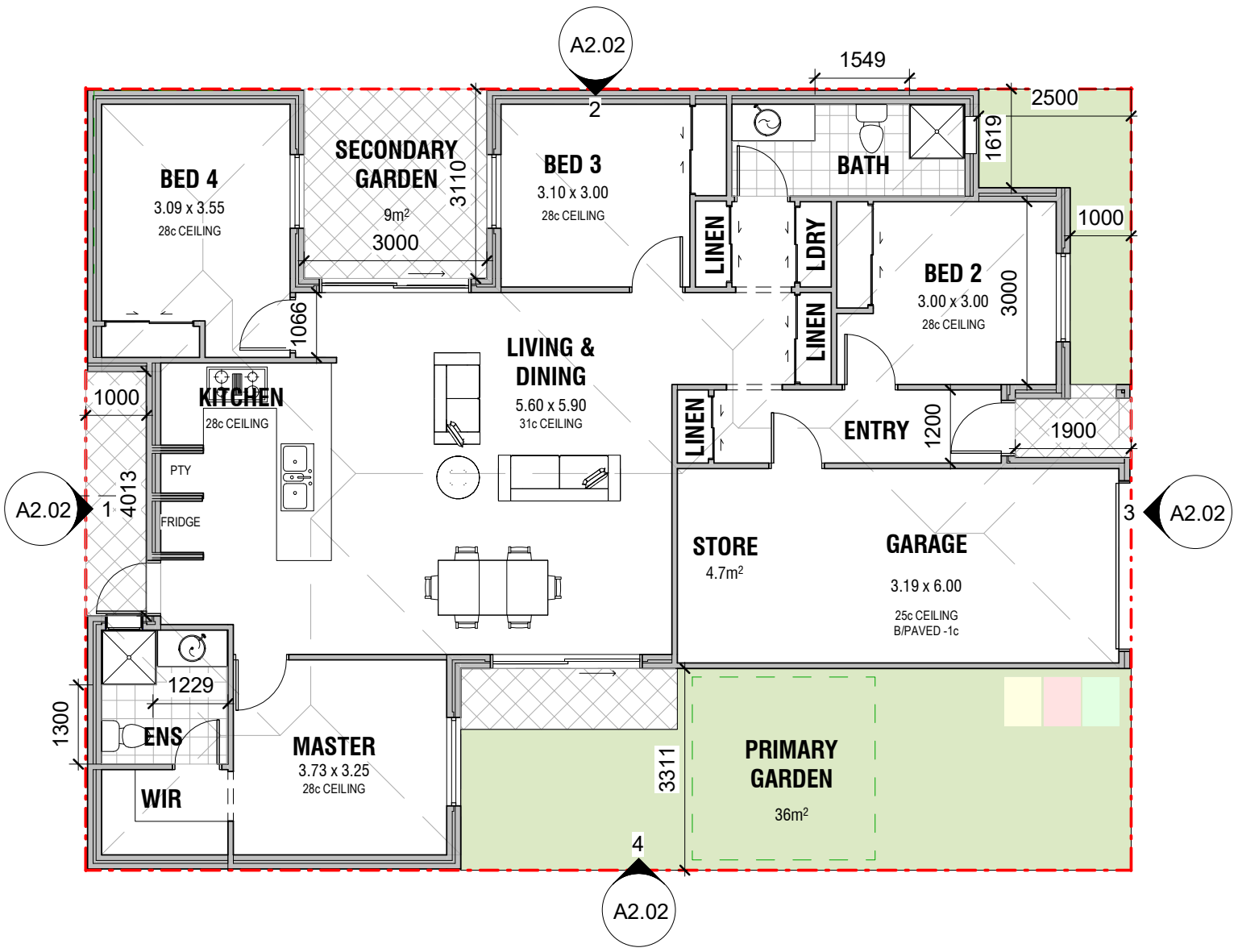
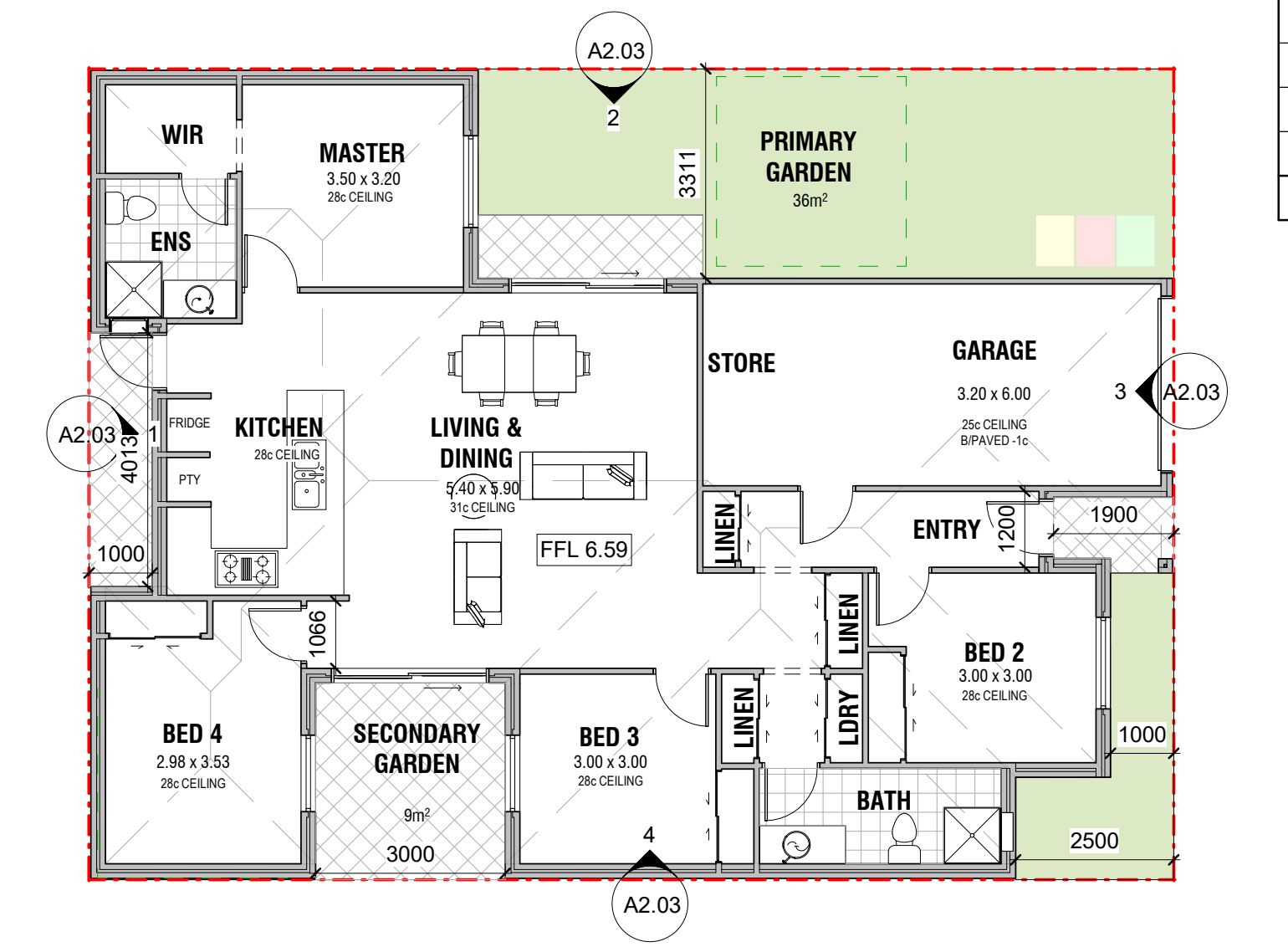


UNIT 2 & 4 GROUND FLOOR PLAN

SCALE 1:100



UNIT 3 FLOOR PLAN (MIRRORED)

SCALE 1:100

UNIT 2-4	
LOCATION	**AREA**
GROUND	135.30m²
GARAGE	19.15m²
ALFRESCO	3.50m²
PORCH	2.00m²
STORE	4.00m²
TOTAL	163.95m²

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UNIT 2-4 FLOOR PLANS	A1.02
SCALE: 1:100 @ A3	REV NO. C

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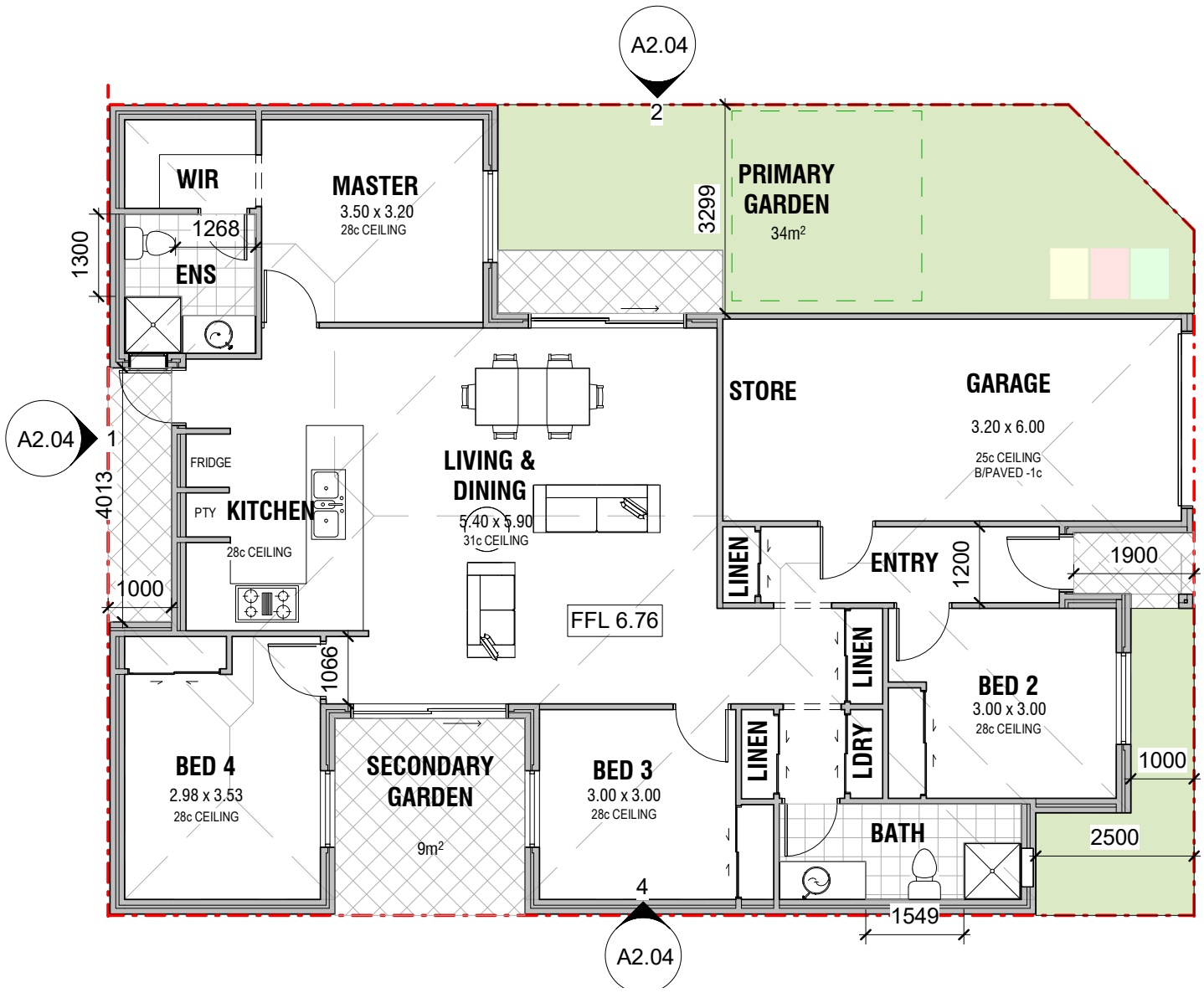

UNIT 5 GROUND FLOOR PLAN

SCALE 1:100

UNIT 5	
LOCATION	**AREA**
GROUND	135.30m²
GARAGE	19.14m²
ALFRESCO	3.50m²
PORCH	2.00m²
STORE	4.00m²
TOTAL	163.94m²

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UNIT 5 FLOOR PLANS	A1.03
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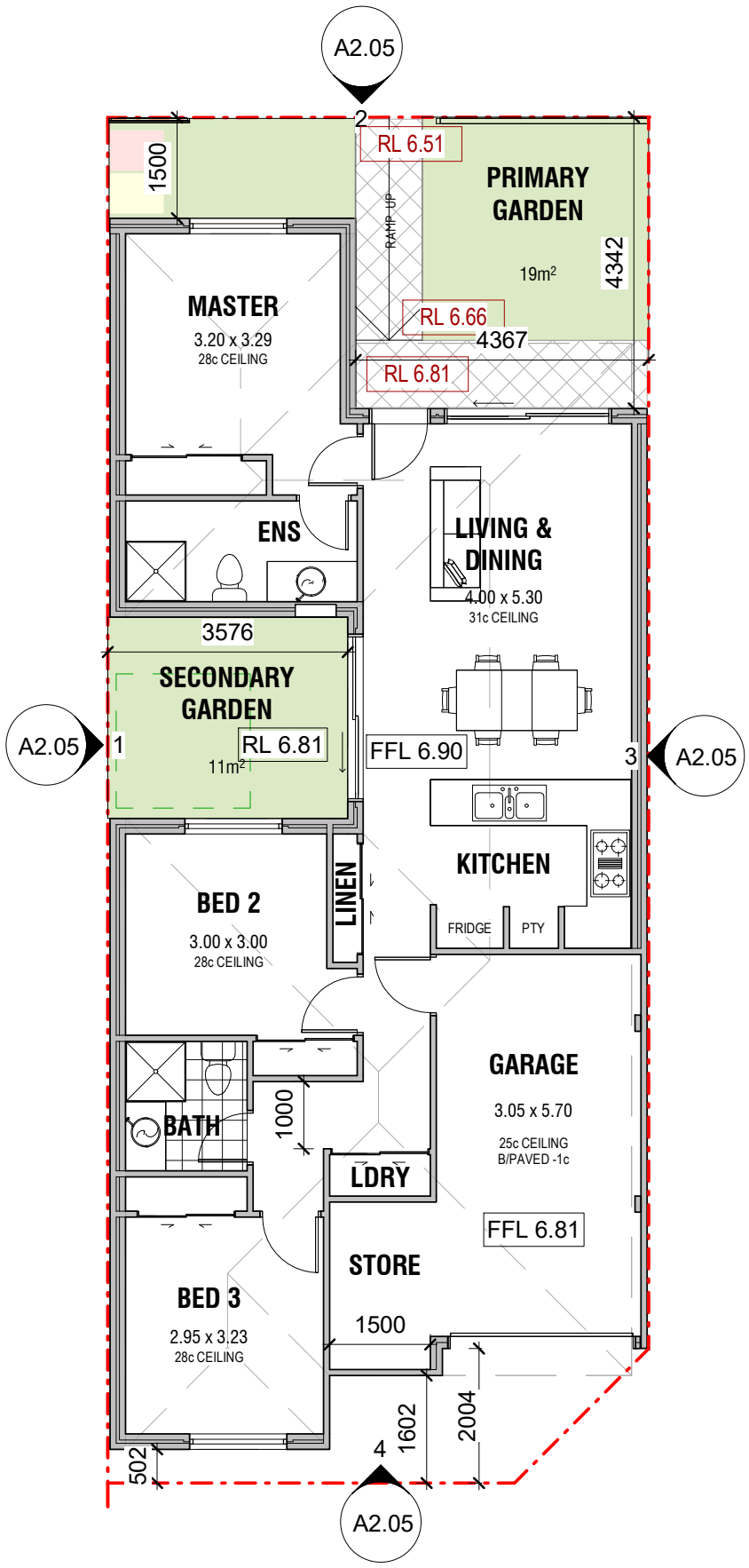

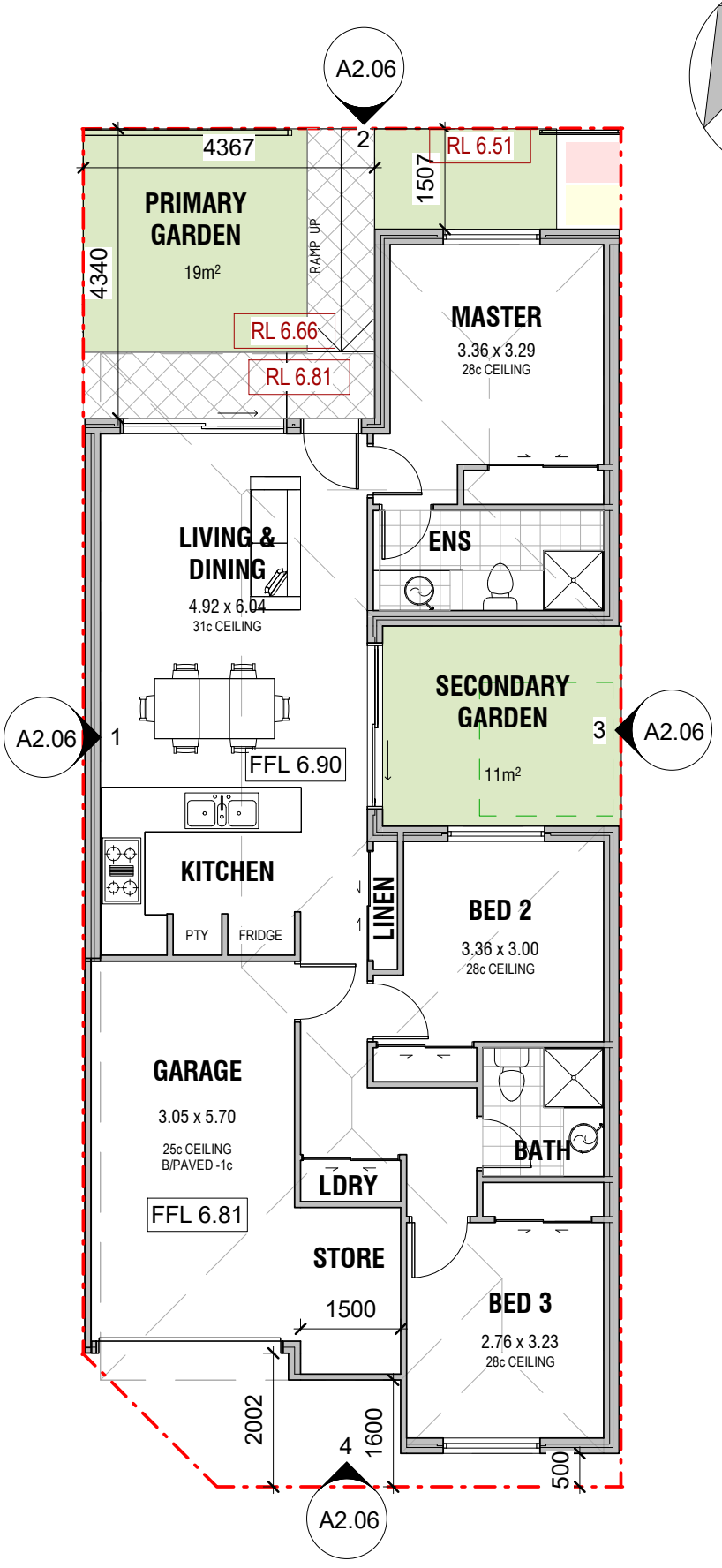

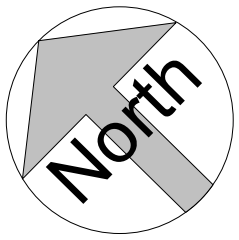

UNIT 6 & 10 FLOOR PLAN

SCALE 1:100

UNIT 7 & 9 FLOOR PLAN (MIRRORED)

SCALE 1:100

UNIT 6-11	
LOCATION	**AREA**
GROUND	95.80m²
GARAGE	18.34m²
ALFRESCO	4.33m²
PORCH	
STORE	4.00m²
TOTAL	122.47m²

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UNIT 6-10 FLOOR PLANS	A1.04
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1:100 @ A3	C

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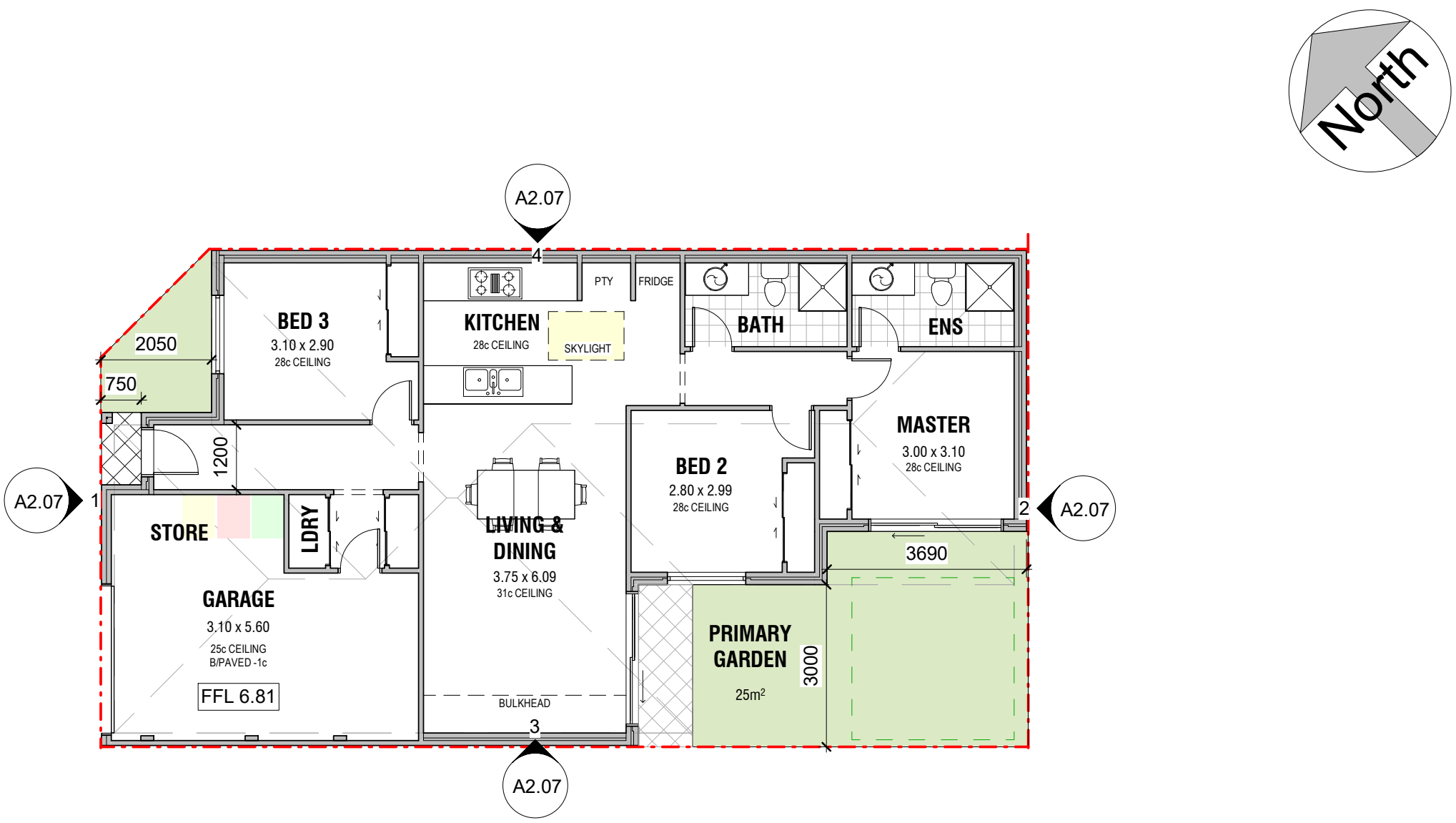

UNIT 11 GROUND FLOOR PLAN

SCALE 1:100

UNIT 11	
LOCATION	**AREA**
GROUND	91.08m^2
GARAGE	18.60m^2
ALFRESCO	3.00m^2
PORCH	1.00m^2
STORE	4.64m^2
TOTAL	118.32m^2

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UNIT 11 FLOOR PLANS	A1.05
SCALE: 1:100 @ A3	REV NO. C

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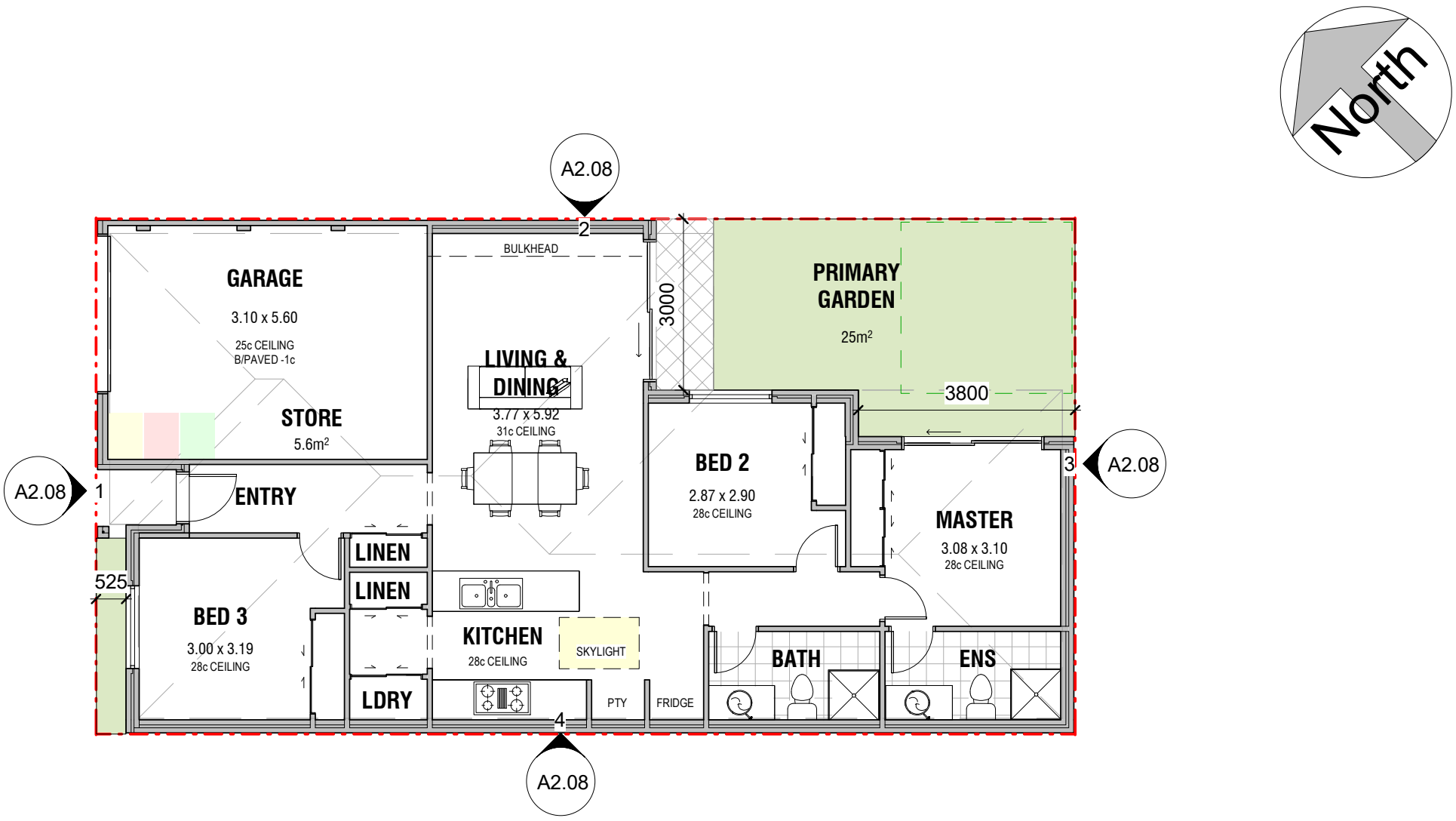
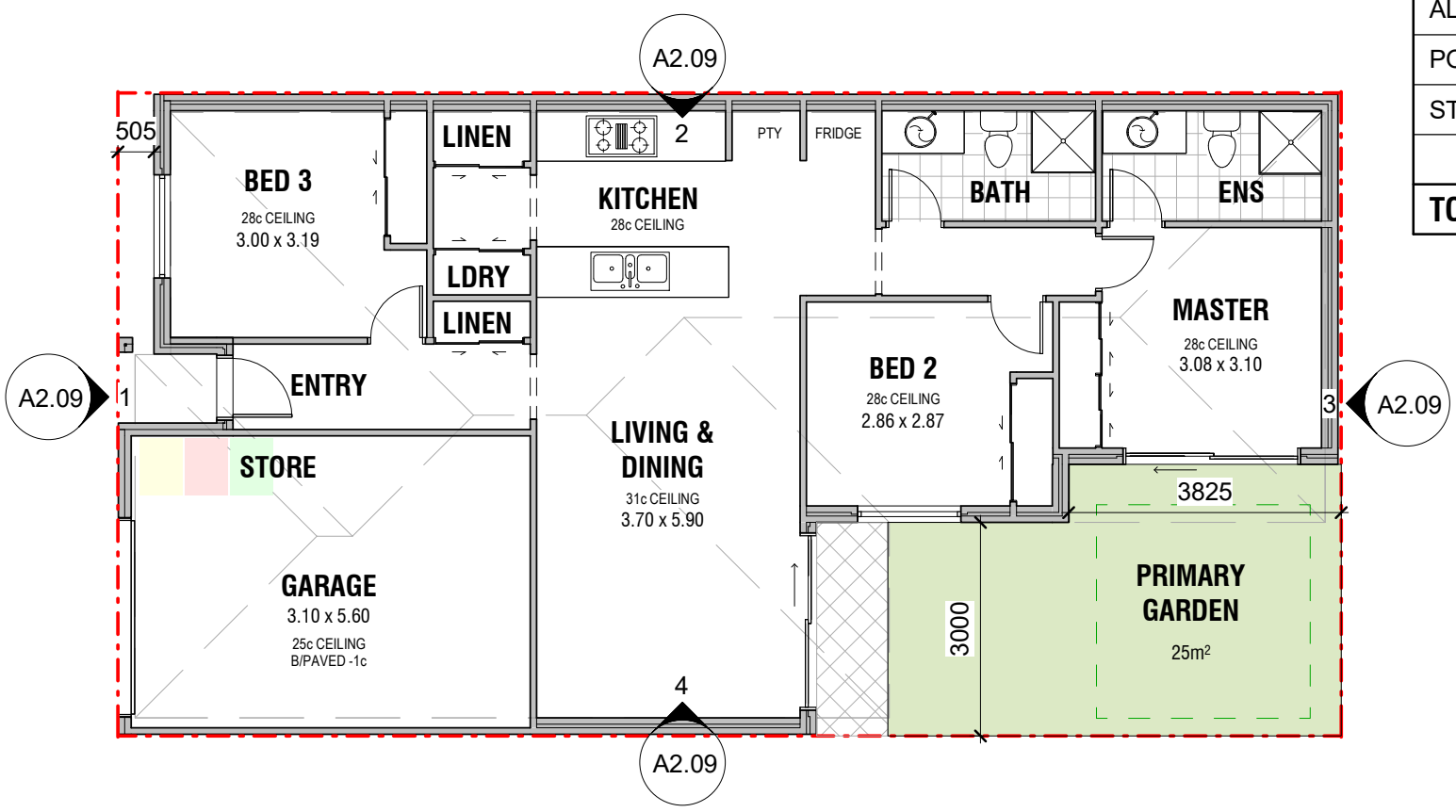


UNIT 12,14 & 16 FLOOR PLAN

SCALE 1:100



UNIT 13 & 15 FLOOR PLAN

SCALE 1:100

UNIT 12-16	
LOCATION	**AREA**
GROUND	100.93m²
GARAGE	18.49m²
ALFRESCO	4.77m²
PORCH	1.40m²
STORE	4.03m²
TOTAL	129.62m²

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UNIT 12-16 FLOOR PLANS	A1.06
SCALE: 1:100 @ A3	REV NO. C

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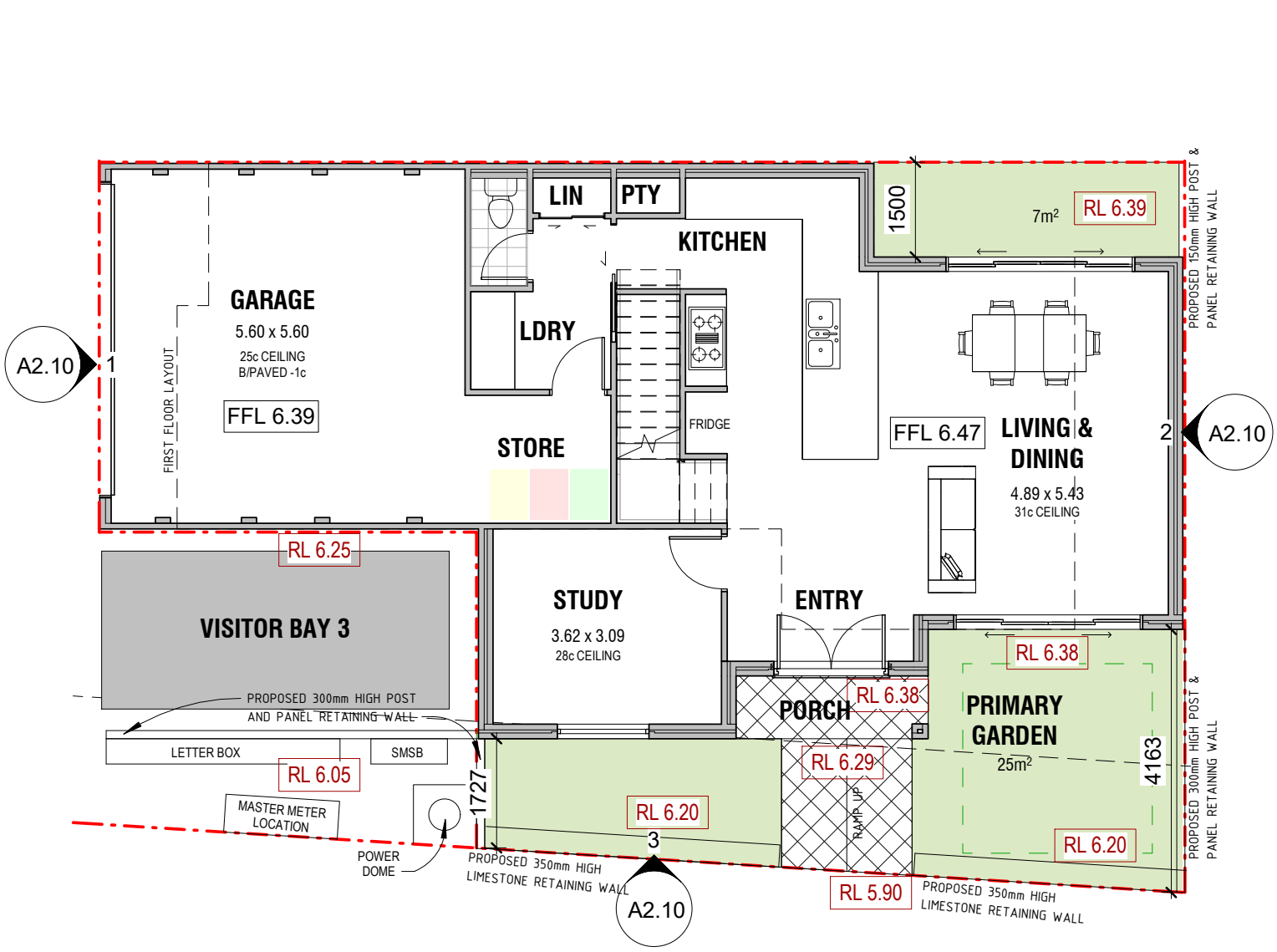
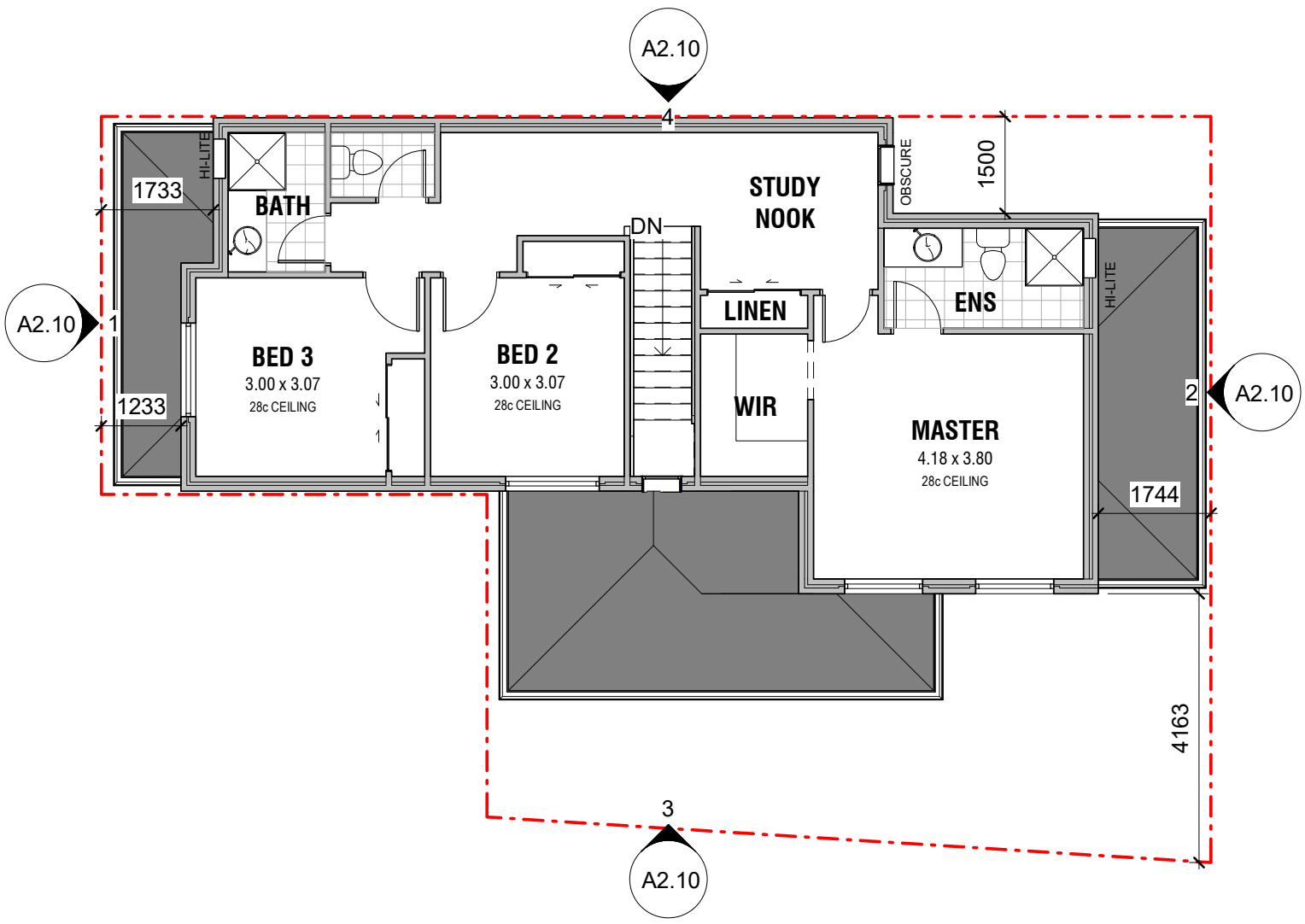


UNIT 17 GROUND FLOOR PLAN

SCALE 1:100



UNIT 17	
LOCATION	**AREA**
GROUND	80.34m²
GARAGE	33.43m²
ALFRESCO	4.89m²
PORCH	3.17m²
STORE	4.67m²
FIRST	81.73m²
TOTAL	208.23m²

UNIT 17 FIRST FLOOR PLAN

SCALE 1:100

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UNIT 17 FLOOR PLANS	A1.07
SCALE:	REV NO.
1:100 @ A3	C

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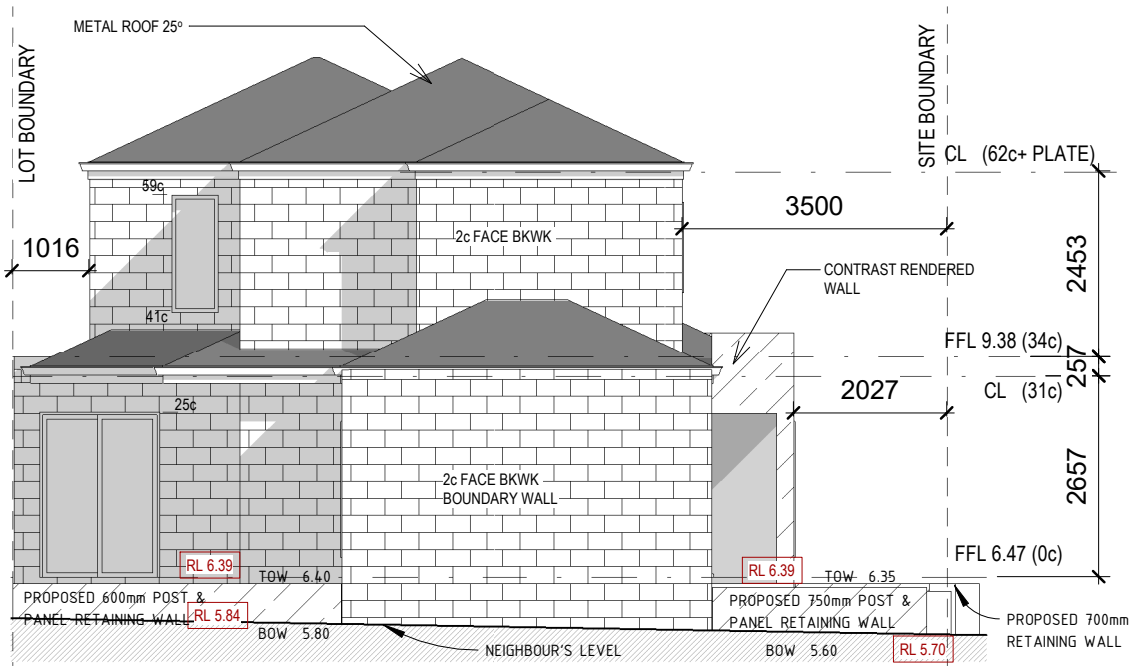
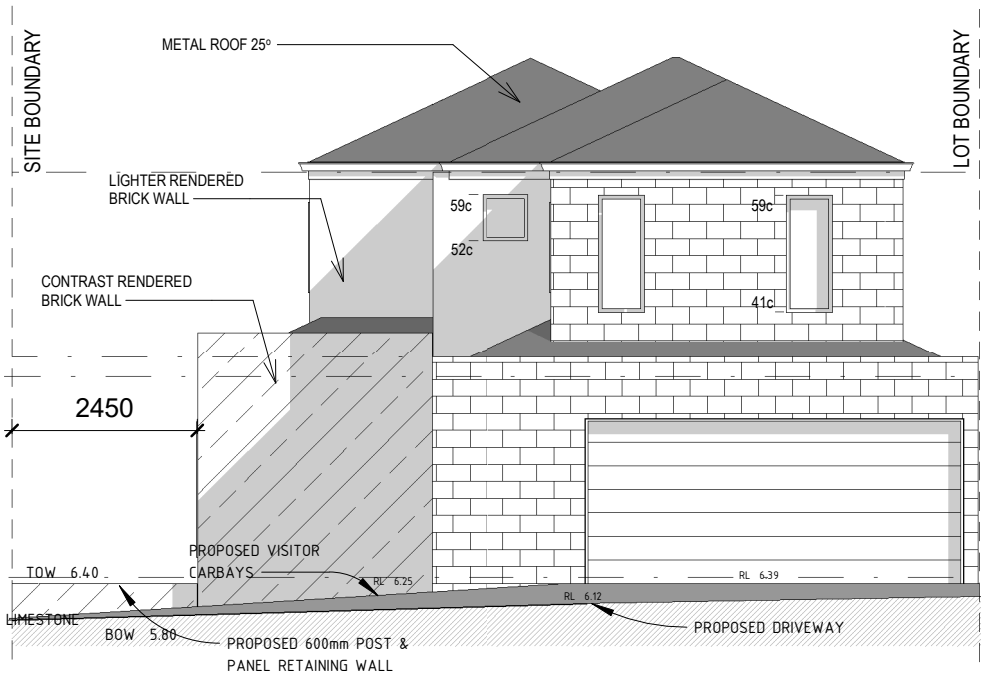


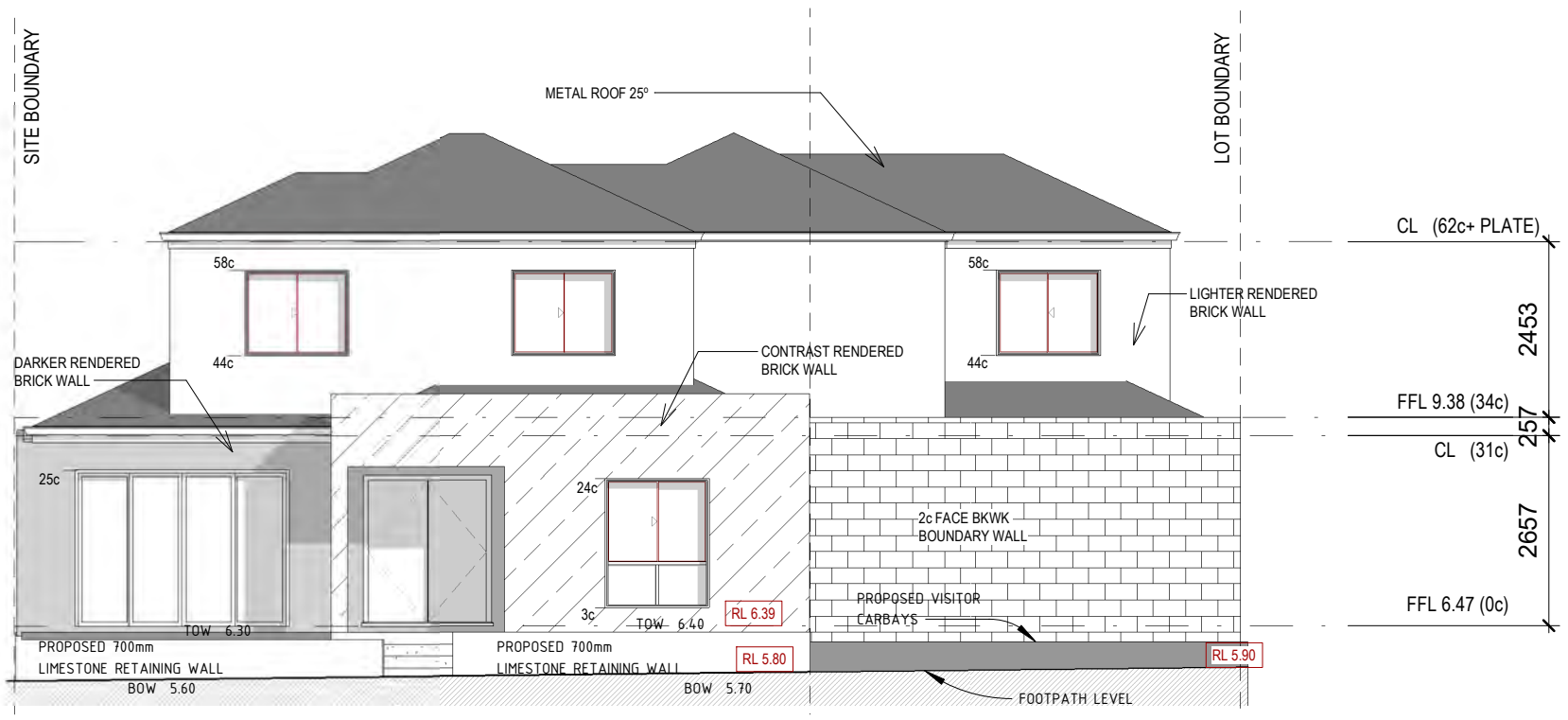
UNIT 1 - ELEVATION 1

SCALE 1:100



UNIT 1 - ELEVATION 2

SCALE 1:100



UNIT 1- ELEVATION 3

SCALE 1:100

UNIT 1 - ELEVATION 4

SCALE 1:100

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REVISIONS

REV.	DATE	DESCRIPTION
A	12.12.25	DA SUBMISSION
B	14.04.26	REVISED DA
C	16.06.26	REVISED DA

PROJECT NAME:
LOT 31 (340) RAILWAY PARADE , BECKENHAM

CLIENT APPROVAL:

I ACKNOWLEDGE THAT THIS DRAWINGS ARE SASTIFIED AND WILL BE LODGED FOR DEVELOPMENT APPLICATION

CLIENT:
JAG05 INVESTMENTS PTY LTD

DRAWING TITLE:	SHEET NO:
UNIT 1 ELEVATIONS	A2.01
SCALE:	REV NO.
1:100 @ A3	C

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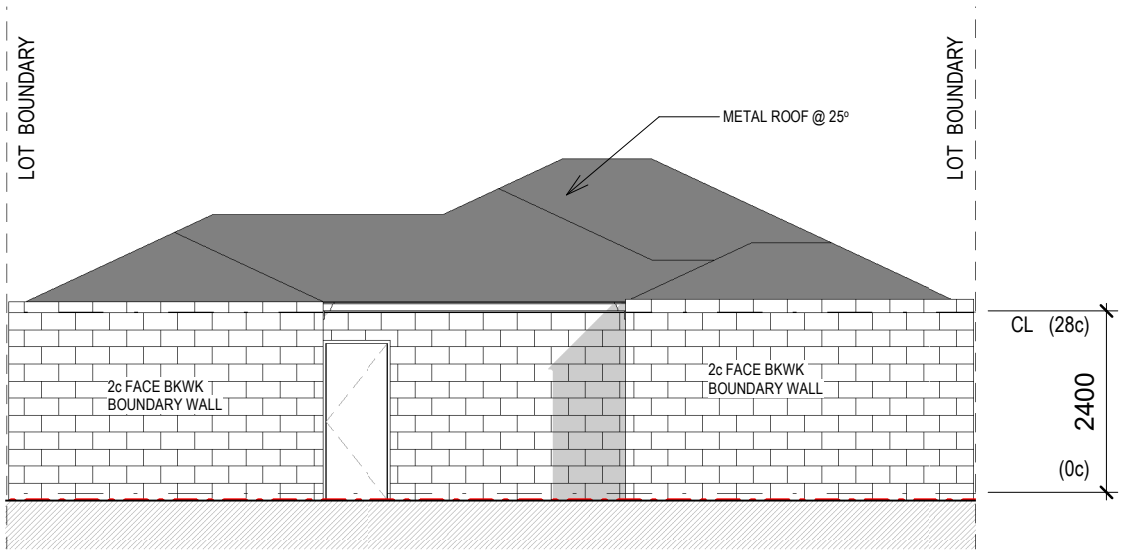

UNIT 3 - ELEVATION 1

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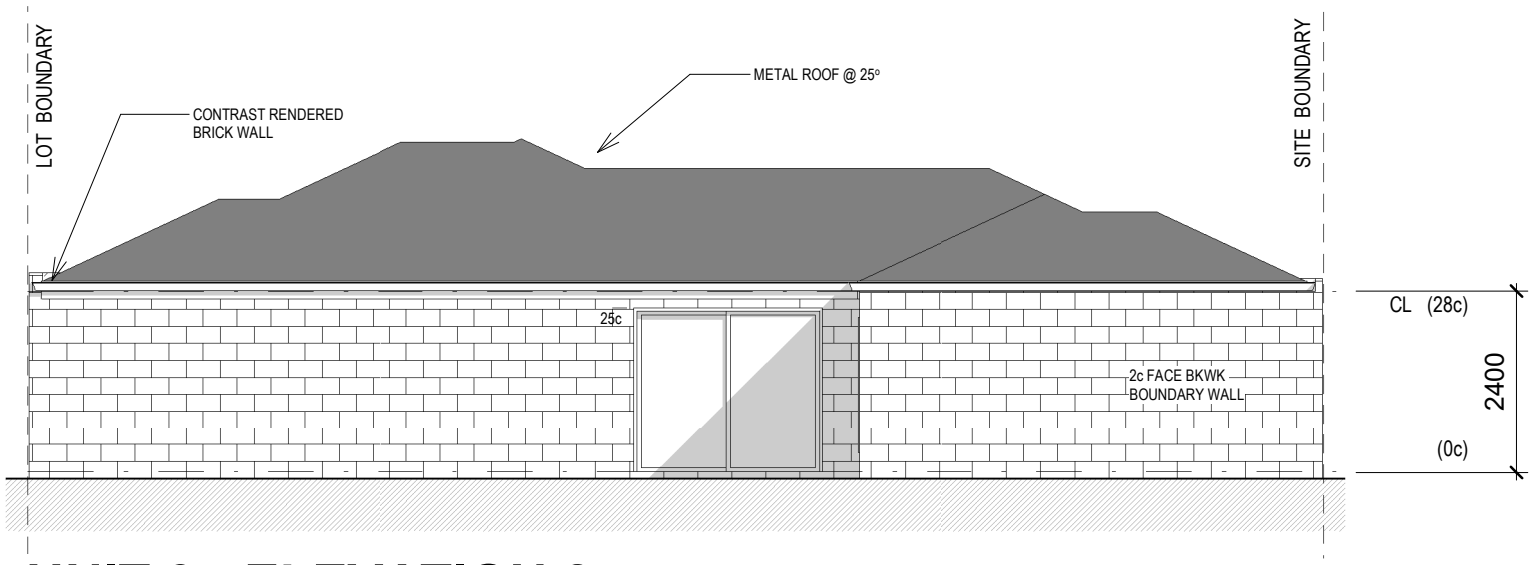
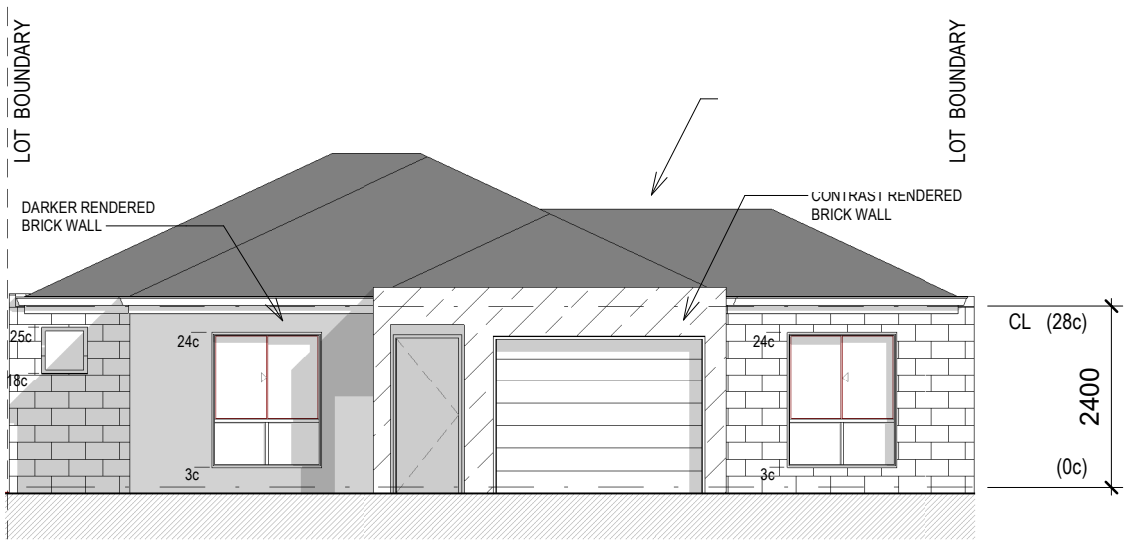


UNIT 3 - ELEVATION 2

SCALE 1:100



UNIT 3 - ELEVATION 3

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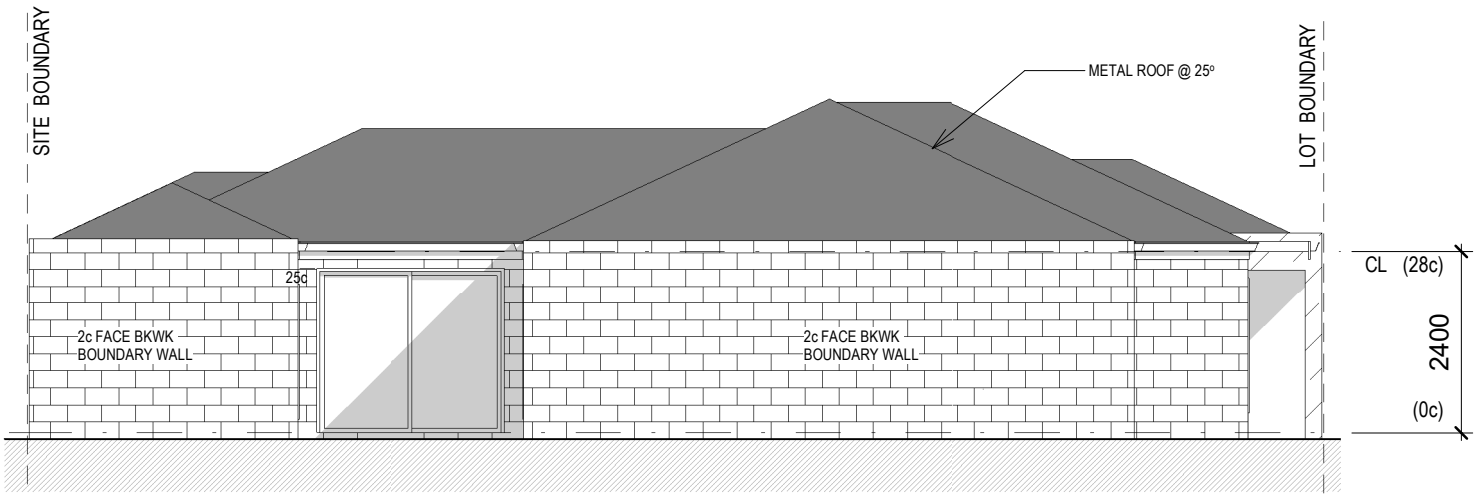

UNIT 3 - ELEVATION 4

SCALE 1:100

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B	14.04.26	REVISED DA
C	16.06.26	REVISED DA

PROJECT NAME:
LOT 31 (340) RAILWAY PARADE , BECKENHAM

CLIENT APPROVAL:

I ACKNOWLEDGE THAT THIS DRAWINGS ARE SASTIFIED AND WILL BE LODGED FOR DEVELOPMENT APPLICATION

CLIENT:
JAG05 INVESTMENTS PTY LTD

DRAWING TITLE:	SHEET NO:
UNIT 3 ELEVATIONS	A2.03
SCALE:	REV NO.
1:100 @ A3	C

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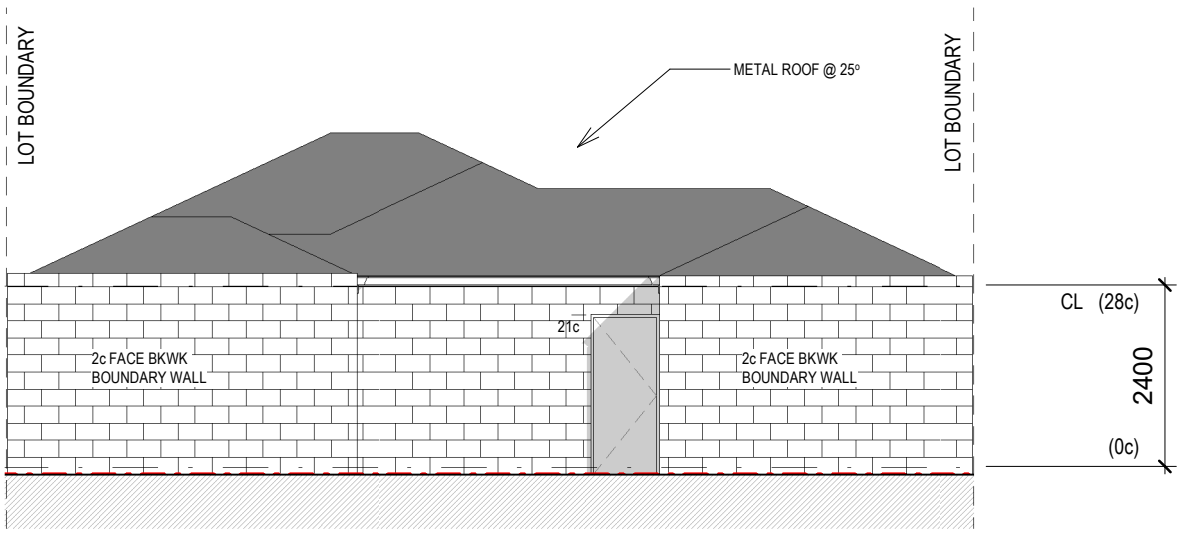
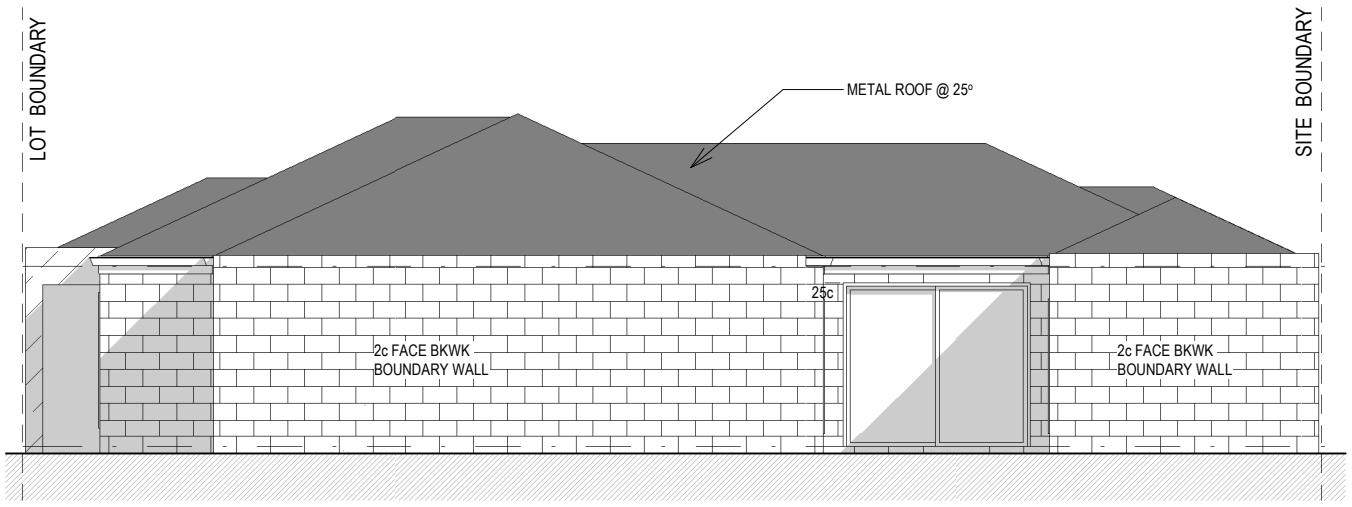


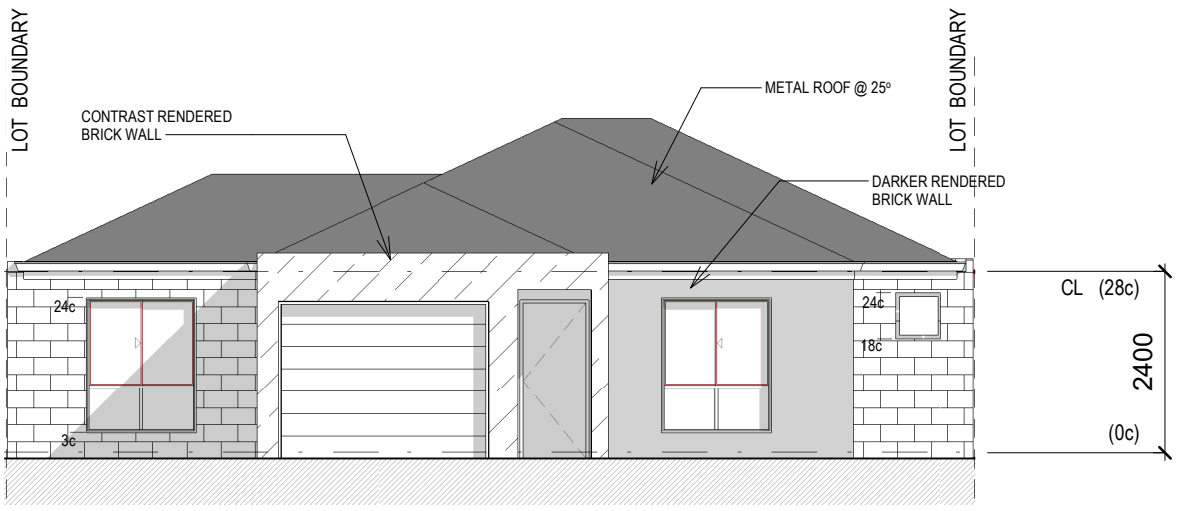
UNIT 2 & 4 - ELEVATION 1

SCALE 1:100



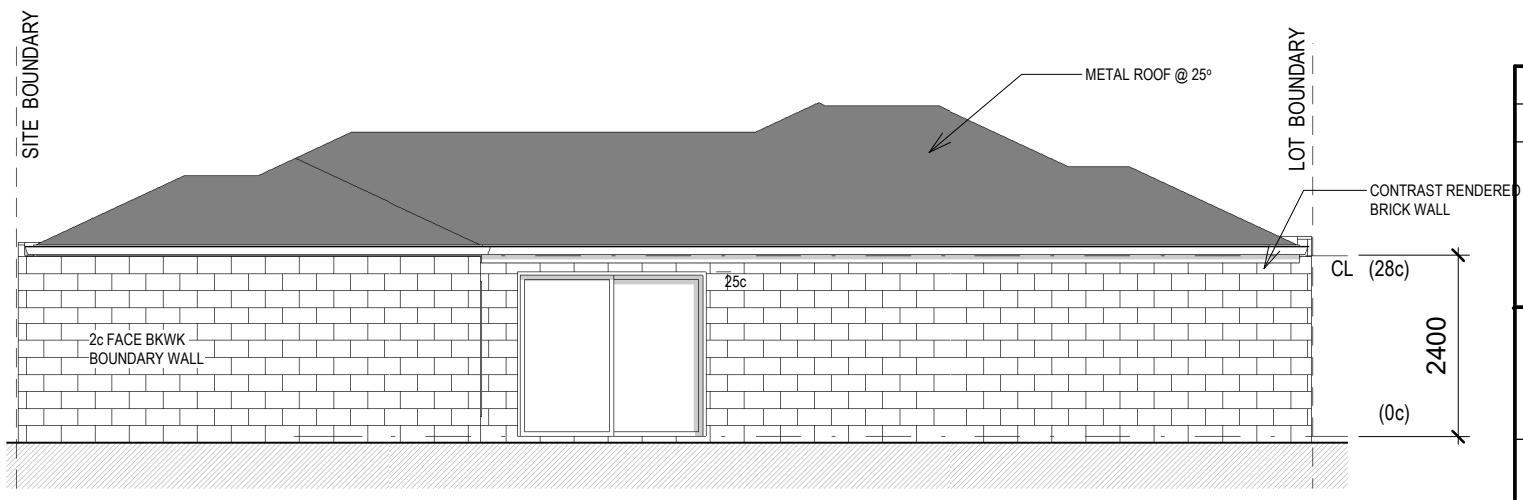
UNIT 2 & 4 - ELEVATION 2

SCALE 1:100



UNIT 2 & 4 - ELEVATION 3

SCALE 1:100



UNIT 2 & 4 - ELEVATION 4

SCALE 1:100

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PROJECT NAME:
LOT 31 (340) RAILWAY PARADE , BECKENHAM

CLIENT APPROVAL:

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CLIENT:
JAGO5 INVESTMENTS PTY LTD

DRAWING TITLE:	SHEET NO:
UNIT 2 & 4 ELEVATIONS	A2.02
SCALE:	REV NO.
1:100 @ A3	C

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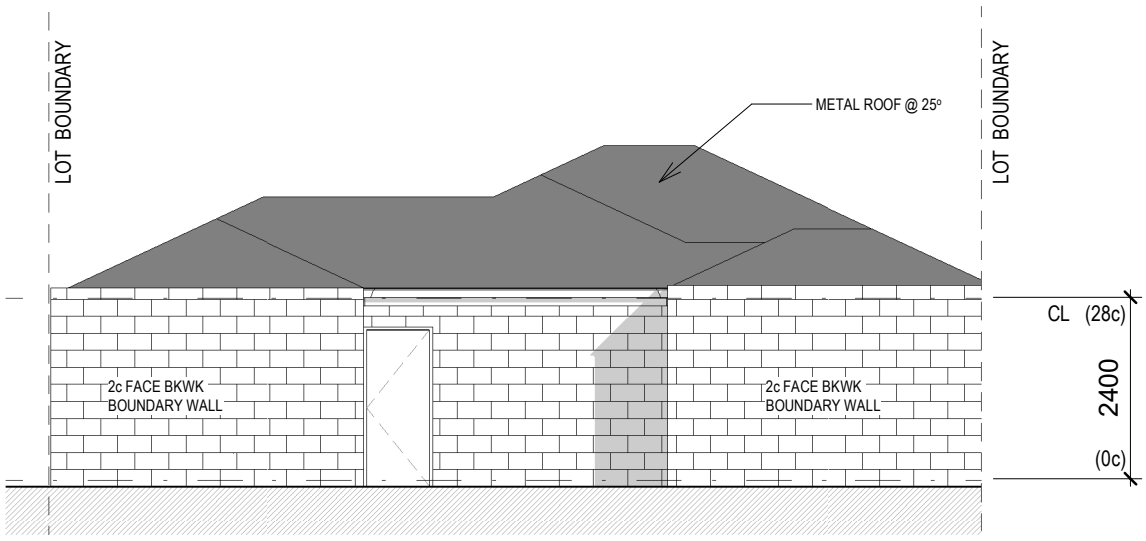
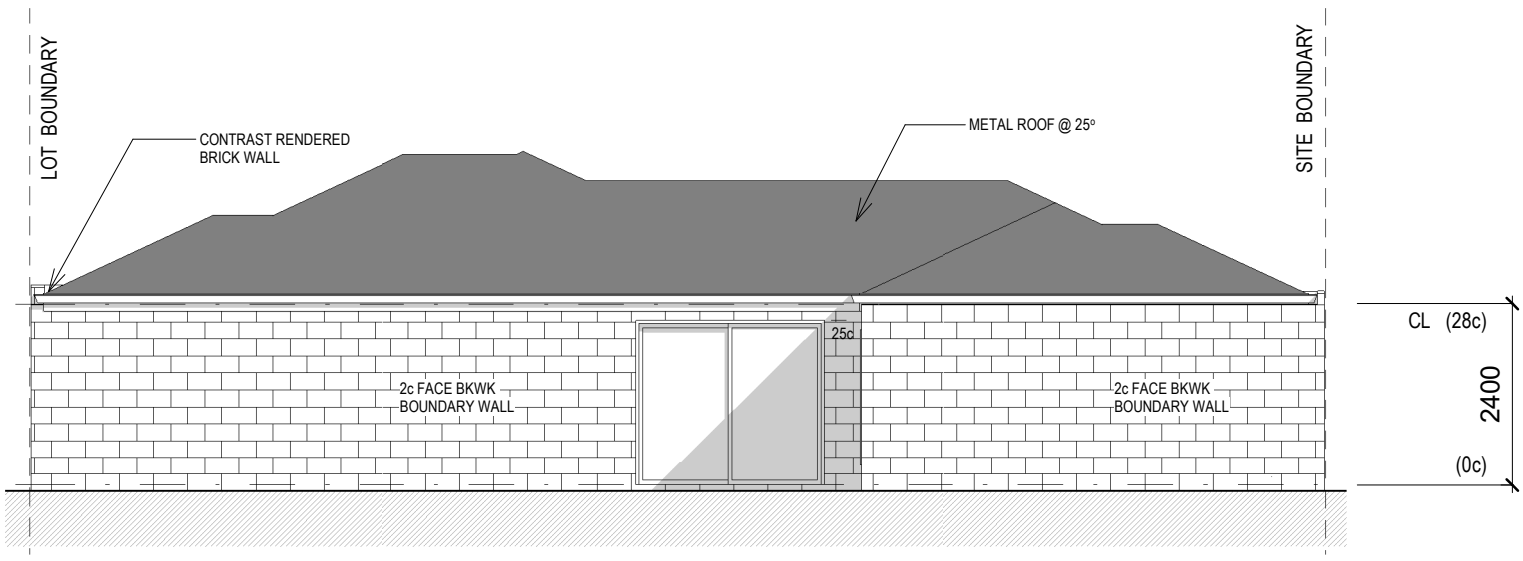


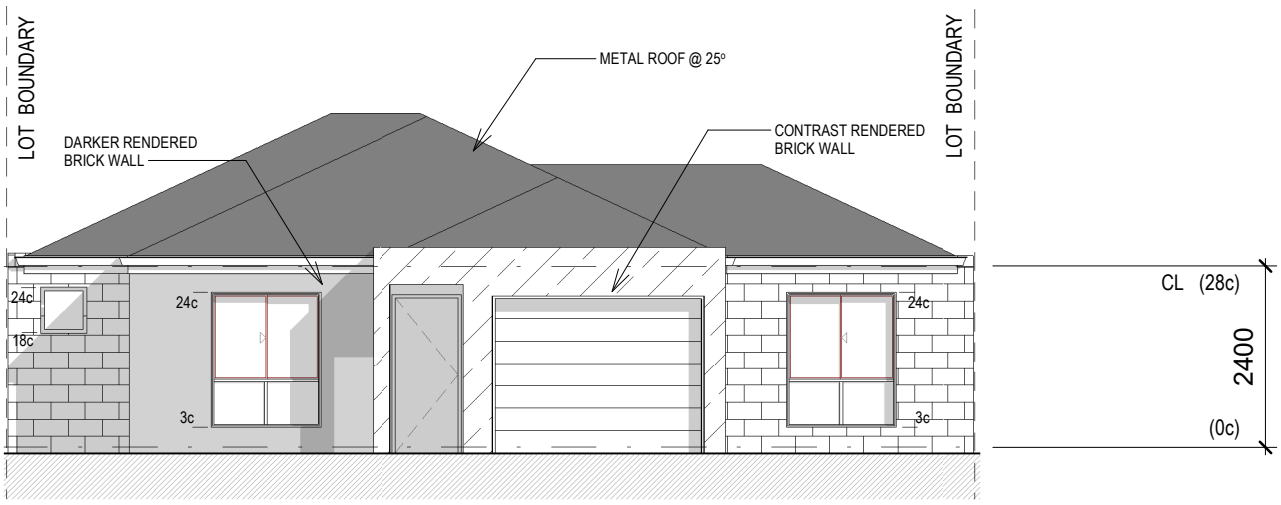
UNIT 5 - ELEVATION 1

SCALE 1:100



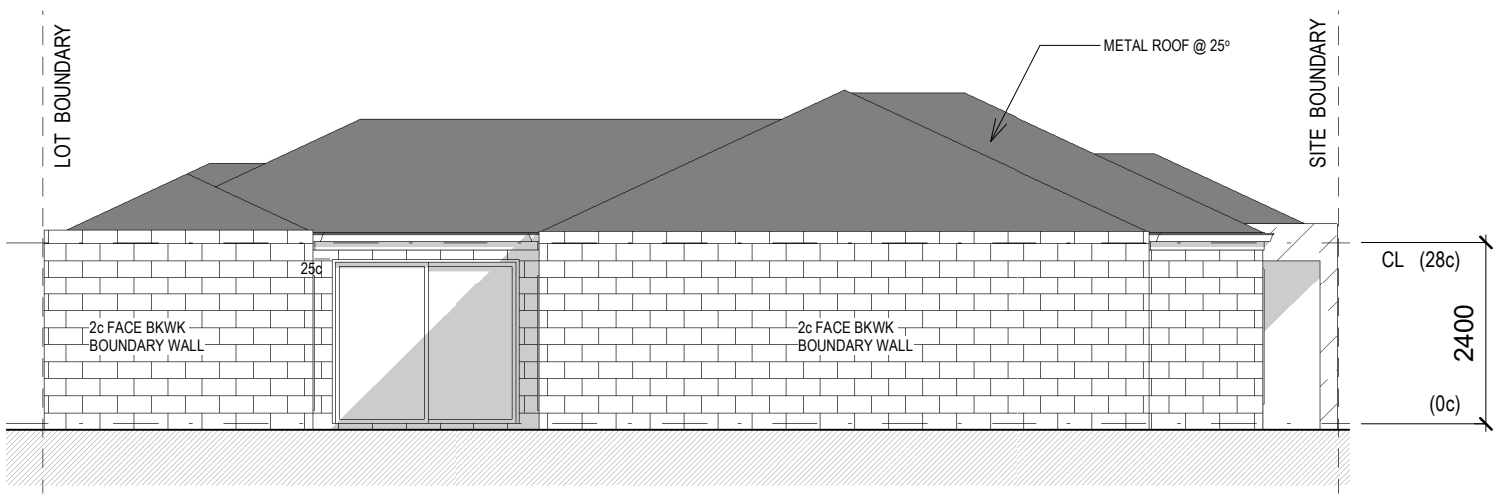
UNIT 5 - ELEVATION 2

SCALE 1:100



UNIT 5 - ELEVATION 3

SCALE 1:100



UNIT 5 - ELEVATION 4

SCALE 1:100

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C	16.06.26	REVISED DA

PROJECT NAME:
LOT 31 (340) RAILWAY PARADE , BECKENHAM

CLIENT APPROVAL:

I ACKNOWLEDGE THAT THIS DRAWINGS ARE SASTIFIED AND WILL BE LODGED FOR DEVELOPMENT APPLICATION

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DRAWING TITLE:	SHEET NO:
UNIT 5 ELEVATIONS	A2.04
SCALE:	REV NO.
1:100 @ A3	C

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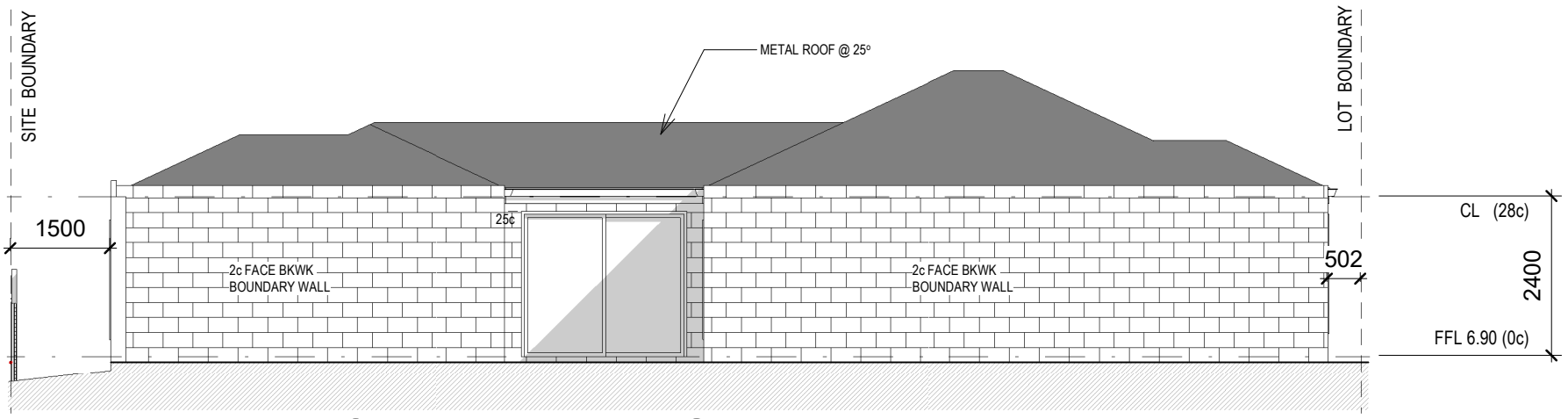
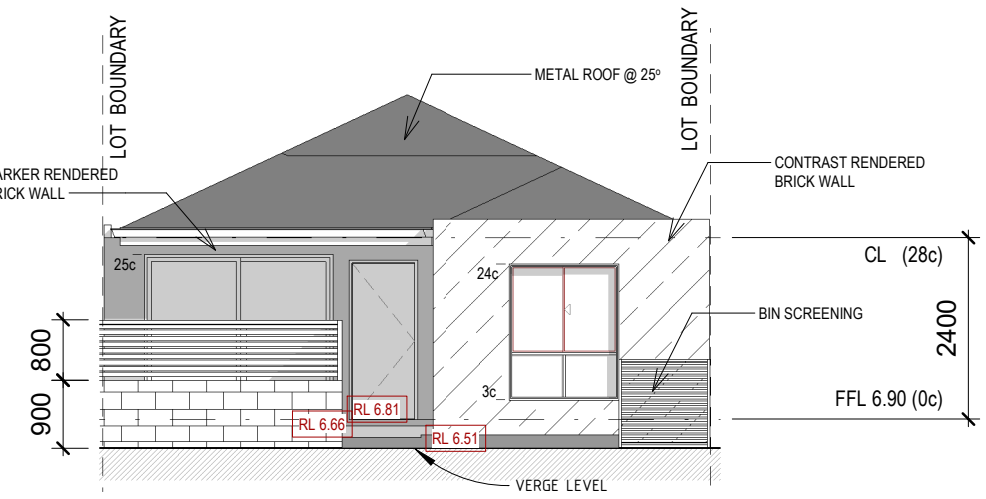


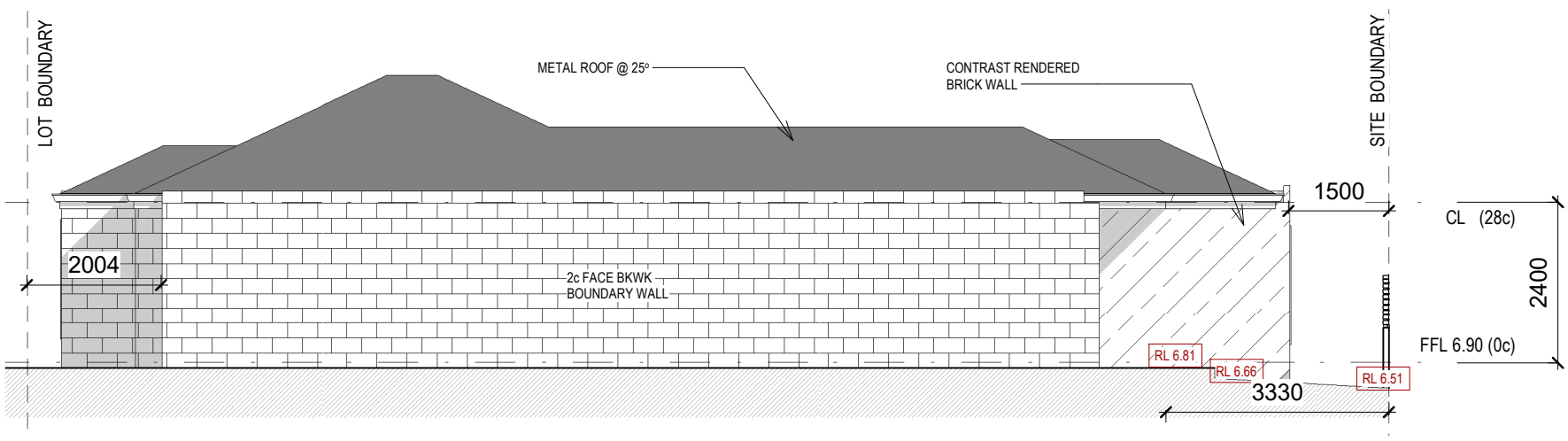
UNIT 6, 8 & 10 - ELEVATION 1

SCALE 1:100



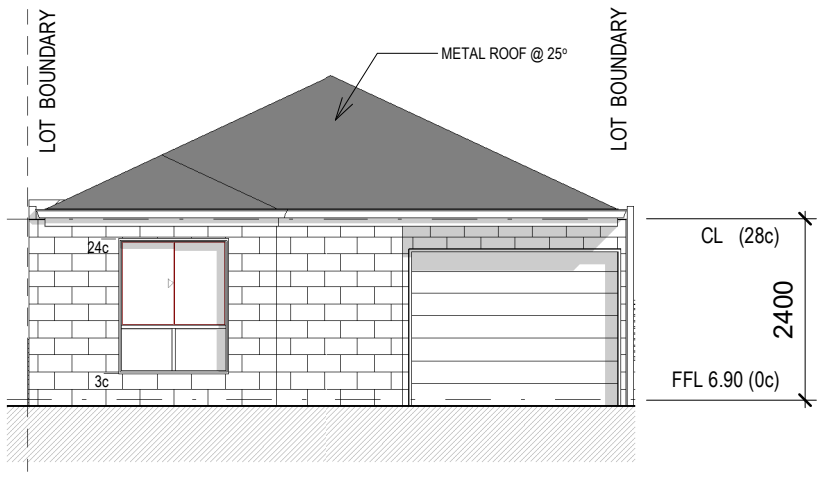
UNIT 6, 8 & 10 - ELEVATION 2

SCALE 1:100



UNIT 6, 8 & 10 - ELEVATION 3

SCALE 1:100



UNIT 6, 8 & 10 - ELEVATION 4

SCALE 1:100

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A	12.12.25	DA SUBMISSION
B	14.04.26	REVISED DA
C	16.06.26	REVISED DA

PROJECT NAME:
LOT 31 (340) RAILWAY PARADE , BECKENHAM

CLIENT APPROVAL:

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DRAWING TITLE:	SHEET NO:
UNIT 6, 8 & 10 ELEVATIONS	A2.05
SCALE: 1:100 @ A3	REV NO. C

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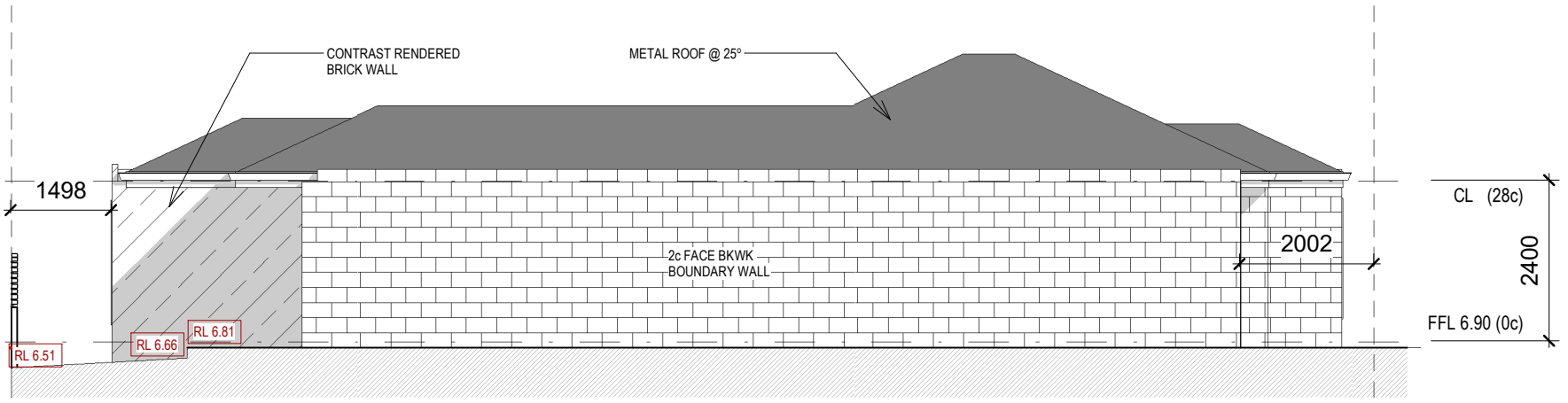
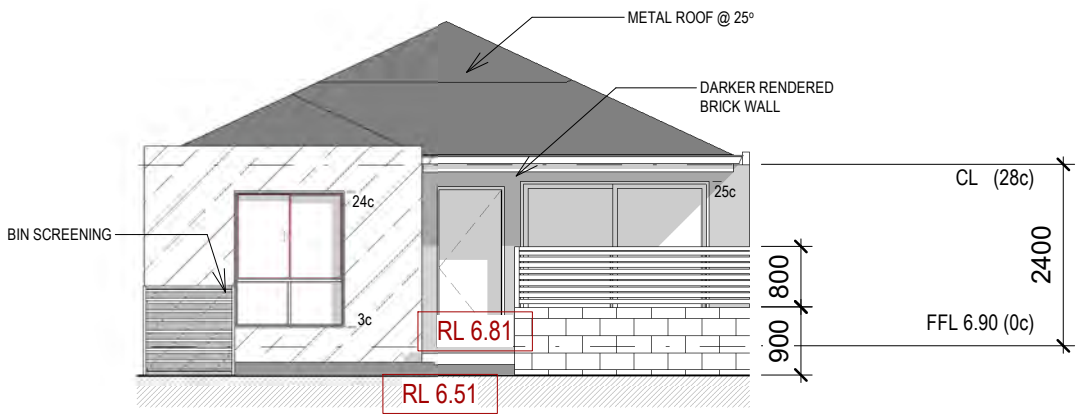


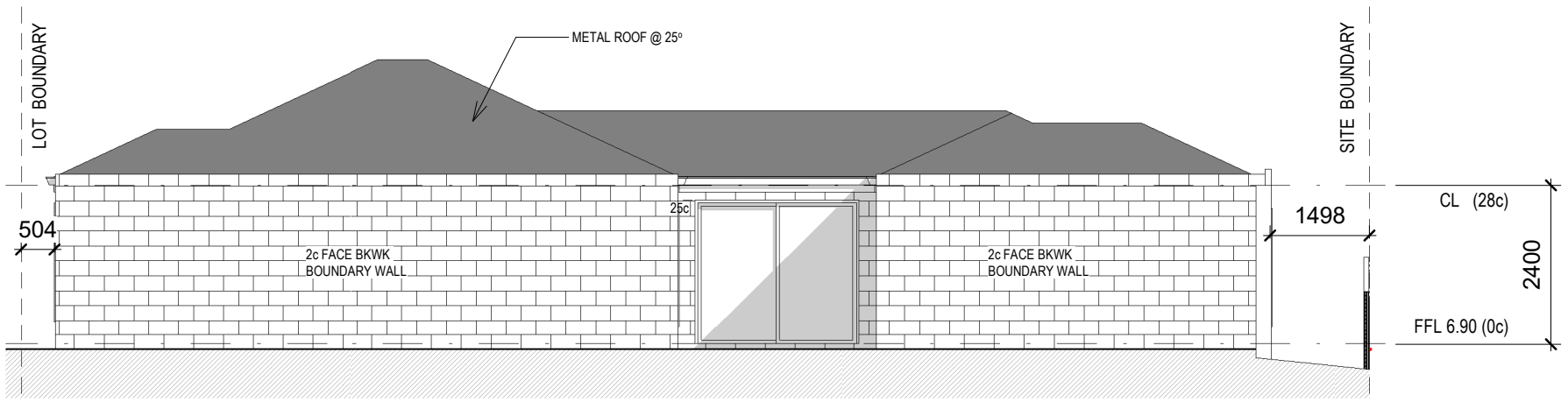
UNIT 7 & 9- ELEVATION 1

SCALE 1:100



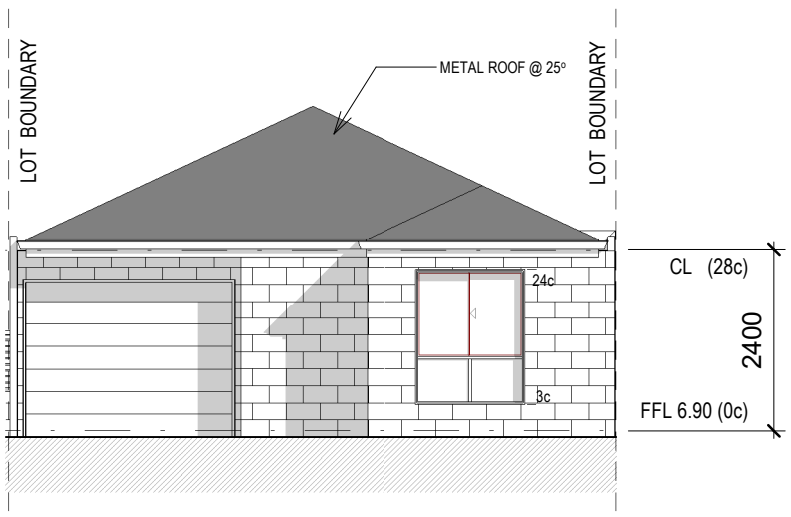
UNIT 7 & 9 - ELEVATION 2

SCALE 1:100



UNIT 7 & 9- ELEVATION 3

SCALE 1:100



UNIT 7 & 9- ELEVATION 4

SCALE 1:100

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A	12.12.25	DA SUBMISSION	
B	14.04.26	REVISED DA	
C	16.06.26	REVISED DA	

PROJECT NAME:
LOT 31 (340) RAILWAY PARADE , BECKENHAM

CLIENT APPROVAL:

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DRAWING TITLE:	SHEET NO:
UNIT 7 & 9 ELEVATIONS	A2.06
SCALE:	REV NO.
1:100 @ A3	C

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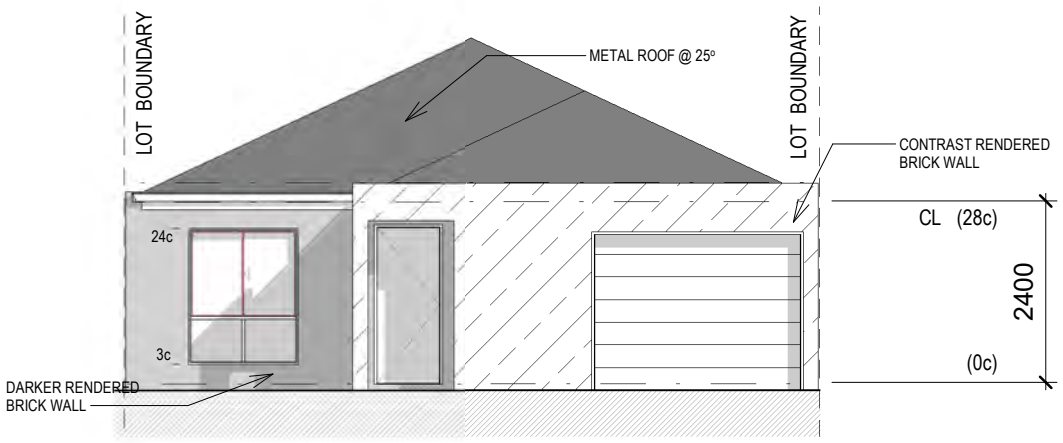
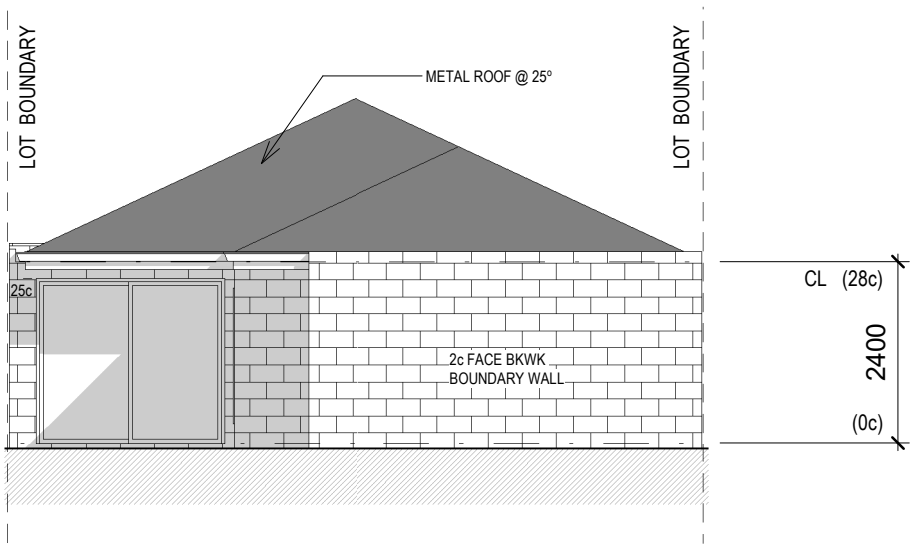


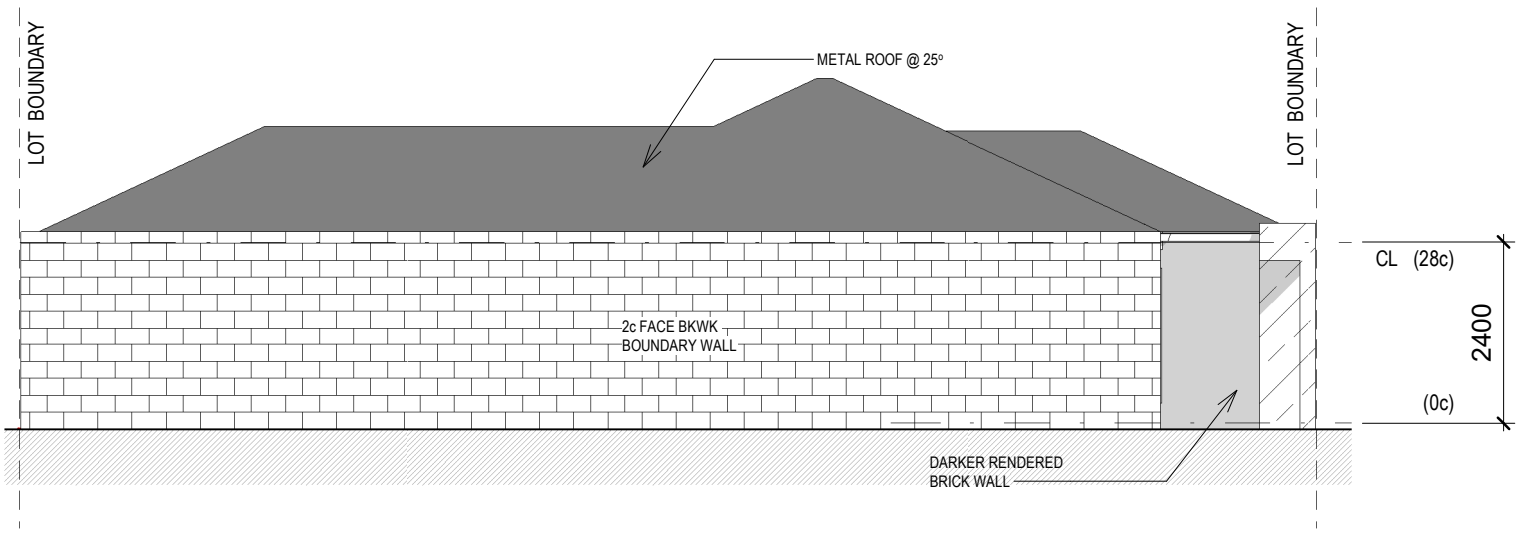
UNIT 11 - ELEVATION 1

SCALE 1:100



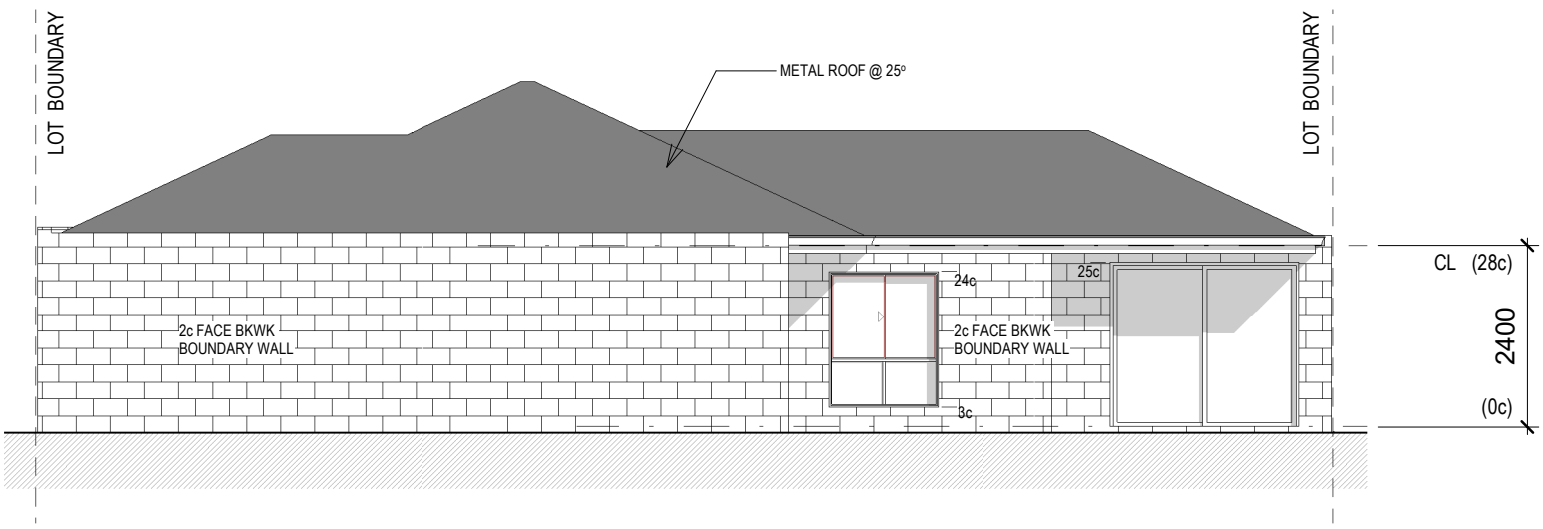
UNIT 11 - ELEVATION 2

SCALE 1:100



UNIT 11- ELEVATION 3

SCALE 1:100



UNIT 11 - ELEVATION 4

SCALE 1:100

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PROJECT NAME:
LOT 31 (340) RAILWAY PARADE , BECKENHAM

CLIENT APPROVAL:

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DRAWING TITLE:	SHEET NO:
UNIT 11 ELEVATIONS	A2.07
SCALE:	REV NO.
1:100 @ A3	C

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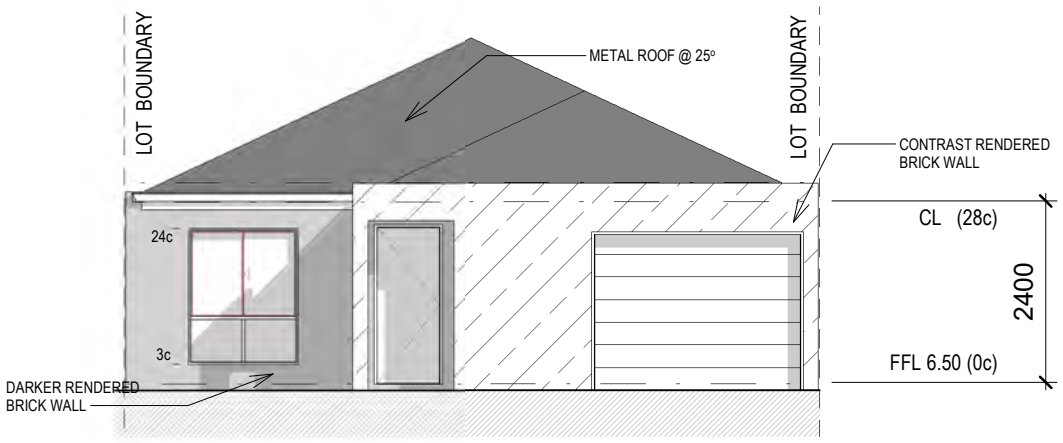
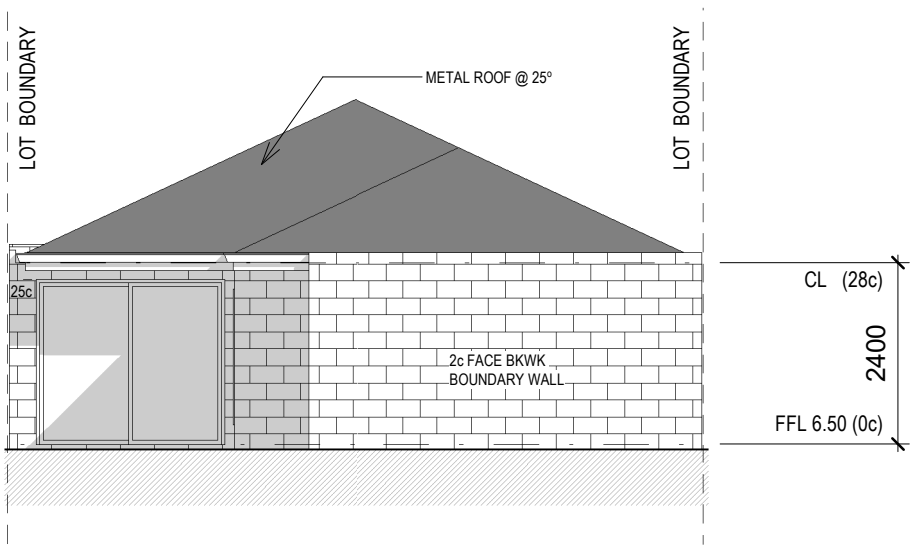


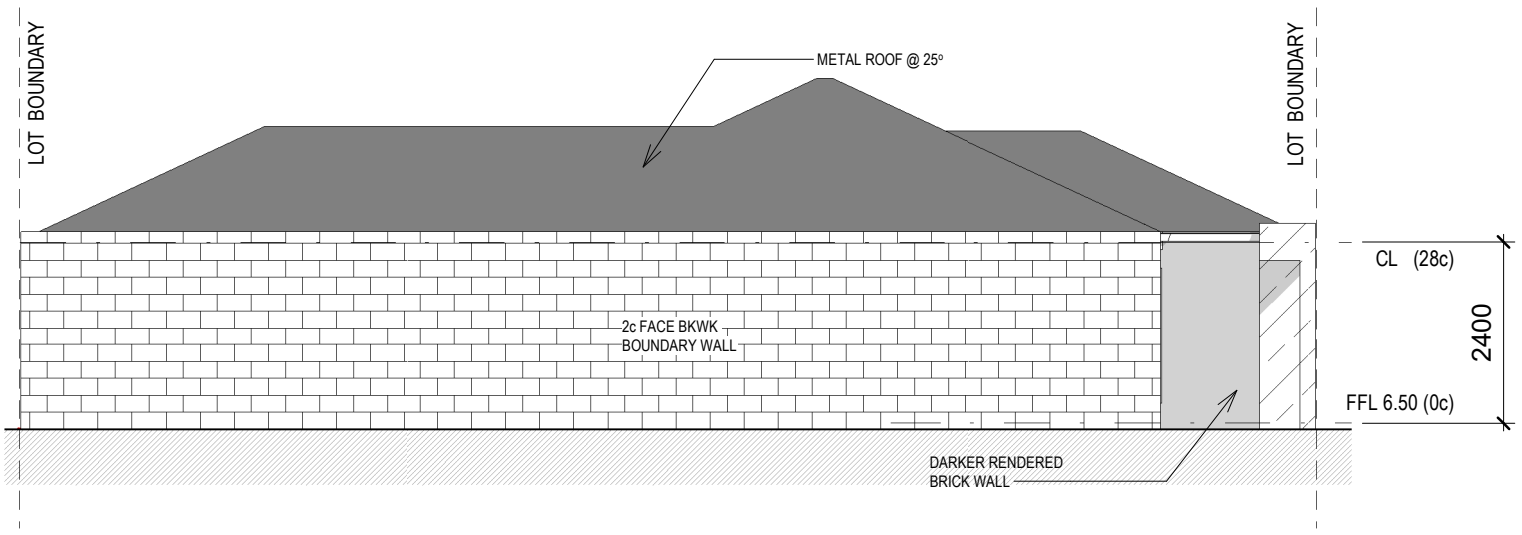
UNIT 11 - ELEVATION 1

SCALE 1:100



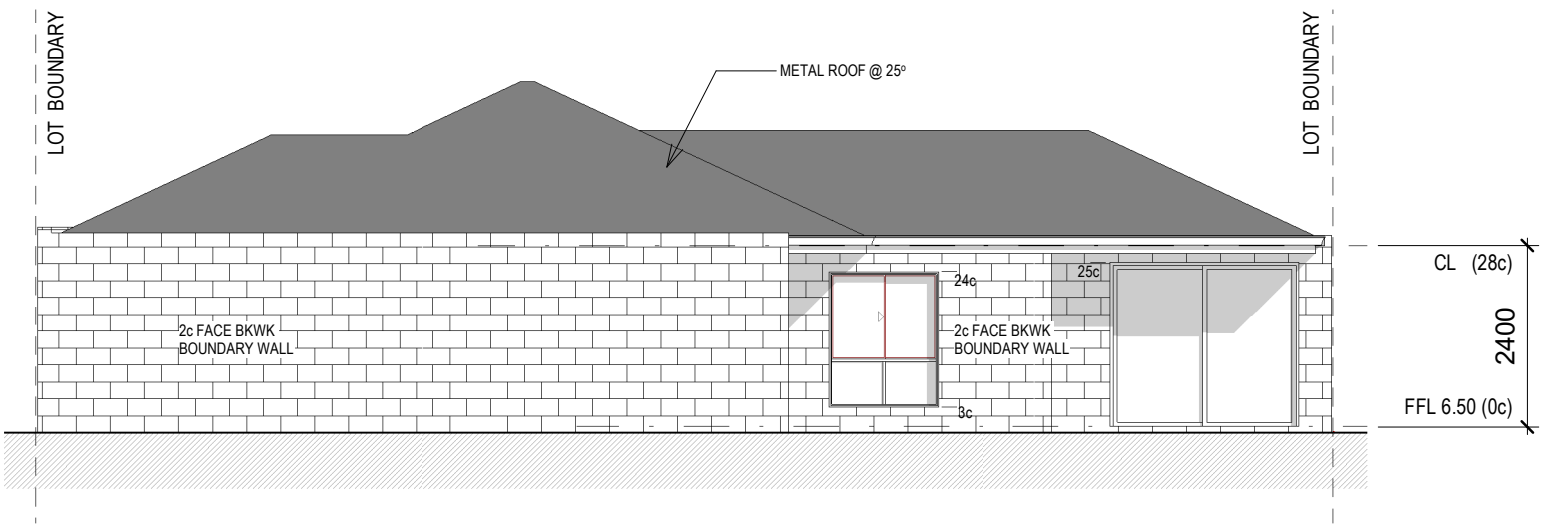
UNIT 11 - ELEVATION 2

SCALE 1:100



UNIT 11- ELEVATION 3

SCALE 1:100



UNIT 11 - ELEVATION 4

SCALE 1:100

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DRAWING TITLE:	SHEET NO:
UNIT 11 ELEVATIONS	A2.07
SCALE:	REV NO.
1:100 @ A3	C

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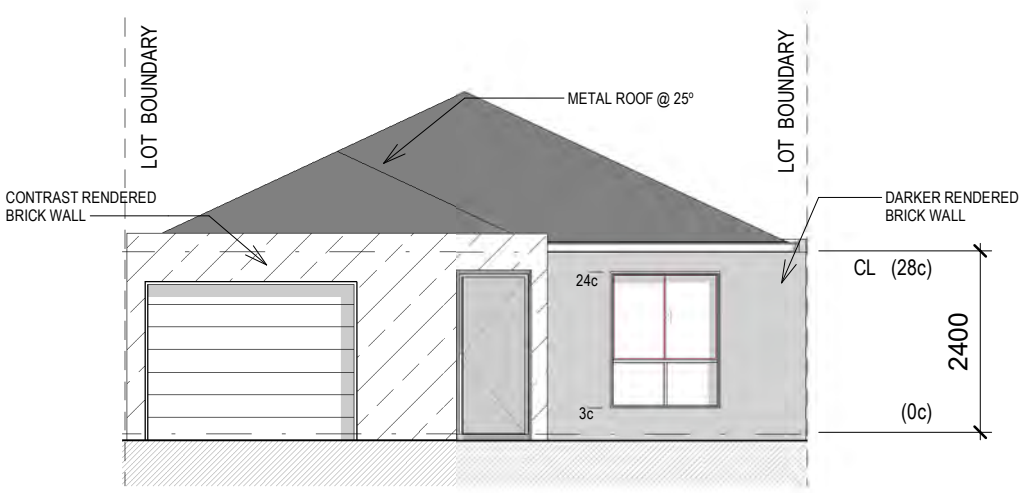
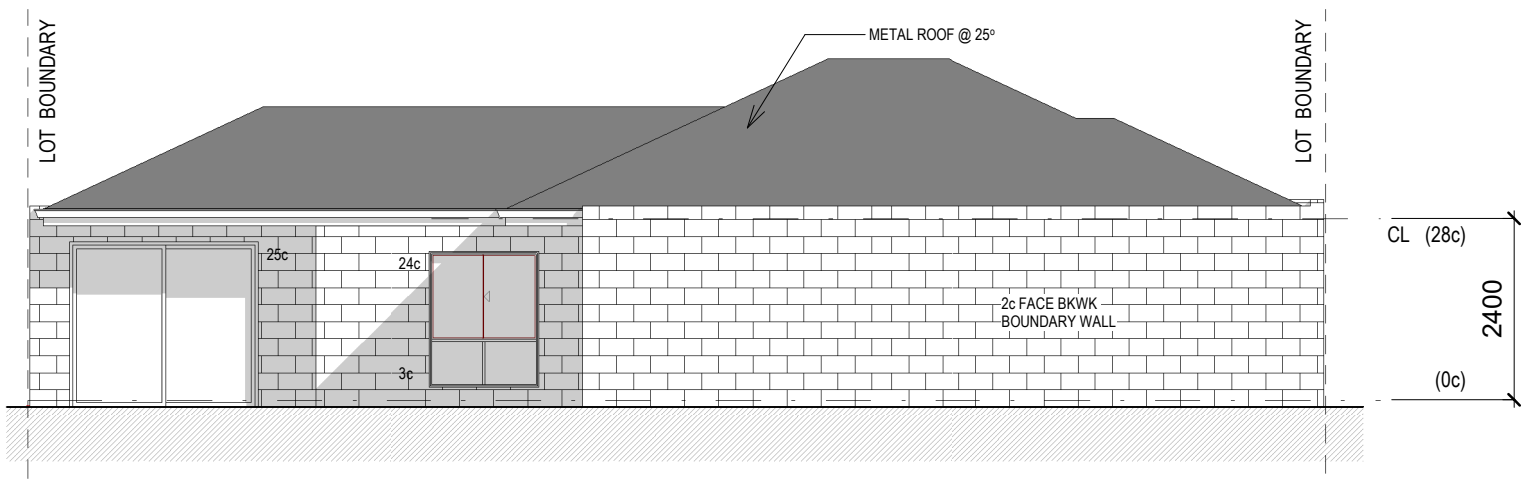


UNIT 12, 14 & 16 - ELEVATION 1

SCALE 1:100



UNIT 12, 14 & 16 - ELEVATION 2

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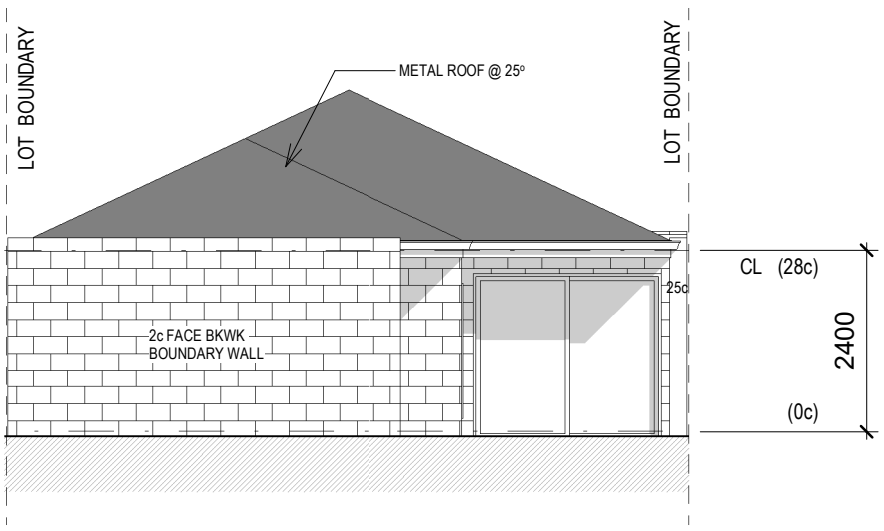
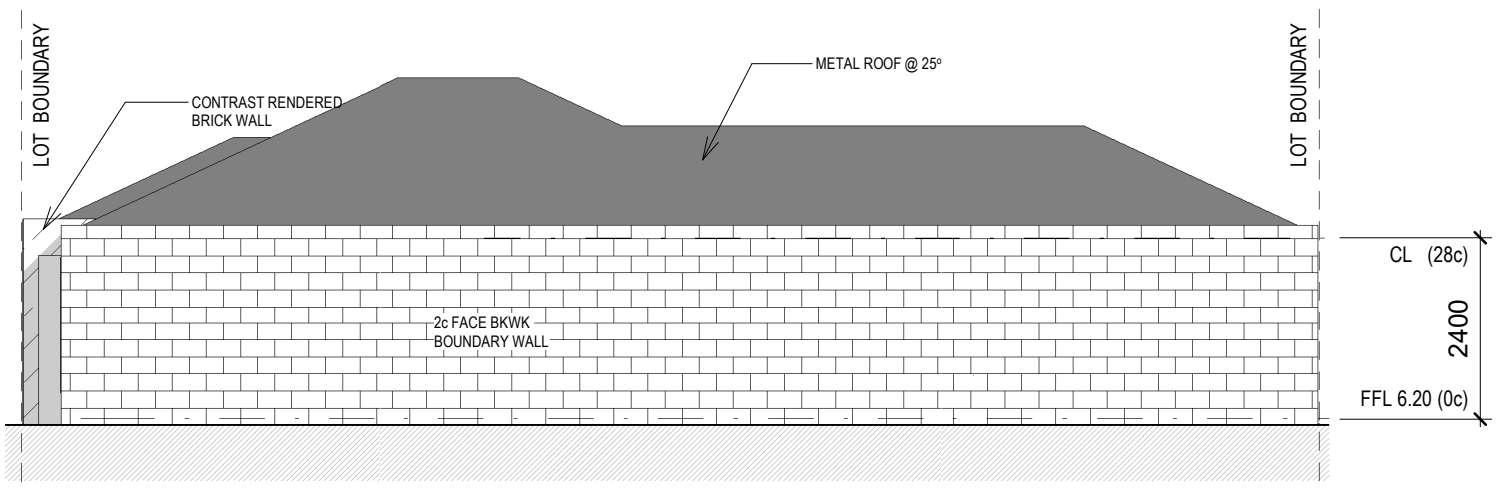


UNIT 12, 14 & 16 - ELEVATION 3

SCALE 1:100



UNIT 12, 14 & 16 - ELEVATION 4

SCALE 1:100

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REVISIONS

REV.	DATE	DESCRIPTION
A	12.12.25	DA SUBMISSION
B	14.04.26	REVISED DA
C	16.06.26	REVISED DA

PROJECT NAME:
LOT 31 (340) RAILWAY PARADE , BECKENHAM

CLIENT APPROVAL:

I ACKNOWLEDGE THAT THIS DRAWINGS ARE SASTIFIED AND WILL BE LODGED FOR DEVELOPMENT APPLICATION

CLIENT:
JAGO5 INVESTMENTS PTY LTD

DRAWING TITLE:	SHEET NO:
UNIT 12, 14 & 16 ELEVATIONS	A2.08
SCALE: 1:100 @ A3	REV NO. C

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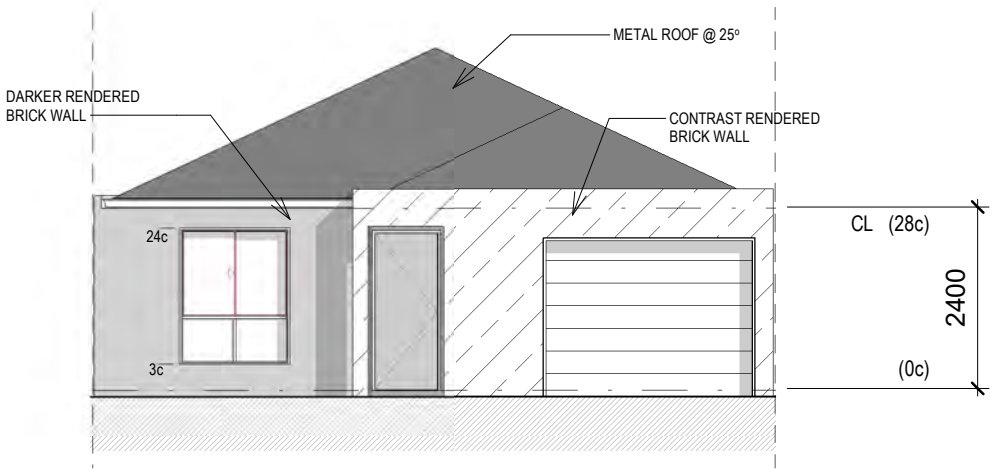

UNIT 13 & 15 - ELEVATION 1

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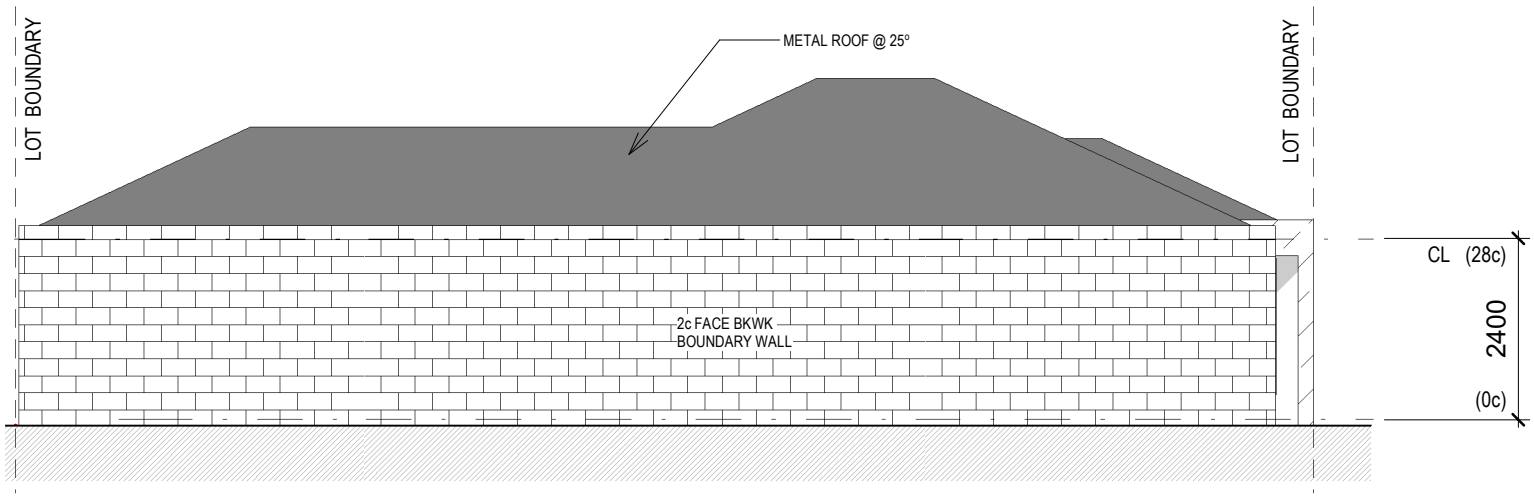

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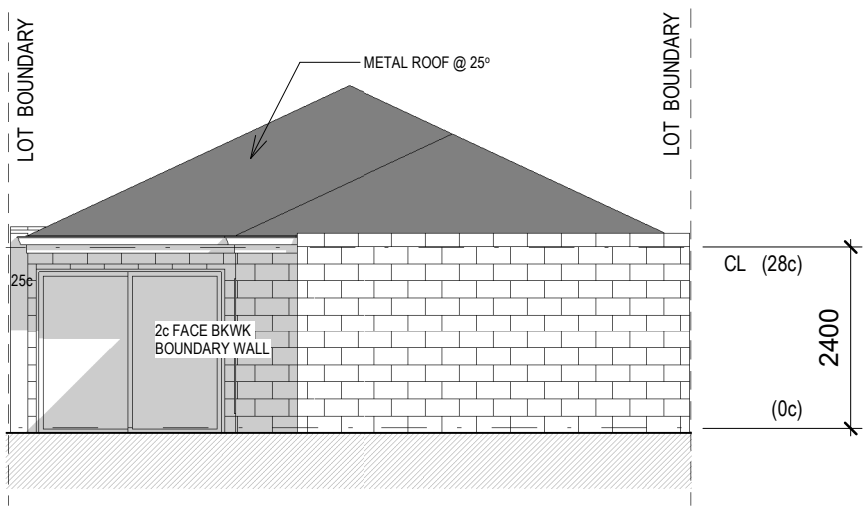

UNIT 13 & 15 - ELEVATION 3

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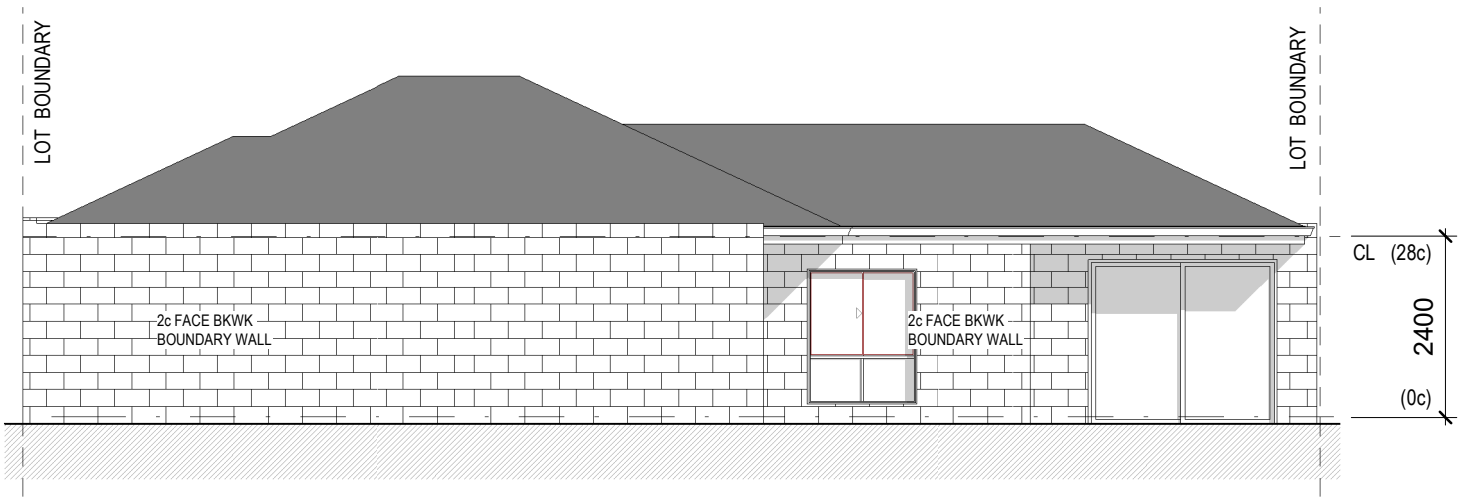

UNIT 13 & 15 - ELEVATION 4

SCALE 1:100

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PROJECT NAME:
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CLIENT APPROVAL:

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JAGO5 INVESTMENTS PTY LTD

DRAWING TITLE:	SHEET NO:
UNIT 13 & 15 ELEVATIONS	A2.09
SCALE:	REV NO.
1:100 @ A3	C

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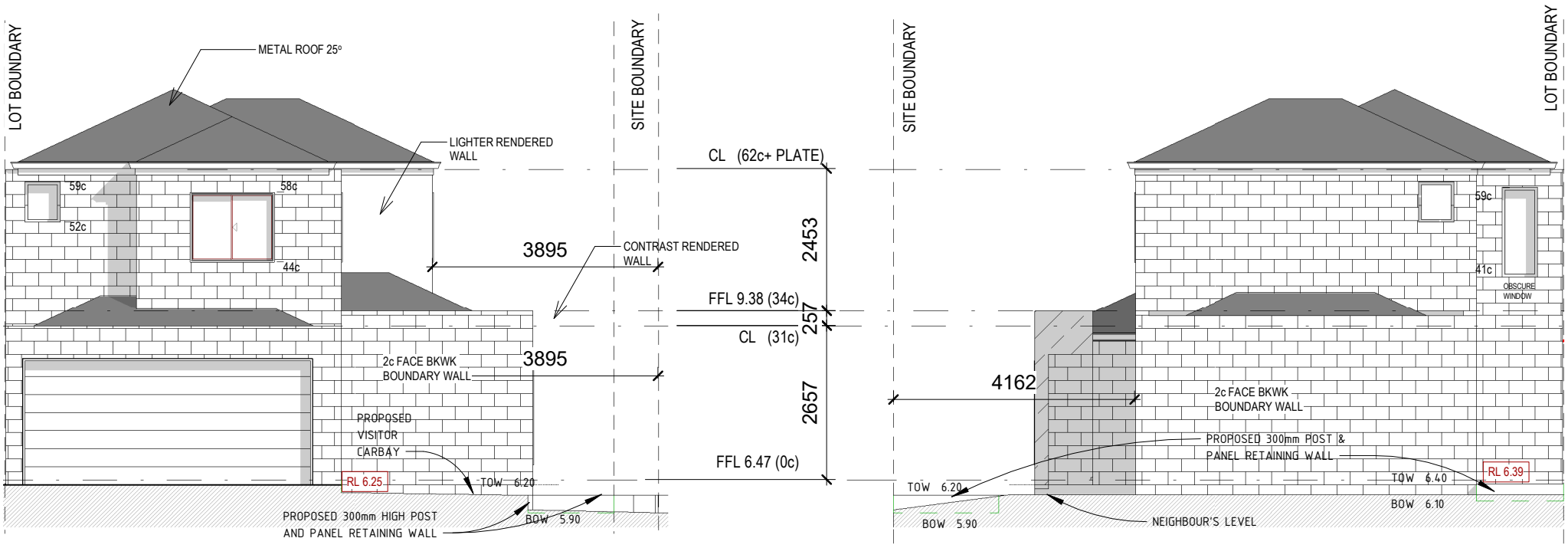
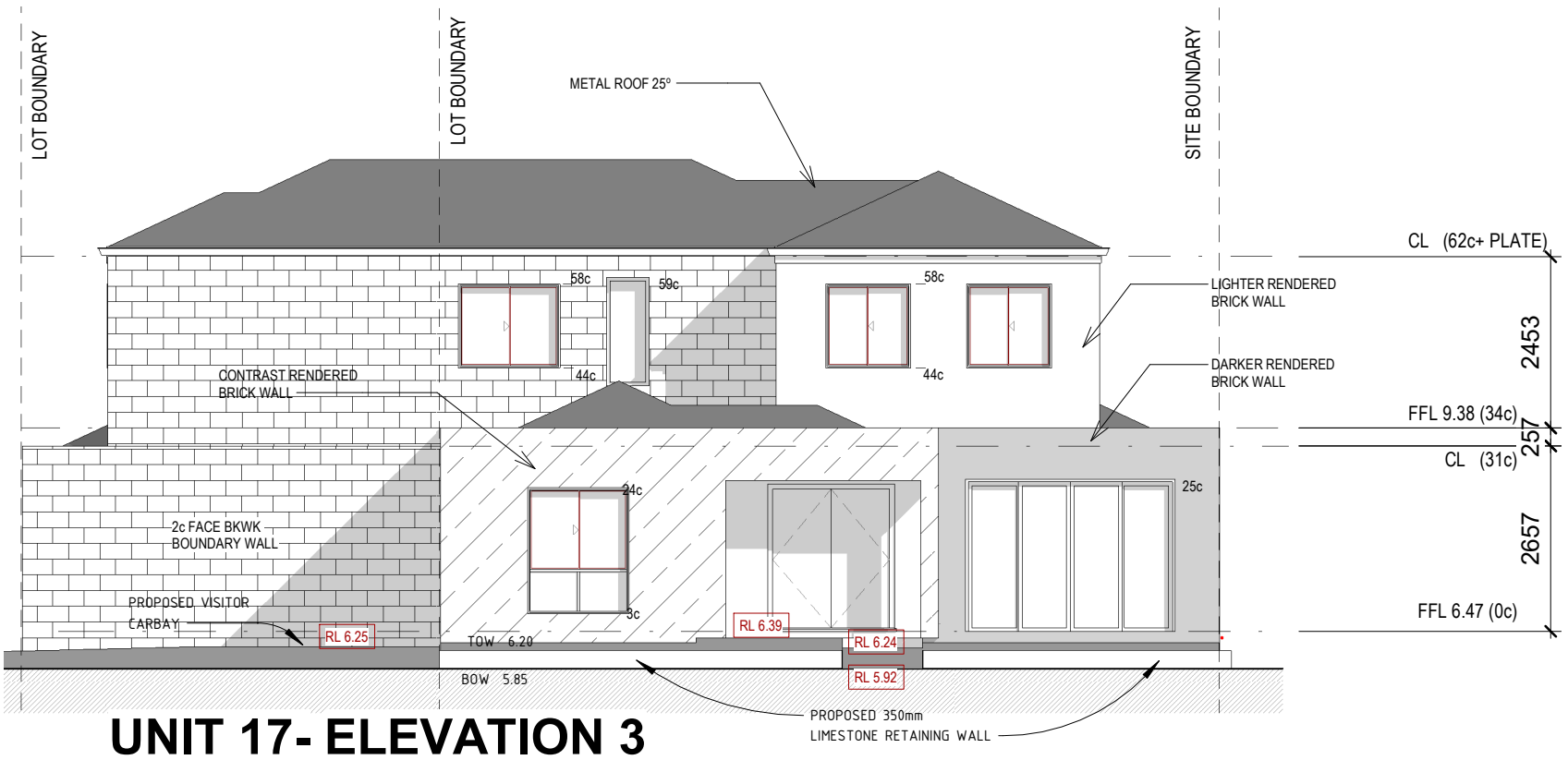


UNIT 17 - ELEVATION 1

SCALE 1:100

UNIT 17 - ELEVATION 2

SCALE 1:100



UNIT 17- ELEVATION 3

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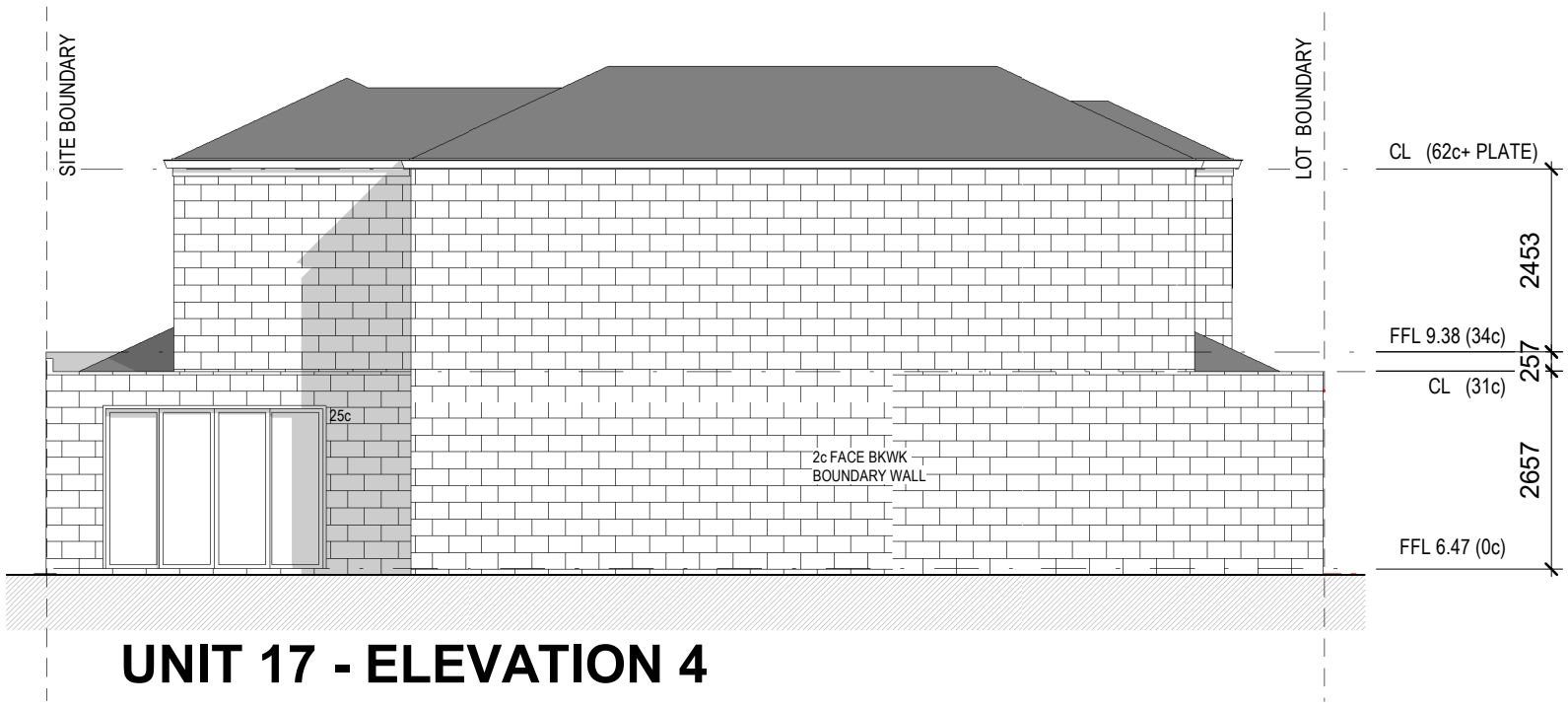

UNIT 17 - ELEVATION 4

SCALE 1:100

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PROJECT NAME:
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DRAWING TITLE:	SHEET NO:
UNIT 17 ELEVATIONS	A2.10
SCALE:	REV NO.
1:100 @ A3	C

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Attachment 2

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26/06/2026

Chief Executive Officer
City of Gosnells
PO BOX 662
Gosnells WA 6990

ATTENTION: Ridaah Gamildien –Planner

Dear Jamie,

RE: AMENDMENT DAP - DA26/00025
LOT 31 (340) RAILWAY PDE BECKENHAM

Tuscom Subdivision Consultants is pleased to represent our client, Jago5 Pty Ltd, in submitting amended plans for DAP26/00025 in response to your email dated 22 May 2026

Please refer to the attached plans and the accompanying letter which outline the relevant performance criteria and provide justification for :

1. **1.1 Private open space (Variation required)**

The proposed units have been modified to comply with the private open space requirements as per below table:

Lots	Minimum primary garden area required	Minimum primary garden area provided	Minimum secondary garden area provided	Total garden	Maximum permanent roof cover	Minimum dimension
Unit 1 182m2	30sqm	25sqm	13 sqm	38sqm	Nil	Min 3 dimension achieved

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Units 2 and 4 220m2	35sqm	36sqm	n/a	36sqm	Nil	3.3m
Unit 3 220m2	35sqm	36sqm	n/a	36sqm	Nil	3.3m
Unit 5 218m2	35sqm	34sqm	n/a	34sqm	Nil	3.3m
Units 6, 8 and 9 162m2	30sqm	19sqm	11sqm	30sqm	Nil	4.3mx4.3m And 3.5mx3m
Units 7 and 10 162m2	30sqm	19sqm	11sqm	30sqm	Nil	4.3mx4.3m And 3.5mx3m
Unit 11 155m2	25sqm	25sqm	n/a	25sqm	Nil	3m
Units 12, 14 and 16 155m2	25sqm	25sqm	n/a	25sqm	Nil	3m
Units 13 and 15 155m2	25sqm	25sqm	n/a	25sqm	Nil	3m

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Unit 17 160m2	25sqm	25 sqm	n/a	25sqm	Nil	4.1m x 4.9m

Slight variations are requested as follows:

• **Unit 5:** A minor variation is requested to the garden area, which provides 34m². The variation is minor and will not affect the functionality or amenity of the garden area.

• **Units 6, 7, 8, 9 and 10:** A minor variation is requested to the primary garden area, which is slightly less than 20m². Primary garden area is also located in the front setback of Head Close (secondary road).

The proposed units have been amended to maximise the provision of garden areas, while balancing compliance requirements with the functionality of the internal living areas. Although variations are required, the proposed garden areas will not compromise the functionality or amenity of the outdoor living spaces for the following reasons:

- The combined primary and secondary garden areas provide a total of 30m² for Units 6, 7, 8, 9 and 10;
- The primary garden area is located within the front setback to maximise solar access and provide a functional outdoor living space directly connected to the dwelling's main living area;
- The garden area facilitates passive surveillance of the street through direct sightlines from major habitable room windows and the dwelling entrance, contributing to community safety and an active streetscape;
- A visually impermeable front fencing not exceeding 1.2 metres in height is proposed, ensuring clear visual connections between the dwelling, garden area and public realm.
- The front garden presentation contributes positively to the streetscape by providing soft landscaping and reducing the visual dominance of built form.
- The garden area remains functional and capable of accommodating outdoor recreation, seating and landscaping opportunities for future residents.
- Adequate deep soil planting areas are retained to support meaningful landscaping and tree planting.

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- Sufficient soft landscaping is provided throughout the site, contributing to visual amenity, urban greening and stormwater infiltration.
- Solar access to the primary living spaces is maintained notwithstanding the location of the primary garden area.

2.1 Size and Layout of dwellings (Compliance)

2. Units 6 to 10 proposes a 1.1m dimension for all storage spaces in-lieu of 1.5m.

The storage room for units 6 to 10 have been amended to allow 1.5m width storage space.

2.2 Solar access and natural ventilation. (Compliance)

3. All bathrooms with external walls do not include any openable windows for ventilation.

Bathrooms on Unit x,y,z have been amended to include openable windows.

2.2 Parking (Compliance)

4. Manoeuvrability in and out of car spaces for each unit needs to comply with Australian Standards – please provided swept path movement using a standard B85 vehicle to confirm compliance.

Swepth Path has been provided showing clear path for the vehicle to exit and enter the property.

5. 3 visitor bays in-lieu of minimum 4 bays.

A total of four (4) visitor parking bays are required under the applicable provisions; however, three (3) visitor bays are proposed on site.

The subject site is located within close proximity (approximately 100 metres) of Beckenham Train Station, providing a high level of accessibility to public transport. In addition, five (5) of the proposed dwellings directly address Head Close, which benefits from readily available on-street parking.

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Given the site's transit-oriented location and the availability of surrounding street parking, it is considered that the shortfall of one (1) visitor bay can be adequately accommodated within the existing road network without resulting in adverse impacts on parking availability or local amenity.

2.3 Waste Management & Waste Management Plan

6. Waste bins proposed in garage storage space, not considered a dedicated space.

Waste management plan:
7. Amend existing waste management plan to align with new proposal of 17 dwellings.

Storage areas of each units have been increased to allow for bin storage conveniently while maintaining 4sqm storage area.

Waste Management Plan has been updated to suit.

2.4 Utilities

8. Demonstrate location of service and functional utilities (as defined under the R-Codes) within site/floor plan.

Proposed services such as ; power dome, master meter and SMSB, letter boxes have been provided in the Landscaping Plan.

2.7 Universal Design

9. Applicant to provide a universal design compliance checklist to address how 20% of dwellings achieved silver level universal design (as shown as appendix 4 of the R-Codes).

Unit 2,3,4 & 5 are proposed as Silver level universal design dwellings. We have met the requirement by providing 23% of the total dwellings. Please find attached check list for universal design compliance checklist.

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3.1 Site Cover

9. Site cover for units below does not comply with the maximum 70% deemed-to-comply provision:

Major redesigns have been undertaken to substantially reduce the site cover across the development while balancing compliance requirements, dwelling functionality and project feasibility.

The amendments include:

1. **Units 2–5** – Site cover has been reduced from approximately **81% to 73–74%** by reconfiguring the double garage arrangement to a single garage and converting the remaining area to garden/open space.
2. **Units 6–10** – Site cover has been reduced from approximately **76.7% to 73–74%** through the expansion of both the primary and secondary garden areas.
3. **Unit 11** – Site cover has been reduced from approximately **81% to 80%** by reducing the internal living area and consolidating the primary garden area.

The revised site cover figures are summarised in the table below.

Lots	Site cover	Site area	Percentage
Unit 1	**127.8sqm**	**182sqm**	**70%**
Units 2,3 and 4	**160.8sqm**	**220sqm**	**73%**
Unit 5	**160.8sqm**	**218sqm**	**74%**
Units 6 and 9	**119.5sqm**	**162sqm**	**74%**
Units 7 and 10	**119.52sqm**	**162sqm**	**74%**
Unit 8	**119.52sqm**	**164sqm**	**73%**
Unit 11	**124.68sqm**	**155sqm**	**80%**

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Units 12, 14 and 16	**125.9sqm**	**155sqm**	**81%**
Units 13 and 15	**125.9sqm**	**155sqm**	**81%**
Unit 17	**118.86sqm**	**160sqm**	**74%**

Despite the significant constraints associated with accommodating 17 dwellings on the site, the proposal has achieved substantial reductions in site cover across the majority of units. Of the 17 proposed dwellings, 11 units now achieve a site cover of between 70% and 74%, which is either compliant with or closely aligned to the R80 deemed-to-comply requirement of 70%.

Only six units remain at approximately 80–81% site cover. Further reductions would require significant redesign of the dwelling layouts, resulting in the loss of functional living spaces, car parking, garden areas, or the introduction of additional two-storey development. Such outcomes would diminish the overall liveability of the dwellings and adversely affect the project's feasibility.

The majority of dwellings are retained as single-storey homes, which assists in reducing visual bulk, maintaining residential amenity and providing a more affordable built form. Only two dwellings fronting Railway Parade are proposed as two-storey dwellings, reflecting their prominent streetscape location and assisting in achieving a balanced and viable development outcome.

Accordingly, the proposed site cover variation should be supported, as the design has been extensively refined to achieve substantial compliance with the R80 provisions while maintaining dwelling functionality, residential amenity and overall development feasibility.

3.3.1 Street setbacks

10. Unit 17: Ground floor proposes a 1.5m setback to Railway Parade street boundary in-lieu of 2m.

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A slight variation is requested for the study area where the double wall is slightly encroaching to the front setback by 30cm (1.72m in lieu of 2m).

Living, dining and porch area are now setback further than 2m as required. This results in a more articulated built form and contributes positively to the overall streetscape outcome and minimises the visual impact of the setback variation.

11. Units 6-10: Ground floor proposes a 1.5m setback to Head Close street boundary in-lieu of 2m.

We do not agree with the City's assessment that Head Close should be treated as the primary street for the purpose of applying the street setback requirements.

The development has been intentionally designed with Railway Parade as the primary street frontage. Railway Parade is the higher-order road, provides the principal address and streetscape presentation for the development, and contains the dwellings that establish the development's primary interface with the public realm. In contrast, Head Close functions as a secondary street frontage to the site.

Accordingly, the setback requirements applicable to a secondary street should apply to the Head Close frontage. Under this interpretation, a minimum setback of 1 metre is required rather than 2 metres.

The proposed development has been designed in accordance with this requirement. The master bedroom walls of Units 6, 7, 8, 9 and 10 are setback a minimum of 1.5 metre from the Head Close boundary and therefore comply with the applicable secondary street setback provisions.

On this basis, it is considered that the setbacks of Units 6, 7, 8, 9 and 10 are compliant and should not be classified as a variation.

12. Nil setback to communal street in-lieu of min 0.5m.

A variation is sought to permit a nil setback to the communal street for the garages serving Lots 1–5 and Lots 11–17.

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The proposed garages front onto the internal communal street (common property) which has a width of 6 metres. The nil setback arrangement has been deliberately adopted to maximise functional open space and dwelling design outcomes while maintaining safe and efficient vehicle access.

The purpose of a garage setback is generally to ensure adequate vehicle manoeuvring space and to prevent vehicles from obstructing traffic movements. In this instance, the 6 metre width of the communal street provides sufficient space for vehicles to enter and exit the garages in a forward direction and undertake manoeuvring movements safely within the common property area.

Accordingly, the nil setback does not compromise vehicle access, manoeuvrability, pedestrian safety or the operation of the communal street.

On this basis, the proposed nil garage setback is considered appropriate and consistent with the design objectives of the R-Codes, as it achieves a functional development outcome without creating any adverse amenity, access or safety impacts.

3.3.2 Lot boundary setbacks

13. North-west boundary proposes a wall (U3 & 4) of 16m in-lieu of maximum 14m with no 3m-by-3m break.

    Unit 3 and 4 have undergo a re design. Lot boundary setback is maximum now less than 14m.

14. Unit 6 and 10 boundary wall is located within front setback area adjacent to Head Close.

    Head close should be interpreted as secondary street, hence the main bedroom setback of 1.5m which is compliance under the R80 requirement.

15. Unit 17 boundary wall is located within front setback area adjacent to Railway Parade.

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No more boundary wall within the front setback. A slight variation is requested for the study area where a portion of the double wall encroaches approximately 0.3 metres into the required setback, resulting in a setback of 1.72 metres in lieu of the required 2.0 metres.The variation is quite minor especially if this has been compensated with reduce setback on the living and dining area.

3.4 Site works and retaining walls

16. 700mm of retaining and fill in front of unit 1 in-lieu of max 500mm.

The requested variations are considered minor and are sought only to facilitate the finished site levels required for drainage purposes.
Due to drainage requirements, portions of the site are required to be raised approximately 400mm to 900mm above natural ground level. The affected lots are summarised below:

	Fill more than 500mm	Retaining wall more than 500mm
LOT 16	N/A	Limestone wall 750mm high on the front frontage. Post and panel retaining 750mm high on NE boundary.

The proposed fill and retaining walls are required to achieve suitable finished levels for drainage and stormwater management across the site and are specifically designed to ensure the lots can be appropriately serviced and drained.

In relation to Lot 16, the proposed front retaining wall has been located within the front setback to preserve a functional deep soil area. Requiring an additional setback to the retaining wall would compromise the ability to provide meaningful deep soil planting and would reduce the landscape outcome for the lot.

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3.7 Access

17. Common driveway is proposed as 18.9m at street boundary in-lieu of maximum 6m.

    The common driveway though is shown at 18.9m, it actually consist of 3 visitor bays, servicing area, 6m wide common driveway and 1.2m with pedestrian access way.

18. Vehicle swept paths required to confirm vehicles can exit in forward gear.

    Vehicle swept path have been provided as attached.

19. 1.5m truncation not shown for all lots within common property for sightline purposes.

    1.5m truncation is not required due as 6m wide access way is provided as shown in the vehicle swept path plan.

20. No dedicated pedestrian path provided as per C3.7.9

    1.2m dedicated pedestrian path is provided.

21. Landscaping strip not shown along entire common property on each side of driveway.

    Landscaping strip has been provided.

22. **Amend landscaping plan to address the following:**

- Landscaping plan to demonstrate an additional 9sqm deep soil area within the front setback of Unit 1 – Provided.
- Include dimensions for all deep soil areas proposed for each lot – please note each deep soil area should have a minimum dimension of 1.5m. - Provided.
- The proposed species as shown below are deciduous, please reconsider tree species. - (Amended to Banksia Attenuata and Eucalyptus Torquatta).

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- Please include your proposed verge treatment within the landscaping plan for both verges. – Provided refer to Landscaping Plan.
- Consider if any proposed drainage conflicts with the proposed deep soil area, no drainage should be located within deep soil area locations. – No conflict between drainage and deep soil area as per the stormwater plan.

23. **TIS report:**

- Traffic Impact Assessment on how the proposal will impact the surrounding road network.

  Please find attached Traffic Impact Assesment report.

- Provide swept paths using a standard B85 vehicle to confirm if there is adequate manoeuvrability from each unit to enter and exit the site. Provided.

24. **Waste Management Plan**

  Amend existing waste management plan to align with new proposal of 17 dwellings.

  Please find attached amended waste management plan for your perusal.

25. Universal design compliance checklist

- Checklist and annotation on plans demonstrating how the proposal will achieve silver level universal design. Provided.

25. **SPP 7.0 Design Principle Statements**

  Please find attached Design Principle Statement.

TUSCOM SUBDIVISION CONSULTANTS Pty Ltd ACN 097 092 003
ABN 90 097 092 003
Surveying • Planning • Subdivision • Project Management • Architecture

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CONCLUSION

Since the previous submission, the development has undergone significant redesign to better align with the City's objectives for R80 development. These amendments have resulted in substantial reductions in site cover, increased primary and secondary garden areas, improved landscaping opportunities, and a more balanced built form outcome across the site.

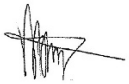
The proposal demonstrates a genuine effort to respond to the City's concerns while maintaining functional and liveable dwellings. The majority of the units now achieve site cover levels that are either compliant with, or closely aligned to, the R80 requirements, with variations limited to a small number of dwellings where strict compliance would result in unreasonable design compromises and affect project feasibility.

The requested variations are minor in nature and do not undermine the intent or objectives of the applicable planning framework. Rather, they represent a practical and balanced design response that achieves a high-quality residential outcome while remaining consistent with the broader vision for increased-density development along Railway Parade.

Accordingly, it is respectfully submitted that the proposal represents a significant improvement over the previous design and should be supported by the City.

Should you have further queries or seek clarification concerning the matters raised above, please do not hesitate to contact the undersigned on 9316 8388 or nuri@tuscom.com.au
Thank you.

Yours faithfully



Nuri Widhi Wulandari
Project Manager
Tuscom Subdivision Consultant

Attachment 3

TUSCOM SUBDIVISION CONSULTANTS Pty Ltd

Surveying • Planning • Subdivision • Project Management • Architecture

Design Quality Statement

Context and Character- *Good design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place.*

The context is an existing residential area close to the public transport, shops and other commercial services. With a zoning of R80, the site and surrounding area is anticipated to transform from single houses on typically larger suburban lots to grouped and multiple dwelling development.

Attributes of the site's context include:

1. A large 3588sqm property, with an existing property is category 3 heritage item. The item is known as Harris House (fmr) (Place Number 13802). Photographic Archival Recording has been conducted by Everick dated 28/11/2025, to facilitate the development.
2. The property has dual frontage. Railway Pde being the primary frontage and Head Close being the secondary frontage. 4 bays street parking is available along Head Close.
3. A notable fall from the northeast to the southeast, and slight fall from the northwest to the southeast.
4. Beckenham Train Station is about 150m to the South of the subject site.
5. The site is in close proximity to Albion Park to the northwest, Basin Park to the West and Wheels Park to the north west.
6. The site is 550m away from Beckenham Primary School and 1.25km away from Canning College.
7. The site is within 400m from the commercial areas along William St and Sevenoaks St.
8. The site is 1.2km away from Major Shopping Centre (Westfield Carousel) and 1.5km away from City of Canning Leisure Plex.
9. The site is predominantly of single storey houses on larger lots (1000sqm or more) with pockets of single storey development to the northwest and multiple dwellings to the northeast and south east of the site.
10. Railway Pde is a two way street with kerbside and foot path is directly abutting the railway line.
11. The site is subject to Western Power transmission line easement requirement.

The character of the place is defined by:

1. Predominantly single-storey single-dwelling development, with some medium-density infill and the larger apartment complexes off along Railway Pde and Central Tce.
2. Walls predominantly of face brick and rendered walls in various colours.
3. Pitched roofs predominantly clad with clay tiles on the single storey development and some with flat roofs with metal sheeting.
4. A simplicity of architecture, largely devoid of decorative detail.
5. Some use of interstitial spaces such as verandas and balconies
6. Front street interfaces largely consisting largely of open and simple landscape, and paved driveways and hard standing.
7. Limited front fencing ranging from low walls to masonry piers with infill railings to 1.8m high solid masonry walls.
8. Verge treatments of turf in various states of maintenance.

The contextual response includes:

- Single crossover to reduce the impact on the streetscape.
- Placing OLA to optimise access to northern sunlight where possible.
- Maintaining consistency with the local planning framework as much as possible.
- Achieving a density that helps to supports the nearby public transport and commercial services.

Landscape Quality- *Good design recognises that together landscape and buildings operate as an integrated and sustainable system, within a broader ecological context.*

The provision of landscape is an essential design consideration and helps to distinguish the proposed development from the typical form of medium density infill development that is largely devoid of greenery.
A wide selection of low maintenance plants and new trees are proposed for the development. All the lots also meet the minimum requirement for primary garden and deep soil area.

Built Form and Scale- *Good design ensures that the massing and height of development is appropriate to its setting and successfully negotiates between existing built form and the intended future character of the local area.*

Attributes of the proposed built form include:

- Proposed 15 single storey units and 2 double storey units. Double storey units are facing Railway Parade to provide high density visual on site.
- The 5 units facing Head Close is considered to face a secondary road.
- The site cover are designed to closely match R80 (70% site coverage)
- Setbacks that are generally consistent with the Clause 5.1.2 C2 (ii) of the R-Codes.
- Common property driveway in the middle side to provide access to each dwellings.

Functionality and Build Quality- *Good design meets the needs of users efficiently and effectively, balancing functional requirements to perform well and deliver optimum benefit over the full life-cycle.*

The development is considered to have functionality and build quality. Each units have direct access to the primary garden area and bins are kept discreetly in the widened garage area. All the internal external circulation space is dimensioned to meet the relevant standards.
The proposed design is sustainable and aesthetically pleasing with durable and renewable material such as brickwall and colorbond roof.

Sustainability- *Good design optimises the sustainability of the built environment, delivering positive environmental, social and economic outcomes.*

From a sustainability perspective, attributes of the proposed design will include:
Social

- Being a mix of single storey and double storey development. This proposal increased housing diversity in the local area, with a focus on affordability.
- An ability for residents to age in place with universal designs on units 2 -5.
- Opportunities to develop social interaction in the communal spaces.

Economic

- An increase in the local population to support local services.
- Relatively affordable rental housing.

Environmental

- Achieving the required threshold for energy rating.
- Natural cross ventilation to all houses, and to bedrooms with dual aspect.
- PV cells on the roof.
- Good levels of daylight and sun into the internal/external living areas of all the units.
- Energy and water efficient appliances.
- Water efficient planting and reticulation.
- Capacity for the installation of EV charging when required by the residents.

Amenity- *Good design provides successful places that offer a variety of uses and activities while optimising internal and external amenity for occupants, visitors and neighbours, providing environments that are comfortable, productive and healthy.*

Attributes of the amenity that the proposed development offers include:

- All bedrooms in the houses having access to daylight, ventilation, and an outlook.
- A landscaped interface that improves the visual amenity of the streetscape.
- No problematic overshadowing to neighbours.
- Maintenance of privacy distances to neighbours.
- Due to the close proximity to public transport, the development provides option of single garage and double garage units.

Legibility- *Good design results in buildings and places that are legible, with clear connections and easily identifiable elements to help people find their way around.*

The proposed development is highly legible with all the main entrances visible and accessed from the common property except for Unit 1 and 17. The visibility of the entrances is further enhanced by their associated porches.

Safety- *Good design optimises safety and security, minimising the risk of personal harm and supporting safe behaviour and use.*

The safety of the proposed development and the adjacent public realm is enhanced by:

- Passive surveillance of the street.
- Appropriate sightlines at the vehicle entry.

Community- *Good design responds to local community needs as well as the wider social context, providing environments that support a diverse range of people and facilitate social interaction.*

The proposed development responds to community needs by:

- Increasing housing diversity in the local area, with a focus on affordability.

• Enabling residents to age in place. • Providing housing within walking distance of local services.
Aesthetics- *Good design is the product of a skilled, judicious design process that results in attractive and inviting buildings and places that engage the senses.*
The development is considered well designed and provides an overall good aesthetics by responding to the character of the area.

Attachment 4

Project:	**Waste Management Plan – V2** 340 Railway Parade, Beckenham Proposed Residential Development
Owners:	**JAG05 Investments Pty. Ltd. c/o Tuscom Subdivision Consultants**
Author:	Heidi Herget
Signature:	
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1. INTRODUCTION

1.1 Overview

Move Consultants has prepared this Waste Management Plan for the proposed grouped dwelling residential development to be located at 340 Railway Parade, Beckenham in the City of Gosnells.

The key objectives of the plan outline the equipment and protocols which will be implemented and adopted to manage all waste (both refuse and recycling) on the site. Specifically, the Waste Management Plan (WMP) demonstrates that the development will be designed to:

1. Adequately cater for the anticipated quantities of general waste, recyclables, and organic waste to be generated.
2. Confirm a suitable bin storage area(s) including appropriate disposal receptacles.
3. Allow for the efficient collection of receptacles by appropriate waste collection vehicles.

1.2 Site Location

The site is located within the *Beckenham Station Precinct Activity Centre*, on the north-east side of Railway Parade, approximately north-west of the intersection of William Street/Railway Parade. The site is shown in **Figure 1.**

Figure 1: Site Location

The location of the site in a metropolitan context is shown in **Figure 2.**

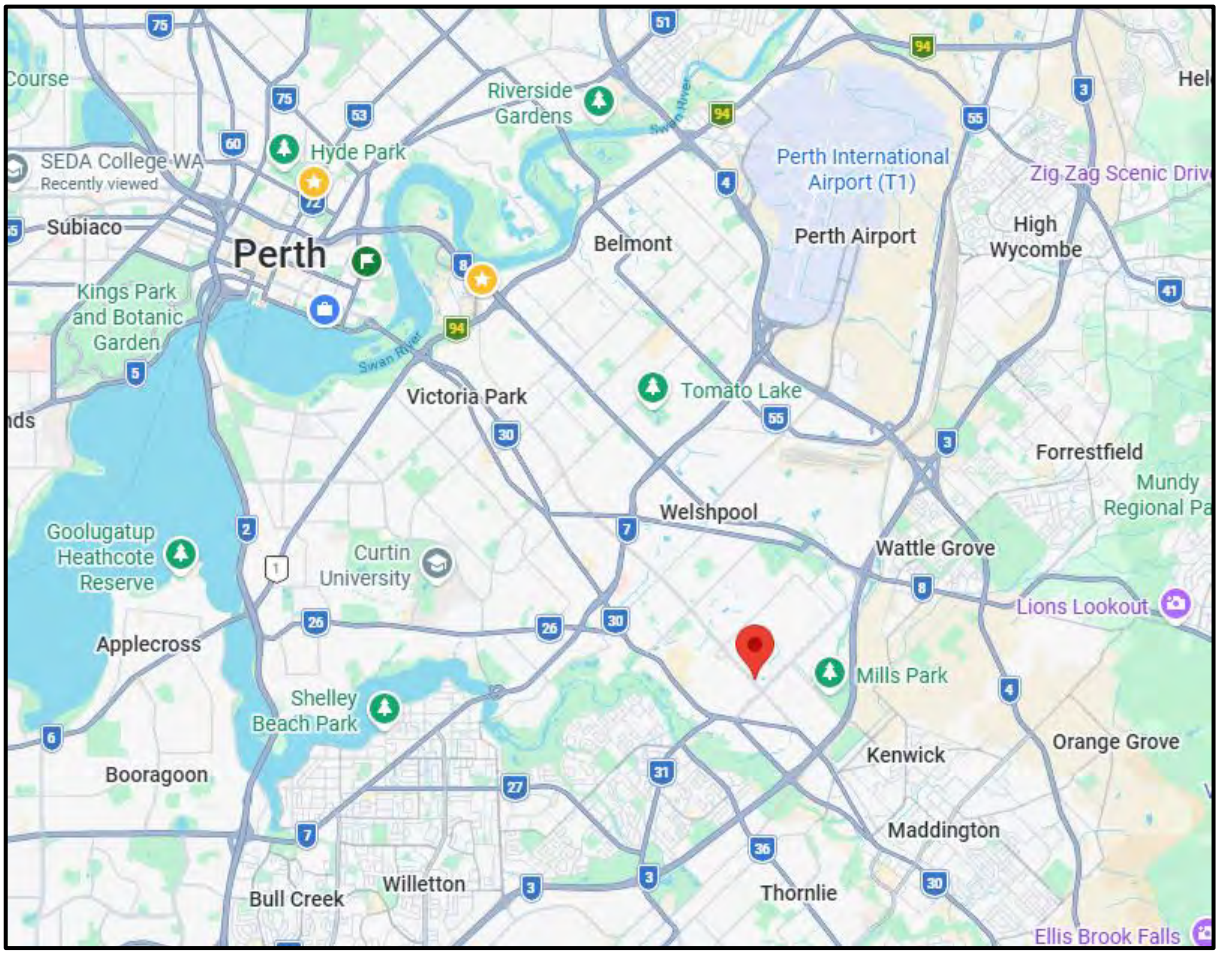


Figure 2: Metropolitan Context

1.3 Proposed Development Details

The proposal consists of the development of a grouped dwelling unit/strata development with access proposed to the north-east side of Railway Parade via a single full common property movements driveway side to serve the 17 strata dwellings. A copy of the site plan is attached in in **Appendix A**.

2. WASTE GENERATION

2.1. Waste Generation Rates

The anticipated volumes of general waste (refuse) and recycling waste for the proposal have been based upon typical maximum waste rates for strata residential units and the types of bins the City of Gosnells will provide to accommodate this waste and upon weekly collection for general waste and fortnightly collection for recycling waste.

2.2. General Waste Generation

Table 1 shows the anticipated general waste to be generated by the proposal.

Table 1: General Waste Generation

Activity Generator	Unit (Dwelling Units)	Waste Generation Rate (L/week)	General Waste Generation (L/week)
Residential	17	240L/week/D.U.	4,080L
BIN STORAGE PROVIDED	**17 x 240L bins (as per Council policy) to be collected WEEKLY by Council**		

2.3. Recyclable Waste Generation

Table 2 shows the anticipated recycling waste to be generated by the proposal.

Table 2: Recycling Waste Generation

Activity Generator	Unit (Dwelling Units)	Waste Generation Rate (L/week)	Recycling Waste Generation (L/ fortnight)
Residential	17	120/week/D.U.	4,080L
BIN STORAGE PROVIDED	**17 x 240L bins (as per Council policy) to be collected FORTNIGHTLY by Council**		

2.4. FOGO Waste Generation

FOGO (food organics/garden organics) collection for residential uses is currently collected as part of general waste collection.

3. WASTE MANAGEMENT RECOMMENDATIONS

In order to ensure that waste is managed appropriately and safely, it is essential that adequate space be provided on the site within the bin storage area to accommodate the required storage receptacles.

3.1. Bin Arrangement

In order to ensure that waste is managed appropriately and safely, individual general and recycling bins will be co-located on each strata property, either within the enclosed garage or adjacent to the façade of each dwelling.

3.2. Bin Storage Area

Each dwelling will accommodate one (1) x 240L bin for general waste and one (1) x 240L bin for recycling waste, respectively, as per the requirements of Council policy and the *Local Government Act,* with bins stored within each of the respective garages/carports for each dwelling unit.

3.3. External Collection of Waste

Bins will be placed on the verge on Railway Parade for on either side of the common driveway crossover for line haul collection by Council vehicles.

3.4. Organic Waste and Bulk Waste

The Strata Manager of the site will arrange separately the removal of any landscaping and bulk waste external to the site along the Railway Parade frontage only, as required for collection by Council on a bi-annual basis (twice per annum). Household organic and garden waste will be collected within the general waste bin on a weekly basis until future rollout of FOGO collection.

3.5. Construction Waste

Construction waste resulting from any demolition activities will be removed off-site for processing, where required.

4. WASTE BIN STORAGE

The strata manager will be assigned to oversee all relevant aspects of the waste management associated with the development.

It should be noted that the estimate of the number of general waste and recycling receptacles has been based upon a weekly and/or fortnightly collection regime; respectively, however increased collection frequency will lower the number of receptacles required, as per City of Gosnells' guidelines and policies. Individual general and recycling waste bins for each dwelling will be stored within the respective garages for each unit. No dedicated on-site centralised bin store is necessary.

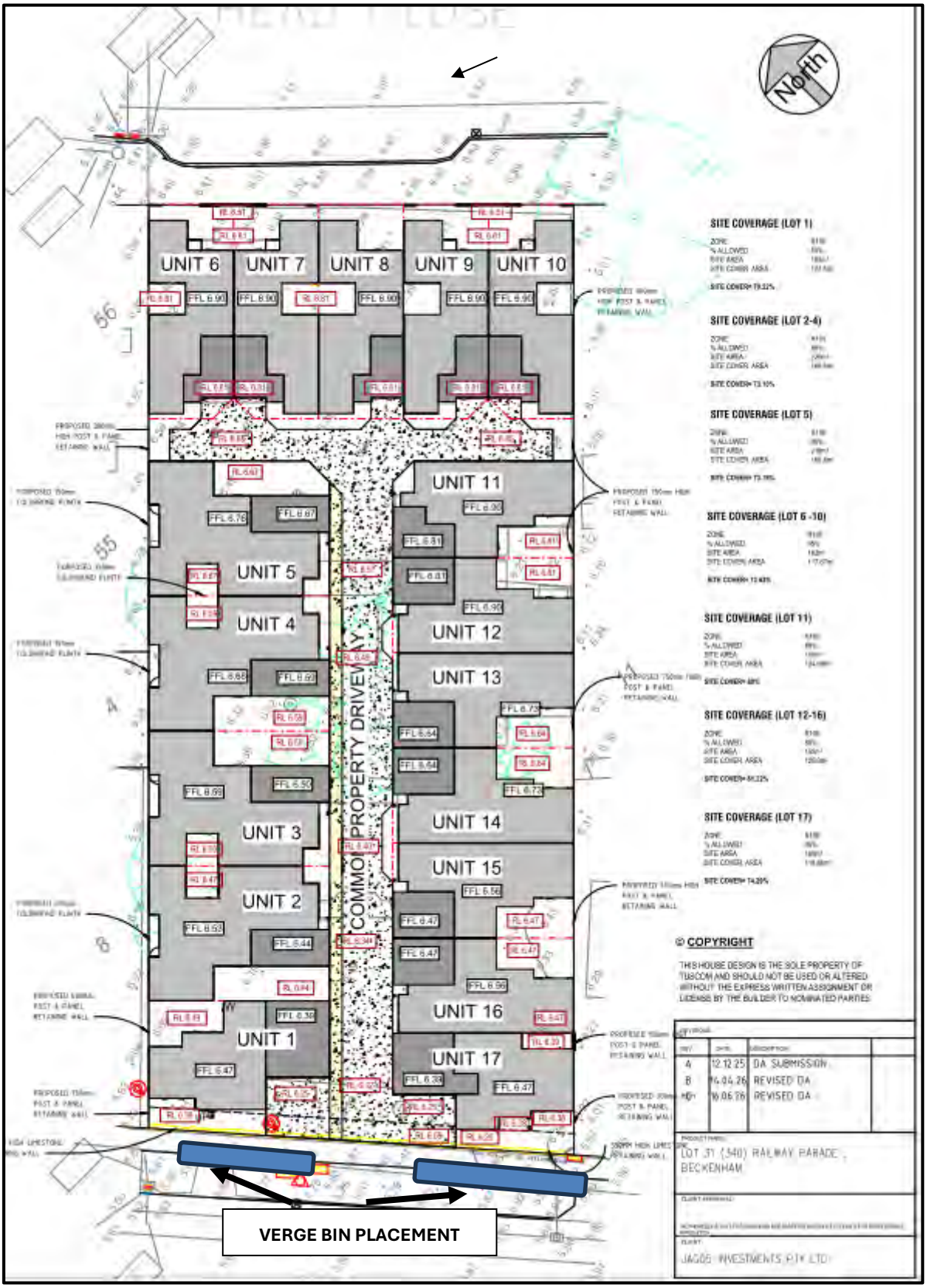
5. PROPERTY MANAGEMENT RESPONSIBLITIES

Property managers will be appointed to be responsible for the following tasks associated with Waste Management on the site:

- Monitoring and maintenance (including cleaning) of the waste receptacles, where applicable.
- Management of bulk waste and green waste collection, where required.
- Engage on an ongoing basis with residents to develop opportunities to increase resource recovery and minimise general waste volumes in conjunction with the City of Gosnells.
- Responsible for managing the placement and collection of receptacles on respective road frontages.
- Ensure that all residents are informed in relation to Waste Management protocols at the development and their respective responsibilities in accordance with this plan.

The proposed Site Management Plan will incorporate the tenets of this Waste Management Plan and any changes to this plan must be approved by the City of Gosnells to implementation. Failure to deliver a safe, effective, and efficient waste management service will result in the City liaising with the owner/operator/strata manager to review, update and approve the Waste Management Plan.

6. APPENDIX A –SITE PLAN AND BIN PLACEMENT


North
UNIT 6
UNIT 7
UNIT 8
UNIT 9
UNIT 10
UNIT 11
UNIT 12
UNIT 13
UNIT 14
UNIT 15
UNIT 16
UNIT 17
UNIT 5
UNIT 4
UNIT 3
UNIT 2
UNIT 1
COMMON PROPERTY DRIVEWAY
SITE COVERAGE (LOT 1)
SITE COVERAGE (LOT 2-4)
SITE COVERAGE (LOT 5)
SITE COVERAGE (LOT 6 -10)
SITE COVERAGE (LOT 11)
SITE COVERAGE (LOT 12-16)
SITE COVERAGE (LOT 17)
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4 12.12.25 DA SUBMISSION
B 14.04.26 REVISED DA
A 16.06.26 REVISED DA
LOT 31 (340) RAILWAY PARADE, BECKENHAM
JAGGS INVESTMENTS PTY LTD
VERGE BIN PLACEMENT

Attachment 5

Project:	**Transport Impact and Car Parking Assessment – V2** 340 Railway Parade, Beckenham Proposed Residential Development
Owners:	**JAG05 Investments Pty. Ltd. c/o Tuscom Subdivision Consultants**
Author:	Heidi Herget
Signature:	
Date:	25th June 2026

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Document Status.

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1. INTRODUCTION

This Transport Impact and Car Parking Assessment has been prepared by Move Consultants on behalf of JAG05 Investments Pty. Ltd. c/o Tuscom Subdivision Consultants. with regard to a proposed residential development to be located on 340 Railway Parade, Beckenham in the City of Gosnells. This assessment has been prepared in accordance with the City of Gosnells' *Local Planning Scheme No. 24,* the WAPC's *State Planning Policy 7.3: Residential Design Codes – Volume 1,* the City's *Beckenham Station Precinct Activity Centre Plan* (2018) and the WAPC *Transport Impact Assessment Guidelines – Vol. 4: Individual Developments* as well as Austroads guidelines and Australian Standards.

1.1 Location

The site is located within the *Beckenham Station Precinct Activity Centre*, on the north-east side of Railway Parade, approximately north-west of the intersection of William Street/Railway Parade. The site is shown in **Figure 1**.

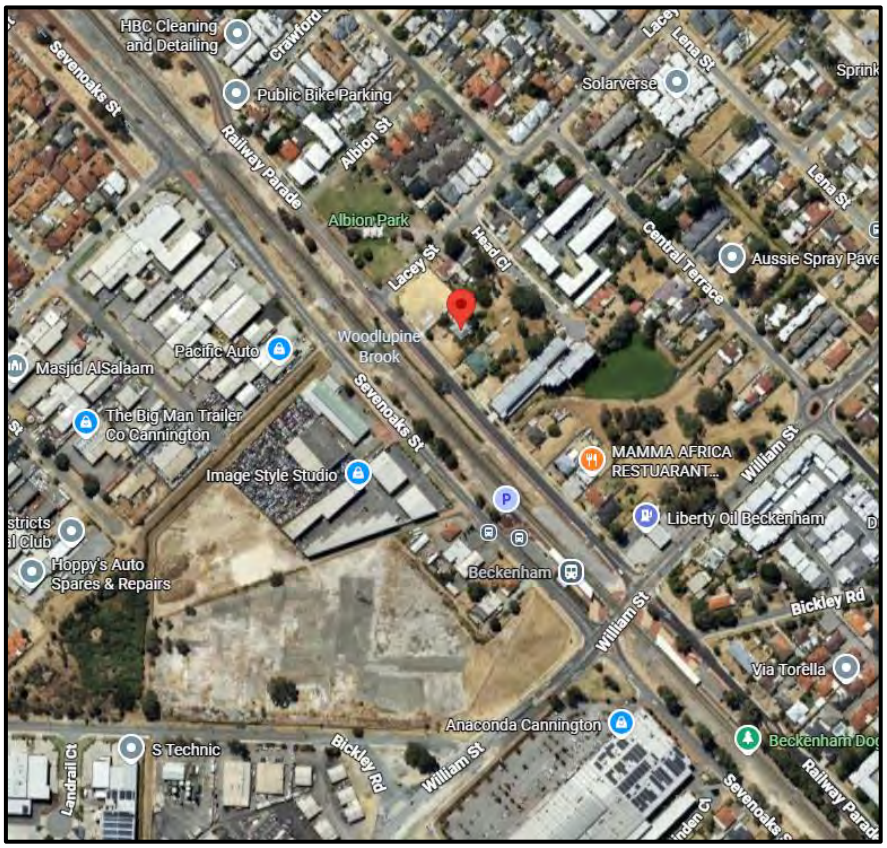


Figure 1 – Local Context

The location of the site in a metropolitan context is shown in **Figure 2**.

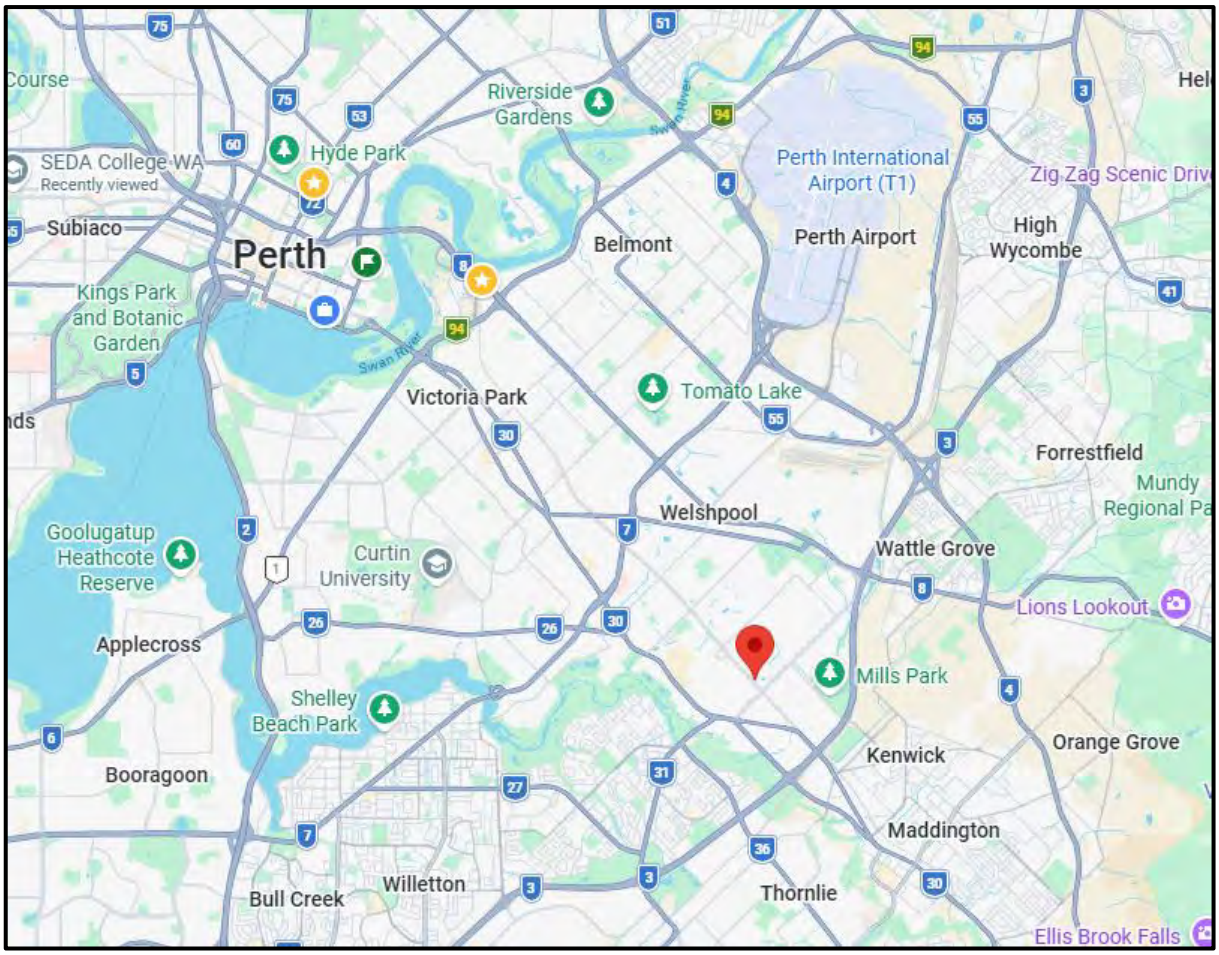


Figure 2: Metropolitan Context

The proposal consists of the development of a grouped dwelling unit/strata development with access proposed to the north-east side of Railway Parade via a single full common property movements driveway side to serve the 17 strata dwellings. A copy of the site plan is attached in in **Appendix A**.

A detailed site visit was conducted on Wednesday 17th June 2026 to any potential traffic-related issues associated with the proposal and to undertake 'spot surveys' of traffic volumes in the vicinity of the site during the weekday roadway peak periods.

In addition to the data collection, a review of the existing road geometry, travel patterns and speed zoning in place was also undertaken.

1.2 Scope of Assessment

This report has been prepared in accordance with the Western Australian Planning Commission's *Transport Assessment Guidelines for Developments: Volume 4 – Individual Developments* (2006) and relevant Council guidelines, plans and policies and relevant industry standards.

Specifically, this report aims to assess the impacts of the proposed development on the boundary road network in the vicinity of the site to identify any modifications, to site or road layout, which may be required to serve the proposed site. In addition, the assessment considers the proposed access, circulation, and egress arrangements to and from the site.

For this purpose, the traffic operations on the adjacent and broader local road network have been assessed under future proposed traffic conditions with regard to the potential impacts from additional traffic generated by the proposed development of the site.

2. EXISTING MOVEMENT NETWORK

2.1 Road Infrastructure

William Street, to the south of the site, has been designated as a *District Distributor B* road, under the Main Roads WA *Functional Road Hierarchy*. Morrison Road, in the vicinity of the site, has been constructed as a dual divided carriageway south-west of the signalised intersection with Seven Oaks Street and a single wide divided carriageway north-east of the signalised intersection with Railway. It is owned, operated, and maintained by the City of Gosnells and operates under a posted speed limit of 60kph.

Railway Parade, which runs along the south-western boundary of the site has been designated as a *Local Distributor* road under the Main Roads WA *Functional Road Hierarchy*. Railway Parade, in the vicinity of the site, has been constructed as a wide single undivided carriageway with a 9.0m seal. Recent works completed on the south-west side of Railway Parade opposite the site included expansion of the Beckenham Station commuter car parking in the form of 30+ publicly accessible bays plus an off-road *Principal Shared Path* adjacent to the eastern side of the railway station. It operates under a speed limit of 60kph and is owned, operated, and maintained by the City of Gosnells.

An extract from the MRWA's *Functional Road Hierarchy* is shown in **Figure 3**.

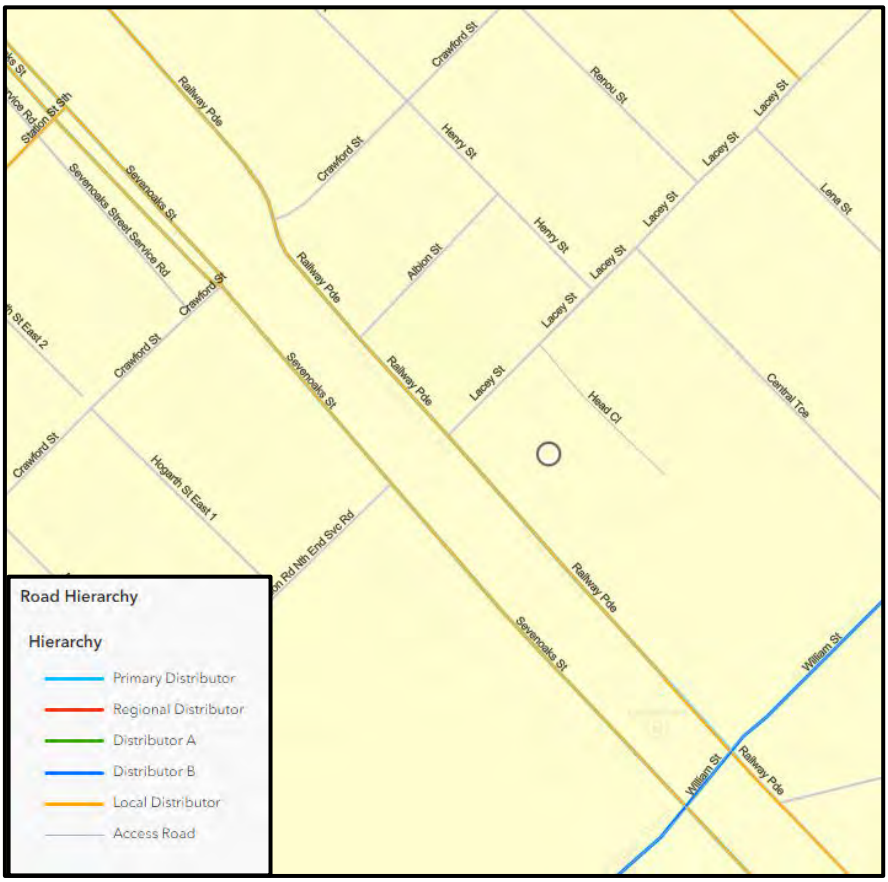


Figure 3 – MRWA Functional Road Hierarchy

Table 1 shows the indicative existing daily traffic volumes for the boundary road network in the vicinity of the site.

Table 1: Existing Traffic Volumes

Road Name	Existing Daily Volume (vpd)	Practical Capacity (vpd)
William Street (East of Sevenoaks Avenue)	20,500 vpd (MRWA, 2026)	25,000 to 30,000 vpd
William Street (West of Sevenoaks Avenue)	20,600 vpd (MRWA, 2026)	20,000 to 25,000 vpd
Railway Parade (North of William Street)	3,680 vpd (MRWA, 2021)	7,000 to 10,000 vpd

2.2 Pedestrian and Cycling Infrastructure

There is a high quality recently constructed off-road *Principal Shared Path* on the west side of Railway Parade, north of William Street, opposite the site delivered as part of the upgrade works at the Beckenham Railway Station with a footpath in place on the east side of Railway Parade adjacent to the western boundary of the site. There is a shared path on the north side of William Street, west of Sevenoaks Street with a footpath in place on the south side. Sealed shoulders

are in place on both sides of William Street, east of Railway Parade

Figure 4 shows the existing pedestrian and cycling infrastructure in the vicinity of the site.

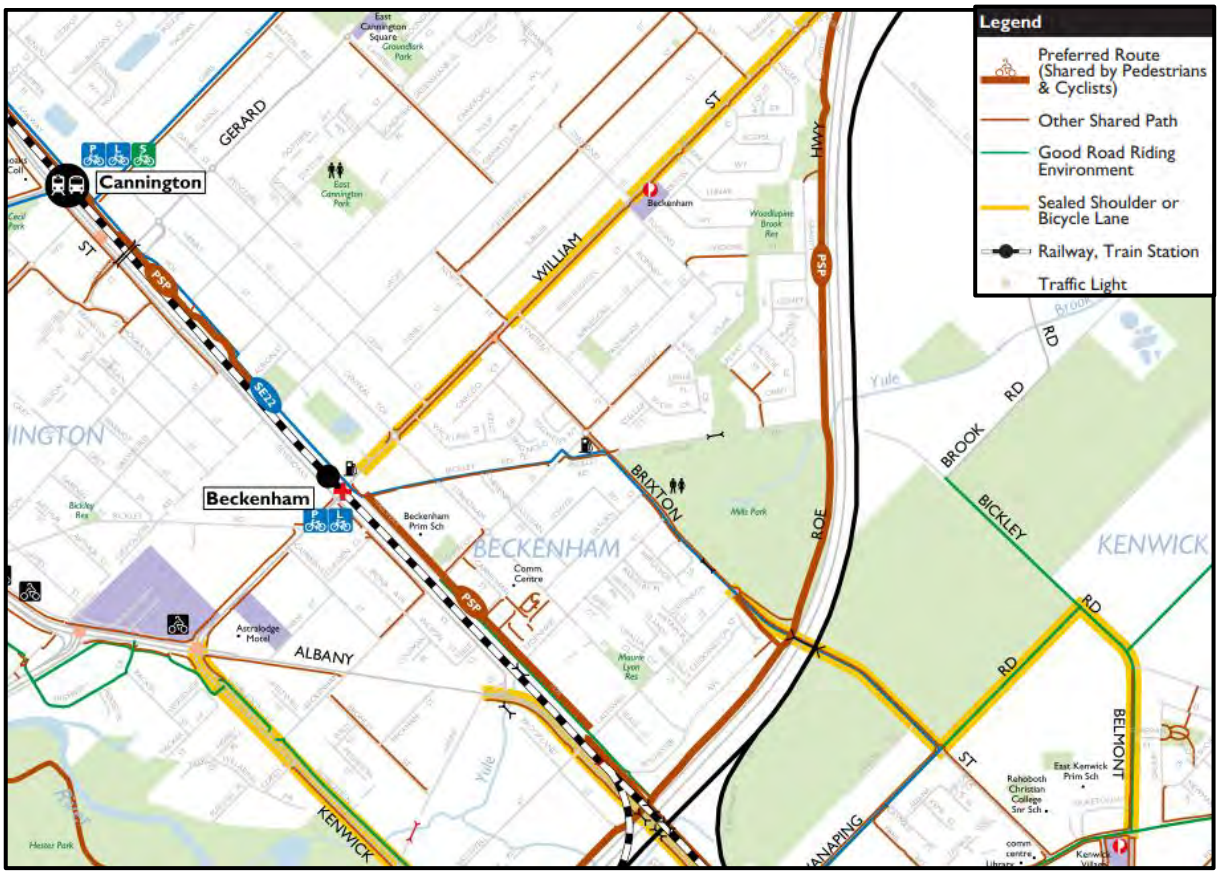


Figure 4: Pedestrian and Cycling Infrastructure (Source: DoT WA)

2.3 Public Transport Infrastructure

The Beckenham Railway Station, operating on the Armadale Line, is located opposite the site within a 1 to 2-minute walking distance providing frequent services to Byford to the south-east and several activity centres and the Perth CBD to the north-west**. Figure 5** shows the services on the Armadale Line serving the site.

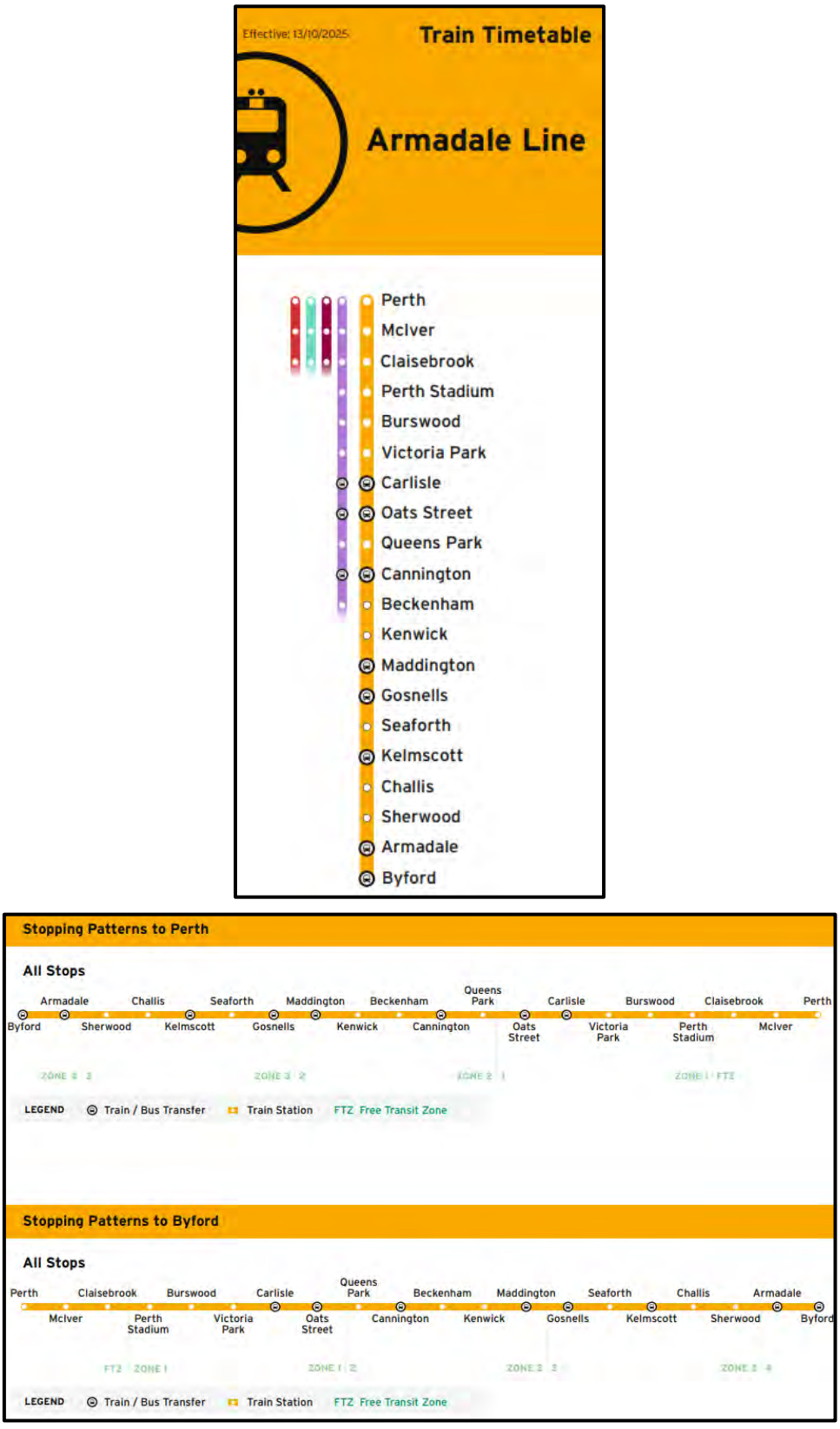
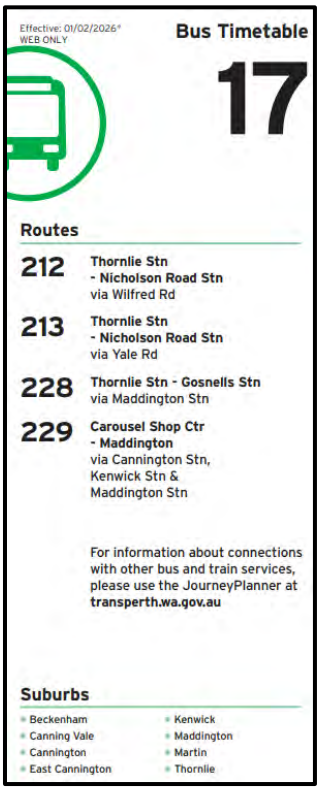


Figure 5: Armadale Railway Line Services (Source: Transperth)

Line haul bus services operate on William Street, east of Railway Parade, with Route 229: Carousel Shopping Centre to Maddington via Cannington Station, Kenwick Station and Maddington Station providing 20- to 25-minute services during weekday peak hours and hourly services during middays and Saturdays. No services operate on Sundays and public holidays.

Figure 6 shows the Route 229 line haul bus services.



Effective: 01/02/2026*
WEB ONLY

Bus Timetable

17

Routes

212 **Thornlie Stn - Nicholson Road Stn** via Wilfred Rd

213 **Thornlie Stn - Nicholson Road Stn** via Yale Rd

228 **Thornlie Stn - Gosnells Stn** via Maddington Stn

229 **Carousel Shop Ctr - Maddington** via Cannington Stn, Kenwick Stn & Maddington Stn

For information about connections with other bus and train services, please use the JourneyPlanner at **transperth.wa.gov.au**

Suburbs

- Beckenham
- Canning Vale
- Cannington
- East Cannington
- Kenwick
- Maddington
- Martin
- Thornlie

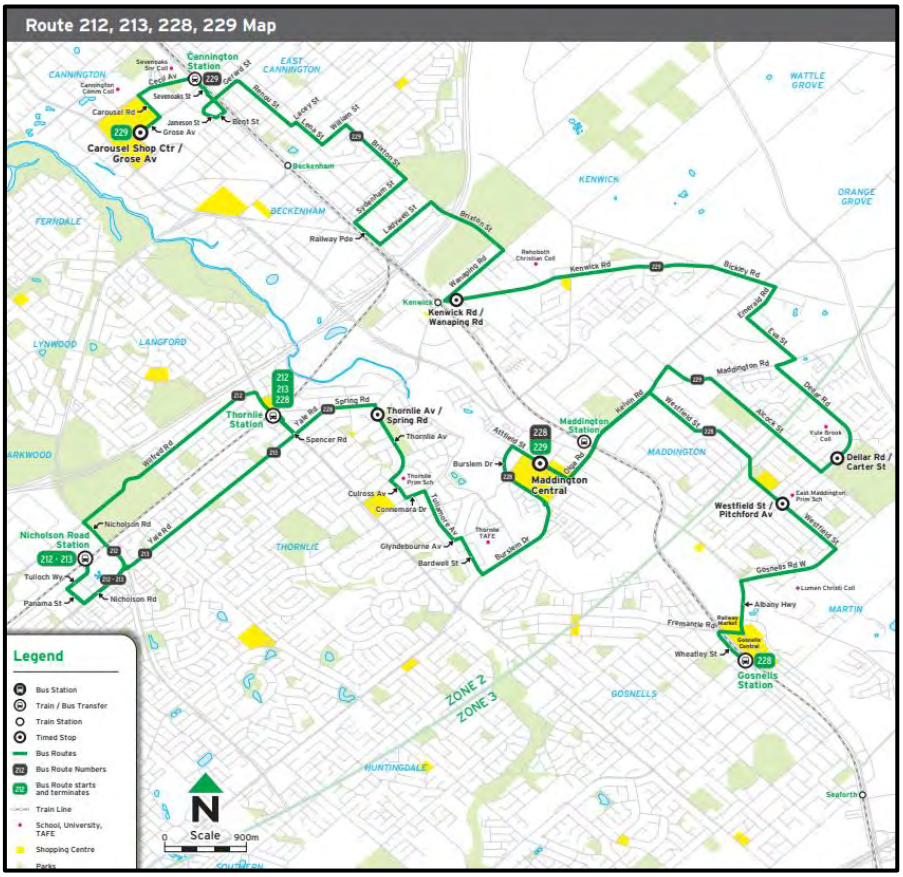


Figure 6: Route 229 Line Haul Bus Services (Source: Transperth)

3. DEVELOPMENT PROPOSAL

3.1 Development Details

The proposal is proposed to consist of 17 grouped residential/strata dwellings served by a single full movements crossover situated central to the site frontage along the north-east side of Railway Parade, north of William Street as shown on the site plans attached in **Appendix A.**

3.2 Car Parking and Access

Vehicular access to the site has been proposed via a single full movements crossover centrally located along the Railway Parade site frontage serving 17 dwelling units internal to the site. Each unit is proposed to have a dedicated single car garage allocated to it.

Three (3) on-site visitor car parking bays have been provided on the site. On-street car parking is permitted outside the time periods of 7:00 a.m. to 9:00 a.m. Mon-Fri and a significant off-street parking supply has been recently commissioned opposite the site at the Beckenham Railway Station which can accommodate any additional visitor car parking needs.

3.3 Bicycle Parking

Bicycle parking will be provided for each unit within individual storage lockers located within the on-site garage to each dwelling unit.

4. TRAFFIC ANALYSIS

A traffic generation and distribution exercise has been undertaken to assess the potential traffic impacts associated with the proposed development. The aim of this exercise was to establish the traffic volumes which would be generated from the proposed development and to quantify the effect that the additional traffic has on the surrounding road network, specifically on the local road network including William Street and Railway Parade. Also, the volume and functionality of traffic at the crossover location to the north-east side of Railway Parade as well as the potential traffic operations along the boundary road network will be assessed.

4.1. Trip Generation and Distribution

The traffic generated by the proposed uses on the site has been predicted using a combination of documented traffic generation rates as well as the application of derived traffic generation rates for the respective uses and anticipated operations at the site.

The total anticipated traffic generated by the proposed development is estimated to be in the order of approximately 100 vpd (50 inbound/50 outbound) on a daily. It is estimated that during the roadway peak periods that the maximum traffic generation will be in the order 7 vph (1 inbound/6 outbound) during the a.m. peak hour; and 9 vph (6 inbound/3 outbound) during the p.m. peak hour.

Based upon the existing traffic patterns in the area and the spatial distribution of adjacent land uses, the following distribution for the proposed development generated traffic has been assume broadly:

- 40% to and from the north via Railway Parade.
- 60% to and from the south via Railway Parade
    - 40% to and from the west via William Street.
    - 20% to and from the east via William Street.

The anticipated site-generated traffic was then assigned to the site crossover to Railway Parade based upon the existing proportions for both the weekday a.m. and p.m. peak hours. The resultant increases in weekday daily and a.m. and p.m. peak hour-generated traffic under the 'worst case' scenario for the boundary road network would be as follows:

- Railway Parade (North):
    - Daily: +40 vehicular trips
    - A.M. Peak Hour: +3 vehicular trips
    - P.M. Peak Hour: +4 vehicular trips

- Railway Parade (South):
    - Daily: +60 vehicular trips
    - A.M. Peak Hour: +4 vehicular trips
    - P.M. Peak Hour: +5 vehicular trips
- William Street (West):
    - Daily: +40 vehicular trips
    - A.M. Peak Hour: +3 vehicular trips
    - P.M. Peak Hour: +4 vehicular trips
- William Street (East):
    - Daily: +20 vehicular trips
    - A.M. Peak Hour: +1 vehicular trips
    - P.M. Peak Hour: +1 vehicular trips

These increases in daily and weekday a.m./p.m. peak hour volumes will have a minimal impact on existing traffic operations in the area with these increases in traffic comfortably accommodated within the practical capacity of boundary road network.

The WAPC *Transport Impact Assessment Guidelines* (2016) provide the following guidance on the assessment of traffic impacts:

> *"As a general guide, an increase in traffic of less than 10 percent of capacity would not normally be likely to have a material impact on any particular section of road but increases over 10 percent may. All sections of the road with an increase greater than 10 percent of capacity should therefore be included in the analysis. For ease of assessment, an increase of 100 vehicles per hour for any lane can be considered as equating to around 10 percent of capacity. Therefore, any section of road where development traffic would increase flows by more than 100 vehicles per hour for any lane should be included in the analysis."*

It is clear that the traffic increase from the proposed development would be significantly less than the critical threshold (100vph per lane). Therefore, the impact on the surrounding road network does not warrant any further assessment.

These increases in daily and a.m./p.m. peak hour traffic volumes will have a minimal impact on existing traffic operations in the area and can be comfortably accommodated within the practical capacities of the respective links on the boundary road network.

5. TRAFFIC ENGINEERING REVIEW AND CAR PARKING ASSESSMENT

5.1. Review of Site Layout and On-Site Circulation

The proposed access arrangements are shown to 17 dwelling units accessed via an internal common property central aisle with units flanking either side of this driveway. network. A review of the proposed crossover location and on-site circulation indicates that they are compliant with Australian Standard *AS2890.1* with respect to location and compliant with the City of Gosnells' crossover guidelines.

5.2. Crash History and Sightlines

A review of the crash history on the boundary road network in the vicinity of the site during the 5-year reporting period 2021-2025 indicates no mid-block crashes on Railway Parade along the south-western boundary of the site including no driveway crashes during this time period.

This lack of crash history along the frontage of the site would indicate that that there would be minimal risk associated with the proposed crossover arrangements for the development.

A review of the sightlines at the proposed site crossover to Railway Parade indicate that there are sufficient sightlines in place to accommodate minimum AGSD, SISD and MGSD requirements under a design speed of 70kph to the north and south of the proposed site crossover with all vehicles entering and exiting the site in forward gear and the site crossover designed with appropriate truncations in place.

5.3. Loading, Servicing and Delivery and Waste Management

If required, a detailed Loading, Servicing and Delivery Management Plan can be prepared outlining protocols associated with service and delivery movements by vehicles larger than a B99 vehicle. Vehicles less than a B99 size can park in the on-site visitor bays on the site. Vehicles

larger than this size will be accommodated in a line haul manner on-street on Railway Parade outside of peak demand periods, including waste management vehicles.

Waste management arrangements have been addressed in a separate Waste Management submitted to the City of Gosnells.

5.4. Car Parking

The proposed car parking supply associated with the development activities is generally consistent with to the WAPC's R-Codes. All residential tenant parking will be accommodated within dedicated garages for each unit to accommodate one (1) vehicle with three (3) visitor bays proposed to be provided on-site. The theoretical visitor car parking requirement for the development is 4 to 5 bays with the theoretical shortfall in the order of 1 to 2 bays. This 'shortfall' can be accommodated on-street along the north-eastern side of Railway Parade which allows for on-street car parking outside of the hours of 7:00 to 9:00 a.m. Mon-Fri. Additional public parking can be accessed via the recently commissioned commuter parking opposite the site serving the Beckenham Railway Station consisting of 30+ bays. Peak visitor demands do not coincide with peak commuter or midday weekday demand periods with any shortfall comfortably accommodated within the existing public on- and off-street supply. This is an appropriate approach to managing visitor car parking demands within activity centres and has been endorsed by the WAPC.

The proposed layout of the car parking supply on-site is compliant with *AS 2890.1* and *AS 2890.6*. All passenger vehicles will enter and exit the site in forward gear.

6. CONCLUSIONS

This Transport Impact and Car Parking Assessment has been prepared by Move Consultants on behalf of JAG05 Investments Pty. Ltd. c/o Tuscom Subdivision Consultants. with regard to a proposed residential development to be located on 340 Railway Parade, Beckenham in the City of Gosnells. This assessment has been prepared in accordance with the City of Gosnells' *Local Planning Scheme No. 24,* the WAPC's *State Planning Policy 7.3: Residential Design Codes – Volume 1,* the City's *Beckenham Station Precinct Activity Centre Plan* (2018) and the WAPC *Transport Impact Assessment Guidelines – Vol. 4: Individual Developments* as well as Austroads guidelines and Australian Standards.

A review of the proposed on-site circulation and car parking layout and supply was undertaken to assess the adequacy of the proposed site access and circulation in addition to service/delivery areas on the site. The design of the proposed car parking areas on the site and queuing space within the drive-through have been reviewed and is consistent with the relevant Australian Standards and Austroads guidelines as well as the R-Codes and traffic engineering best practice, with the proposed design considered adequate to accommodate on-site manoeuvring and circulation.

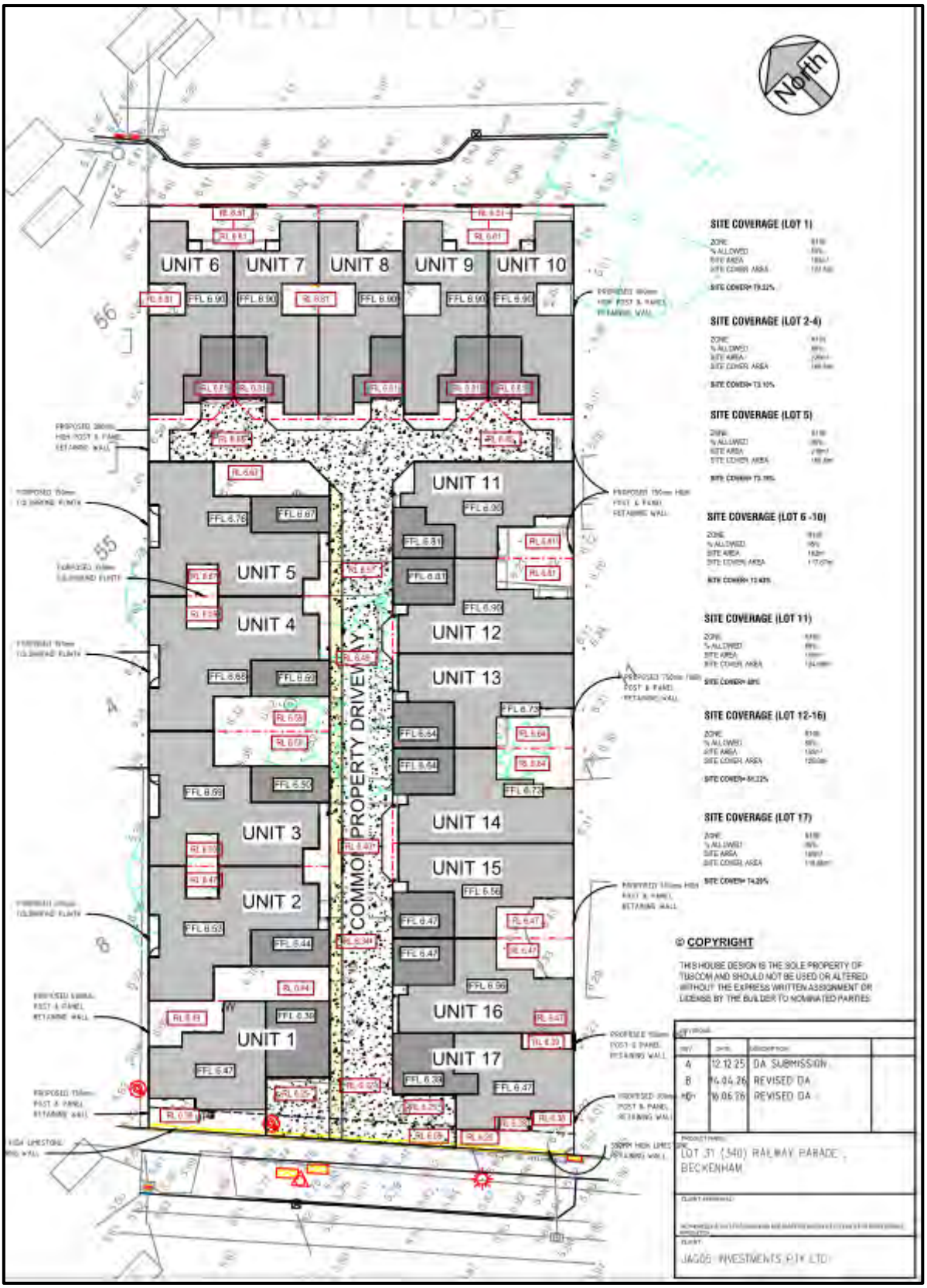
If required, a detailed Loading, Servicing and Delivery Management Plan can be prepared outlining protocols associated with service and delivery movements catering to the site for vehicles larger than a B99 vehicle. A Waste Management Plan has been prepared and submitted to Council under separate cover.

A review of the sightlines at the proposed site crossover to Railway Parade indicate that there are sufficient sightlines in place to accommodate minimum AGSD, SISD and MGSD requirements under a design speed of 70kph to either side of the respective crossover. This lack of crash history along the primary road frontage of the site would indicate that that there would be minimal risk associated with the proposal.

The proposed on-site car parking supply supplemented by the immediately adjacent and proximate on- and off-street public supply is consistent with relevant Council-endorsed guidelines and standards and best practice traffic engineering standards with the anticipated on-site car parking supply comfortably accommodating the future maximum parking demand on the site.

In conclusion, it should be noted that based both on a review of the modelled total traffic assessment and observed traffic operations of the boundary road system, the anticipated site-generated traffic associated with the proposed development can be accommodated within the existing practical capacity and functional road classification of the local road system.

7. APPENDIX A –SITE PLAN


North
UNIT 6
UNIT 7
UNIT 8
UNIT 9
UNIT 10
UNIT 11
UNIT 12
UNIT 13
UNIT 14
UNIT 15
UNIT 16
UNIT 17
UNIT 5
UNIT 4
UNIT 3
UNIT 2
UNIT 1
COMMON PROPERTY DRIVEWAY
SITE COVERAGE (LOT 1)
SITE COVERAGE (LOT 2-4)
SITE COVERAGE (LOT 5)
SITE COVERAGE (LOT 6 -10)
SITE COVERAGE (LOT 11)
SITE COVERAGE (LOT 12-16)
SITE COVERAGE (LOT 17)
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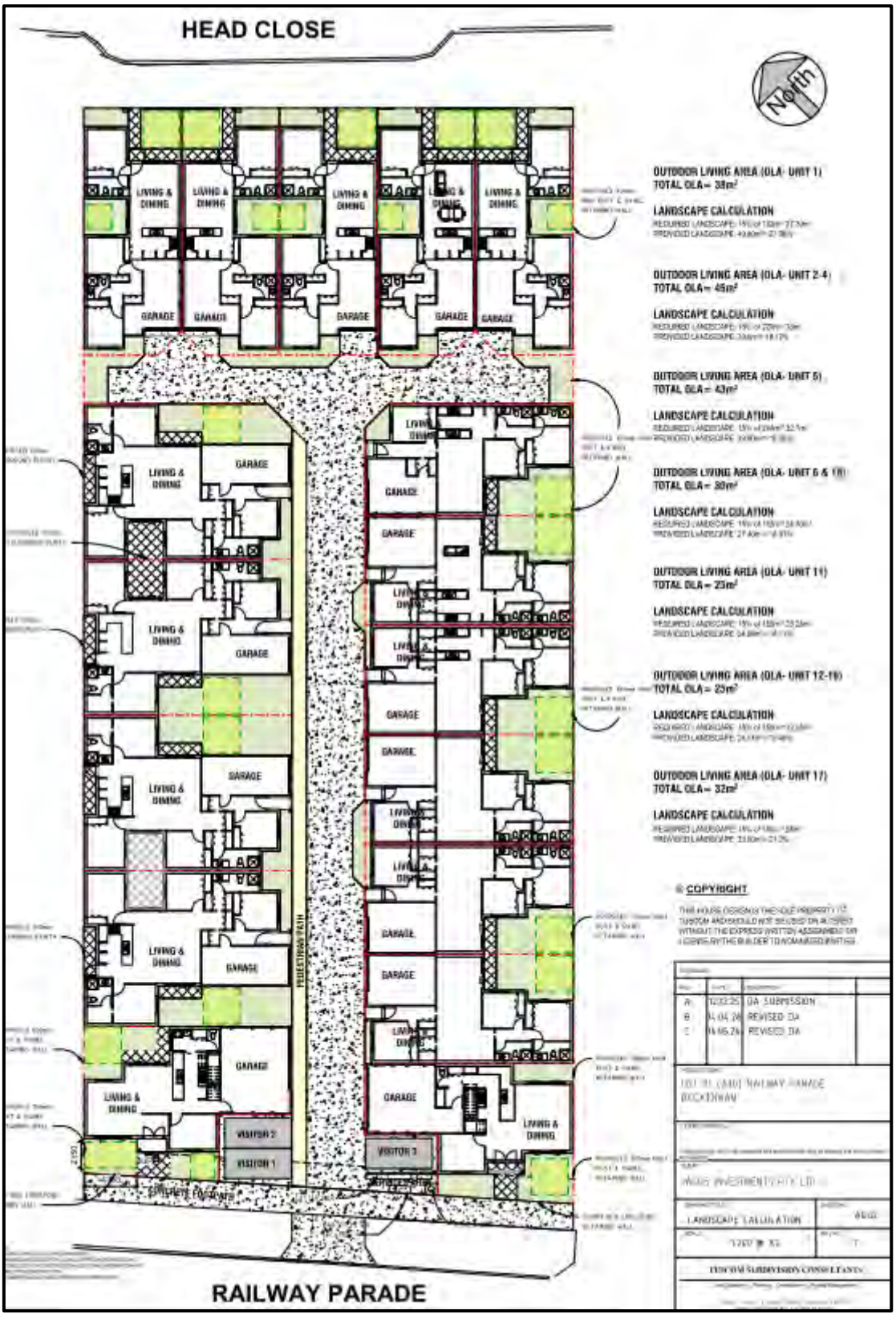
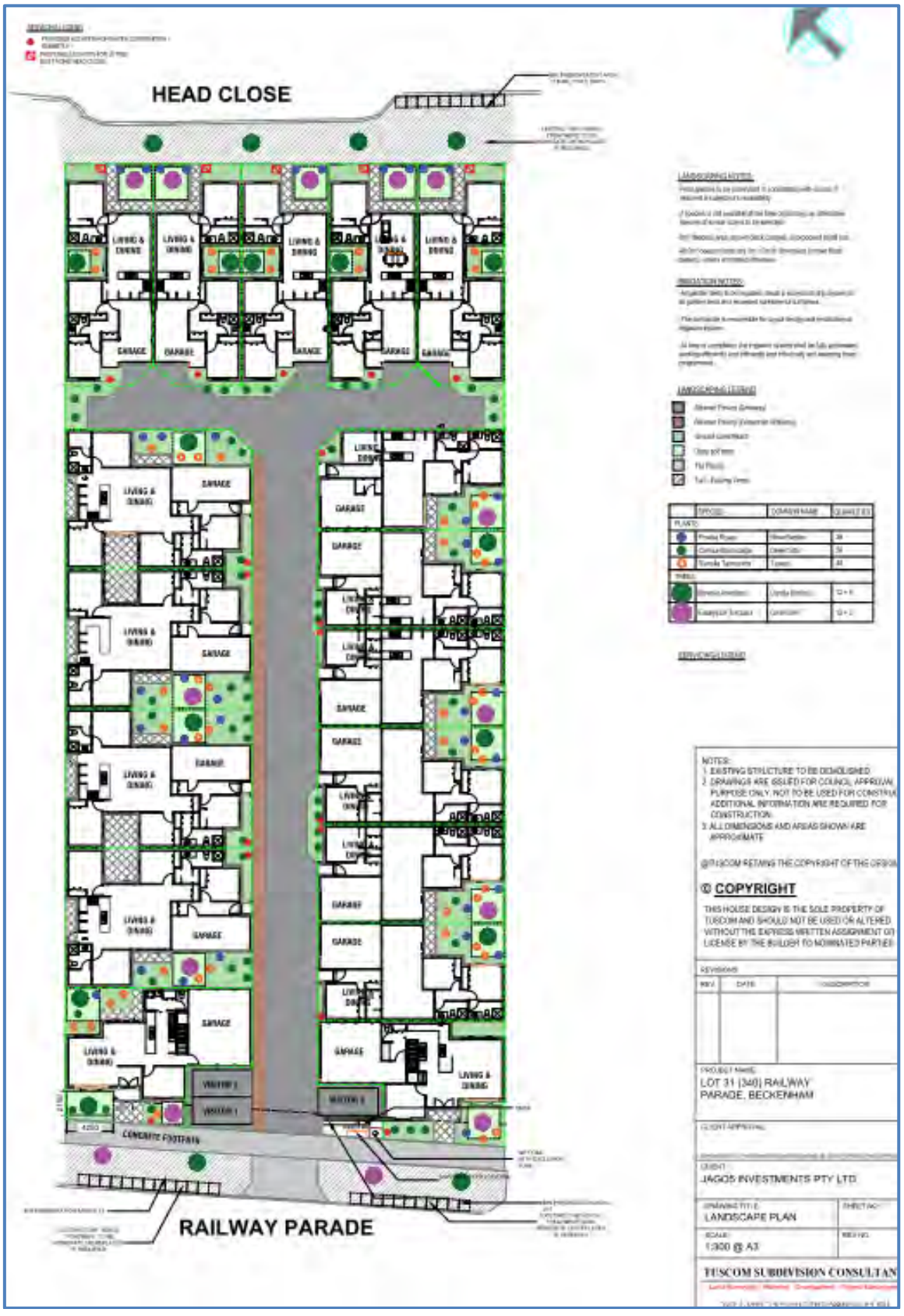
4 12.12.25 DA SUBMISSION
B 14.04.26 REVISED DA
A 16.06.26 REVISED DA
LOT 31 (340) RAILWAY PARADE, BECKENHAM
JAGGS INVESTMENTS PTY LTD


HEAD CLOSE
North
OUTDOOR LIVING AREA (OLA- UNIT 1)
TOTAL OLA= 38m²
LANDSCAPE CALCULATION
OUTDOOR LIVING AREA (OLA- UNIT 2-4)
TOTAL OLA= 45m²
LANDSCAPE CALCULATION
OUTDOOR LIVING AREA (OLA- UNIT 5)
TOTAL OLA= 43m²
LANDSCAPE CALCULATION
OUTDOOR LIVING AREA (OLA- UNIT 6 & 18)
TOTAL OLA= 30m²
LANDSCAPE CALCULATION
OUTDOOR LIVING AREA (OLA- UNIT 11)
TOTAL OLA= 23m²
LANDSCAPE CALCULATION
OUTDOOR LIVING AREA (OLA- UNIT 12-16)
TOTAL OLA= 23m²
LANDSCAPE CALCULATION
OUTDOOR LIVING AREA (OLA- UNIT 17)
TOTAL OLA= 32m²
LANDSCAPE CALCULATION
© COPYRIGHT
LIVING & DINING
GARAGE
VISITOR 1
VISITOR 2
VISITOR 3
RAILWAY PARADE


HEAD CLOSE
RAILWAY PARADE
GARAGE
LIVING & DINING
CONCRETE FOOTPATH
NOTES:
1. EXISTING STRUCTURE TO BE DEMOLISHED
2. DRAWINGS ARE ISSUED FOR COUNCIL APPROVAL PURPOSE ONLY. NOT TO BE USED FOR CONSTRUCTION. ADDITIONAL INFORMATION ARE REQUIRED FOR CONSTRUCTION.
3. ALL DIMENSIONS AND AREAS SHOWN ARE APPROXIMATE
© COPYRIGHT
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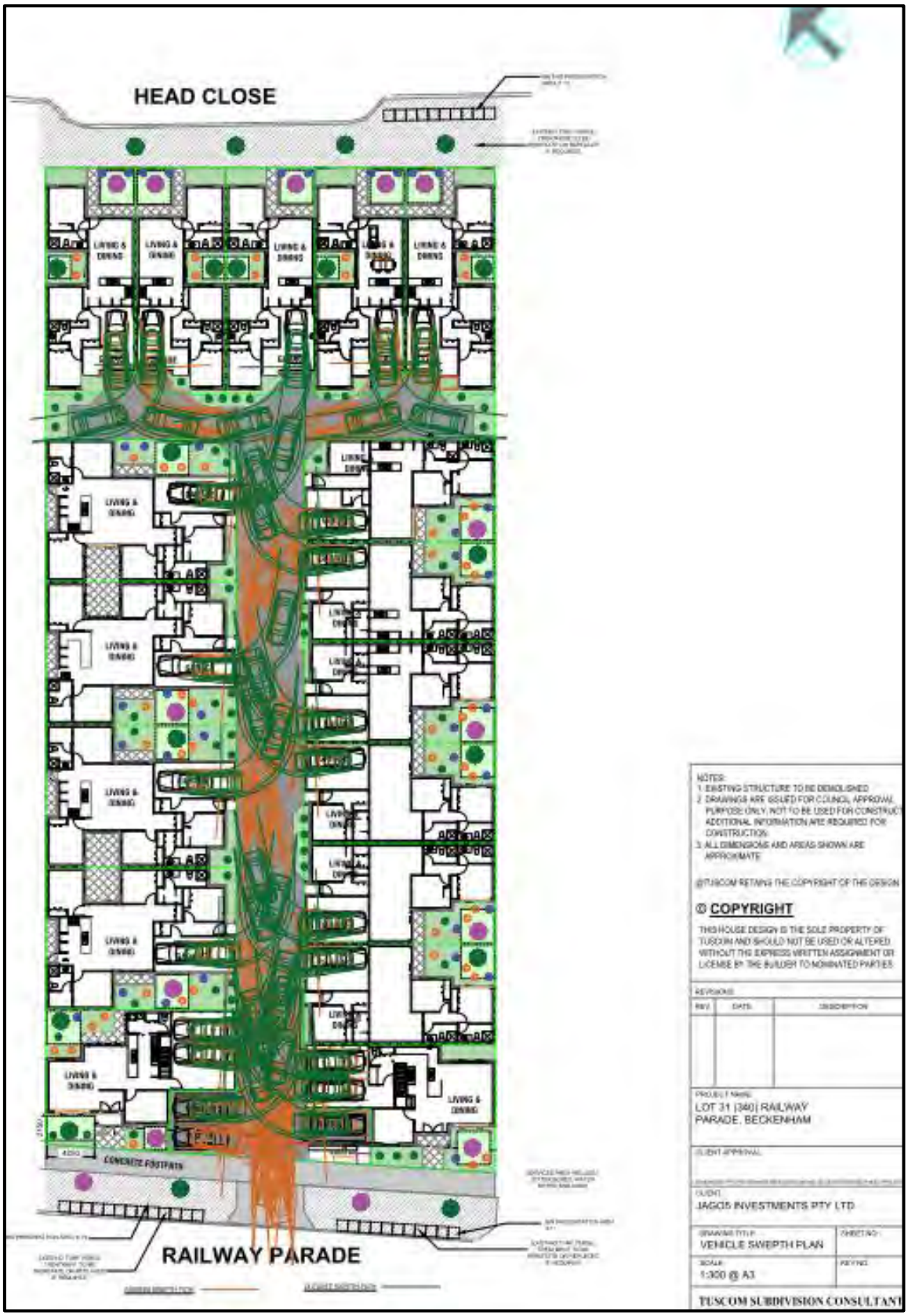
REVISIONS
LOT 31 (340) RAILWAY PARADE, BECKENHAM
JAGOS INVESTMENTS PTY LTD
LANDSCAPE PLAN
1:300 @ A3
TUSCOM SUBDIVISION CONSULTAN


HEAD CLOSE
RAILWAY PARADE
CONCRETE FOOTPATH
NOTES:
1. EXISTING STRUCTURE TO BE DEMOLISHED
2. DRAWINGS ARE ISSUED FOR COUNCIL APPROVAL PURPOSE ONLY, NOT TO BE USED FOR CONSTRUC ADDITIONAL INFORMATION ARE REQUIRED FOR CONSTRUCTION.
3. ALL DIMENSIONS AND AREAS SHOWN ARE APPROXIMATE
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REVISIONS
REV
DATE
DESCRIPTION
LOT 31 (340) RAILWAY PARADE, BECKENHAM
CLIENT APPROVAL
CLIENT
JAGCIS INVESTMENTS PTY LTD
DRAWING TITLE
VEHICLE SWEPTH PLAN
SHEET NO
SCALE
1:300 @ A3
REV NO
TUSCOM SUBDIVISION CONSULTANT

Harris House (fmr), Beckenham
Place No. (inHerit): P13802

CULTURAL HERITAGE SIGNIFICANCE

Statement of Significance	Harris House (fmr), 340 Railway Parade, Beckenham has aesthetic significance as a good representative example of a substantial timber Federation Bungalow home. The place has historic significance as a representative example of the type of residence built for professional men and their families during the development of the district in the 1910s.
Values	Aesthetic, Historic, Representativeness
Classification of Significance	**Level of Significance**: Category 3 Conservation of the place is desirable. Any alterations or extensions should reinforce the significance of the place, and original fabric should be retained wherever feasible. Photographically record prior to major development or demolition. If a Historic Site, may be included in heritage initiatives such as interpretive signage, heritage/walk trails, and education projects. Potential of archaeological evidence could be investigated. **Desired Outcome**: A place of some cultural heritage significance to the City of Gosnells that contributes to the heritage of the locality. May have some altered or modified elements, not necessarily detracting from the overall significance of the place. May have a different use or function than its original purpose. Does not fulfil the criteria for entry in the City of Gosnells Heritage List.

PLACE DETAILS

Former and other names			
Street No.	340	**Street Name**	Railway Parade
Locality	Beckenham		
GIS coordinates	-32.0203244, 115.95320699		
Reserve No.		**Diagram/Plan No.**	405759
Lot No.	31	**Vol/Fol**	2910/585
Place Type	Individual Building		
Statutory Listings	N/A		
Other Surveys	N/A		

PHYSICAL DESCRIPTION

Construction Materials	Walls: Timber - Weatherboard Roof: Metal - Zincalume

Document Set ID: 8575776
Version: 1, Version Date: 14/01/2025

	Other:		
Architectural Period	Federation (c.1890-c.1915)	**Architectural Style**	Bungalow
Demolished	No	**Year of demolition**	N/A
Description	House, 340 Railway Parade is located on the north eastern side of the road, overlooking the railway line and commercial development in Beckenham. It is set on a large lot of 0.358ha (0.88acres). The property is a single storey, timber framed painted weatherboard house with a hipped and gabled roof clad in Zincalume, and a tall chimney. The façade is symmetrical with two timber bays either side of a central entrance. Each bay projects through the verandah canopy terminating with a plain gable. A prominent projecting gable is located on the north elevation overlooking the driveway. The verandah extends around the house with a separate skillion canopy underneath the battened eaves. The canopy is supported by simple timber posts. There is no balustrade. Windows appear to have been replaced in part with aluminium openings, but some evidence of timber framed sashes remains. The house is set back from the street behind open lawned gardens enclosed by a low limestone wall with steel pickets (not original).		
Condition	Fair. Assessed from street view only.		

HISTORICAL DESCRIPTION

Heritage Themes	**Peopling WA** - Demographic Development
Construction Date	1914
Original Use	Residential Single Storey Residence
Current Use	Residential Single Storey Residence
Historical Notes	The house was constructed by carpenter John Boughton Harris (jnr). He was born c. 1879, the son of carpenter John Boughton Harris (snr) and Eliza Le'Strang Wall, of Bendigo. John Harris (jnr) married Maria Debnam in Leederville in 1914, and presumably built this house then in the suburb of Cannington for them to live in. By 1916, the Post Office Directories record them living at the property in Railway Parade, indicating that it had been completed by 1915. The couple had two children; Muriel Constance Boughton Harris (b. 1917) and John Clive Boughton Harris (b. 1920). Mrs E. Duirs owned the property after the Harris family from c. 1933.
Associations	Architect: Builder: Previous owners or occupants: John Boughton Harris Other:

REFERENCES

Date of assessment	July 2023. Photographs by **element**
Sources	Information from community member Margaret Lefevre (2016 HI) Registry of Births, Deaths and Marriages. http://www.bdm.dotag.wa.gov.au/ 'Post Office Directories.' *State Library of Western Australia*. https://slwa.wa.gov.au/collections/collections/post-office-directories

Document Set ID: 8575776
Version: 1, Version Date: 14/01/2025

PART C – CITY OF COCKBURN

1. Declarations of Due Consideration

2. Disclosure of Interests

3. Form 1 DAP Applications

3.1 Lots 1, 300, 4308, 7, and 99 Yangebup Road, Hammond Road and Beeliar Drive, Cockburn Central - Proposed Commercial Development (Neighbour Centre) – DAP/26/03070

4. Form 2 DAP Applications

Nil

5. Section 31 SAT Reconsiderations

Nil

Part C – Item 3.1 - Lots 1, 300, 4308, 7, and 99 Yangebup Road, Hammond Road and Beeliar Drive, Cockburn Central

RESPONSIBLE AUTHORITY REPORT – FORM 1	
DAP Name:	Metro Outer DAP
DAP File No:	DAP/26/03070
LG Reference:	DAP26/001
Proposed Development:	Proposed Commercial Development (Neighbour Centre)
Value of Development:	$28 million
Owner:	Mr. Angelo Luciano Alessandrini, Mr. Antonio Anselmo Alessandrini, Ms. Catiana Christiana Alessandrini, Mr. John Alessandrini
Applicant:	George Hajigabriel, Rowe Group/Windsor Knight Pty Ltd
Local Government Area:	City of Cockburn
Responsible Authority:	City of Cockburn
Authorising Officer:	Tanya Wasley (Planning Officer)
Application Acceptance Date:	25 February 2026

LOCATION PLAN

Figure 1. Location Plan and Surrounding Context

RESPONSIBLE AUTHORITY RECOMMENDATION

That the Metro Outer DAP resolves to **APPROVE** DAP Application reference DAP/26/03070 for Proposed Commercial Development (Neighbour Centre) at Lots 1, 300, 4308, 7, and 99 Yangebup Road, Hammond Road and Beeliar Drive, Cockburn Central in accordance with Clause 68 of Schedule 2 (Deemed Provisions) of the Planning and Development (Local Planning Schemes) Regulations 2015, and the provisions of the City of Cockburn Town Planning Scheme No. 3, subject to the following conditions:

1. The development is to be undertaken in accordance with the approved plans and documents attached to this approval, as listed below, except where amended by subsequent conditions:

Plan/ Document Name	Reference	Date
1 Beeliar SC Development Application Plans	2433_260720_Rev C	07 2026
2 Combined DA Landscape Plan	0614-BEL-KD-100 Rev C	20 07 26
3 Existing Tree Protection Plan (amended)	0614-BEL-KD-100 Rev C	27.07.26

2. This decision constitutes planning approval only and is valid for a period of four years from the date of approval, being <insert date>. If the subject development is not substantially commenced within the specified period, the approval shall lapse and be of no further effect.

3. Development shall be carried out in accordance with the approved plans.

4. The approved land uses apply to the various tenancies as outlined below:
   a) T01, T03, T04, T05, T06, T07 & T09 – Shop
   b) T02 – Liquor Store
   c) T08 – Consulting Room
   d) T10, T11, T12 & T13 – Restaurant/Fast Food
   e) Pad Sites 1 and 2 – Fast Food Outlet
   f) Fuel Site – Service Station

5. **Prior to the issue of a Building Permit** (excluding any forward/site works BP's) the owner/applicant shall:
   - submit to the City for approval a preliminary proposal for an art work designed be a professional artist at a cost of 1% of the total project cost (to a maximum of $250,000), to be to be located within the subject site as an integral part of the development;
   - submit to the City for approval an 'Application for Art Work Design';
   - enter into a contract with a professional artist/s to design and install (if appropriate) the art work approved by the City

   The art work shall then be installed prior to occupation of the building/development and maintained thereafter to the satisfaction of the City.

6. **Prior to the issue of a Building Permit,** a detailed material, colours and finishes schedule for the development, to be provided to the City's satisfaction. The details as agreed by the City are to be implemented in the development.

7. **Prior to the issue of a Building Permit,** an updated Tree Protection Management Plan, prepared by a suitably qualified arborist and informed by Australian Standard AS 4970, the final approved site levels and the final development design, is to be submitted to and approved by the City. The Plan is to demonstrate the retention and protection measures for the four (4) nominated trees identified under Condition 8.

8. **Prior to the issue of a Building Permit,** an updated Detailed Landscaping Plan is to be submitted to and approved by the City. The Plan is to include:
   a) a minimum of one hundred and seventeen (117) new trees, in addition to the four (4) retained trees identified under Condition 7;
   b) the location of up to eight (8) contingency replacement trees, in addition to the 117 trees required by point (a), to be provided in 1000L containers at a ratio of two (2) replacement trees for each of the four (4) retained trees, should any retained tree be lost, die, decline to the satisfaction of the City, or otherwise not be successfully retained;
   c) roundabout landscaping designed in accordance with the requirements of Figure 19 of the Traffic Impact Statement;
   d) the location, number, size and species of all proposed trees and shrubs;
   e) calculations demonstrating the extent of landscaped areas;
   f) updated site levels and tree retention annotations in accordance with Condition 7;
   g) verge landscaping treatments; and
   h) amended shade sail locations, where required, to accommodate retained and proposed trees.

9. Landscaping including verge planting shall be installed, reticulated and/or irrigated in accordance with the/an approved plan and maintained thereafter to the satisfaction of the City. The landscaping shall be implemented prior to the initial occupation of the development and any species which fail to establish within a period of 12 months from planting shall be replaced to the satisfaction of the City.

10. A geotechnical report prepared by an appropriately qualified consultant certifying that the ground is capable of accommodating the proposed development, shall be lodged with the City prior to the commencement of construction on site, at the cost of the owner/applicant, to the satisfaction of the City.

11. The applicant must implement all of the recommendations contained in the Bushfire Management Plan (Ref: BMP26108v3.0) prepared by WA Fire & Safety dated 16 July 2026 and approved by the Local Government for the duration of the development, including the implementation of all of the requirements outlined in Table 5 under Part 6.0 Roles and Responsibilities.

12. Crossovers are to be located and constructed to the City's Vehicle Crossover Specifications.

13. The development shall comply with the noise pollution provisions of the Environmental Protection Act 1986, and more particularly with the requirements of the Environmental Protection (Noise) Regulations 1997.

14. No building or construction activities shall be carried out before 7.00am or after 7.00pm, Monday to Saturday, and not at all on Sunday or Public Holidays.

15. All outdoor lighting shall be installed and maintained in accordance with Australian Standard AS 4282 - 1997 "Control of the Obtrusive Effects of Outdoor Lighting".

16. **Prior to the issue of a Building Permit**, a Construction Management Plan shall be submitted to and approved by the City for new buildings detailing management of:
    a) access to and from the site;
    b) the delivery of materials and equipment to the site;
    c) the storage of materials and equipment on the site;
    d) the parking arrangements for contractors and subcontractors;
    e) other matters likely to impact on surrounding properties;
    f) management of construction waste.

    The Construction Management Plan shall be implemented at all times during the construction phase.

17. **Prior to the issue of a Building Permit,** an updated Acoustic Assessment is to be submitted to and approved by the City. The assessment is to be prepared by a suitably qualified acoustic consultant and include details of all proposed mechanical plant, including final plant specifications and locations, and demonstrate compliance with the requirements of the Environmental Protection (Noise) Regulations 1997.

18. The development site shall be connected to the reticulated sewerage system of the Water Corporation before commencement of any use.

19. The dimensions of all car parking bays, aisle widths, wheel stops, columns, ramps and circulation areas complying with the Australian Standards AS/NZS 2890.1:2004 and AS/NZS 2890.6:2009.

20. All access ways, parking areas and hardstand areas shall be maintained in accordance with the City's engineering requirements and design guidelines.

21. **Prior to the issue of a Building Permit,** engineering drawings and specifications are to be submitted to, and approved by, the City, for the following works to be completed at full cost to the applicant;
    a) The upgrade of the Yangebup Road verge, including any required modifications to existing road infrastructure to accommodate safe access/egress to the development site; and
    b) Yangebup Road upgrading works including kerbing, backfilling and draining using soakwells abutting the development; and
    c) pedestrian connection along the Beeliar Drive and Yangebup Road that adequately connects to the existing footpaths, and
    d) construction of the north-south private vehicle road and associated drainage.

    The approved works are required to be undertaken prior to the occupation of the development and to the satisfaction of the City.

22. Prior to occupation of the approved development, the applicant/landowner shall make a financial contribution equivalent to 5% of the final cost of the future Hammond Road/Yangebup Road/Cooper Road intersection upgrade, estimated at $2 million, to the satisfaction of the City.

23. **Prior to the issue of a Building Permit**, with regard to the existing stormwater sump on Lot 4308, the landowner/applicant, shall come to a satisfactory arrangement with the City to:
    a) Design and construct the driveway to protect the existing stormwater infrastructure from damage and ensure that the ongoing operation, structural integrity and maintenance access to the infrastructure are not compromised; or
    b) Relocate the sump to a location acceptable to the City, without compromising the capacity or performance of the existing drainage infrastructure.

    Engineering drawings and specifications are to be submitted to, and approved by, the City

24. All stormwater to be contained on site. Stormwater drainage to be able to contain a 1 in 100 year, critical storm event.

25. Prior to the issue of Building Permit, details about the stormwater drainage design intended for the proposed development shall be submitted to the City for review and approval. Details should include information on storage volumes to be contained within the drainage cells and soakwells, drainage calculations with catchment area and rainfall intensity.

26. Prior to occupancy, installation of pedestrian crossing markings, vehicular guide signs, and pavement markings should be provided to ensure safe movement throughout the site, in accordance with AS 2890.1, AS 1742.1, and AS 1742.10. Where pedestrians, including people with disabilities, are expected to cross, they shall be guided to an accessible travel path and a safe crossing point that provides that provides adequate sight distance and is clearly marked with appropriate signage and pavement markings.

27. Prior to the initial occupation of the development, the parking bays, driveways and points of ingress and egress shall be sealed, kerbed, drained and line marked in accordance with the approved plans to the satisfaction of the City.

28. Prior to occupation of the development, a Service and Delivery Access Plan (SDAP) is to be submitted to and approved by the Local Government. The Plan is to detail delivery scheduling, servicing arrangements, loading bay management, waste collection operations and measures to minimise conflicts between service vehicles and customer traffic. The approved Plan is to be implemented and maintained thereafter to the satisfaction of the City.

29. Prior to occupation of the development, bicycle parking facilities are to be installed in accordance with the approved plans and thereafter maintained to the satisfaction of the City.

30. The approved development must clearly display the street number/s.

31. All services areas and service related hardware, including antennae, satellite dishes and air conditioning units, being suitably located away from public view and/or screened to the satisfaction of the City.

32. Prior to the occupation of the approved development, the owner of Lots 1 and 300 Yangebup Road ("the Owner") shall enter into an agreement with the City of Cockburn ("the City") to ensure that an easement is created over Lots 1 and 300 for the benefit of Lot 803 for access purposes in accordance with the specifications of and to the satisfaction of the City. The agreement shall be prepared by the City's solicitors to the satisfaction of the City. The owner shall be responsible to pay all costs of and incidental to the preparation of (including all drafts) and stamping of the agreement and lodgement at Landgate.

33. Prior to occupation of the approved development, a public access easement pursuant to Section 196 of the Land Administration Act 1997 is to be created over Lot 4308 to provide for vehicular access by the general public within the area shown on the plan as 'Alessandrini Drive (road between Beeliar Drive and Yangebup Road)'. The easement is to be registered on the Certificate of Title and noted on the deposited plan. The owner shall be responsible to pay all costs of and incidental to the preparation of (including all drafts) and stamping of the agreement and lodgement at Landgate.

34. Prior to occupation of the approved development, the landowner/applicant shall, at their cost, register an easement in gross in favour of the City over the drainage infrastructure for the purposes of access, inspection, maintenance, repair, replacement and renewal of the drainage infrastructure, to the satisfaction of the City.

35. Prior to occupation of the approved development, the landowner/applicant is to implement the sustainability initiatives as outlined in the Sustainable Design Assessment Report dated 13 January 2026 and maintained thereafter to the satisfaction of the City.

36. All alfresco dining areas approved herein are to comply with the requirements set out in Part 4 of Local Planning Policy 3.5 – Alfresco dining and maintained thereafter to the satisfaction of the City.

37. If chicks are found within a nest or hollow in a tree proposed for removal, a Fauna Relocation Management Plan must be submitted to and approved by the Local Government prior to clearing, in accordance with the City's Fauna Relocation Management Plan Guidelines.

38. Fuel deliveries to occur outside of normal shopping centre hours to avoid conflicts with customer traffic and outside of peak service station customer hours:
    - 7.30am to 9am and 2:30pm to 4pm on weekdays; and
    - 11am to 1pm Saturday and Sundays.

    The SDAP as required under Condition 28 is to be updated as required.

Advice Notes

1. This is a Development Approval only and does not remove the responsibility of the applicant/owner to comply with all relevant building, health and engineering requirements of the City, or with any requirements of the City of Cockburn Town Planning Scheme No. 3 or with the requirements of any external agency.

2. Please be advised that the development must comply with the requirements of the Building Codes of Australia.

3. With regard to condition 5, the art work shall be in accordance with Council' Local Planning Policy 5.13 Percent for Art and the 'Application for Art Work Design' and shall include a contract between the owner/applicant and the artists full working drawings (including an indication of where the art work is located) and a detailed budget being submitted to and approved by the City. Further information regarding the provision of art work can be obtained from the City's Community Arts Officer on 9411 3444.

4. With regards to Condition 8. the landscaping plan is to exclude species that may be detrimental to the adjoining nature reserve, including PSHB host species. Proposed trees are to be suitable for roadside and shade sail locations, with a preference for Western Australian native species, to the satisfaction of the City's Environmental Team.

5. With regard to condition 12, Please submit a crossover application on City's website with a detailed site plan. A 2m x 2.5m sightline shall be provided at the intersection of the crossover(s) and road boundary. All sightlines shall be maintained clear of obstructions above a height of 0.75m. Copies of crossover specifications are available from the City's Engineering Services or from the City's website www.cockburn.wa.gov.au.

6. With regard to condition 16, the Construction Management Plan (CMP) shall be prepared in accordance with the 'City of Cockburn Construction Management Plan Guidelines' (available on the City's website) and shall include the provision of a completed CMP checklist. Please note that in accordance with the Guidelines, a Dust Management Plan and/or Traffic Management Plan may be required to form part of the CMP. You are advised to contact the City's Environmental Health team and Traffic & Transport team to discuss whether these are required.

7. No signage forms part of this approval. Any proposed signage that is not exempt under Town Planning Scheme No. 3 is required to be submitted to and approved by the City prior to installation. The applicant is advised to consult with the City's Planning Services to determine whether approval is required.

8. All earthworks and/or associated drainage details shall be in accordance AS3500 with plans and specifications certified by a suitably qualified practicing Engineer to the satisfaction of the City.

9. A clearing permit from the Department of Water and Environmental Regulation is required prior to any clearing for the development under the provisions of the Environmental Protection Act 1986.

10. Retaining wall(s) being constructed in accordance with a suitably qualified Structural Engineer's design and a Building Permit being obtained prior to construction. Retaining walls are required for any cut and/or fill greater than 150mm in height. In this regard, any fill above or below natural ground level at the lot boundaries is to be suitably retained or have a compliant stabilised embankment.

11. This development has been defined as a public building and shall comply with the relevant provisions of the Health (Miscellaneous Provisions) Act 1911 (as amended), and the Health (Public Buildings) Regulations 1992.

12. All food businesses shall comply with the Food Act 2008 and Chapter 3 of the Australia New Zealand Food Standard Code (Australia Only).

13. An "Application to Construct or Alter a Food Premises" is required to be submitted to Health Services prior to construction. This is to be accompanied by detailed plans and specifications of the food preparation and storage area (including mechanical ventilation and hydraulics), sanitary conveniences and garbage room, demonstrating compliance with the mentioned legislation.

14. Street trees are a Council Asset and shall not be removed, altered in any way or pruned, without prior approval of the City of Cockburn. The City shall seek compensation for any damages to street trees as a result of the development and the applicant is advised to ensure all contractors are made of aware of this requirement.

15. No wash-down of plant, vehicles or equipment is permitted on the premises. Industrial, commercial or wash-down wastes shall not enter stormwater disposal systems or otherwise be discharged to the environment.

16. A 'Shop' is defined under the City's Town Planning Scheme No. 3 as 'premises used to sell goods by retail, hire goods, or provide services of a personal nature (including a hairdresser or beauty therapist) but does not include a showroom, fast food outlet, bank, farm supply centre, garden centre, hardware store, liquor store or nursery'.

17. A 'Fast Food Outlet' is defined under the City's Town Planning Scheme No. 3 as 'premises used for the preparation, sale and serving of food to customers in a form ready to be eaten without further preparation, primarily off the premises but does not include a lunch bar'.

18. A 'Liquor Store' is defined under the City's Town Planning Scheme No. 3 as 'a building the subject of a Store Licence granted under the provisions of the Liquor Act'.

19. A 'Restaurant' is defined under the City's Town Planning Scheme No. 3 as 'premises where the predominant use is the sale and consumption of food and drinks on the premises and where seating is provided for patrons, and includes a restaurant licensed under the Liquor Licensing Act 1988.'

PROPOSAL:

The application seeks approval for a Neighbourhood Centre development featuring a main shopping centre building located adjacent to the northern Yangebup Road boundary. The centre incorporates two (2) major retail tenancies, one mini-major tenancy, and a mix of retail, commercial, and food and beverage tenancies with external dining areas facing the main street. In addition, two fast-food drive-thru outlets are proposed along the southern boundary of the site adjacent to Beeliar Drive, together with a fuel station located on the south-western boundary. the total proposed net lettable area proposed is 7,855m². The site is proposed to be accessed via the existing Beeliar Drive roundabout central access road, Yangebup Road, and through Lot 803 to the west, in accordance with the Hammond Road North Structure Plan Concept Plan.

Proposed land uses and sizes as follows:

- Shop (Major Retail): 5,360m²
- Consulting Room: 100m²
- Shop (Mini Major): 600m²
- Liquor Store: 160m²
- Shop (Retail/Commercial): 400m²
- Restaurant/Fast food (Food and Beverage): 375m²
- Fast Food (two drive-thru outlets): 620m²
- Service Station (Fuel): 240m²

The development proposes 312 car parking bays, 7 motorcycle bays and 68 bicycle spaces (44 visitor and 24 secure staff). Delivery and back-of-house areas are oriented to Yangebup Road, with landscaping provided throughout the site. As the development spans multiple lots, amalgamation will be required before a Building Permit can be issued.

SUBJECT SITE AND SURROUNDS:

The overall development site at 142L Yangebup Road comprises three primary lots and portions of two adjoining lots. Two of the primary lots are proposed for the development of the Neighbourhood Centre, while the third, Lot 4308 Beeliar Drive, is reserved for road purposes. The site is currently vacant and contains a significant number of regulated trees. The rectangular parcel of land slopes down from the south-eastern corner to the north-western corner. Access is proposed from the existing Beeliar Drive/Kemp Road roundabout, Yangebup Road, and via Lot 803 to the west, consistent with the Hammond Road North Structure Plan Concept Plan. A district drainage basin adjoins Yangebup Road within Lot 4308, which is identified as a public road reserve in both the City's mapping and the Structure Plan.

The site is located within a varied urban and environmental setting. Industrial development is situated to the north, while the Yangebup Lake Regional Reserve adjoins the site to the west and the Kogolup (Thomsons Lake) Regional Reserve lies to the south. Commercial and educational developments are located nearby, including the Tony Ale Fruit and Vegetable Market to the east. Beeliar Drive, which forms the site's southern boundary, is classified as an Other Regional Road and serves as a key east-west transport corridor within the locality.

BACKGROUND:

A previous development approval (DAP/18/01397) was granted on 21 December 2020 for a mixed commercial development comprising warehouse/showroom, office, gym, consulting rooms, liquor store, service station, tavern, shop and restaurant uses. The approval applied to the subject land and Lot 803 to the west, whereas the current application excludes Lot 803.

Lot 803 is approved for a Health Studio and Warehouse development within the Mixed Business zone and is currently under construction. The Structure Plan requires access easements to establish the east-west connection between Lots 803 and 4308, allowing vehicle access from the singular access point permitted form Beeliar Drive.

PLANNING ASSESSMENT:

PLANNING FRAMEWORK	
Region Scheme	Perth Metropolitan Region Scheme
Region Scheme - Zone/Reserve	Urban
Local Planning Scheme	City of Cockburn Town Planning Scheme No. 3
Local Planning Scheme - Zone	Development Zone
Structure Plan/Precinct Plan	Hammond Road North Structure Plan
Structure Plan/Precinct Plan - Land Use Designation	Mixed Business, Local Centre, and Local Road
Lot Size	Lot 1 - 1.0197ha, Lot 300 - 1.5590ha Lot 4308 - 3,597m² partial areas of lots 7 & 99 (road network)
Existing Land Use	Vacant Land
Heritage Status	☒ N/A ☐ State Register of Heritage Places ☐ Local Heritage List ☐ Local Heritage Area
Bushfire Prone Area	Yes

The proposal has been assessed against the City of Cockburn Town Planning Scheme No.3 (TPS3), the Hammond Road North Structure Plan, State Planning Policy's, and applicable Local Planning Polices.

The following matters have been identified as key considerations for the determination of this application:

Land Use – Structure Plan Amendment

The subject site is located within the Hammond Road North Structure Plan, which designates Lot 1 as 'Mixed Business', Lot 300 as primarily 'Mixed Business', with a portion of the zoning designated as 'Local Centre' adjacent the central road as outlined in Figure 2 below.

The objectives of the Mixed Business Zone outlined in TPS3:

To provide for a wide range of light and service industrial, wholesaling, showrooms, trade and professional services, which, by reason of their scale, character, operation or land requirements, are not generally appropriate to, or cannot conveniently or economically be accommodated within the Centre or industry zones.

The objectives of the Local Centre outlined in TPS3:

To provide for convenience retailing, local offices, health, welfare and community facilities which serve the local community, consistent with the local - serving role of the centre.

Below is a summary of the proposed use permissibility's under the current Hammond Road North Structure Plan 'Mixed Business' zone:

- Shop (retail) – 'X' Not Permitted Use
- Consulting Room – 'P' Permitted Use
- Use Not Listed (Liquor Store)
- Restaurant / Fast Food – 'P' Permitted Use
- Fast Food – 'P' Permitted Use
- Service Station (Fuel) – 'D' Discretionary use

Figure 2. Hammond Road North Structure Plan Map – Subject Sites Zone

In addition to land use permissibility under the TPS, the Hammond Road North Structure Plan limits shop/retail floor space within the 'Local Centre' zone to a maximum of 8,170m². This cap was intended to support a small-format retail centre focused on a main street environment, while maintaining opportunities for shop/retail development and future redevelopment at the Tony Ale Fruit and Vegetable Market site to the east.

To facilitate the proposed Neighbourhood Centre development, the landowners have concurrently lodged an application to amend the Hammond Road North Structure Plan, supported by a Retail Needs Assessment (RNA) and Net Benefit Test (NBT) The structure plan amendment seeks to reconfigure the 'Local Centre' and 'Mixed Business' zones and the allowable retail floor space within the centre to align with the development application zoning as shown in Figure 3.

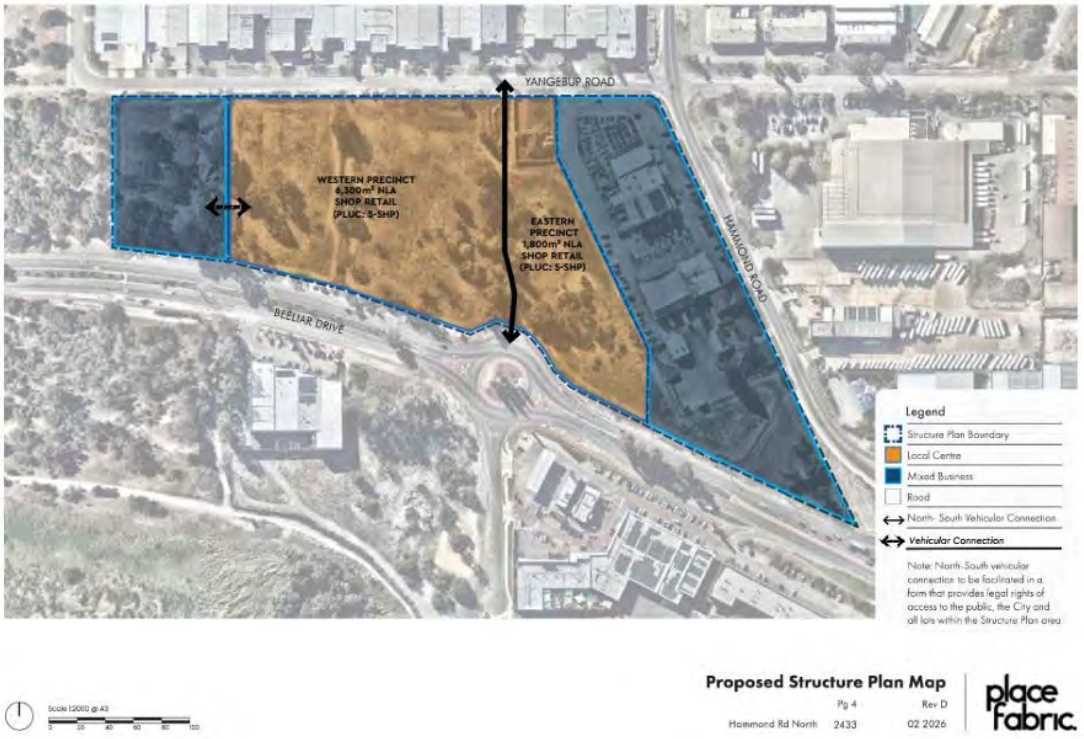

Figure 3. DRAFT Proposed Hammond Road North Structure Plan Map

During the assessment of both applications, it was identified that the applicant's calculation of NLA, including the exclusion of certain back-of-house (BOH) areas as outlined in the RNA and NBT, did not align with the City's assessment. This issue was also raised in a submission received during the public consultation process. In response, the City sought further justification from the applicant regarding the methodology adopted, referred the matter to DPLH Activity Centres, and obtained independent expert advice to inform its assessment.

In this regard the key BOH areas in dispute for the supermarkets are primarily storage areas, cool rooms and food preparation areas (with toilets, locker rooms and staff areas to be excluded) and whether these areas could be reasonably defined as 'other service areas' (OSA) to be excluded from NLA.

It is noted OSA appears in the first limb (a) of the definition of NLA and is therefore to be read in conjunction with the list of areas that precede it. These areas all contribute to the operation of the building, except for tea rooms, which are provided solely to support employees. Therefore, OSA is interpreted to mean areas servicing the building or the employees; whereas storage areas, cool rooms and food preparation areas service the retail operation.

On this basis, the City's view is that that storage areas, cool rooms and food preparation areas do not meet the definition of OSA because they relate to the retail operation rather than serving employees or the building.

The advice further concluded that excluding these areas would be inconsistent with the purpose of the NLA provisions, which are intended to regulate built form, inform infrastructure and transport planning, and manage retail development within the established retail hierarchy.

Accordingly, officers have assessed the proposal on the basis that storage areas, cool rooms and food preparation areas are included within the shop/retail NLA calculation, as reflected in Table below which outlines estimates based on preliminary plans provided by the proponent.

HAMMOND ROAD NORTH SHOPPING CENTRE DEVELOPMENT APPLICATION – SHOP/RETAIL (PLUC5) NLA ESTIMATES				
	Total floor area	TOTAL BOH	BOH Areas excluded from NLA	Total NLA
Major supermarket	3820m^2	1060m^2	140m^2 Toilets, tearooms: (Toilets, locker rooms, Team Room) Cleaning: (Sustainability room, Coles Services) Stairs	3,680m^2
Minor supermarket	1500m^2	410m^2	117m^2 Amenities; changerooms	1,383m^2 NLA
Mini Major				600m^2
Liquor				160m^2
Retail/Commercial				400m^2
Food and bev.				375m^2
Fast food	620m^2		30m^2	590m^2
Service Station	240m^2		30m^2	210m^2
TOTAL PROPOSED SHP/RETAIL (PLUC5)				7,398m^2 NLA
Tony Ale existing NLA				1,350m^2
TOTAL NLA				**8,748m^2**
LPS Total allowable 'shop/retail' PLUC5 NLA				8,170m^2
Estimated excess shop/retail NLA across Activity Centre				**+ 578m^2**

The table above demonstrates the combined NLA of the proposed development and the existing Tony Ale Fruit and Vegetable Market in the eastern precinct likely exceeds the shop/retail floorspace allocation under the Local Planning Strategy and current Structure Plan by approximately 578m².

The City considers the additional 578m² NLA to be minor and unlikely to undermine the role or function of nearby activity centres. Given the broader retail, commercial and entertainment offer at Cockburn Gateway and its larger catchment, the proposal is not expected to adversely affect the activity centre hierarchy. Accordingly, the proposal addresses DPLH Activity Centres' concerns regarding centre hierarchy and function.

However, while the City supports this minor increase in total shop/retail floorspace, the draft Hammond Road North Structure Plan amendment requires further modification to reflect the revised NLA calculation to ensure consistency with the Local Planning Strategy.

The draft advertised Structure Plan Amendment reconfigured the zonings and allocated 6,300m^2 of shop/retail NLA to the western precinct (proposed to be zoned predominately 'Local Centre' zone), and 1,800m^2 to the eastern precinct (to be zoned predominately 'Mixed Business' with a portion of 'Local Centre' zone).

However, given the recalculated NLA figures for the proposed development indicate an approximate shop/retail NLA of 7,398m^2, this would leave only approximately 772m^2 of shop/retail (PLUC5) NLA available for the eastern precinct. It is the City's intent to recommend the Structure Plan Amendment be modified to reflect this allocation, including a reduction in the spatial extent of the 'Local Centre' zone in the eastern precinct.

This would mean in the event existing shop/retail land uses in the eastern precinct cease or change, there would only be approximately 772m^2 shop/retail (PLUC5) NLA available for future development; with an expectation this precinct would be strongly focused on 'Mixed Business' land uses.

This will maintain the existing shop/retail floorspace allocation framework, ensure no negative impact on the activity centre hierarchy, and address concerns raised through the public consultation process regarding the calculation and administration of retail floorspace.

Parking

Car parking requirements for the subject site are prescribed under TPS3. The proposal has also been assessed against the WA Planning Manual: Non-Residential Car Parking Rates in Perth and Peel, which supports a case-by-case assessment of non-residential parking demand.as shown in the table below:

CAR PARKING ASSESSMENT					
TPS3 Table 1 Land Use	GLA / NLA (m²)	TPS Rate	Car bays required	Car bays provided	WAPC Car Parking Req'mnts
Shop(s) Major, mini, liquor, retail	6,520	1:14	466	261 onsite bays	131
Consulting Room	100	5:1 practitioner	2 practitioners = 10	12 street bays	4
Restaurant Fast food	200 175	1:4 seats or 1:15	30 seats x 2 = 15 12 (27)	6 pickup bays	6 4 (10)
Fast food	620	1:15	42	33 pad site bays (294 total onsite)	13
Fuel	240	1:1 employee	2 employees		5

		6 service bays 2:1	12 service bays (14)		
		Total	**559** 247 bay shortfall	**312 total bays**	**163 req'd** **149 bay surplus**

While the proposal does not satisfy the prescriptive parking requirement of TPS3, the submitted Traffic Impact Assessment (TIA) demonstrates that the proposed provision of 315 bays is sufficient to accommodate anticipated parking demand. In support of the variation, consideration has been given to:

- forecast parking demand;
- access to public transport on Beeliar Drive;
- connectivity to the shared path network;
- shared parking opportunities within the centre; and
- alternative transport options.

Consistent with the WAPC Parking Guidelines, the assessment adopts a performance-based approach that considers actual parking demand and site context rather than relying solely on prescriptive parking rates. The TIA estimates a peak parking demand of 213 to 291 bays, confirming that the proposed supply of 315 bays is sufficient to service the development.

Accordingly, support is provided for the variation to the TPS3 parking requirement, as the proposed parking supply is consistent with the intent of the WAPC Parking Guidelines and is not expected to result in adverse parking impacts.

Landscaping

TPS3 and Local Planning Policy 5.18 - Subdivision and Development details the specific landscaping requirements, including the required rate of street trees for commercial development.

The proposal's compliance with these provisions is outlined in the table below:

Provision	Requirement	Proposal	Assessment
TPS3 4.9.2 (a)	29,980m2 lot / 2,998m2 (10%)	1,581m2 **(5.2%)** onsite landscape	Verge landscaping required as per (b)
TPS3 4.9.2 (b)	Minimum 5% onsite landscaping where the verge is landscaped	5.2% landscaping, Verge shown on plans to be landscaped.	Condition to be applied
TPS3 4.9.2 (c)	Street verge to be maintained by owner	As above	Condition to be applied
TPS3 4.9.2 (d)	Minimum 1.5m width and 4m² area	As above	Areas under minimum not including in calculation

TPS3 4.8.2 (e) and (f)	2 x 200/214m frontages = 42 onsite trees 294 on site bays / 3 = 98 trees min (excl. on street and pickup bays) **(140 total req'd)**	**121 trees provided,** including avenue trees and 4 to be retained trees. **(117 new trees)**	Condition 121 min trees, revegetation to be applied, consideration for species / location of shade sails Refer to discussion below
LPP 5.18 3.2.3	2 x 200/214m frontages = 42 total trees req'd	21 to Yangebup, 22 to Beeliar verge (43 total)	**Compliant with 1 extra tree shown**

It has been noted that the Landscape Concept Plan (page 101) identifies a total of 135 trees; however, a review of the plan indicates that the number of trees shown does not align with this figure. In addition, landscape areas that do not satisfy the requirements of Clause (d) have not been included in the calculations, resulting in a discrepancy between the landscape percentage shown on the plans and the assessment calculations.

To address these variations, conditions are recommended requiring an updated detailed Landscaping Plan that provides an appropriate number of trees and suitable species selection throughout the site. All landscaping is to be consistent with the approved Bushfire Management Plan (BMP), with any amendments required for bushfire compliance maintaining the intended landscaping outcomes and canopy coverage to the satisfaction of the City.

Local Planning Policy 5.23 Tree Protection

Local Planning Policy 5.23 – Tree Protection seeks the retention of regulated trees wherever practicable and requires their consideration as part of the development assessment process.

The subject site contains a number of regulated trees. The applicant initially proposed retaining six trees; however, this was subsequently reduced to four. Given the proposed earthworks, changes to site levels and construction impacts, concerns remain regarding the long-term viability of the four proposed retained trees.

While replacement planting is proposed at a 2:1 ratio using 1000L stock for any lost retained trees, it is unclear whether sufficient space exists on-site to accommodate all replacement planting. Accordingly, a condition is recommended requiring a revised Landscaping Plan, prior to the issue of a Building Permit, demonstrating tree retention where practicable and appropriate replacement planting to the satisfaction

of the City. of the City.

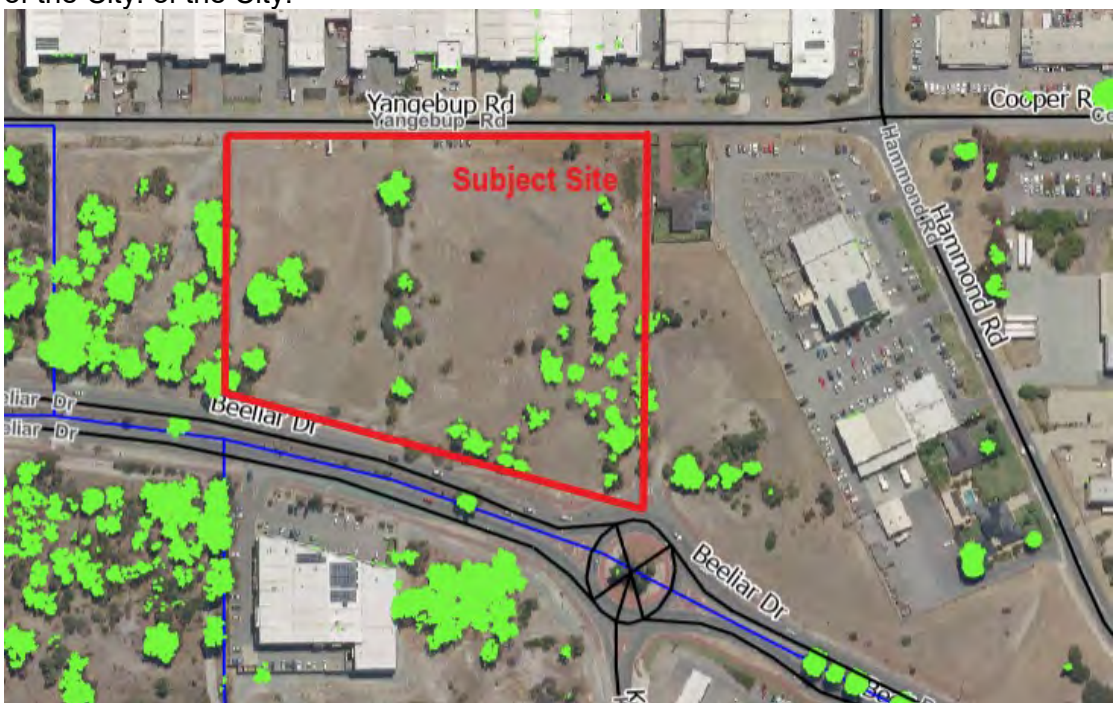

Figure 4. Regulated Tree Mapping

Bushfire

The site is located within a bushfire-prone area (Figure 5). A Bushfire Management Plan identifies the site as BAL-FZ in its current state and BAL-29 following development and implementation of the required Asset Protection Zone (APZ).

During assessment, the City identified potential inconsistencies between the BMP APZ requirements and the proposed landscaping. Following discussions with the applicant and BMP certifier, it was confirmed that the landscaping shown on Figure 4 is consistent with the BMP and can be implemented within the required APZ. Conditions are recommended to ensure approved landscaping is retained, installed and maintained in accordance with the BMP.

Figure 5. DFES Map of Bushfire Prone Areas

Transport and Traffic

The Hammond Road North Structure Plan identifies a number of road network upgrades required to accommodate traffic generated by future development within the Structure Plan area.

A Traffic Impact Assessment (TIA) submitted in support of the application concludes that the proposed development can be accommodated within the surrounding road network, subject to identified road upgrades, and is consistent with the movement network framework of the Hammond Road North Structure Plan.

The TIA determined that the proposal would contribute approximately 5% of future traffic demand at the Hammond Road/Yangebup Road/Cooper Road intersection. Accordingly, the applicant has agreed, in lieu of the contribution estimates contained within the TIA (Revised Final, June 2026), to provide a financial contribution equivalent to 5% of the final construction cost of the future roundabout upgrade, based on the City's preliminary cost estimate of $2 million.

Accordingly, conditions are recommended requiring implementation of the TIA recommendations, completion of the proposed access and road works, and payment of a financial contribution equivalent to 5% of the final construction cost of the future Hammond Road/Yangebup Road/Cooper Road intersection upgrade. Subject to these conditions, the proposal is considered acceptable from a traffic and transport perspective.

Existing District Stormwater Sump

The existing stormwater sump, located within an area identified as a public road reserve under the Structure Plan, will be impacted by the proposed development and associated road works (Figure 6). The applicant proposes that the road remain in private ownership while maintaining public access, consistent with the intent of the Structure Plan. The City has no objection to this arrangement, subject to engineering approval, the creation of a public access easement, and the provision of drainage infrastructure in accordance with City specifications, including an easement in gross for ongoing access and maintenance.

Accordingly, conditions are recommended requiring the landowner/applicant, at their cost, to accommodate stormwater from all existing connected catchments within the subject landholding, with the final drainage arrangement and location to be approved by the City. Any works must maintain the existing drainage network's capacity and performance, with detailed drainage design and engineering certification to the satisfaction of the City..

Figure 6. Existing District Stormwater Sump Location

All stormwater generated by the development is to be retained and managed on-site in accordance with the City's standard drainage requirements and to the satisfaction of the City.

Local Planning Policy 3.5 – Alfresco Dining

The submitted plans include alfresco seating areas near the main entrance. An condition is recommended requiring any future alfresco dining areas to comply with LPP 3.5 – Alfresco Dining.

Local Planning Policy 3.7 – Signs and Advertising

During the further information process, the applicant removed all signage from the plans, agreeing that any future signage will be subject to a separate development application. A condition is therefore recommended requiring separate approval for all signage..

Local Planning Policy 5.13 – Percent for Art

The City's Local Planning Policy 5.13 – Percent for Art requires a 1% contribution for commercial developments with a value exceeding $1 million. The applicant has agreed to the City's standard Percent for Art condition, as noted in the application documentation. A standard condition is recommended requiring compliance with the policy.

Public consultation

The application was advertised on the City's Comment on Cockburn website from 8 May to 19 June 2026, concurrent with the Local Structure Plan Amendment. Notification letters were also issued to properties within 200m, with submissions accepted until 5 June 2026 due to the proposed Liquor Store (Use Not Listed). Two submissions were received, raising concerns regarding retail floorspace calculations and the health impacts of fast-food outlets.

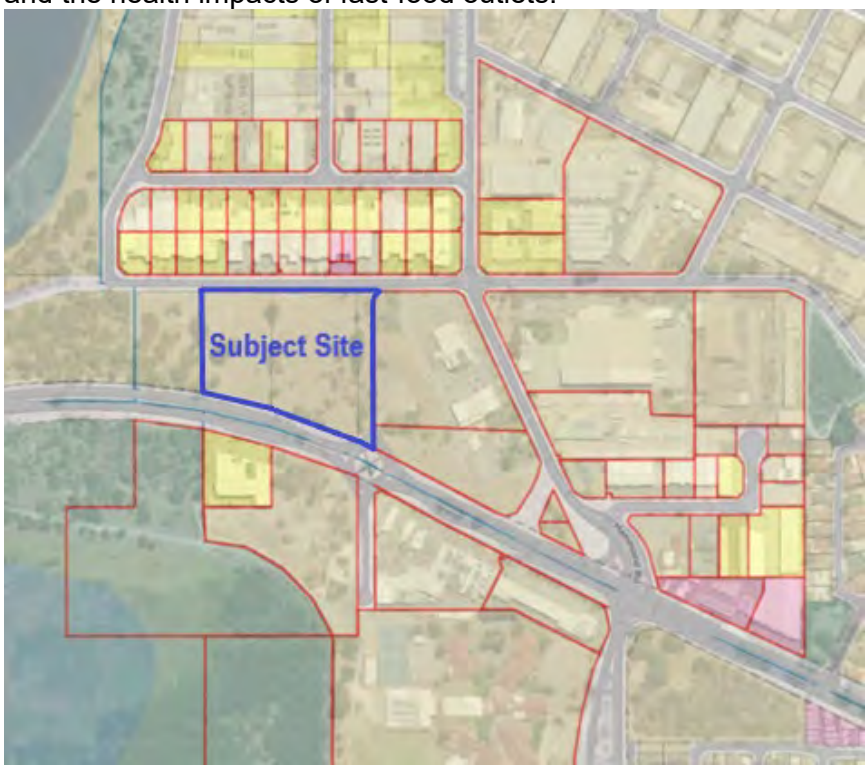

Figure 3. Extent of Public Advertising

Comment/Matter Raised	Responsible Authority Response
Oversupply of retail floorspace, and inconsistent with the Structure Plan/SPP4.2 Calculation of retail floorspace in the RNA and NBT to be reviewed and updated, to ensure the proposed development aligns with the floorspace cap of the Structure Plan, deferred until the Structure Plan amendment is approved by the WAPC	As discussed in the Land Use – Structure Plan Amendment section of this report, the draft Structure Plan amendment requires further modification to align with the revised NLA calculation. To ensure consistency with the planning framework and maintain the maximum retail floorspace permitted under the existing Structure Plan, a condition of approval is recommended requiring the Structure Plan amendment to be updated accordingly.
Health and wellbeing of the community impacts of the two proposed fast-food outlets and the proximity to schools	Fast-food is a 'P' use in the 'Mixed Business' zone of the current structure plan, and a 'D' discretionary use in the proposed Draft Structure Plan 'Local Centre' Zone. The use aligns with the intent of the zones, and there is no statutory framework to support refusal on the grounds of health and well-being due to the proximity to schools.

REFERRALS/CONSULTATION WITH GOVERNMENT/SERVICE AGENCIES

The application was referred to the following agencies:

Department of Planning, Lands and Heritage (DPLH) – Other Regional Road

Referred as per Clause 28 as site abuts an 'Other Regional Road' (ORR).

Upon review of the application documentation, DPLH provided the following recommendations:

- that developer contributions arrangements be agreed between the proponent and the City to implement needed intersection upgrades;
- the proponent to demonstrate the safe manoeuvrability of service vehicles including waste collection vehicles within the development site to the satisfaction of the City;
- given that Beeliar Drive is a designated Primary Freight Route, comments should be sought from the Department of Transport (DoT) if required;
- no direct access to Beeliar Drive is supported; and
- to reinforce low speeds and pedestrian priority, consideration be given to raised/shared main aisle and marked pedestrian crossings to the satisfaction of the City as outlined in the TIA.

The matters raised have been satisfactorily addressed through the updated information process, including revised Development Application plans and an updated Transport Impact Assessment (TIA), which demonstrate adequate service vehicle access and manoeuvrability within the site. The remaining matters will be addressed through recommended conditions of approval relating to developer contribution requirements and the provision of pedestrian-priority measures.

Department of Biodiversity, Conservation and Attractions (DBCA)

The application was referred to DBCA because the proposed 'Use Not Listed' falls within the 200m referral area applicable to Thomsons Lake Regional Reserve.

Response received by the City confirming DBCA has no objections.

Department of Planning, Lands and Heritage (DPLH) – SPP 4.2 – Activity Centres

The application was referred to DPLH Activity Centres for comment. DPLH identified a number of matters requiring further clarification, including retail floorspace calculations, consistency between the Structure Plan Amendment, Development Application and RNA, and the role and function of the centre within the activity centre hierarchy. These matters have been considered and addressed by the City in the Land Use – Structure Plan Amendment section of this report.

DESIGN REVIEW PANEL ADVICE

The proposal was referred to the City's Design Review Panel (DRP) in accordance with Local Planning Policy 5.16 - Design Review Panel. The DRP assesses proposals against the 10 Design Principles of State Planning Policy 7.0 – Design of the Built Environment and provides design advice to proponents.

As required by LPP 5.16 for new activity centres, the proposal was reviewed by the DRP prior to lodgement. DRP meetings were held on 22 October 2025 (DRP1) and 26 November 2025 (DRP2). The minutes of both DRP meetings are attached (Attachments 10 & 11)

The feedback provided following DRP2 is summarised below with comments provided by the proponent and the City. The applicant's full response to each DRP comment can be found within section 4 of the Planning Report (attachment 8)

Design Principle (SPP 7.0)	**DRP2 Feedback (Summarised)**	**Proponent Response (Summarised)**	**City Response**
Context and Character	Improve built form interface with the primary streetscape and increase buffering to adjoining properties at the rear of the site..	Built form layout has been retained to provide legibility, functionality and site activation, with service areas separated from customer areas. Fast food and fuel uses are intentionally located near Beeliar Drive, with design and orientation measures ensuring a safe, high-quality development outcome.	Noted:Fuel station has had additional openings added facing Beeliar Drive to minimise blank facades

Landscape Quality	Consider all opportunities for larger trees on the site.	Landscape design retains and protects six existing mature trees and incorporates additional large endemic trees throughout the site to enhance canopy cover and landscape quality.	As noted above, four existing trees to be retained, condition updated landscaping plan to be provided prior to BP to be applied
Community	Further integrate unique, high-quality public art within parklets and public spaces to create meaningful community outcomes and strengthen local identity.	Public art will be integrated throughout the centre in a variety of forms, with a specialist artist engaged to develop concepts for future discussion with the City.	Public art condition to be applied
Aesthetics	Prepare a signage strategy identifying signage types and locations to balance commercial visibility with a sensitive and integrated design outcome.	A signage strategy will be prepared following development approval, with the Applicant supporting a condition requiring its submission and approval.	Signage condition to be applied

Design Principles with no comments or recommendations at DRP2 have been excluded from the table, as they were supported by the Design Review Panel without further amendment or discussion.

CONCLUSION:

The key considerations for the proposal are the land use mix, retail floorspace allocation, activity centre hierarchy, landscaping, stormwater management, and consistency between the Development Application and the concurrent Structure Plan amendment. The primary area of planning discretion relates to the allocation of land uses within the Structure Plan area, while landscaping and stormwater matters are capable of being addressed through conditions in accordance with the planning framework.

Overall, the proposal is considered to have planning merit and is generally consistent with the intent of the applicable planning framework. Subject to conditions requiring amendment of the concurrent Structure Plan to align with the approved development and maintain the existing shop/retail floorspace cap within the Eastern Precinct, the proposal represents an appropriate planning outcome.

The City recommends that the Metro-Outer Development Assessment Panel approves this application.

ATTACHMENTS

1. Development Plans
2. Combined DA Landscape Plan
3. Existing Tree Protection Plan
4. Bushfire Management Plan
5. Transport Impact Assessment
6. Beeliar Drive Shopping Centre, Initial Arboricultural Assessment
7. Rev A. Grading Plan – Overall Plan Rev. A
8. Development Application Full Planning Report
9. Hammond Road North Structure Plan
10. DRP1 – Design Review Report – Hammond Road Neighborhood Centre
11. DRP2 – Design Review Report – Hammond Road Neighborhood Centre

Beeliar SC

Development Application

place fabric.

Rev C

07 2026

Broader Site Context

Pg 2 Rev C

Beeliar SC 2433 07 2026

place fabric.

TBM
RL : 20.44m
(Deck Spike)

TBM
RL : 21.09m
(Deck Spike)

Y A N G E B U P R O A D

2500H
2300H
2100H
2200H
1800H
1100H

SANDY LANDSCAPE

1
DP59832

704
DP415238
(EXPIRED)

4308
DP193038

803
DP44876

7
D25994

SANDY LANDSCAPE

0.1m wide P.A.W.

B E E L I A R D R I V E

TBM
RL : 22.00m
(Deck Spike)

TBM
RL : 23.99m
(Deck Spike)

705
DP415238
(EXPIRED)

GRAVEL
SAND
GRAVEL

K E M P R O A D

LINE TYPES

- BRICK PAVING
- DRIVEWAY CENTRE
- FOOTPATH
- KERB TOP
- KERB BOTTOM
- PEDESTRIAN RAMP
- ROAD BITUMEN EDGE
- ROAD CENTRELINE
- ROAD SHOULDER
- LINE MARKING SINGLE SOLID
- LINE MARKING DASHED
- TACTILE
- TRACK
- SIGN MULTIPLE POLES
- CONCRETE EDGE
- FENCE LOG
- FENCE MESH
- FENCE METAL
- UNKNOWN STRUCTURE
- WALL
- BANK BOTTOM
- BANK TOP
- LAWN / GRASS
- BUSH LINE
- TREE CANOPY
- DRAIN GRATE EDGE
- POWER LINES - OVERHEAD
- WATER EDGE
- CONTOURS MAJOR
- CONTOURS MINOR
- CADASTRAL BOUNDARY
- ROAD WIDENING

LEGEND

- TEMPORARY BENCHMARK - TBM
- HYDRANT (GROUND)
- WATER METER
- WATER TAP
- LIGHT POLE
- POWER DOME
- POWER POLE
- STEEL WIRE ANCHOR
- FUEL VENT
- DRAINAGE GULLY SQUARE
- DRAINAGE SIDE ENTRY PIT
- DRAINAGE MANHOLE
- COMMS MANHOLE
- COMMS PIT
- SEWER MANHOLE
- SEWER PIT
- UNKNOWN PIT
- GATE CENTRE
- GUIDE POST
- MAIL BOX
- OTHER POLE OR POST
- FINGER SIGN
- ADVERTISING SIGN
- SIGN ONE POLE
- BUSH
- TREE STUMP
- TREE
- NATURAL SURFACE POINT

NOTE:
AHD DATUM BASED ON SSM JAND16A VIA TRIG OBSERVATION.

PLEASE REFER TO THE DIGITAL DATA FILE FOR ADDITIONAL SPATIAL INFORMATION.

NOTE:
THE BOUNDARIES SHOWN ON THIS PLAN WERE RE-ESTABLISHED AS PART OF THIS SURVEY.

RM SURVEYS
PHONE: 08 9457 7900
EMAIL: INFO@RMSURVEYS.COM.AU
WEBSITE: RMSURVEYS.COM.AU

0 10 20 30 40 50 60 70 80
SCALE 1:1000
ALL DISTANCES IN METRES
PAPER SIZE A3

Endorsed by ISO 45001 certified, ISO 9001 certified, ISO 14001 certified

CLIENT:
WINDSOR KNIGHT PROPERTIES

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SURVEYOR	AF
SURVEY DATE	28/07/2025
VERTICAL DATUM	AHD
HORIZONTAL DATUM	PCG2020

REV	DESCRIPTION	DRN	CKD	APP	DATE
0	INITIAL ISSUE	AS	JX	DW	08/08/2025

FEATURE AND CONTOUR SURVEY

LOT 1, 300 AND 4308 YANGEBUP ROAD
CITY OF COCKBURN

JOB No.	DRAWING No.	REV
WIND-YANG	WIND-YANG-DW-001	0

Legend

- Existing Site Boundary
- Proposed Site Boundary
- Vehicle Entry/Exit
- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

Note:

All NLA measured in accordance with PCA method of measurement.

This plan remains preliminary and subject to design evolution and authority approvals.

CAR PARKING	NUMBERS
On-Site Bays North-West	50
Online Pick Up Bays	6
Street Bays	12
On-Site Bays	211
Pad Site Bays	33
TOTAL BAYS PROVIDED	312
Motorcycle Bays	7

BIKE PARKING	NUMBERS
Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	62

Scale 1:1000 @ A3

0 10 20 30 40 50

Site Plan

place fabric.

Legend

- Existing Site Boundary
- Proposed Site Boundary
- Vehicle Entry/Exit
- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

Development Summary

Anticipated Use	Class in LSP3	Area
Major Retail	Shop	5,360m²
Consulting Room	Consulting Room	100m²
Mini Major	Shop	600m²
Liquor	Liquor Store	160m²
Retail/ Commercial	Shop	400m²
Food & Beverage	Restaurant/Fast Food	375m²
Fast Food	Fast Food	620m²
Fuel	Service Station	240m²
Amenities	-	
Services	-	
TOTAL NLA		**7,855m²**

Note:

All NLA measured in accordance with PCA method of measurement.

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CAR PARKING	NUMBERS
On-Site Bays North-West	50
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Street Bays	12
On-Site Bays	211
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Motorcycle Bays	7

BIKE PARKING	NUMBERS
Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	62

Scale 1:1000 @ A3

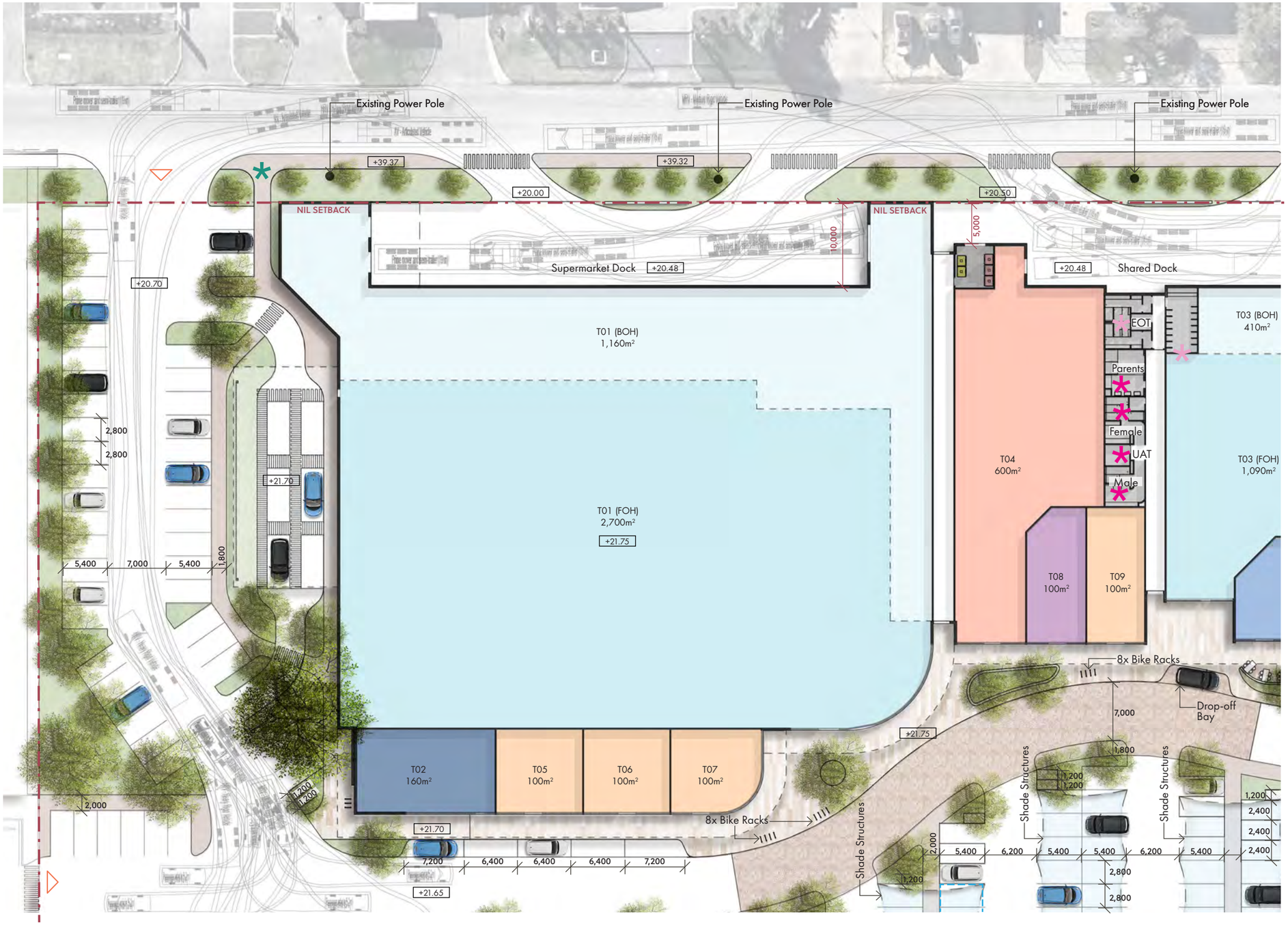
0 10 20 30 40 50

Ground Floor Plan

Pg 5 Rev C

Beeliar SC 2433 07 2026

place fabric.



Legend

- Existing Site Boundary
- Proposed Site Boundary
- Vehicle Entry/Exit
- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

Development Summary

Anticipated Use	Class in LSP3	Area
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Mini Major	Shop	600m²
Liquor	Liquor Store	160m²
Retail/ Commercial	Shop	400m²
Food & Beverage	Restaurant/Fast Food	375m²
Fast Food	Fast Food	620m²
Fuel	Service Station	240m²
Amenities	-	
Services	-	
TOTAL NLA		**7,855m²**

Note:

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Online Pick Up Bays	6
Street Bays	12
On-Site Bays	211
Pad Site Bays	33
TOTAL BAYS PROVIDED	312
Motorcycle Bays	7

BIKE PARKING	NUMBERS
Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	62

Scale 1:500 @ A3

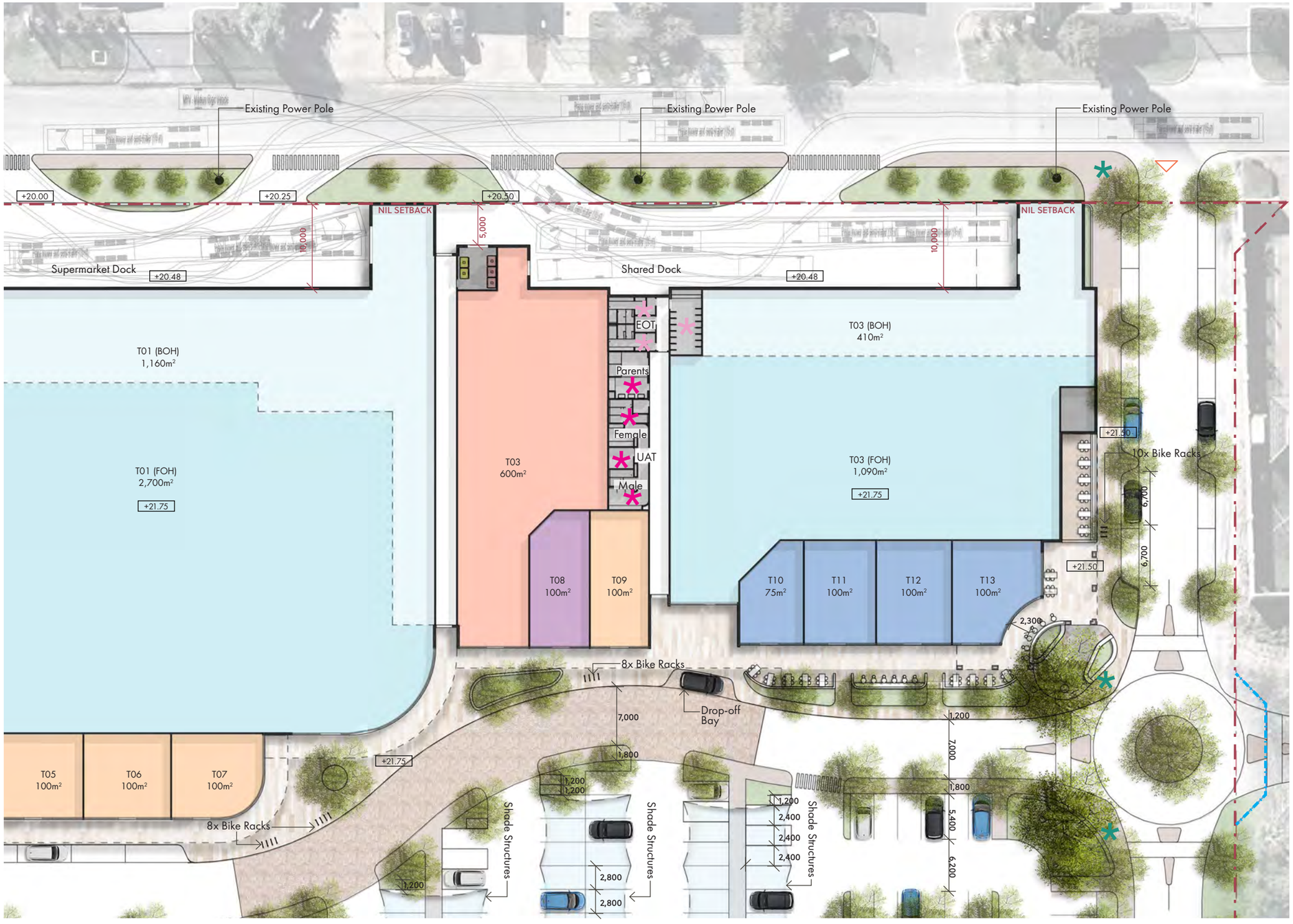
0 5 10 15 20 25

Floor Plan - North West

Pg 6 Rev C

Beeliar SC 2433 07 2026

place fabric.



Legend

- Existing Site Boundary
- Proposed Site Boundary
- Vehicle Entry/Exit
- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

Development Summary

Anticipated Use	Class in LSP3	Area
Major Retail	Shop	5,360m²
Consulting Room	Consulting Room	100m²
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Liquor	Liquor Store	160m²
Retail/ Commercial	Shop	400m²
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Fast Food	Fast Food	620m²
Fuel	Service Station	240m²
Amenities	-	
Services	-	
TOTAL NLA		**7,855m²**

Note:

All NLA measured in accordance with PCA method of measurement.

This plan remains preliminary and subject to design evolution and authority approvals.

CAR PARKING
On-Site Bays North-West
Online Pick Up Bays
Street Bays
On-Site Bays
Pad Site Bays
TOTAL BAYS PROVIDED
Motorcycle Bays

BIKE PARKING	**NUMBERS**
Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	62

Scale 1:500 @ A3

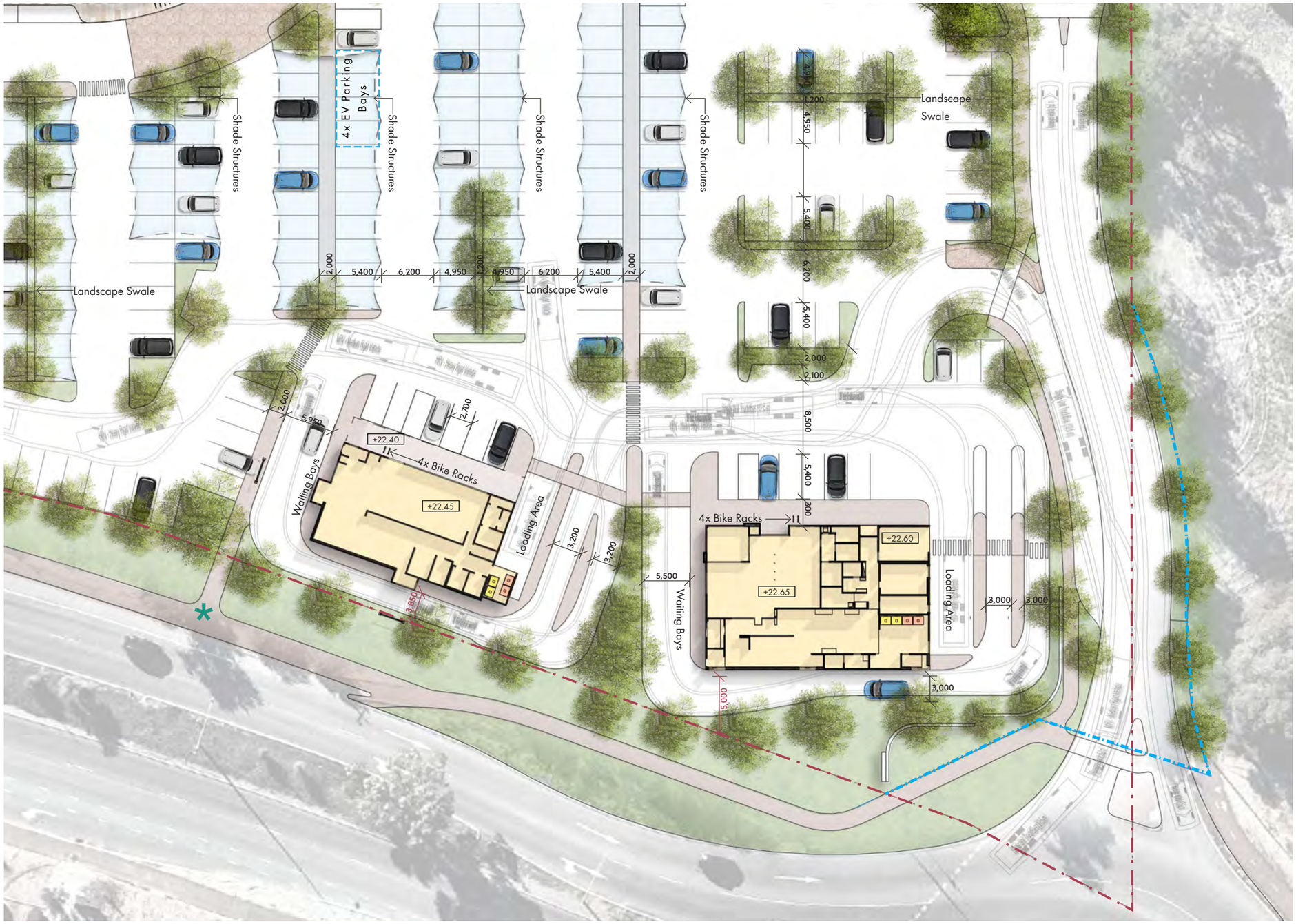
0 5 10 15 20 25

Floor Plan - North East

Pg 7 Rev C

Beeliar SC 2433 07 2026

place fabric.



Legend

- Existing Site Boundary
- Proposed Site Boundary
- Vehicle Entry/Exit
- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

Development Summary

Anticipated Use	Class in LSP3	Area
Major Retail	Shop	5,360m²
Consulting Room	Consulting Room	100m²
Mini Major	Shop	600m²
Liquor	Liquor Store	160m²
Retail/ Commercial	Shop	400m²
Food & Beverage	Restaurant/Fast Food	375m²
Fast Food	Fast Food	620m²
Fuel	Service Station	240m²
Amenities	-	
Services	-	
TOTAL NLA		**7,855m²**

Note:

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On-Site Bays North-West	50
Online Pick Up Bays	6
Street Bays	12
On-Site Bays	211
Pad Site Bays	33
TOTAL BAYS PROVIDED	312
Motorcycle Bays	7

BIKE PARKING	NUMBERS
Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	62

Scale 1:500 @ A3

0 5 10 15 20 25

Floor Plan - South East

Pg 8 Rev C

Beeliar SC 2433 07 2026

place fabric.

Legend

- Existing Site Boundary
- Proposed Site Boundary
- Vehicle Entry/Exit
- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

Development Summary

Anticipated Use	Class in LSP3	Area
Major Retail	Shop	5,360m²
Consulting Room	Consulting Room	100m²
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Liquor	Liquor Store	160m²
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Fast Food	Fast Food	620m²
Fuel	Service Station	240m²
Amenities	-	
Services	-	
TOTAL NLA		**7,855m²**

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On-Site Bays	211
Pad Site Bays	33
TOTAL BAYS PROVIDED	312
Motorcycle Bays	7

BIKE PARKING	NUMBERS
Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	62

Scale 1:500 @ A3

0 5 10 15 20 25

Floor Plan - South West

Pg 9 Rev C

Beeliar SC 2433 07 2026

place fabric.

Materiality & Character

Pg 10 Rev C

Beeliar SC 2433 07 2026

place fabric.

South Elevation

East Elevation

West Elevation

North Elevation

Scale 1:500 @ A3

0 5 10 15 20 25

Site Elevations

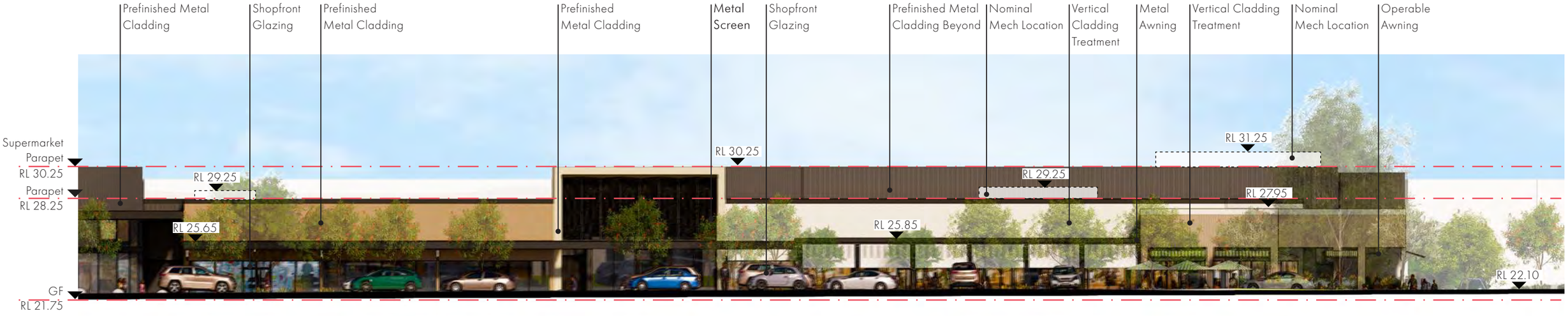
Pg 11 Rev C

Beeliar SC 2433 07 2026

place fabric.

South Elevation A **South Elevation B**

South Elevation A



South Elevation B

Scale 1:250 @ A3

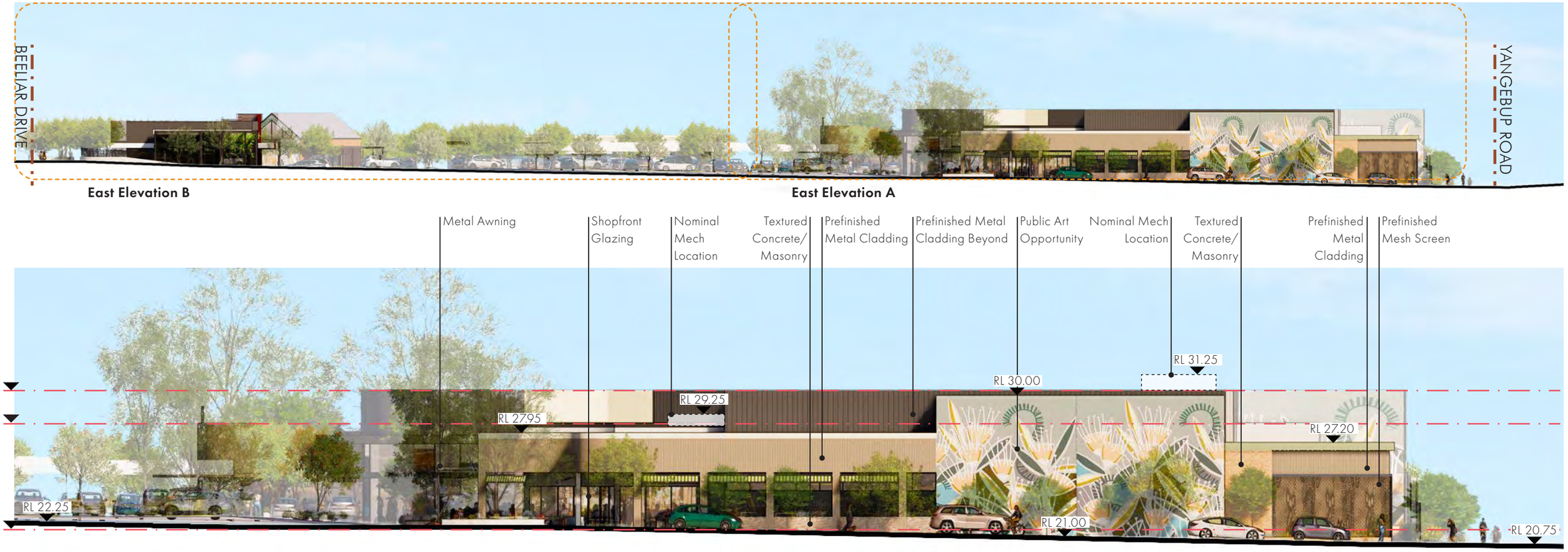
0 5 10 15

South Elevation

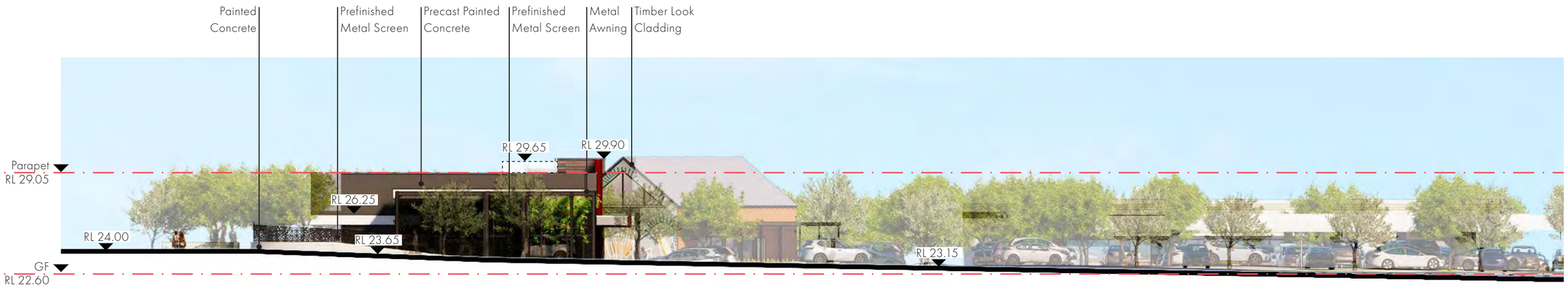
Pg 12 Rev C

Beeliar SC 2433 07 2026

place fabric.



East Elevation A



East Elevation B

Scale 1:250 @ A3

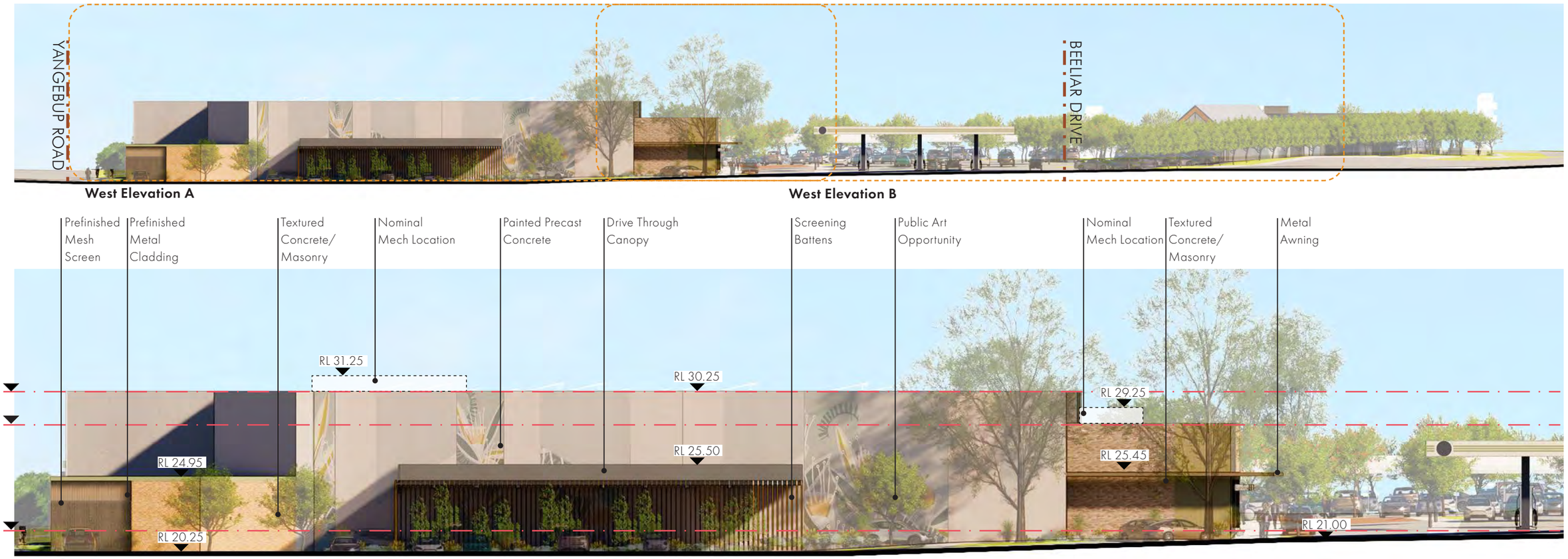
0 5 10 15

East Elevation

Pg 13 Rev C

Beeliar SC 2433 07 2026

place fabric.



West Elevation B

Scale 1:250 @ A3

0 5 10 15

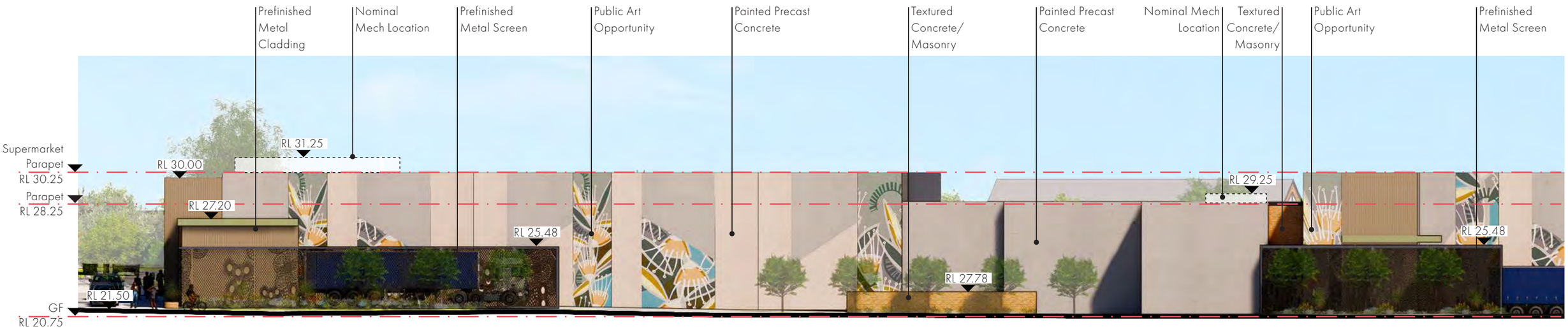
West Elevations

Pg 14 Rev C

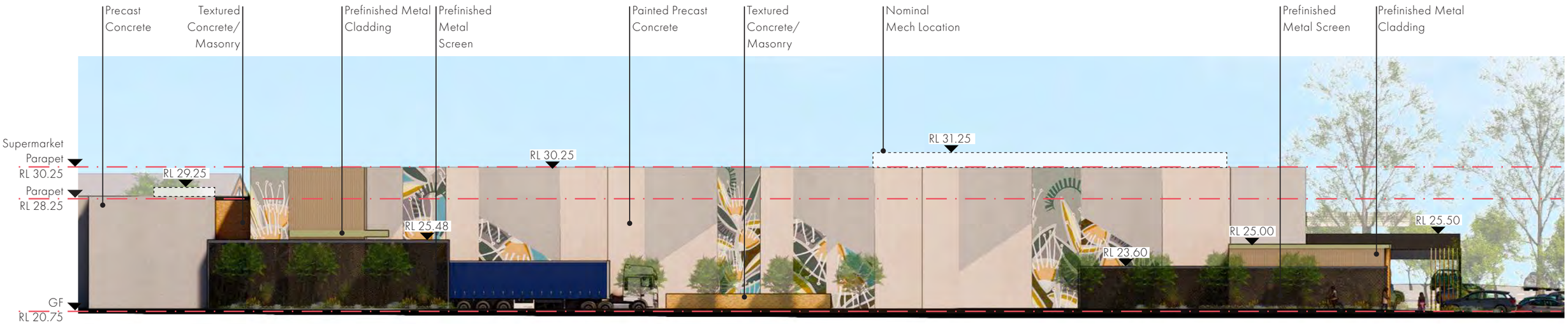
Beeliar SC 2433 07 2026

place fabric.

North Elevation A **North Elevation B**



North Elevation A



North Elevation B

Scale 1:250 @ A3

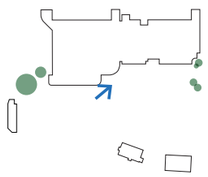
0 5 10 15

North Elevations

Pg 15 Rev C

Beeliar SC 2433 07 2026

place fabric.



3D Render

Pg 16 Rev C

Beeliar SC 2433 07 2026

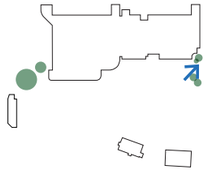
place fabric.

3D Render

Pg 17 Rev C

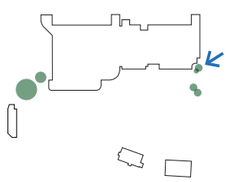
Beeliar SC 2433 07 2026

place fabric.



3D Render

place fabric.

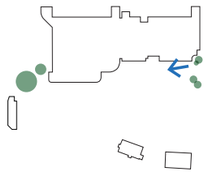


3D Render

Pg 19 Rev C

Beeliar SC 2433 07 2026

place fabric.

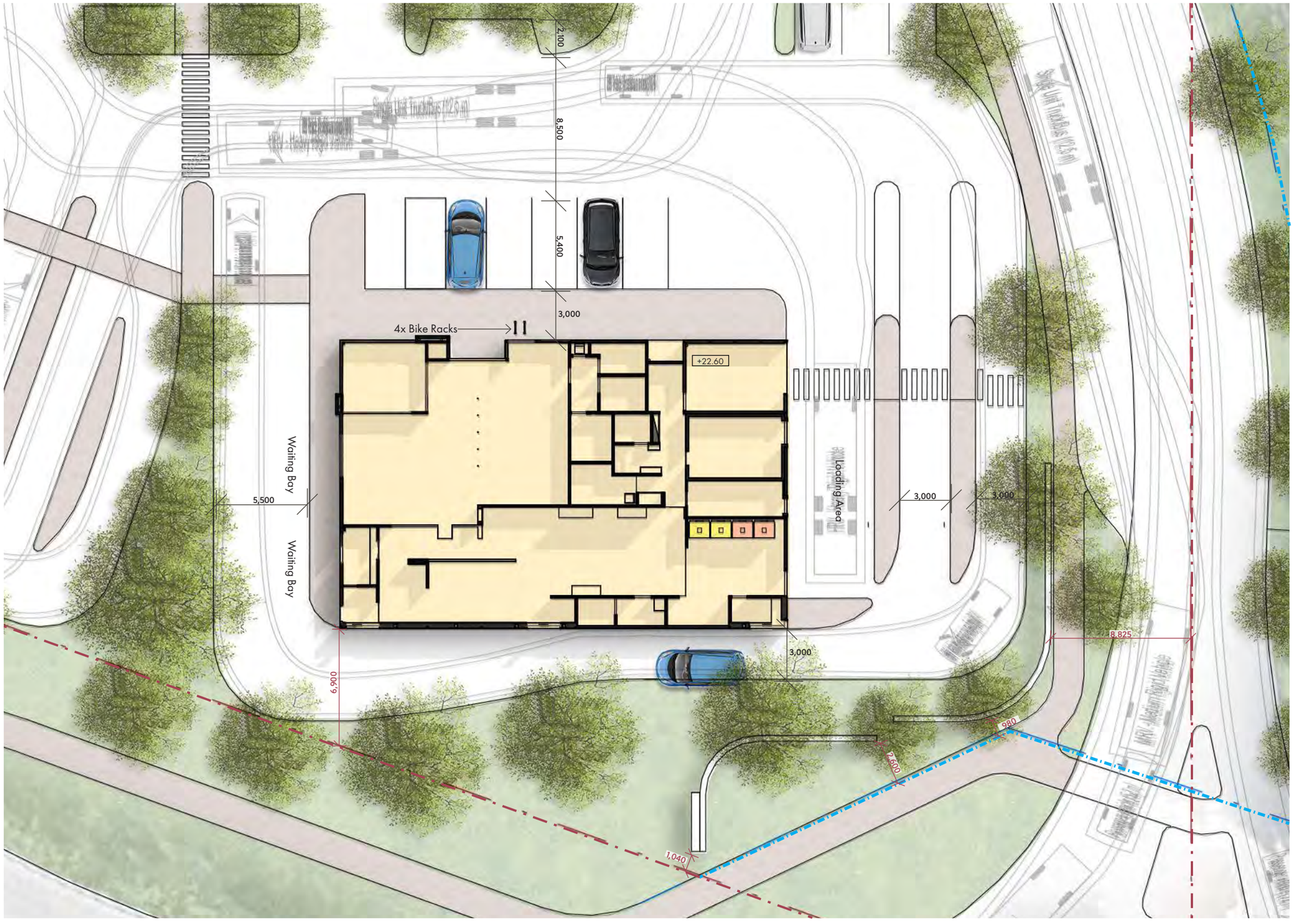


3D Render

Pg 20 Rev C

Beeliar SC 2433 07 2026

place fabric



Legend

- Existing Site Boundary
- Proposed Site Boundary
- Vehicle Entry/Exit
- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

Development Summary

Anticipated Use	Class in LSP3	Area
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Liquor	Liquor Store	160m²
Retail/ Commercial	Shop	400m²
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Fast Food	Fast Food	620m²
Fuel	Service Station	240m²
Amenities	-	
Services	-	
TOTAL NLA		**7,855m²**

Note:

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This plan remains preliminary and subject to design evolution and authority approvals.

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Street Bays	12
On-Site Bays	211
Pad Site Bays	33
TOTAL BAYS PROVIDED	312
Motorcycle Bays	7

BIKE PARKING	NUMBERS
Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	62

Scale 1:250 @ A3

0 5 10 15

Pad Site 1 - Ground Floor

Pg 21 Rev C

Beeliar SC 2433 07 2026

place fabric.

North Elevation

South Elevation

Scale 1:200 @ A3

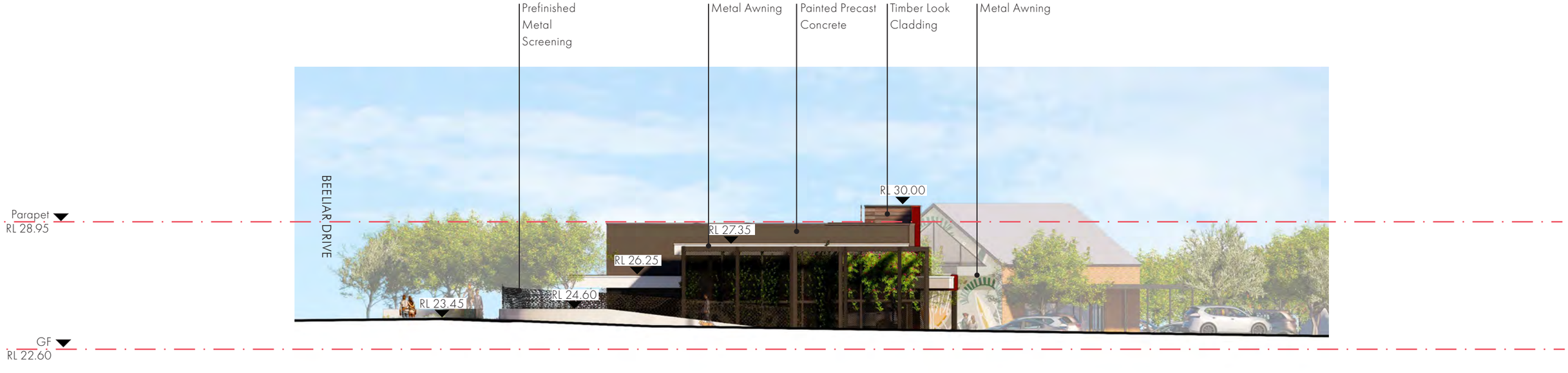
0 1 2 3 4 5 10

Pad Site 1 - North & South Elevations

Pg 22 Rev C

Beeliar SC 2433 07 2026

place fabric



East Elevation

West Elevation

Scale 1:200 @ A3

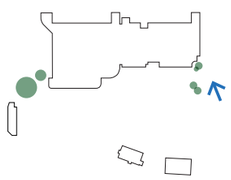
0 1 2 3 4 5 10

Pad Site 1 - East & West Elevations

Pg 23 Rev C

Beeliar SC 2433 07 2026

place fabric

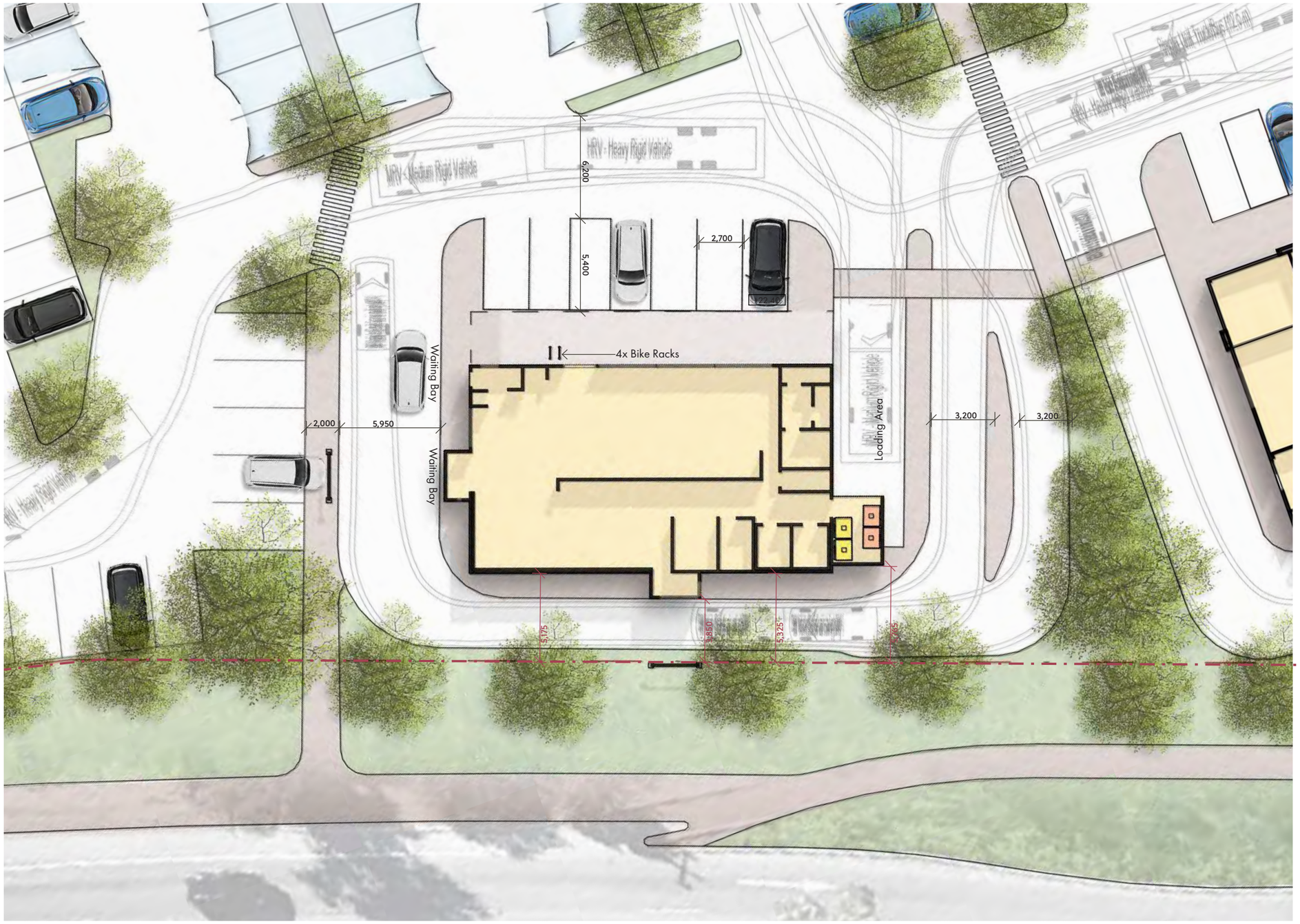


3D Render

Pg 24 Rev C

Beeliar SC 2433 07 2026

place fabric



Legend

- Existing Site Boundary
- Proposed Site Boundary
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- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

Development Summary

Anticipated Use	Class in LSP3	Area
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TOTAL NLA		**7,855m²**

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On-Site Bays	211
Pad Site Bays	33
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Motorcycle Bays	7

BIKE PARKING	NUMBERS
Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	62

Scale 1:250 @ A3

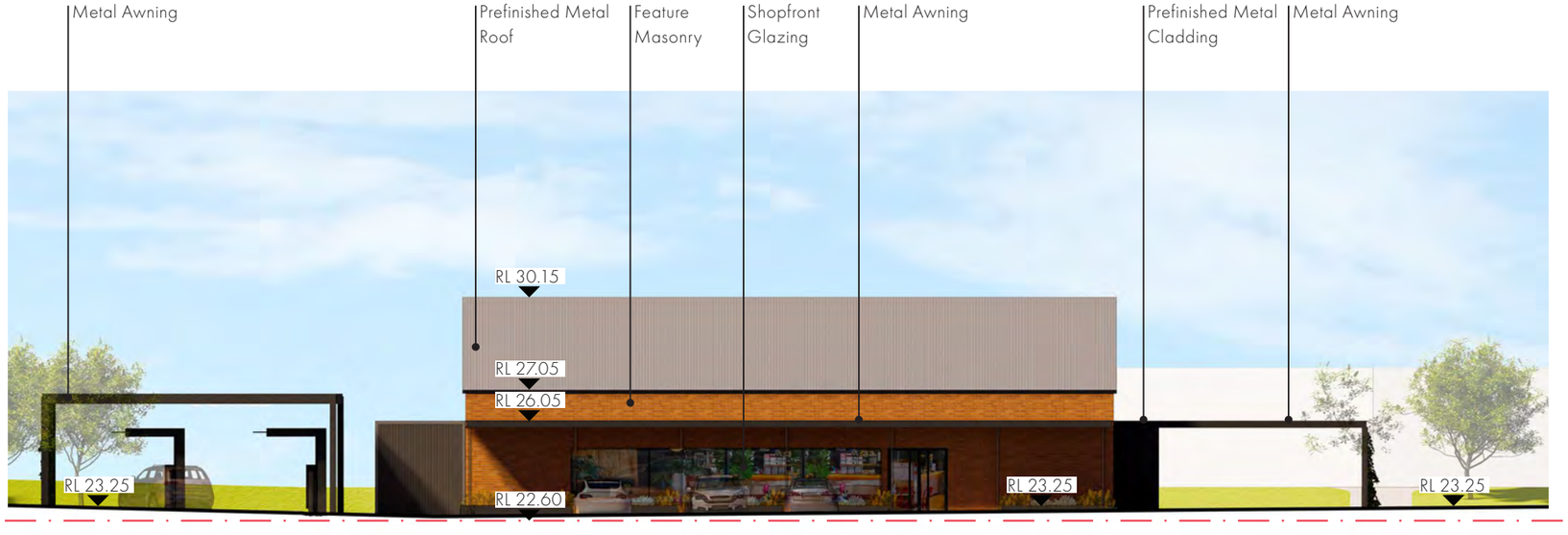
0 5 10 15

Pad Site 2 - Ground Floor

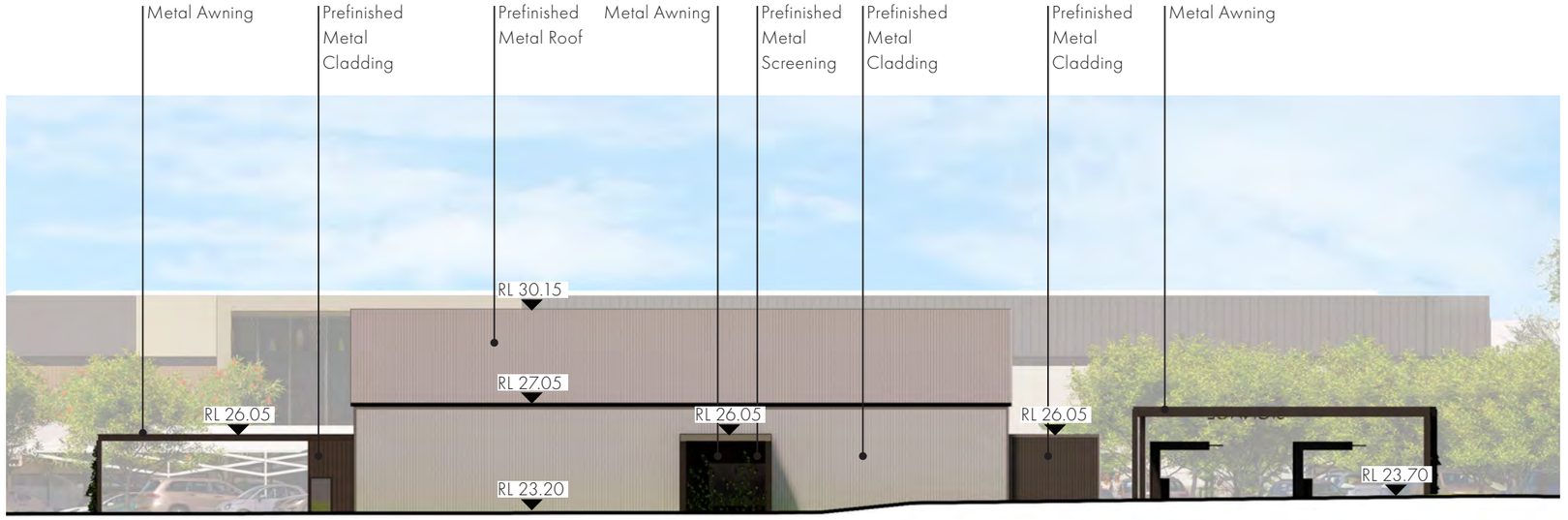
Pg 25 Rev C

Beeliar SC 2433 07 2026

place fabric.



North Elevation



South Elevation

Scale 1:200 @ A3

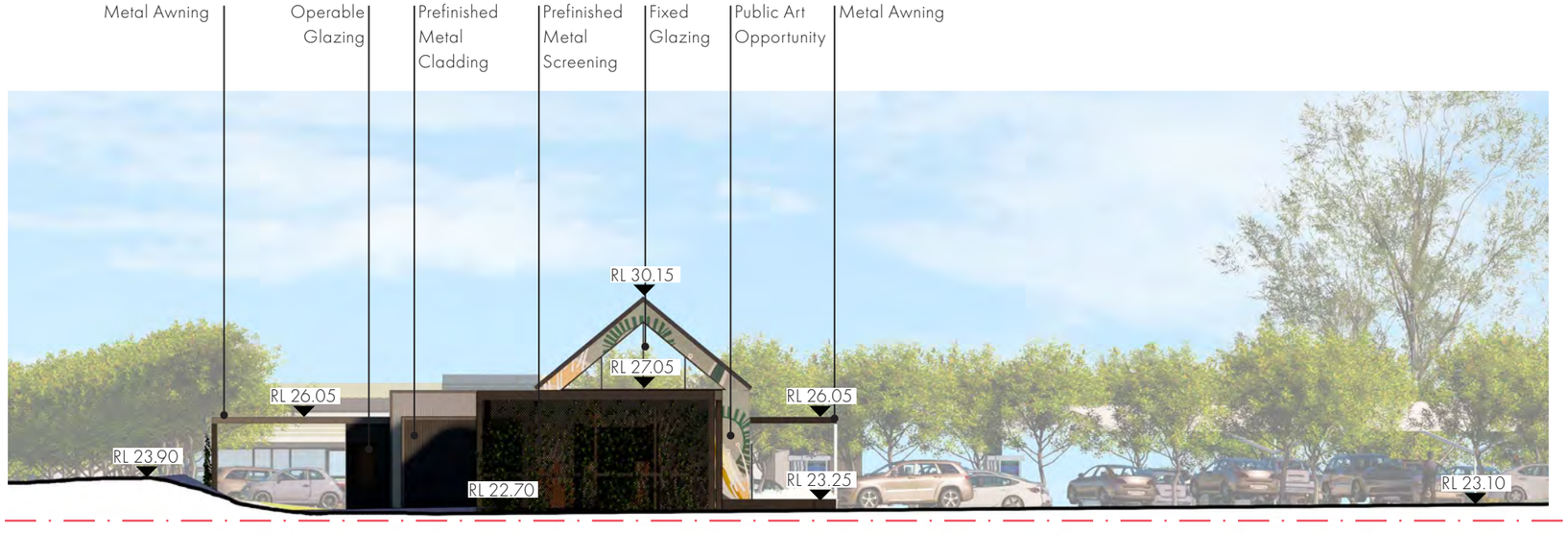
0 1 2 3 4 5 10

Pad Site 2 - North & South Elevations

Pg 26 Rev C

Beeliar SC 2433 07 2026

place fabric.



East Elevation

West Elevation

Scale 1:200 @ A3

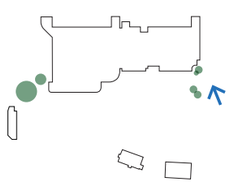
0 1 2 3 4 5 10

Pad Site 2 - East & West Elevations

Pg 27 Rev C

Beeliar SC 2433 07 2026

place fabric.

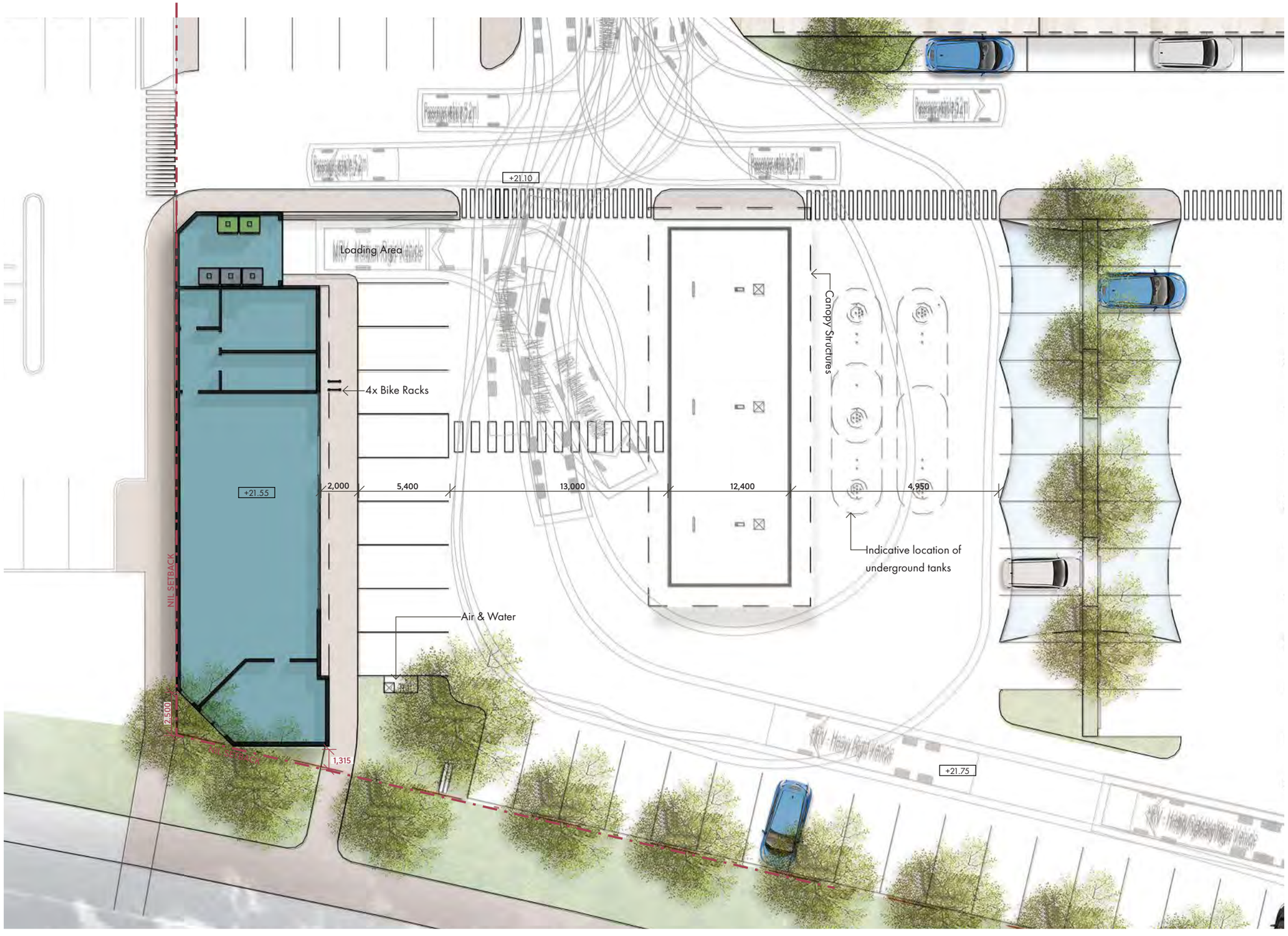


3D Render

Pg 28 Rev C

Beeliar SC 2433 07 2026

place fabric.



Legend

- Existing Site Boundary
- Proposed Site Boundary
- Vehicle Entry/Exit
- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

Development Summary

Anticipated Use	Class in LSP3	Area
Major Retail	Shop	5,360m²
Consulting Room	Consulting Room	100m²
Mini Major	Shop	600m²
Liquor	Liquor Store	160m²
Retail/ Commercial	Shop	400m²
Food & Beverage	Restaurant/Fast Food	375m²
Fast Food	Fast Food	620m²
Fuel	Service Station	240m²
Amenities	-	
Services	-	
TOTAL NLA		**7,855m²**

Note:

All NLA measured in accordance with PCA method of measurement.

This plan remains preliminary and subject to design evolution and authority approvals.

CAR PARKING	NUMBERS
On-Site Bays North-West	50
Online Pick Up Bays	6
Street Bays	12
On-Site Bays	211
Pad Site Bays	33
TOTAL BAYS PROVIDED	312
Motorcycle Bays	7

BIKE PARKING	NUMBERS
Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	62

Scale 1:250 @ A3

0 5 10 15

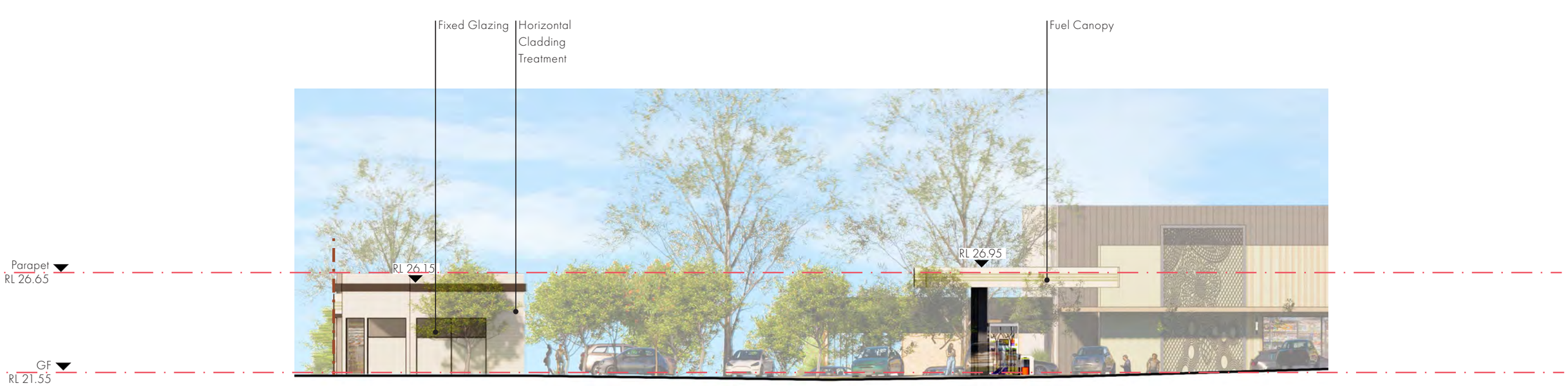
Fuel Site - Ground Floor

Pg 29 Rev C

Beeliar SC 2433 07 2026

place fabric.

North Elevation



South Elevation

Scale 1:200 @ A3

0 1 2 3 4 5 10

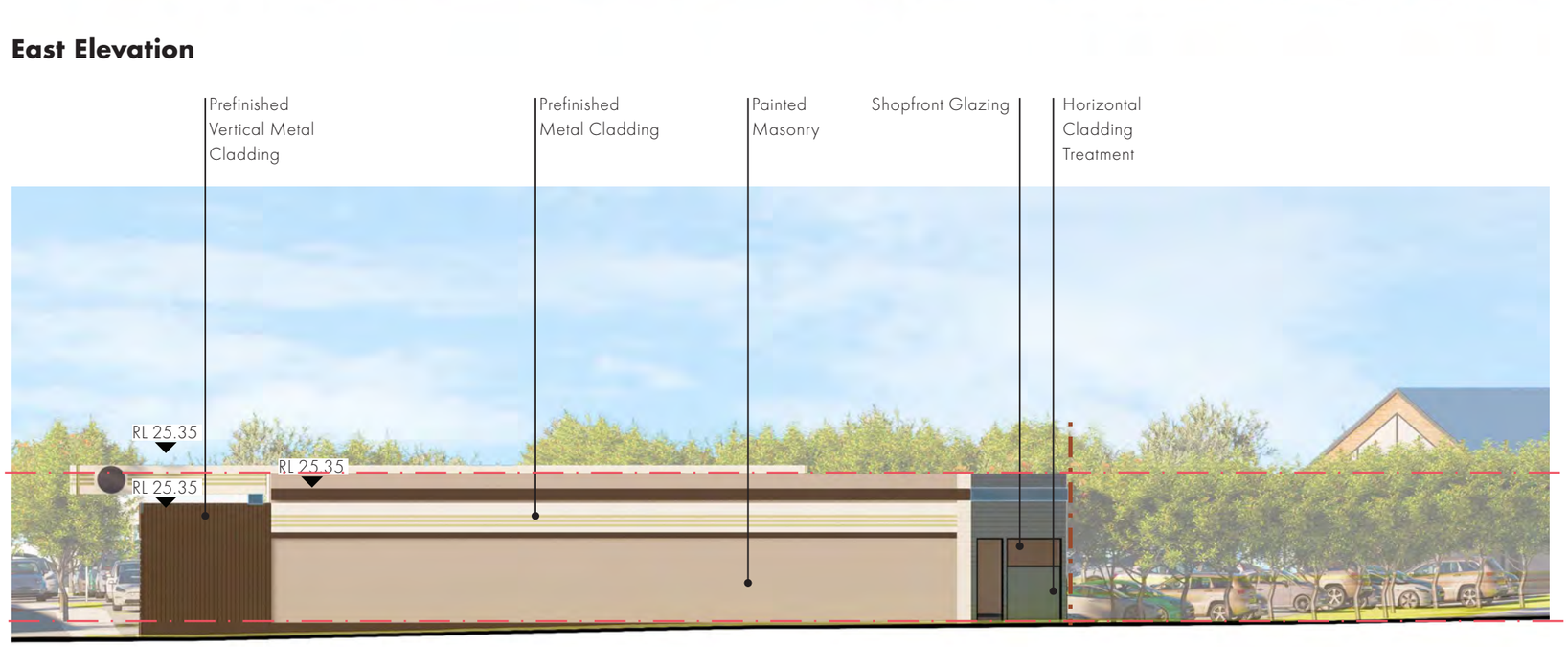
Fuel Site - North & South Elevations

Pg 30 Rev C

Beeliar SC 2433 07 2026

place fabric

East Elevation



West Elevation

Scale 1:200 @ A3

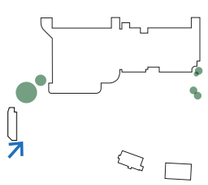
0 1 2 3 4 5 10

Fuel Site - East & West Elevations

Pg 31 Rev C

Beeliar SC 2433 07 2026

place fabric



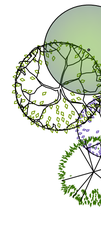
3D Render

place fabric.

REV	DATE	DWN	APP	DESCRIPTION
A	22.01.26	GM	KD	DA SUBMISSION
B	23.06.26	GM	KD	DA SUBMISSION - UPDATED
C	20.07.26	GM	KD	DA SUBMISSION - UPDATED

LEGEND

TREES



EXISTING TREES
TO BE RETAINED AND PROTECTED

VERY LARGE ENDEMIC TREES
EG. RUSTY GUM
CANOPY: 15m

LARGE ENDEMIC TREES
EG. RED IRON BARK
CANOPY: 10m

SELECTED MEDIUM TREES
EG. FLOODED GUM OR RIVER RED GUM
CANOPY: 12M

SELECTED MEDIUM TREES
EG. AGONIS
CANOPY: 6M

SELECTED MEDIUM TREE TO ROUNDABOUT - TO BE CONFIRMED
EG. SILVER PRINCESS
CANOPY: 5m

SELECTED SMALL CAR PARK TREES
EG. CORAL GUM OR FUCHSIA GUM
CANOPY: 4-5m

SELECTED SMALL CARPARK TREES
EG. WEEPING BOTTLEBRUSH
CANOPY: 4m

SELECTED SMALL AVENUE TREES
EG. NON-FRUITING OLIVE TREES
CANOPY: 4m

SELECTED SMALL TREES
EG. BROAD-LEAVED PAPERBARK OR PIN CUSHION HAKEA
CANOPY: 3-4m

NEW TREE REPLACEMENT AT A RATIO OF 2:1 FOR EACH REMOVED EXISTING TREE

FEATURE PLANTS

GRASS TREES

PLANTING

PLANTING TYPE 01
GROUNDCOVERS

PLANTING TYPE 02
SHRUBS

PLANTING TYPE 03
CAR PARK INTERNAL PLANTING MIX UP TO 600mmH

PLANTING TYPE 04
STRAPPY/MIXED 600-1500mmH

PLANTING TYPE 05
STRAPPY/CASCADING MIXES TO RAISED PLANTERS

ORGANIC MULCH
75mm THICK

SURFACE TREATEMENT

TYPE 01 - PEDESTRIAN PATHWAY
INSITU CONCRETE - COLOUR TBC

TYPE 02 - FEATURE PAVING
LARGE FORMAT PAVERS - TYPE 01 TBC

TYPE 03 - FEATURE PAVING
LARGE FORMAT PAVERS - TYPE 02 TBC

TYPE 04 - PERMEABLE SURFACE
COMPACTED GRAVEL FINES

TYPE 05 - SHARED SPACE / CROSSINGS
INSITU CONCRETE - COLOUR TBC

TYPE 06 - PERMEABLE PAVING TO PARKING BAYS
UNIT PAVERS EG. MIDLAND BRICK AQUA TRI-PAVE

TYPE 07 -CROSSING
UNIT PAVERS / LINE MARKING TBC

MISC

SHADE STRUCTURE OR SHADE SAILS
REFER ARCHITECTURAL PLANS
FOR FINAL LAYOUT

FEATURE BOULDERS

SEATING WALLS

BENCH SEAT

NOTES

1. GENERAL

1.1 DRAINAGE FROM THE RAISED PLANTER AREAS AND POTS TO BE PROVIDED BY BUILDER
1.2 ALL SCALES ARE AS NOTED AND TO SUIT A1 PAPER SIZE
1.3 THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION UNLESS REVISED '0' ISSUED FOR CONSTRUCTION AND SIGNED AND APPROVED BY PROJECT MANAGER/SUPERINTENDENT.
1.4 PLANTING SETOUT SHOULD BE CHECKED BY SUPERINTENDENT BEFORE INSTALLATION BEGINS.

2. SOIL PREPARATION

2.1 ALL AREAS ARE TO BE FINE GRADED EVENLY TO CONFORM TO KERB LEVELS AND SURROUNDING FINISHES.
2.2 SURFACES SHALL BE FREE FROM DEPRESSIONS, IRREGULARITIES AND NOTICEABLE CHANGES IN GRADE. GENERALLY, GRADES SHALL DEVIATE IN LEVEL NO GREATER THAN 20mm IN ONE LINEAR METRE.
2.3 PLANTED AREAS SHALL BE SPREAD WITH MIN. 50mm OF APPROVED STANDARD SOIL CONDITIONER THAT SHALL BE RIPPED INTO EXISTING SOIL TO A MIN. DEPTH OF 200mm.
2.4 RAISED PLANTER AREAS AND POTS SHALL BE INSTALLED WITH APPROPRIATE DRAINAGE CELL, AGGREGATE AND GEOTEXTILE MEMBRANE BELOW SOIL.
2.5 FILL SOIL TO RAISED PLANTER AREAS AND POTS TO BE APPROVED LIGHTWEIGHT LANDSCAPE MIX.
2.6 ALL SITE AND IMPORTED SOILS, POTTING MIX, SOIL CONDITIONERS AND MULCHES TO BE IN ACCORDANCE TO RELEVANT AUSTRALIAN STANDARDS.

3. PLANTING

3.1 PLANTED AREAS SHALL BE MULCHED WITH AN ORGANIC (WOODCHIP) MULCH UNLESS OTHERWISE STATED TO A MINIMUM DEPTH OF 75mm.
3.2 ADVANCED TREES SHALL BE STAKED W/ 50x50mm DIA HARDWOOD POSTS. POSTS SHALL BE PAINTED BLACK AND INSTALLED TO A MIN DEPTH OF 500mm. TREES SHALL BE SECURED TO POLES W/ RUBBER TIES IN FIGURE 8.
3.3 TREES PLANTED WITH IN 1000mm OF BOUNDARY WALLS AND/OR PARKING AREAS SHALL BE INSTALLED WITHIN 600mm DEPTH NYLEX ROOT BARRIER MEMBRANE. MEMBRANE SHALL BE INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS.
3.4 FINAL PLANTING SHALL BE SELECTED FROM PLANTING PALETTE SCHEDULE.
3.5 PLANTS TO BE SET OUT IN EVEN SPACING TO FILL THE DESIGNATED AREAS.
3.6 IN AREAS OF MIXED PLANTING, SPECIES TO BE SPREAD OUT AT RANDOM, IN GROUPINGS OF 2 OR 3.
3.7 PLANTS SHALL BE SUPPLIED FROM AN INDUSTRY ACCREDITED WHOLESALE NURSERY. PLANTS SHALL BE IN APPROPRIATE SIZE FOR THE LISTED POT SIZE AND IN GOOD HEALTH.

4. IRRIGATION

4.1 PLANTING TO GROUND LEVEL TO BE IRRIGATED VIA A FULLY AUTOMATIC SYSTEM FROM MAINS.
4.2 WATER PRESSURE TO HAVE A MINIMUM FLOW RATE OF 30L/pm AT 300kPA FROM THE WATER CONNECTION POINT (OR AS STIPULATED).
4.3 CONTROLLER TO BE LOCATED IN SERVICE ROOM (OR AS SHOWN ON IRRIGATION DETAILS TO FUTURE DETAIL).
4.4 SLEEVES BENEATH PAVED SURFACES AND TO RAISED PLANTING AREAS TO BE PROVIDED BY OTHERS.
4.5 IRRIGATION TO GARDEN BEDS TO BE NETAFIM TECHLINE, SUB SURFACE IRRIGATION. INSTALLED TO MANUFACTURERS SPECIFICATION. IRRIGATION TO TURF TO BE POP UP SPRINKLERS; MP ROTATORS OR SIMILAR. IRRIGATION TO TREES TO BE BE BUBBLERS; TORO FLOOD BUBBLERS OR SIMILAR.
4.6 ASCON DRAWINGS, MANUALS AND 12 MONTH WARRANTY SHALL BE SUPPLIED BY THE IRRIGATION CONTRACTOR TO THE CLIENT UPON PRACTICAL COMPLETION.
4.7 PLEASE REFER TO IRRIGATION DRAWING SET FOR FINAL LAYOUT AND SCHEDULE (TO FUTURE DETAIL).

REFER TO PAGE 102 PLANTING PLAN

NOTE:
TREE PLANTING LOCATIONS SHOWN ON THIS PLAN IS SUBJECT TO DETAILED DESIGN. MINOR ADJUSTMENTS TO TREE POSITIONS MAY BE REQUIRED TO ACCOMMODATE THE FINAL TRAFFIC, PARKING, SERVICING, ENGINEERING AND FINISHED LEVEL DESIGN, WHILE MAINTAINING THE OVERALL LANDSCAPE DESIGN INTENT.

PROPOSED LEVELS AND GRADING ARE SUBJECT TO DETAILED DESIGN AND ENGINEERING COORDINATION. FINAL LEVELS WILL BE DEVELOPED WITH CONSIDERATION OF EXISTING TREE RETENTION REQUIREMENTS, INCLUDING TREE ROOT ZONES. WHERE EXISTING TREES CANNOT BE RETAINED DUE TO DETAILED DESIGN REQUIREMENTS, REPLACEMENT TREE PLANTING WILL BE PROVIDED AT A MINIMUM RATIO OF 2:1.

LANDSCAPE CALCULATIONS:
- 8.5% LANDSCAPE AREA ACHIEVED WITHIN THE SITE
- 4 x EXISTING LARGE CANOPY TREES TO BE RETAINED AND PROTECTED
- 135 NEW TREES PROPOSED WITHIN THE PROPERTY
- 26 NEW VERGE TREES PROPOSED

THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION UNLESS APPROVED BY CLIENT AND REVISED '0' ISSUED FOR CONSTRUCTION

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DEVELOPMENT APPROVAL

JOB No. 0614 PAGE 101 REV C

SCALE 1:500 @A1

BEELIAR DRIVE VILLAGE
LANDSCAPE CONCEPT PLAN

WINDSOR KNIGHT
LOT 1 704 + 4308 YANGEBUP RD, COCKBURN CENTRAL

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REV	DATE	DWN	APP	DESCRIPTION
A	22.01.25	KD	KD	PLANTING PLAN
B	23.06.26	GM	KD	TREE SPECIES - UPDATED
C	20.07.26	GM	KD	TREE+SHRUB SPECIES - UPDATED

PLANTING IMAGES

TREES

AGOfle

MELvir

EUCcae

EUCfor

EUCgom

EUCtor

EUCtor

HAKlau

OLEeur

SELECTED SHRUB PLANTING

PITmis

RHAori

WESaus

WESgre

LEUbro

PIMfer

TEMret

HARvio

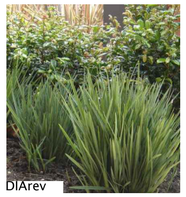
BANmen

BANatt

SELECTED STRAPPY PLANTING

CONcan

DIAeme


DIArev

FICnod

HYProb

LOMtan

ORTlax

ISOcer

ANIfla

ANIfla

SELECTED GROUNDCOVER PLANTING

MYOpar

ACAsal

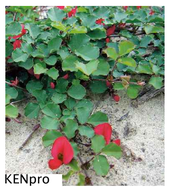
ADEcun

CARvir

EREblu

GREcri

HEMpun


KENpro

SELECTED FEATURE PLANT

XANpre

PRECEDENT IMAGES

PLANTING PALETTE

Symbol	Species	Common Name	Quantities	Size
Trees:				
AGOfle	Agonis flexuosa	WA Peppermint Tree	As Shown	100L/1000L
ANGcos	Angophora costata	Sydney red gum	As Shown	100L
EUCcae	Eucayptus caesia magna	Silver Princess	As Shown	100L
EUCfor	Eucalyptus forrestiana	Fuchsia Gum	As Shown	100L
EUCsid	Eucalyptus sideroxylon rosea	Red Iron Bark	As Shown	200L
EUCtor	Eucalyptus torquata	Coral Gum	As Shown	100L
EUCvic	Eucalyptus victrix	Little Ghost Gum	As Shown	100L
HAKlau	Hakea laurina	Pin Cushin Hakea	As Shown	45L
MELvir	Melaleuca viridiflora 'Red'	Broad-leaved Paperbark	As Shown	100L
OLEeur	Olea europe 'Swan Hill'	Olive Tree	As Shown	100L
Groundcovers and Cascading:				
ACAsal	Acacia saligna prostrate	Springtime Cascade Wattle	2/m 2	140mm
ADEcun	Adenanthos cuneatus	Coral Carpet	2/m 2	140mm
CARvir	Carobrotus virescens	Coastal Pigface	2/m 2	140mm
DICsil	Dichondra 'Silver Falls'	Silver Falls	2/m 2	140mm
EREblu	Eremophila 'Blue Horizon"	Blue Horizon	2/m 2	140mm
GREcri	Grevillea crithmifolia	Grevillea	2/m 2	140mm
GREgin	Grevillea 'Gin Gin Gem'	Gin Gin Gem	2/m 2	140mm
HEMpun	Hemiandra pungens	Snake Bush	2/m 2	140mm
KENpro	Kennedia prostrata	Running Postman	2/m 2	140mm
HIBsca	Hibbertia scandens	Snake Vine	2/m 2	140mm
MYOpar	Myoporum parvifolium 'Yareena'	Yareena	2/m 2	140mm
SCAhum	Scaevola humilis 'Purple Fusion'	Fan Flower	2/m 2	140mm
Grasses, Herbs, Rushes & Sedges:				
ANIhum	Anigozanthos humilis	Catspaw	3/m 2	140mm
CONcan	Conostylis candicans	Grey Cottonheads	3/m 2	140mm
DIAeme	Dianella tasmanica 'Emerald Arch'	Emerald Arch	3/m 2	140mm
DIArev	Dianella revoluta	Blue flax lilly	3/m 2	140mm
FICnod	Ficinia nodosa	Knobby Club Rush	3/m 2	140mm
ISOcer	Isolepis cernua	Nodding Club-rush	3/m 2	140mm
HYProb	Hypocalymma robustum	White Myrtle	3/m 2	140mm
LIRjus	Liriope 'Just Right'	Just Right	3/m 2	140mm
LOMtan	Lomandra 'Tanika'	Tanika	3/m 2	140mm
ORTlax	Orthrosanthus laxus	Morning Iris	3/m 2	
Shrubs:				
BANatt	Banksia attenuata dwarf	Dwarf Candlestick Banksia	3/m 2	200mm
BANmen	Banksia menziesii dwarf	Dwarf Firewood Banksia	3/m 2	200mm
LEUbro	Leucophyta brownii	Silver Cushion Bush	3/m 2	200mm
OLEaxi	Olearia axillaris	Coastal Daisy	3/m 2	200mm
PIMfer	Pimelea ferruginea	Rice Flower	3/m 2	200mm
PITmis	Pittosporum tobira 'Miss Muffet'	Miss Muffet	3/m 2	200mm
RHAori	Rhapiolepsis 'Oriental Pearl'	Dwarf Indian Hawthorn	2/m 2	200mm
TEMret	Templetonia Retusa	Cockies Tounge	2/m 2	200mm
WESaus	Westringia 'Aussie Box'	Aussie Box	3/m 2	200mm
WESgre	Westringia 'Grey Box'	Grey Box	3/m 2	200mm
Shade Planting:				
CHOcor	Chorizema cordata	Egg and Bacon Plant	3/m 2	140mm
CORdus	Correa 'Dusky Bells'	Dusky Bells	3/m 2	140mm
DARoit	Darwinis citriodora	Darwinia	2/m 2	140mm
DICrep	Dicondra repens	kidney plant	3/m 2	140mm
LIRjus	Liriope 'Just Right'	Just Right	3/m 2	140mm
MYOpor	Myoporum parvifolium 'Yareena'	Yareena	2/m 2	140mm
OPHjap	Ophiopogon japonicus	Mondo Grass	3/m 2	140mm
PHIxan	Philodendron Xanadu	Xanadu	3/m 2	200mm
SANtri	Sansevieria trifasciata laurentii	Mother-in-law's Tongue	3/m 2	200mm
VIOhed	Viola hederacea	Native Violet	3/m 2	200mm
Feature Plants:				
ANIfla	Anigozanthos flavidus	Kangaroo Paw	As Shown	12L
BANmen	Banksia menziesii 'dwarf'	Menzies Banksia Dwarf	As Shown	12L
HARvio	Hardenbergia violaceae	Native Wisteria	As Shown	12L
XANpre	Xanthorrhoea preissii	Grass Tree	As Shown	MTP
ZAMfur	Zamia furfuracea	Cardboard Palm	As Shown	12L
Climbing Plants:				
HARwhi	Hardenbergia violaceae 'White Out'	White Native Wisteria	As Shown	200mm
TRAjas	Trachelospermum jasminoides	Star Jasmine	As Shown	200mm

REFER PAGE 101 FOR PLAN AND NOTES

THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION UNLESS APPROVED BY CLIENT AND REVISED '0' ISSUED FOR CONSTRUCTION

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DEVELOPMENT APPROVAL

JOB No. 0614 PAGE 102 REV C

BEELIAR DRIVE VILLAGE
LANDSCAPE PLANTING PALETTE

WINDSOR KNIGHT
LOT 1 704 + 4308 YANGEBUP RD, COCKBURN CENTRAL

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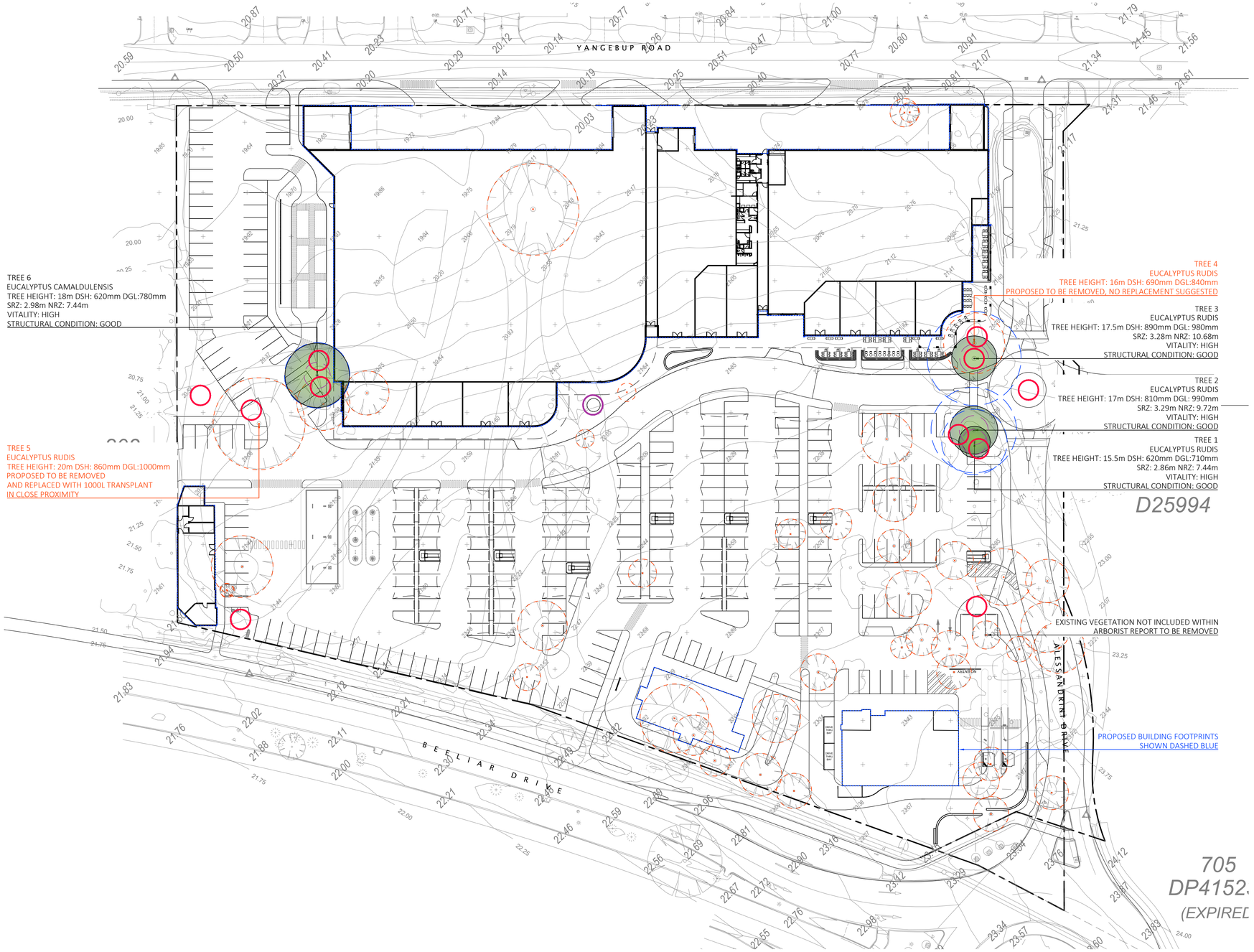

REV	DATE	DWN	APP	DESCRIPTION
A	23.06.26	GM	KD	DA SUBMISSION
B	20.07.26	GM	KD	NOTES AMENDED
C	27.07.26	KD	KD	POTENTIAL TREE LOCATIONS NOMINATED

LEGEND

TREES

EXISTING TREES
TO BE RETAINED

EXISTING TREES/VEGETATION
TO BE REMOVED

NRZ - NOTIONAL ROOT ZONE

SRZ - STRUCTURAL ROOT ZONE

POTENTIAL TREE LOCATIONS FOR REPLACEMENT TREES SHOULD THE EXISTING TREES PROPOSED FOR RETENTION NEED TO BE REMOVED (REFER NOTE BELOW)

EXISTING TREES - SITE PHOTOS

NOTES

THIS PLAN HAS BEEN PREPARED BASED ON:
- FEATURE AND CONTOUR SURVEY, COMPLETED BY RM SURVEYS , REV 0 DATED 08.08.2025
- ARBORICULTURAL ASSESSMENT, BEELAIR DRIVE SHOPPING CENTRE - 2026, CONDUCTED BY CLADDIC TREE SERVICES/GENUS, ISSUED DATE 03.03.2026

1. GENERAL

1.1 TREES MARKED FOR REMOVAL TO BE REMOVED BY CIVIL CONTRACTOR
1.2 BRACING IS PERMISSIBLE WITHIN TPZ, THOUGH INSTALLATION SHOULD AVOID DAMAGING ROOTS.
1.3 NO EXCAVATION, CONSTRUCTION ACTIVITY, GRADE CHANGES, SURFACE TREATMENT OR STORAGE OF MATERIALS OF ANY KIND IS PERMITTED WITHIN THE TPZ.
1.4 SHOULD ANY WORK WITHIN TPZ BE REQUIRED, THEY MUST BE APPROVED BY THE SUPERINTENDENT AND CARRIED OUT AS PER THE AUSTRALIAN STANDARDS AND UNDER ARBORIST SUPERVISION.
1.5 CONTRACTOR TO CHECK GUIDELINES PRIOR TO INSTALLATION OF TPZ (AS 4970-2009).
1.6 TPZ - THE TREE PROTECTION ZONES ARE CALCULATED AS SET OUT IN AUSTRALIAN STANDARD PROTECTION OF TREES ON DEVELOPMENT SITES AS 4970-2009. NO SOIL DISTURBANCE OR CONSTRUCTION ACTIVITY IS TO OCCUR WITHIN THE ZONE.
1.7 THE FENCED OFF AREA UNDER THE SUBJECT TREE SHOULD BE CLEARED OF LITTER AND WEEDS, AND MULCHED AND FERTILISED, WITH TEMPORARY IRRIGATION INSTALLED FOR THE DURATION OF THE CONSTRUCTION PERIOD.

2. TEMPORARY FENCE

2.1 THE FOLLOWING AS DOCUMENTS SHOULD BE REFEREED TO IN ESTABLISHING THE TREE PROTECTION FENCING.
- AS 1319 SAFETY SIGNS FOR THE OCCUPATIONAL ENVIRONMENT
- AS 4373 PRUNING OF AMENITY TREES
- AS 4454 COMPOSTS, SOIL CONDITIONERS AND MULCHES
- AS 4687 TEMPORARY FENCING AND HOARDINGS

2.2 FENCING SHOULD BE ERECTED BEFORE ANY MACHINERY OR MATERIALS ARE BROUGHT ONTO THE SITE AND BEFORE COMMENCEMENT OF WORKS INCLUDING DEMOLITION.
ONCE ERECTED, PROTECTIVE FENCING MUST NOT BE REMOVED OR ALTERED WITHOUT APPROVAL BY THE PROJECT ARBORIST. THE TPZ SHOULD BE SECURED TO RESTRICT ACCESS.
2.3 AS 4687 SPECIFIES APPLICABLE FENCING REQUIREMENTS. SHADE CLOTH OR SIMILAR SHOULD BE ATTACHED TO REDUCE THE TRANSPORT OF DUST, OTHER PARTICULATE MATTER AND LIQUIDS INTO THE PROTECTED AREA.
2.4 FENCE POSTS

NOTE: IF ANY TREE NOMINATED FOR RETENTION IS DEEMED UNSUITABLE, IT SHALL BE REPLACED AT A RATIO 2:1 WITH A SUITABLE ENDEMIC MATURE TRANSPLANTED SPECIMEN OR A TREE OF EQUIVALENT SIZE, WITH A MINIMUM 1000L CONTAINER VOLUME AT THE TIME OF PLANTING. SPECIES TO BE DETERMINED AND APPROVED BY COUNCIL

THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION UNLESS APPROVED BY CLIENT AND REVISED '0' ISSUED FOR CONSTRUCTION

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H:\Shared drives\KDLA Design\0614 Beelier Dr Shopping Centre_Windsor Knight\01. CAD Design\0614-BEL-KD_G.dwg

DEVELOPMENT APPROVAL

JOB No. 0614 PAGE 100 REV C

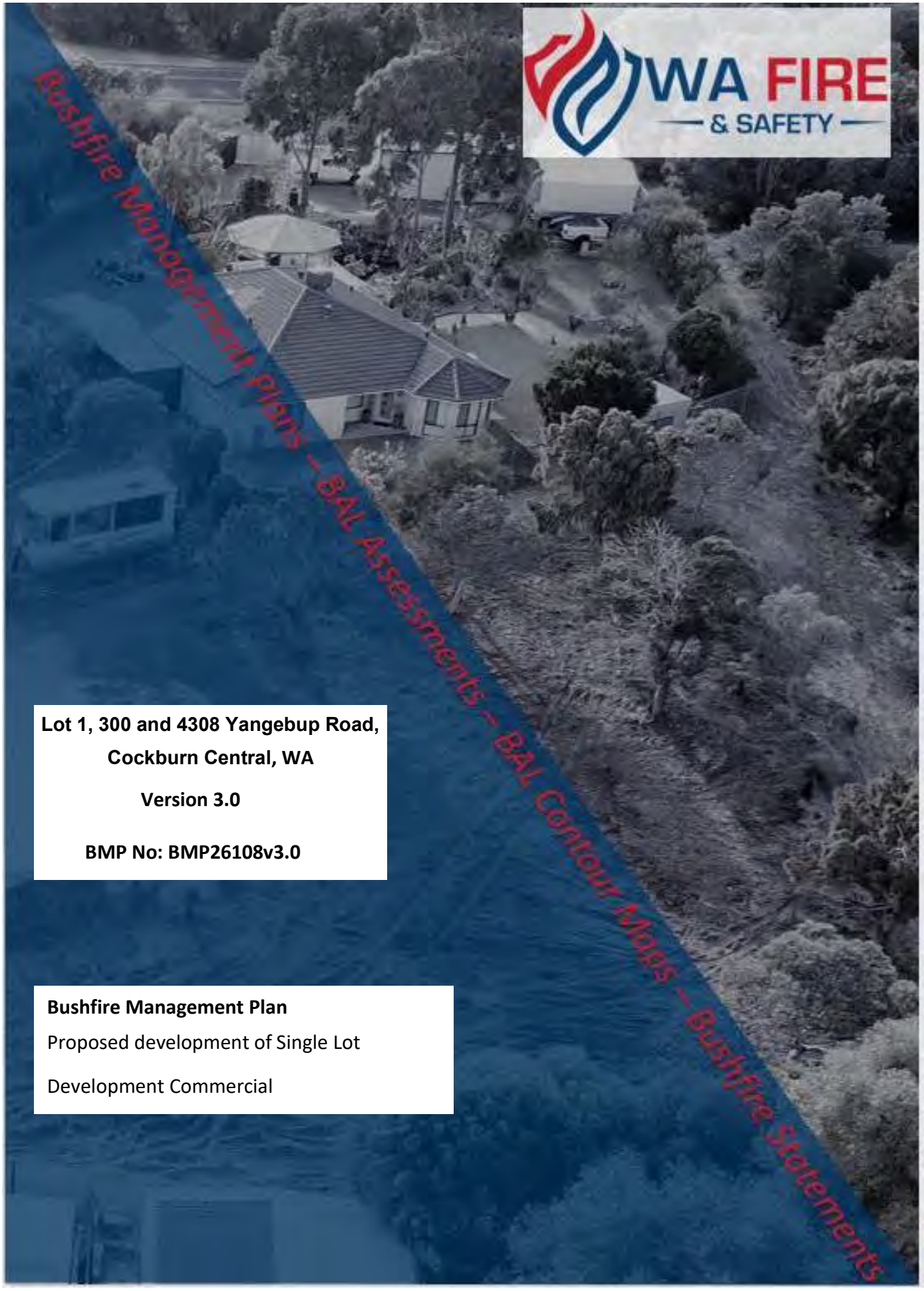
SCALE 1:500 @A1

BEELIAR DRIVE VILLAGE

EXISTING TREE PROTECTION + DEMOLITION PLAN

WINDSOR KNIGHT

LOT 1 704 + 4308 YANGEBUP RD, COCKBURN CENTRAL



Lot 1, 300 and 4308 Yangebup Road, Cockburn Central, WA

Version 3.0

BMP No: BMP26108v3.0

Bushfire Management Plan

Proposed development of Single Lot

Development Commercial

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Bushfire Management Plan Coversheet

This Coversheet and accompanying Bushfire Management Plan has been prepared and issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme.

Bushfire management Plan and Site Details

Site Address: Lot 1, 300 and 4308 Yangebup Road, Cockburn Central, Western Australia,

Date of site visit: 3 September 2025

Report Author and/ or Reviewer: Dwayne Griggs, Level 2, BPAD 40466 - WA Fire & Safety

(BMP) Bushfire Management Plan Number: BMP 26108v3.0

BMP Date: 16 July 2026

If one or more of the following are marked **X / YES**, then this BMP should be referred to DFES for comment:

	Yes	No
Has the BAL been calculated by a method other than Method 1 as outlined in AS3959?		X
Have any of the bushfire protection criteria elements been addressed through the use of an outcomes-based approach?		X
Strategic planning proposal (including rezoning applications)		X
Local planning scheme amendment containing supplementary provisions, additional to the deemed provisions for bushfire risk management		X
Where a bushfire local planning policy, or variation to the acceptable solutions or the APZ is proposed		X
Where there is a conflict of opinion between the decision maker and proponent		X
Expert technical advice on bushfire behaviour, emergency management, or other occasions where bushfire technical advice is required to support planning decision-making		X
Expert technical advice on bushfire matters referred to State Administrative Tribunal (SAT) or Development Assessment Panel (DAP)		X
Comments on future buildings' compliance with FES Commissioner's operational requirement guidelines		X
Decision maker discretionary referral, (e.g. renewable energy, hazardous materials, vulnerable land use)		X

Note: The decision maker (e.g. local government or the WAPC) should only refer the proposal to DFES for comment if one (or more) of the above answers are ticked "Yes". Referral to DFES Checklist

The information provided within this bushfire management plan to the best of my knowledge is true and correct:

Dwayne Griggs, WA Fire & Safety, 16 July 2026

Document control

Report version	Purpose	Author/reviewer and accreditation details	Date submitted
1.0	Approval of Commercial 4 x Class 6 Structures	Dwayne Griggs Level 2- BPAD40466 Claire Taylor Level 1 – BPAD62089	15 September 2025
2.0	Approval of Commercial 4 x Class 6 Structures & 4 x Class 10a Non-Associated Structures (Change of Site Plans)	Dwayne Griggs Level 2- BPAD40466 Claire Taylor Level 1 – BPAD62089	6 February 2026
3.0	Additional wording to Landscape Plan area + Updated landscape plan.	Dwayne Griggs Level 2- BPAD40466 Claire Taylor Level 1 – BPAD62089	16 July 2026

Disclaimer

The Bushfire Management Plan prepared by WA Fire & Safety (Dwayne Griggs BPAD40466), is solely intended for the use of:

1. Current & future landowners
2. Developers & contractors engaged by the current landowners
3. Local Government Authority (LGA)

The enclosed strategies intended for the mitigation of the bushfire risk for this development are the minimum standard and the risk is assessed to the ability of the bushfire consultant and provided information from all stakeholders at the time of the accepted task.

This BMP considers the bushfire aspects of planning only and does not consider all the environmental aspects involved. A limited environmental survey has been completed and further consultation and/or approval for vegetation clearances is up to the Local Government Authority (LGA).

The setbacks and distances for the Asset Protection Zone(s) APZs should be confirmed at the time of vegetation modification for the proposed structures and after the vegetation clearance a final inspection may be required to provide a to confirm distance and issue a BAL certificate, thus ensuring the correct risk mitigation distances has been achieved, the decision for a final inspection is up to the LGA.

There is no guarantee that in the event of a bushfire that property loss will not occur, and the author has used the information provided, appropriate guidelines and due care to provide what they believe is the best possible solution to combat a relatively unpredictable fire threat.

WA Fire & Safety (Dwayne Griggs) excludes all liability for any damage, loss, injury or claim from any fire event, by the acceptance of this BMP the property owner is made aware and agrees to this exclusion of liability.

The ongoing responsibility falls on the landowner for the correct site maintenance to maintain the BAL Levels outlined inside this BMP and their continuance to mitigate the risks involved with extreme fire behaviour. The poor maintenance of vegetation, fuel loads, APZ requirements, Local government fire break notices and fire risk mitigation strategies provided within this BMP can severely impact the level of risk that a fire event can have. If the landowner believes that any factors have changed or modified the potential risk, then the bushfire consultant should be informed, and a new BMP may be required.

On submission of this BMP the landowner authorises direct contact from the LGA to the bushfire consultant for any issues, changes, or queries, contact details are below.

This Bushfire Management Plan is Valid for 3 years from the date completed.

Compliance Statement

This document has been prepared in accordance to comply with the latest State Planning Policy 3.7 Bushfire April 2023 and the Planning for Bushfire Guidelines September 2024.

Bushfire Management Plan

Author:

Claire Taylor

Level 1 FPAA Accredited Practitioner

Accreditation Number: 62089

Reviewer:

WA Fire & Safety, Maida Vale, Western Australia

Dwayne Griggs

Level 2 FPAA Accredited Practitioner

Accreditation Number: BPAD40466

Admin (M-F / 0800-1600) - Phone: 0473078179

Admin Email: Admin@wafiresafety.com.au

Webpage: https://www.wafiresafety.com.au/

1.0 Introduction and Proposal Details

This BMP has been requested by the landowners for the proposed development of Lot 1, 300 and 4308 Yangebup Road, Cockburn Central, Western Australia, within the LGA of the City of Cockburn.

The zoned Mixed Business lot is currently identified as inside the Bushfire Prone area 2. Currently this lot is in an undeveloped state with only the firebreaks being established to an acceptable standard.

This proposed application is for a 4 x commercial structures:

1. Class 6 Main Shopping Centre located to the North.
2. Class 6 Service Station Located to the Southwest.
3. Class 6 Fast Food Building 1 located to the Southeast.
4. Class 6 Fast Food Building 2 located to the Southeast.
5. 4 x Class 10a Non-Associated Car park Shades located in the center of the lot

The assessed bushfire risk for the lot is moderate to extreme, BAL-29 or less is achievable for all proposed structures with vegetation separation and an APZ (Asset Protection Zone) established inside the lot.

Determined BAL rating is BAL-FZ on the day for all proposed structures on the day of the site visit and further vegetation modification is required to achieve BAL-29 or less.

1.1 Site Location

The proposed development is located 1km East of Cockburn centre on Yangebup Road having access from West and East.

1.2 Aims and Objectives

The aim of this Bushfire Management Plan is to identify issues, requirements and provide bushfire risk mitigation measures for the proposed development. Aims for this site include:

- avoid increasing the threat to people, property and infrastructure
- reduce the developments vulnerability from extreme bushfire behaviour
- allow ingress and egress for fire and emergency services
- consider and minimize environmental impacts by reducing vegetation modification.

The objectives of this Bushfire Management Plan are to:

- demonstrate suitability for development
- display bushfire risk levels, fuels, vegetation types and the impact before and after
- show Bushfire management strategies recommended for the site
- demonstrate compliance with the bushfire protection criteria and the use of acceptable solutions for the site.

1.3 Document Preparation

Dwayne Griggs from WA Fire & Safety a BPAD Level 2 accredited practitioner with the Fire Protection Association of Australia has conducted the site assessment and prepared this BMP.

FIGURE 1: Copy of Site Plans

CAR PARKING	NUMBERS
On-Site Bays North-West	49
Online Pick Up Bays	6
Street Bays	12
On-Site Bays	216
Pod Site Bays	32
TOTAL BAYS PROVIDED	315
Motorcycle Bays	7

BIKE PARKING	NUMBERS
Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	62

Scale 1:1000 @ A3
0 10 20 30 40 50

Site Plan
Rev A
01 2026
Pg 3
Beeliar SC
2433
place fabric.

FIGURE 2: Proposed Location

FIGURE 3: **Map of Bushfire Prone Areas for the subject site**

Site is entirely inside the bushfire prone area 2.

2.0 Environmental Considerations

Limited considerations below have been assessed with no issues:

Department of Biodiversity, Conservation and Attractions (DBCA)

Conservation category wetlands and buffer **DBCA-019,**
Augusta to Walpole **DBCA-017**)
RAMSAR wetlands (**DBCA-010**)
Threatened and priority flora (**DBCA-036**)-May require investigation.
Threatened Ecological Communities (**DBCA-038**)-May require investigation.

Department of Planning, Lands and Heritage

Bush Forever areas 2000 (**DPLH-019**)

Department of Water and Environmental Resources (DWER)

Clearing regulations – Environmentally Sensitive Areas (**DWER-046**)
Swan Bioplan Regionally Significant Natural Areas 2010 (**DWER-070**)

Department of Primary Industries and Regional Development (DPIRD)

Conservation Covenants Western Australia (**DPIRD-023**)-May require investigation.

2.1 Native vegetation – Modification and Clearing

Vegetation modification is required to achieve BAL-29 for all proposed structures within the proposed lot.

The area of 7025m2 of Class A Forest and 2.924 ha of Class G Grassland will be required to be modified to the Asset Protection Zone – Siting and Design (appendix 1) and the requirements of the Local Government Authority Firebreak Notice (Appendix 2) in order to establish and APZ of BAL-29.

There are no alternative bushfire management design solutions that will reduce the extent of vegetation clearing as the commercial structure location has been provided to minimise vegetation modification.

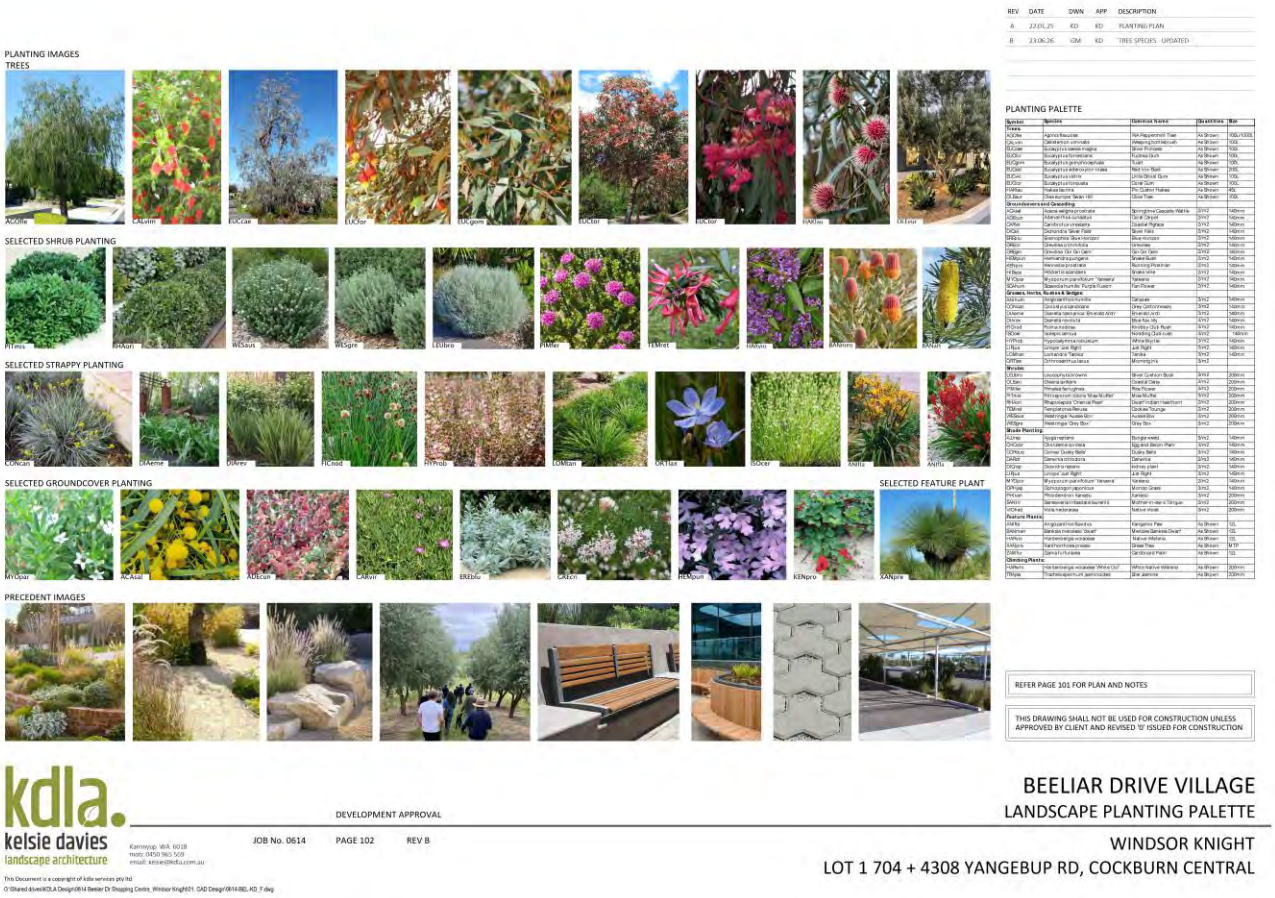
The proposed layout will result in an appropriate balance between bushfire risk mitigation and vegetation retention.

2.2 Revegetation/Landscape Plans

Revegetation inside the APZ will be designed and maintained as per the Asset Protection Zone – Siting and Design (Appendix 1) and the Local Government Authority Firebreak Notice (Appendix 2)

Landscape Plans provided below with layout of trees and plants to be used within the subject lot. The landscape plan is compliant with BAL standards, and we are happy with the layout. It will be maintained vegetation within carparks and concreted areas, able to be identified as low-threat.

Figure 4: Landscape Plan



3.0 Bushfire Assessment Results

The site requires a BAL assessment in accordance with clause 6.5 of SPP 3.7. The assessment of this site or development was undertaken by Dwayne Griggs of WA Fire & Safety, a BPAD Accredited Level 2 Practitioner for the purpose of determining the Bushfire Attack Level in accordance with AS 3959 - 2018 Simplified Procedure (Method 1). All vegetation within 150m of the proposed site has been assessed and classified in accordance with AS3959.

3.1 BAL Assessment Inputs

Vegetation and land use within 150 m of the site has been classified as per descriptions included in *AS 3959 – 2018 Construction of Buildings within Bushfire Prone Areas*.

All vegetation inside the 150m Vegetation survey is either Class A Forest or Class G Grassland.

Plot 1	
Vegetation Classification or Exclusion Clause:	Class G Grassland
Description / Justification for Classification	
Grassland of >100mm in Height Canopy Cover of Less than 10% Understorey of Grasses Minimal surface, Near surface and Intermediate Fuel loads	
Photo ID: 15	**Photo ID: 27**
Photo ID: 45	**Photo ID:**

Plot 2	
Vegetation Classification or Exclusion Clause:	Class A Forest
Description / Justification for Classification	
Overstorey 10-30m in Height Canopy Cover of 30-70% Understorey of Low Trees, Shrubs, Scrub and Grasses High surface, Near surface and Intermediate Fuel loads	
Photo ID: 19	**Photo ID: 24**

Plot 3	
Vegetation Classification or Exclusion Clause:	Class A Forest
Description / Justification for Classification	
Overstorey 10-30m in Height Canopy Cover of 30-70% Understorey of Low Trees, Shrubs, Scrub and Grasses High surface, Near surface and Intermediate Fuel loads	
Photo ID: 8	**Photo ID: 80**

Plot 4	
Vegetation Classification or Exclusion Clause:	Class A Forest
Description / Justification for Classification	
Overstorey 10-30m in Height Canopy Cover of 30-70% Understorey of Low Trees, Shrubs, Scrub and Grasses High surface, Near surface and Intermediate Fuel loads	
Photo ID: 59	**Photo ID: 71**

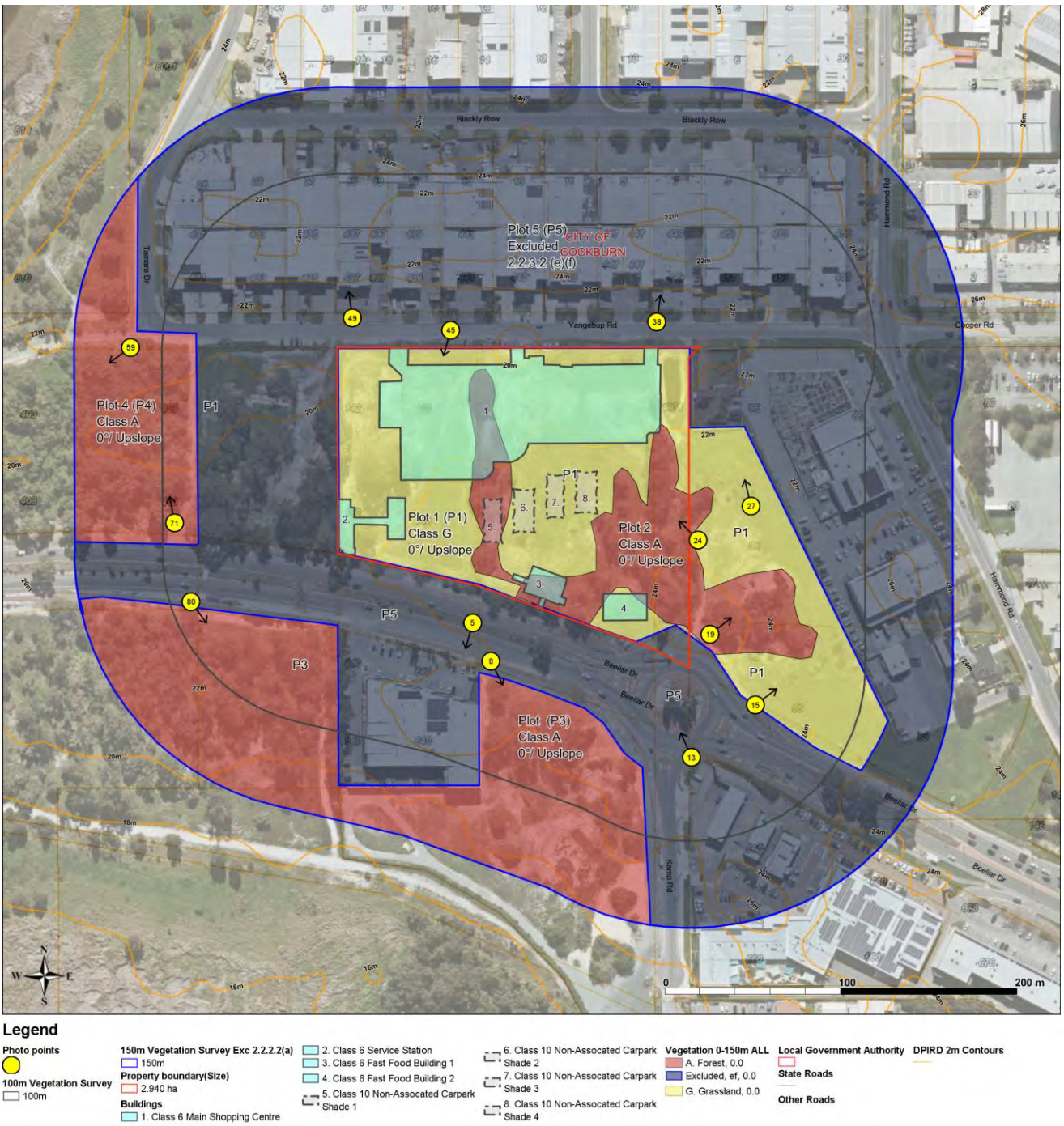
Plot 5	
Vegetation Classification or Exclusion Clause:	Excludable - 2.2.3.2 (e) (f) Low Threat Vegetation/Non Vegetated
Description / Justification for Classification	
Maintained Areas Canopy Cover of Less than 10% Industrial Areas and Roads Insufficient Fuels to increase the risk from bushfire Non-Vegetated Areas	
Photo ID: 5	**Photo ID: 13**
Photo ID: 38	**Photo ID: 49**

This site is flat ground

Table 3A: Vegetation Classification and Slopes

Plot	Vegetation Classification	Effective Slope
1	Class G Grassland	0/Upslope
2	Class A - Forest	0/Upslope
3	Class A - Forest	0/Upslope
4	Class A - Forest	0/Upslope
5	Excludable – Clause 2.2.3.2 (e) & (f)	-

Figure 5: Vegetation Classification Map



3.2 BAL-Assessment Outputs

Table 3B) 1. Class 6 Main Shopping Centre provides the distances and determined radiant heat impact in the form of a BAL rating before vegetation modification or the establishment of APZ.

Table 3B: Determined BAL Ratings

Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class G Grassland	0/Upslope	0	BAL – FZ
2	Class A - Forest	0/Upslope	0	BAL – FZ
3	Class A - Forest	0/Upslope	91	BAL – 12.5
4	Class A - Forest	0/Upslope	103	BAL – LOW
5	Excludable – Clause 2.2.3.2 (e) & (f)	-	-	BAL – LOW

Table 3C) 2. Class 6 Service Station provides the distances and determined radiant heat impact in the form of a BAL rating before vegetation modification or the establishment of APZ.

Table 3C: Determined BAL Ratings

Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class G Grassland	0/Upslope	0	BAL – FZ
2	Class A - Forest	0/Upslope	36	BAL – 19
3	Class A - Forest	0/Upslope	41	BAL – 19
4	Class A - Forest	0/Upslope	80	BAL – 12.5
5	Excludable – Clause 2.2.3.2 (e) & (f)	-	-	BAL – LOW

Table 3D) 3. Class 6 Fast Food Building 1 provides the distances and determined radiant heat impact in the form of a BAL rating before vegetation modification or the establishment of APZ.

Table 3D: Determined BAL Ratings

Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class G Grassland	0/Upslope	0	BAL – FZ
2	Class A - Forest	0/Upslope	0	BAL – FZ
3	Class A - Forest	0/Upslope	45	BAL – 12.5
4	Class A - Forest	0/Upslope	179	BAL – LOW
5	Excludable – Clause 2.2.3.2 (e) & (f)	-	-	BAL – LOW

Table 3E) 4. Class 6 Fast Food Building 2 provides the distances and determined radiant heat impact in the form of a BAL rating before vegetation modification or the establishment of APZ.

Table 3E: Determined BAL Ratings

Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class G Grassland	0/Upslope	0	BAL – FZ
2	Class A - Forest	0/Upslope	0	BAL – FZ
3	Class A - Forest	0/Upslope	51	BAL – 12.5
4	Class A - Forest	0/Upslope	232	BAL – LOW
5	Excludable – Clause 2.2.3.2 (e) & (f)	-	-	BAL – LOW

Figure 6: BAL Assessment Map

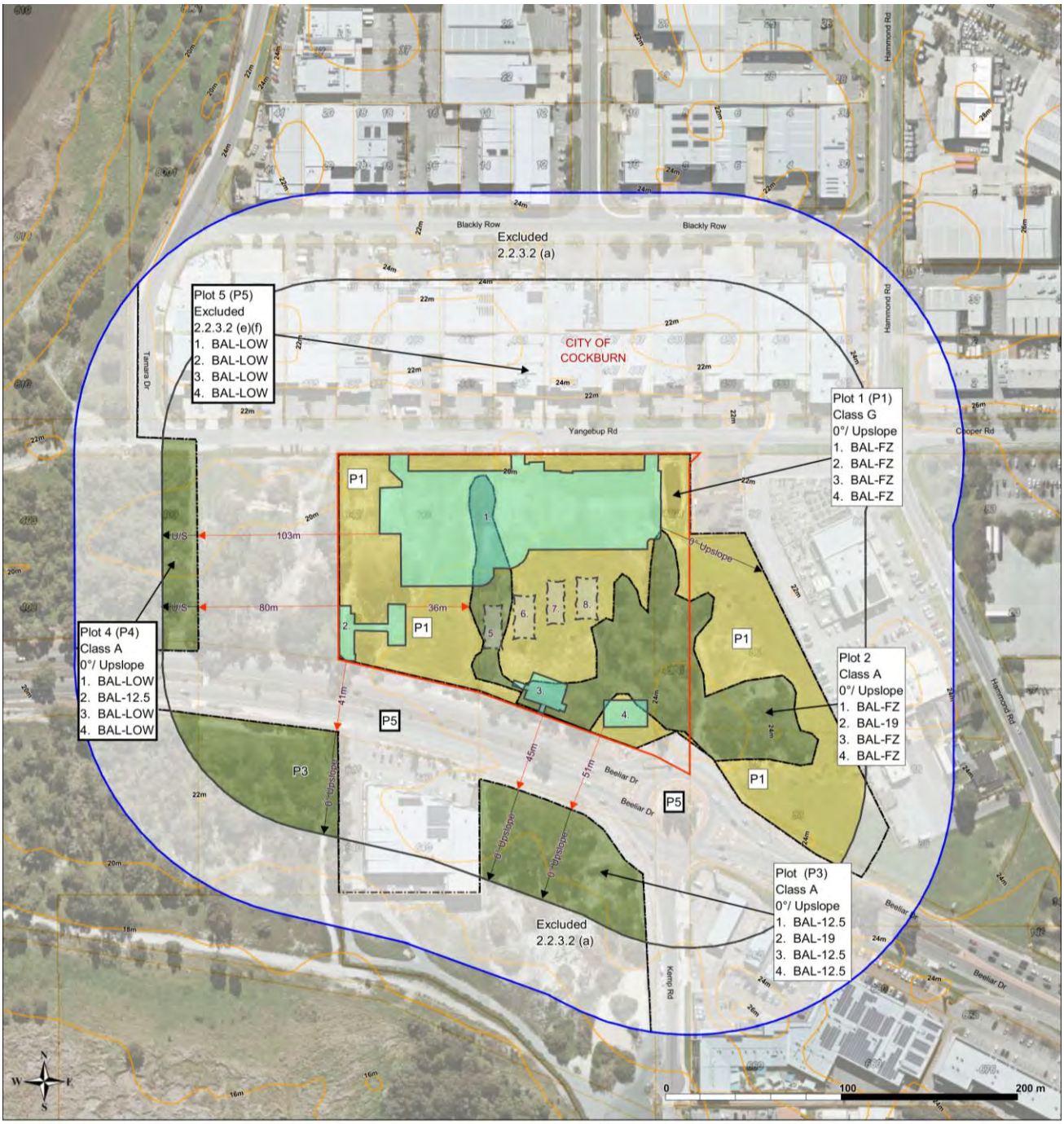


Table 3F) 1. Class 6 Main Shopping Centre provides the indicative BAL rating after the proposed APZ has been established inside the lot boundary.

Table 3F: Prescribed BAL ratings and required separation distances

Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class G Grassland	0/Upslope	15	BAL – 19
2	Class A - Forest	0/Upslope	38	BAL – 19
3	Class A - Forest	0/Upslope	91	BAL – 12.5
4	Class A - Forest	0/Upslope	103	BAL – LOW
5	Excludable – Clause 2.2.3.2 (e) & (f)	-	-	BAL – LOW

Table 3G) 2. Class 6 Service Station provides the indicative BAL rating after the proposed APZ has been established inside the lot boundary.

Table 3G: Prescribed BAL ratings and required separation distances

Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class G Grassland	0/Upslope	161	BAL – LOW
2	Class A - Forest	0/Upslope	161	BAL – LOW
3	Class A - Forest	0/Upslope	41	BAL – 19
4	Class A - Forest	0/Upslope	80	BAL – 12.5
5	Excludable – Clause 2.2.3.2 (e) & (f)	-	-	BAL – LOW

Table 3H) 1. Class 6 Fast Food Building 1 provides the indicative BAL rating after the proposed APZ has been established inside the lot boundary.

Table 3H: Prescribed BAL ratings and required separation distances

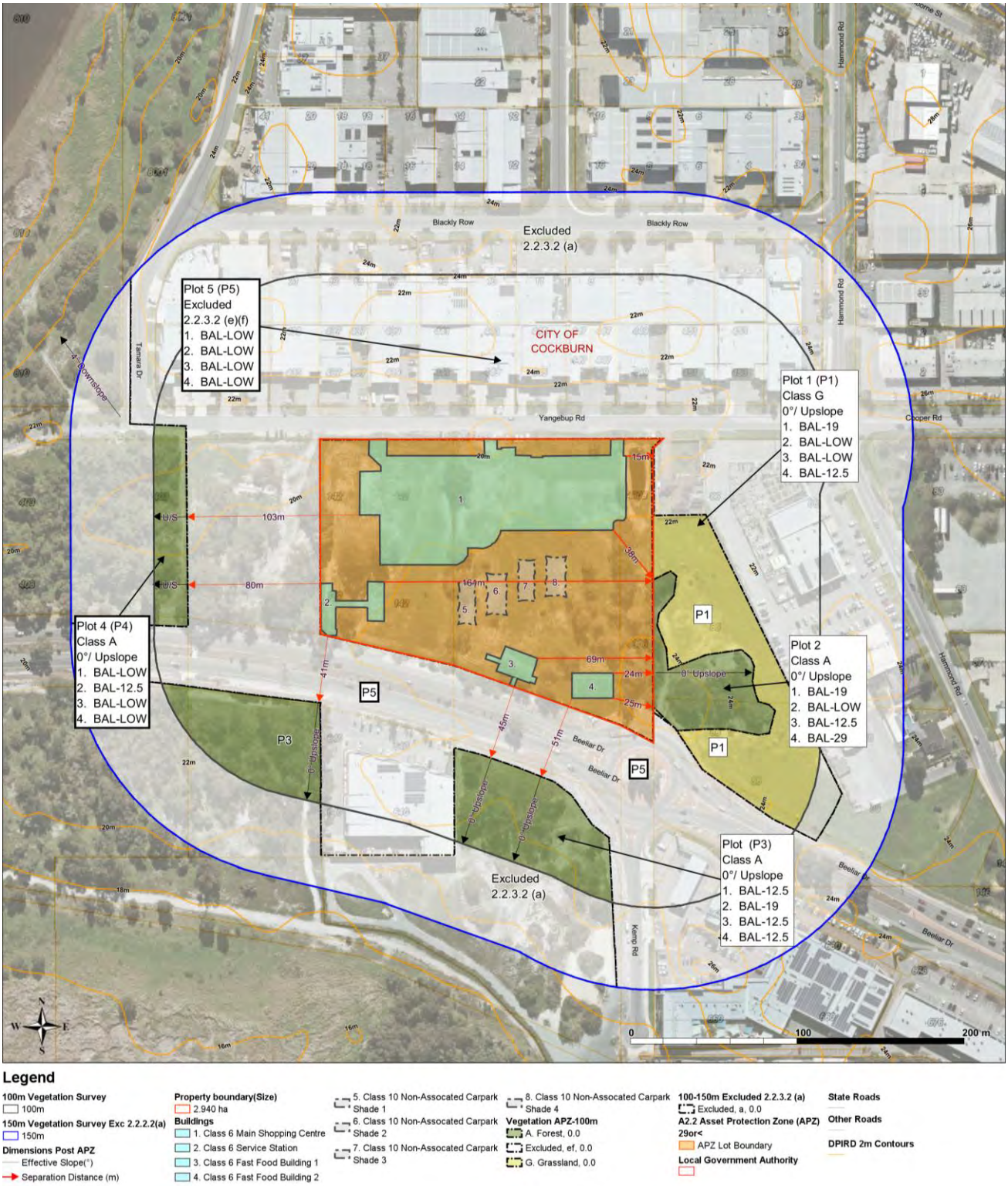
Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class G Grassland	0/Upslope	72	BAL – LOW
2	Class A - Forest	0/Upslope	69	BAL – 12.5
3	Class A - Forest	0/Upslope	45	BAL – 12.5
4	Class A - Forest	0/Upslope	179	BAL – LOW
5	Excludable – Clause 2.2.3.2 (e) & (f)	-	-	BAL – LOW

Table 3I) 1. Class 6 Fast Food Building 2 provides the indicative BAL rating after the proposed APZ has been established inside the lot boundary.

Table 3I: Prescribed BAL ratings and required separation distances

Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class G Grassland	0/Upslope	25	BAL – 12.5
2	Class A - Forest	0/Upslope	24	BAL – 29
3	Class A - Forest	0/Upslope	51	BAL – 12.5
4	Class A - Forest	0/Upslope	232	BAL – LOW
5	Excludable – Clause 2.2.3.2 (e) & (f)	-	-	BAL – LOW

Figure 7: BAL Assessment Map (Prescribed with APZ)



Legend

100m Vegetation Survey
100m
150m Vegetation Survey Exc 2.2.2.2(a)
150m
Dimensions Post APZ
Effective Slope(°)
Separation Distance (m)

Property boundary(Size)
2.940 ha
Buildings
1. Class 6 Main Shopping Centre
2. Class 6 Service Station
3. Class 6 Fast Food Building 1
4. Class 6 Fast Food Building 2

5. Class 10 Non-Associated Carpark Shade 1
6. Class 10 Non-Associated Carpark Shade 2
7. Class 10 Non-Associated Carpark Shade 3
8. Class 10 Non-Associated Carpark Shade 4
Vegetation APZ-100m
A. Forest, 0.0
Excluded, ef, 0.0
G. Grassland, 0.0

100-150m Excluded 2.2.3.2 (a)
Excluded, a, 0.0
A2.2 Asset Protection Zone (APZ) 29or<
APZ Lot Boundary
Local Government Authority

State Roads
Other Roads
DPIRD 2m Contours

4.0 Identification of Bushfire Hazard Issues

Below are the identified bushfire hazard issues relating to this site:

- The development has class A Forest within the subject lot and running down the Eastern boundary outside the subject lot
- Asset Protection Zones are to be established and maintained in perpetuity to ensure the commercial structures will maintain BAL-29.
- The indicative BAL ratings are to demonstrate compliance only and will need to be established during the building process with building permit being issued after BMP is approved by the local government authority, APZ has been established and the issue of a BAL-29 Report and certificate.
- Storage of hazardous, flammable or combustible materials are located in BAL-29 or less.
- As this development is above BAL-LOW the relevant bushfire protection criteria apply and will need to be addressed (section 4.0).

5.0 Assessment against the Bushfire Protection Criteria

5.1 Compliance Table

Table 4: Compliance with bushfire protection criteria

Bushfire protection criteria Intent	Acceptable solutions	Proposed bushfire management strategies/solutions
Element 1: Location Avoid broader landscapes that present an unacceptable bushfire risk to life, property and infrastructure	**BPA Area 1**	**Not Applicable** for Commercial Development
	BPA Area 2	**Not Applicable** for Commercial Development
Element 2: Siting and design Ensure siting and design solutions: • manage or mitigate the bushfire risk to people, property and infrastructure; and • avoid, or where unavoidable, minimises the clearing of native vegetation	**A2.1a Siting and Design** Every proposed new habitable commercial building or associated structure achieves a radiant heat impact not exceeding 29 kW/m² (BAL-29).	All proposed habitable commercial building within the subject lot can achieve BAL-29 or less in the sited locations. Compliant – Y ☑ / N ☐
	A2.1b Siting in an area with a radiant heat impact exceeding 29 kW/m² (BAL-40 or BAL-FZ). The siting of a commercial habitable building, with a radiant heat impact exceeding 29 kW/m² (BAL-40 or BAL-FZ). **Should only be considered where:** • the lot was created prior to December 2015; and	N/A –BAL-29 or less can be achieved. Compliant – Y ☑ / N ☐

Bushfire protection criteria Intent	Acceptable solutions	Proposed bushfire management strategies/solutions
	• there are demonstrated site characteristics and/or biodiversity or conservation values that prevent the achievement of a radiant heat impact not exceeding 29 kW/m2 (BAL-29); and • it is demonstrated that the reduction of the building footprint or a redesign to manage or mitigate the risk, is not practical or appropriate. If the provision of an APZ in accordance with acceptable solution A2.2 cannot be achieved, then the vegetation immediately surrounding the building is to be managed as defendable space in accordance with Appendix 1, Table 9 – APZ technical requirements.	
	A2.2 Asset Protection Zone (APZ) Where a residential habitable building cannot be wholly within an area with a radiant heat impact not exceeding 29 kW/m2 (BAL-29) in its pre-development state, an APZ is to be provided and meet the following requirements: **Width:** the APZ is to be measured from any external wall or supporting post or column of the building, and of sufficient size to ensure the radiant heat impact of a bushfire does not exceed 29 kW/m² (BAL-29) in all circumstances. **Location:** the APZ is to be contained solely within the boundaries of the lot, except in instances where: – the vegetation on the adjoining lot(s) is, and will continue to be, low threat as per Clause 2.2.3.2 of AS 3959 or the requirements	APZ is to be established and maintained in perpetuity to: 1. Lot Boundary APZ has been designed to minimise environmental impact within the lot boundary. APZ's are to be maintained in perpetuity in accordance with: 1. APZ Siting and Design (Appendix 1 - Table 9) and 2. Local Government Authority Firebreak Notice (Appendix 2). Compliant – Y ☑ / N ☐

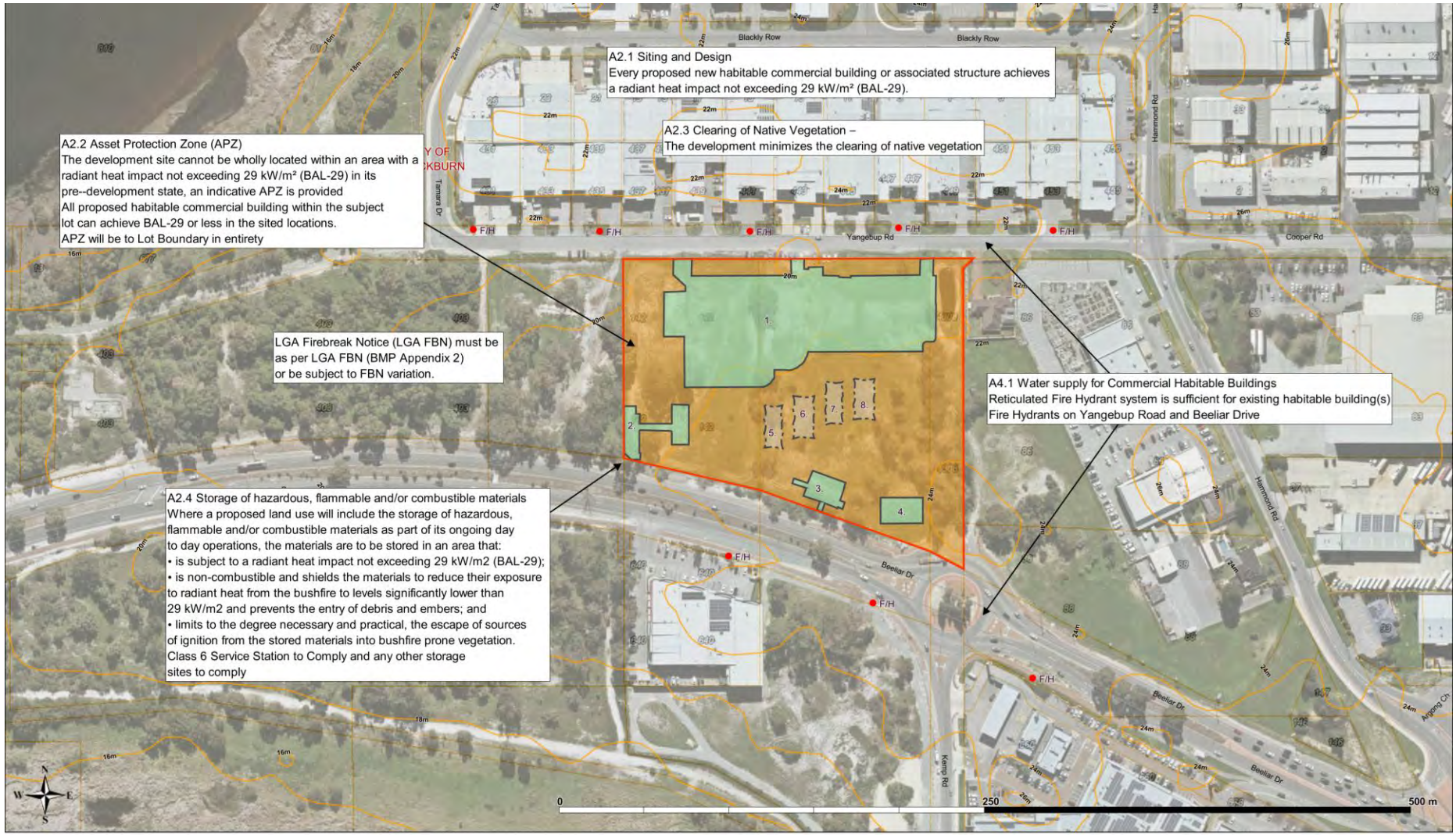
Bushfire protection criteria Intent	Acceptable solutions	Proposed bushfire management strategies/solutions
	of Appendix B.2, Table 9 - APZ technical requirements, or an alternative standard in a local planning scheme, on an ongoing basis in perpetuity; or – the adjoining land is and will remain in perpetuity, non-vegetated. **Management:** the APZ is managed in accordance with the requirements of Appendix B.2, Table 9 – APZ technical requirements (Appendix 1), or an alternative standard in a gazetted local planning scheme.	
	A2.3 Clearing of native vegetation The development avoids, or where unavoidable, minimises the clearing of native vegetation	Proposed site is suitable and avoids excessive vegetation management or clearing. Compliant – Y ☑ / N ☐
	A2.4 Storage of hazardous, flammable and/or combustible materials Where a proposed land use will include the storage of hazardous, flammable and/or combustible materials as part of its ongoing day to day operations, the materials are to be stored in an area that: • is subject to a radiant heat impact not exceeding 29 kW/m2 (BAL-29); • is non-combustible and shields the materials to reduce their exposure to radiant heat from the bushfire to levels significantly lower than 29 kW/m2 and prevents the entry of debris and embers; and	Materials on site are stored in an area that: - is subject to a radiant heat impact not exceeding 29 kW/m2 (BAL-29) - is non-combustible and shields the materials to reduce their exposure to radiant heat from the bushfire to levels significantly lower than 29 kW/m2 and prevents the entry of debris and embers; and - limits to the degree necessary and practical, the escape of sources of ignition from the stored materials into bushfire prone vegetation

Bushfire protection criteria Intent	Acceptable solutions	Proposed bushfire management strategies/solutions
	• limits to the degree necessary and practical, the escape of sources of ignition from the stored materials into bushfire prone vegetation	Class 6 Service Station to Comply and any other storage sites to comply Compliant – Y ☑ / N ☐
Element 3: Ensure the design and capacity of vehicular access and egress provide: • for efficient and effective evacuation to a suitable destination(s) and/or • as a contingency measure for vulnerable land uses, an on-site shelter, where demonstrated appropriate, as a last resort option	**A3.1 Private Driveways** There are no private driveway technical requirements (prescribed by these Guidelines) where the private driveway is within a lot: 1. serviced by reticulated water and 2. is no greater than 70 metres in length between the most distant external part of the habitable building and the public road (curb as a hose lay). In circumstances where the above conditions are not met, the private driveway is to meet all of the following requirements: • requirements of Appendix 3 - Table 10, column 5; and • passing bays every 200 metres with a minimum length of 20 metres and a minimum additional carriageway width of 2 metres (i.e. the combined carriageway width of the passing bay and constructed private driveway is to be a minimum 6 metres); and • turn-around area (Figure 30) and within 30 metres of the residential habitable building (Figure 38).	N/A - as structure is less than 70m to the curb as a hose lay and has a reticulated fire hydrant system on the road. Compliant – Y ☑ / N ☐
Element 4: Water Water is available to the subdivision, development or land use to enable people,	**A4.1 Water supply for residential / habitable commercial buildings** Where a reticulated water supply is existing or proposed, a hydrant connection(s) should be provided in accordance with the	Existing Fire Hydrants on Yangebup Road and Beeliar Drive hydrant connections provided in accordance with Water Corporation's No. 63 Water Reticulation Standard.

Bushfire protection criteria Intent	Acceptable solutions	Proposed bushfire management strategies/solutions
property and infrastructure to be defended from bushfire	specifications of the relevant water supply authority. Where these specifications cannot be met, a water tank(s) should be provided in accordance with the requirements of Appendix 4, Table 11 – Water supply dedicated for bushfire firefighting.	Compliant – Y ☑ / N ☐

5.2 Bushfire Mitigation Measures

Figure 8: Spatial representation of the bushfire mitigation measures (BMS)



6.0 Roles & Responsibilities

Responsibilities & implementation measure for the proposed development, these are shared by the Current and future landowners, project developer and the Local Government Authority (LGA).

Table 5: Roles & Responsibilities

DEVELOPER/LANDOWNER/CONSULTANT – PRIOR TO USE	
No.	Implementation action
1	A notification, pursuant to Section 165 of the Planning and Development Act 2005, is required to be placed on the certificate(s) of title of the proposed lot(s) with a Bushfire Attack Level (BAL) rating of 12.5 or above, advising of the existence of a hazard or other factor. Notice of this notification is to be included on the diagram or plan of survey (deposited plan). The notification is to state as follows "This land is within a bushfire prone area as designated by an Order made by the Fire and Emergency Services Commissioner and is/may be subject to a Bushfire Management Plan. Additional planning and building requirements may apply to development on this land." Notification placed on title ☐ *Certified* ☐ *dated the* ___ *of* _____ *20*____ *- Certified by* _____
2	Establish an Asset Protection Zone (APZ) to the - dimensions (Table 4 A2.2), and - standard stated in this BMP in APZ Siting and Design (Appendix 1) and - to the additional requirements outlined in the LGA Firebreak Notice (Appendix 2). *APZ Clearance Completed* *Certified* ☐ *dated the* ___ *of* _____ *20*____ *- Certified by* _____
3	Maintain the lot and firebreaks to comply with the relevant (LGA) annual firebreak notice issued under s33 of the Bush Fires Act 1954 to required standard in perpetuity as per Local Government Authority Firebreak Notice (Appendix 2) or per variation issued by LGA.
4	Hazardous, flammable or combustible materials on site must be stored as per the requirements in - BMP (table 4 A2.4) - Bushfire Management Strategies map
LANDOWNER – ONGOING	
No.	Management action
1	Maintain an Asset Protection Zone (APZ) to: - dimensions (Table 4 A2.2), and - standard stated in this BMP in APZ Siting and Design (Appendix 1) and - to the additional requirements outlined in the LGA Firebreak Notice (Appendix 2).
2	Maintain the lot and firebreaks to comply with the relevant (LGA) annual firebreak notice issued under s33 of the Bush Fires Act 1954 to required standard in perpetuity as per Local Government Authority Firebreak Notice (Appendix 2) or per variation issued by LGA.
3	Maintain Storage of Hazardous, flammable or combustible materials on site must be stored as per the requirements in - BMP (table 4 A2.4) Bushfire Management Strategies map

LOCAL GOVERNMENT AUTHORITY (LGA) – ONGOING MANAGEMENT	
No.	Management action
1	Inspection and issue of works orders or fines for non-compliance, this includes firebreaks, private driveway, Asset Protection Zone and water supply.

Bushfire Management Plan Appendices

Appendix 1 – Asset Protection Zone (APZ) – Siting and Design

B.2: SITING AND DESIGN

State Planning Policy outcome for Element 2: Siting and design

Ensure siting and design solutions:

- **manage or mitigate the bushfire risk to people, property and infrastructure; and**
- **avoid, or where unavoidable, minimise clearing of native vegetation.**

B.2.1 IDENTIFYING AN ASSET PROTECTION ZONE

An Asset Protection Zone (APZ) is a low fuel area, maintained around a building to increase the likelihood a building will survive a bushfire, by reducing the potential for direct flame contact, radiant heat exposure and ember attack. The APZ allows emergency services access and provides an area for firefighters and home-owners to defend their property.

The width of an APZ should ensure the radiant heat impact does not exceed 29 kW/m² for a habitable building, or 10 kW/m² where a building is identified for use as an on-site shelter. Where a building or development site achieves a radiant heat impact of 29k W/m² or lower in its pre-development state (prior to any vegetation clearing or modification), an APZ is generally not required.

However, providing for the ongoing management of an APZ in perpetuity, as low threat vegetation, within the implementation section of the BMP and/or condition of development approval, will ensure the BAL rating of the building does not increase over time.

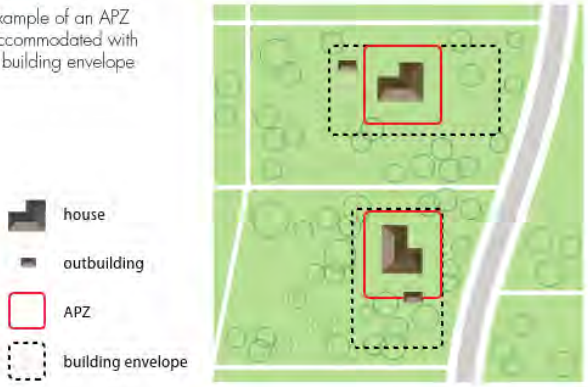
Clearing or modification of native vegetation to reduce the radiant heat impact below 29 kW/m² is generally not supported.

At the subdivision stage where a lot contains a building envelope, and the development site(s) is yet to be determined, the BMP should demonstrate the lot(s) can achieve an indicative development site(s) with a radiant heat impact not exceeding 29 kW/m², within the building envelope (**Figure 24**).

It may not be necessary for an entire building envelope to achieve 29 kW/m² or lower, where this results in unnecessary clearing or modification of native vegetation.

An APZ should be contained within the boundaries of the lot on which the building is situated, except in instances where it is demonstrated the vegetation on the adjoining land is, and will continue to be, low threat as per cl. 2.2.3.2 of AS 3959, or the vegetation on the adjoining lot is, and will remain in perpetuity, non-vegetated. However, it should be noted there is no requirement for a neighbouring landowner or land manager (public or private) to be party to a legal agreement to undertake ongoing management of vegetation as low threat, in perpetuity.

Figure 24: Example of an APZ accommodated with a building envelope



Exclusion of vegetation on adjoining land, which is covered by a local government firebreak notice, issued under section 33 of the *Bushfires Act 1954*, may occur in limited circumstances at the development application stage. Where it is evident the adjoining landowner is managing the vegetation in accordance with the firebreak notice, a copy of the firebreak notice and photographic evidence of the managed vegetation should be included in a BMP. It will also be necessary to seek written confirmation from the local government, to confirm support for the exclusion.

B.2.2 DESIGNING AN ASSET PROTECTION ZONE

An APZ should not be seen as an area entirely cleared of vegetation, but as a strategically designed space that considers how existing and future mature vegetation, and combustible and non-combustible features interact with and affect the building's resilience to bushfire.

An APZ should provide the greatest level of vegetation management within at least three metres of a habitable building, to ensure adequate unobstructed defendable space for emergency services to operate. This area should contain minimal vegetation and be free of combustible materials and obstructions. Within the remainder of the APZ, planting of vegetation can increase as you move farther away from the building.

The placement of plants within an APZ is a key design technique. Separation of garden beds with areas of low fuel or non-combustible material will break up fuel continuity and reduce the likelihood of vegetation within an APZ supporting a bushfire. It is important to consider the plant density and final structure and form of plants in their mature state.

Strategic landscaping measures can be applied, such as replacing weeds with low flammability vegetation to create horizontal and vertical separations between the retained vegetation.

Mulches used within the APZ should be non-combustible. The use of stone, gravel, shells, rock and crushed mineral earth is encouraged. Very fine or light mulch (such as shredded pine bark, pine needles, or poplar woodchips) less than five millimeters in diameter should be avoided. It is recommended that wood mulch is used in garden beds or areas where the moisture level is higher by regular irrigation, and these areas are separated with non-combustible elements, such as pathways and open spaces.

Incorporation of landscaping features, such as masonry feature walls, can provide habitable buildings with barriers to wind, radiant heat and embers. These features can include noise walls or wind breaks. Use of Appendix F of AS 3959 for bushfire resistant timber selection or the use of non-combustible fencing materials such as iron, brick, limestone, metal post and wire is encouraged within an APZ.

B.2.3 MANAGEMENT OF AN ASSET PROTECTION ZONE

Ongoing maintenance of an APZ is usually enforced through a condition of a development approval, which should refer to **Table 9** APZ technical requirements within this Appendix.

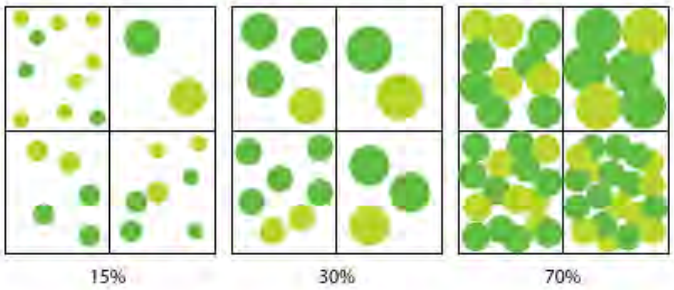
In addition to regular maintenance of an APZ, further bushfire protection can be provided by:

- ensuring gutters are free from vegetation
- installing gutter guards or plugs
- regular cleaning of underfloor spaces, or enclosing them to prevent gaps
- trimming and removing dead plants or leaf litter
- pruning climbing vegetation (such as vines) on a trellis, to ensure it does not connect to a building, particularly near windows and doors
- removing vegetation in close proximity to a water tank to ensure it is not touching the sides of a tank
- following the requirements of the relevant local government firebreak notice, which may include additional provisions such as locating wood piles more than 10 metres from a building.

Preparation of a property prior to the bushfire season and/or in anticipation of a bushfire is beneficial even if your plan is to evacuate. Embers can travel up to several kilometres from a bushfire and fall into small spaces and crevices or land against the external walls of a building. Best practice recommends objects within the APZ are moved away from the building prior to any bushfire event. Objects may include, but are not limited to:

- door mats
- outdoor furniture
- potted plants
- shade sails or umbrellas
- plastic garbage bins
- firewood stacks
- flammable sculptures
- playground equipment and children's toys.

Table 9: Asset Protection Zone (APZ) technical requirements

OBJECT	REQUIREMENT
Fences within the APZ	Should be constructed from non-combustible materials (for example, iron, brick, limestone, metal post and wire, or bushfire-resisting timber referenced in Appendix F of AS 3959).
Fine fuel load (combustible, dead vegetation matter less than 6 mm in thickness)	• Should be managed and removed on a regular basis to be maintained as low threat vegetation • Should be maintained at less than two tonnes per hectare (on average) • Mulches should be non-combustible such as stone, gravel, shells, rock or crushed mineral earth or wood mulch more than five millimetres in thickness.
Trees* (more than 6 m in height)	• Trunks at maturity should be a minimum distance of six metres from all elevations of the building • Branches at maturity should not touch or overhang a building or powerline • Lower branches and loose bark should be removed to a height of two metres above the ground and/or surface vegetation. • Canopy cover within the APZ should be less than 15 per cent of the total APZ area • Tree canopies at maturity should be at least 5 m apart to avoid forming a continuous canopy. Stands of existing mature trees with interlocking canopies may be treated as an individual canopy provided the total canopy cover within the APZ does not exceed 15 per cent and is not connected to the tree canopy outside the APZ. **Tree canopy cover – ranging from 15 to 70 per cent at maturity**  15% 30% 70%
Shrub* and scrub* (0.5 m to 6 m in height). Shrub and scrub more than 6 m in height are to be treated as trees.	• Should not be located under trees or within three metres of buildings • Should not be planted in clumps more than five square metres in area • Clumps should be separated from each other and any exposed window or door by at least 10 metres.
Ground cover* (less than 0.5 m in height. Ground cover more than 0.5 m in height is to be treated as shrub)	• Can be planted under trees but must be maintained to remove dead plant material, as prescribed in 'Fine fuel load' above • Can be located within two metres of a structure but three metres from windows or doors if more than 100 mm in height.
Grass	• Grass should be maintained at a height of 100 mm or less, at all times • Wherever possible, perennial grasses should be used and well-hydrated with regular application of wetting agents and efficient irrigation.
Defendable space	Within three metres of each wall or supporting post of a habitable building; the area is kept free from vegetation but can include ground cover, grass and non- combustible mulches as prescribed above.
Liquid petroleum gas cylinders	• Should be located on the side of a building farthest from the likely direction of a bushfire or on the side of a building where surrounding classified vegetation is upslope, at least one metre from vulnerable parts of a building • The pressure relief valve should point away from the house • No flammable material within six metres from the front of the valve • Must sit on a firm, level and non-combustible base and be secured to a solid structure.

Notes:
** Plant flammability, landscaping design and maintenance should be considered – refer to following explanatory notes*

Appendix 2 – Local Government Authority Firebreak Notice

City of Cockburn Fire Control Order - Effective from 10 May 2018

First and Final Notice

Pursuant to *Section 33* of the *Bush Fires Act 1954* owners or occupiers of land situated within the City of Cockburn are required by law to comply with the prescribed Fire Control Order here within.

Term	Definition
Authorised Officer	A person appointed by the City of Cockburn Chief Executive Officer as an authorised person/officer to exercise the powers and duties set out in the Local Government Act 1995, Bush Fires Act 1954 and Local Law(s).
Flammable Material	Any dead or dry grass, vegetation, substance, object, thing or material (except living flora including live and/ or habitat standing trees) that may or is likely to catch fire and burn or any other thing deemed by an Authorised Officer to be capable of combustion.
Maintained Grass	Soil covered land, planted with grasses or other durable plants, maintained green and less than 50mm in height.
Prohibited Burning Time	The time of each year where it is unlawful to set fire to the bush at any time. This time is normally from 1 December of each year until and including 31 March of the following year. This time may be amended, subject to prevailing seasonal conditions.
Restricted Burning Time	The time of each year where it is unlawful to set fire to the bush without a valid Permit to Set Fire To The Bush issued by an Authorised Officer. This period is normally from 1 April until and including 31 May and from 1 October until and including 30 November of any year. This time may be amended, subject to the prevailing seasonal conditions.
Unrestricted Burning Time	The time of each year where it is lawful to set fire to the bush at any time, in areas zoned rural under the Metropolitan Region Scheme. This time is normally from 1 June until and including 30 September. This time may be amended, subject to the prevailing seasonal conditions.
Firebreak Time	**The time of each year where fire hazard reduction works must be maintained as specified in this Fire Control Order. This time is 1 November of each year until and including 15 April of the following year.**
Structure	A building, as defined in the Building Codes of Australia (BCA) may be made up of a number of classes if it has a mixed use.

1. All Property (vacant or developed) - less than 4,047m2 Collapse

To reduce the fire hazard on your land and to comply with the requirements of this Fire Control Order you are required to:

1.1 Have all flammable materials such as dry grass and weeds slashed, mown or trimmed down by other means to a maximum height of 50mm across the entire property for the duration of this firebreak time; and

1.2 Remove all dead vegetation.

2. All property (vacant or developed) - 4,047m2 or greater

Collapse

To reduce the fire hazard on your land and to comply with the requirements of this Fire Control Order you are required to:

2.1 Construct a firebreak (as defined within section 3 of this order) immediately inside all external property boundaries, this includes those adjacent to roads, drains, rail reserves and any public open space reserves

2.2 Remove all dead vegetation surrounding and over all habitable structures to a radius of 3 metres except living trees, shrubs, maintained grass and gardens under cultivation.

3. Firebreak Specifications

Collapse

A firebreak is an area of land cleared of flammable material, installed to minimise the spread or extension of a fire and to provide suitable access for fire fighting vehicles. The standards of a compliant firebreak are as follows:

3.1 A firebreak must be constructed of bare earth, stone, or sealed surfaces and be clear of all flammable materials to create a 3 metre wide trafficable surface

3.2 Maintained grass may occupy a firebreak

3.3 Overhanging branches must be pruned to provide a 4 metre vertical clearance above the full width of the 3 metre firebreak surface

3.4 A firebreak must be a continuous trafficable surface for a fire fighting vehicle, clear of any obstructions and must not terminate in a cul-de-sac (dead end).

4. Additional Works

Collapse

Regardless of land size and location, the City of Cockburn or its Authorised Officer(s) may require you to undertake additional work(s) on your property to improve access and/or undertake further works where in the opinion of that Authorised Officer(s), these works would be conducive to preventing the outbreak and/or the spread or extension of a fire.

5. Fire Control Order Variations

Collapse

A variation will be considered where the owner and/or occupiers believe it is impractical to meet the compliance requirements of this Fire Control Order.

Approved structure's occupying a firebreak will not require a variation approval. However, a firebreak will be required to be installed as close as practical around the approved structure.

If approved, variations will be valid in perpetuity, unless a new variation has been approved or the property changes ownership.

The City of Cockburn reserves the right to review, amend or revoke an existing variation in writing at any time. Should a request to vary the Fire Control Order requirements on your property not be approved in writing, this Fire Control Order must be complied with as applicable in its entirety.

If you cannot comply with the above requirements you can complete the online firebreak variation application form.

Firebreak Variation Application Form

Approved: You must comply with the conditions of the approved variation.
Not approved: You must comply with the requirements of the Fire Control Order.

6. Burning

Collapse

During the declared prohibited burning time, owners and/or occupiers must not undertake any bush or garden refuse burning activities.

During the declared restricted burning time only, owners and/or occupiers may:

6.1 Apply for a permit to burn the bush for bush fire risk mitigation purposes, by following the conditions imposed on a permit to burn as issued by an Authorised Officer.

6.2 In areas zoned rural by the Metropolitan Region Scheme you may undertake burning of leaves, tree branches, and other dry vegetation in piles no larger than 1m³ in size, without a permit to burn, subject to the following conditions:

6.2.1 No flammable material (other than that being burned) is to be within 5 metres of the fire at any time while the fire is burning

6.2.2 The fire is lit between 6pm and 11pm and is completely extinguished before midnight on the same day

6.2.3 At least one person is present at the site of the fire at all times until it is completely extinguished

6.2.4 When the fire is no longer required, the person ensures that the fire is completely extinguished by the application of water or earth.

During the unrestricted burning time, owners and/or occupiers in areas zoned rural under the Metropolitan Region Scheme may burn garden refuse and set fire to bush on their land without a permit 'To Set Fire To The Bush'. Burning of the bush must be in accordance with all relevant State legislative requirements.

Burning of garden refuse in areas not zoned rural should not be undertaken within the City of Cockburn, unless approved by an Authorised Officer. Burning of household waste is prohibited in all areas of the City of Cockburn.

7. Penalties

Collapse

Failing to comply with this Fire Control Order will result in a penalty of up to $5,000. A person in default is also liable whether prosecuted or not to pay the costs of performing the work directed by a City's Authorised Officer.

Any owner and/or occupier who engages a contractor to undertake works on their behalf is responsible to ensure that the works completed meet the requirements of this Fire Control Order.

Any Fire Control Order previously published by the City of Cockburn in the Government Gazette or in any Western Australian newsprint is hereby revoked.

By Order of Council

More information and contact

Please contact the City's Fire and Emergency Services for more information on firebreaks and burning permits on 08 9411 3444 or at rangercustomerservice@cockburn.wa.gov.au

urbii

Sustainable Transport. Safe Solutions

Beeliar Shopping Centre

Proposed Development Application

TRANSPORT IMPACT ASSESSMENT

Prepared for:

Albion Park Project Pty Ltd

June 2026

Beeliar Shopping Centre

Prepared for: Albion Park Project Pty Ltd
Prepared by: Paul Ghantous
Date: 30 June 2026
Project number: U25.105

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1 Executive summary

Urbii has prepared this revised Traffic Impact Assessment (TIA) to support the proposed Beeliar Shopping Centre development located at the north-west corner of Beeliar Drive and Yangebup Road, Cockburn.

The revised TIA responds to transport-related matters raised by the City of Cockburn through its Request for Further Information (RFI) process and incorporates additional analysis, design refinement and supporting information developed following consultation with the City.

The proposed development comprises a neighbourhood shopping centre containing a full-line supermarket, mini-major tenancy, specialty retail tenancies, food and beverage outlets, fast-food pad sites and a service station. The development provides a total net lettable area of approximately 7,875 m² and an actual retail trading floor area of approximately 6,075 m². For traffic assessment purposes, a conservative floor area of 8,000 m² has been adopted to represent an upper-bound traffic generation scenario.

The development has been assessed with consideration to the Hammond Road North Structure Plan and remains consistent with the retail floorspace allocation contemplated for the western activity centre site. The proposal also delivers key transport infrastructure identified by the Structure Plan, including the north-south internal road connection, frontage walking and cycling infrastructure, and future connectivity opportunities to adjoining development parcels.

Traffic generation estimates indicate that the development is expected to generate approximately 4,880 vehicle trips per day, 536 vehicle trips during the weekday peak hour and 600 vehicle trips during the weekend peak hour. The assessment adopts recognised shopping centre trip generation rates and includes an allowance for passing trade associated with the arterial road network.

SIDRA intersection modelling has been undertaken for key intersections within the surrounding road network. The assessment confirms that several intersections along the Beeliar Drive corridor are already operating under constrained conditions during peak periods and are forecast to experience increasing congestion as a result of broader background traffic growth. The modelling indicates that the proposed development contributes only a modest increase in traffic demand and does not materially alter the overall operational performance of the surrounding network.

Additional assessment has been undertaken of the Hammond Road / Yangebup Road / Cooper Road intersection, including review of the City of Cockburn concept roundabout arrangement. The analysis indicates that future consideration of an upgrade at this location is likely to be driven primarily by broader background growth and future Structure Plan development rather than the proposed shopping centre in isolation. Based on forecast traffic volumes, the proposed development is estimated to contribute approximately 5% of future traffic demand through the intersection.

The proposed access strategy provides customer access from Beeliar Drive and Yangebup Road, dedicated service vehicle access to the main shopping centre loading docks from Yangebup Road, and a separate service vehicle entry arrangement for the fast-food pad sites. The internal road network has been designed to accommodate relevant service vehicle types, including articulated vehicles, fuel tankers, medium rigid vehicles and heavy rigid vehicles. Swept path assessments confirm satisfactory manoeuvrability throughout the site.

The development incorporates approximately 315 parking bays, including accessible bays, motorcycle parking and bicycle parking facilities. Parking demand has been assessed with reference to survey data, planning requirements and industry guidance and is considered appropriate for the anticipated scale and function of the development.

The site benefits from strong accessibility by public transport, walking and cycling. Existing bus services operate along Beeliar Drive, with nearby bus stops providing convenient access to the development. The proposal includes new frontage paths, internal pedestrian connections and bicycle parking facilities which support sustainable transport choices and improve connectivity with the surrounding area.

Overall, the assessment concludes that the proposed Beeliar Shopping Centre can be appropriately accommodated within the existing and planned transport network. The proposed access arrangements, parking provision, servicing strategy and active transport infrastructure are considered suitable for the scale and nature of the development and support an appropriate transport planning outcome for the site.

2 Introduction and background information

2.1 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.

This report represents Revision 02 of the TIA and incorporates additional information and assessment prepared in response to discussions with the City of Cockburn following the issue of a Request for Further Information (RFI).

Figure 1: Subject site

2.2 Response to request for further information

Following lodgement of the Development Application, the City of Cockburn issued a Request for Further Information (RFI) seeking clarification and additional assessment regarding a number of transport and access matters associated with the proposed development.

Representatives of Urbii and the project team met with officers from the City of Cockburn on 16 June 2026 to discuss the transport-related matters raised in the RFI and to agree on the scope of supplementary information to be incorporated into the Transport Impact Assessment (TIA).

In response to these discussions, this revised TIA has been updated to provide additional information regarding the proposed development yield, integration with the Hammond Road North Structure Plan transport framework, future transport infrastructure identified within relevant planning documents, sight distance requirements, vehicle manoeuvring, servicing arrangements and the operation of the proposed north–south link road.

Additional assessment has also been undertaken in relation to the future Hammond Road / Yangebup Road / Cooper Road intersection upgrade, including consideration of roundabout arrangements identified through Structure Plan planning. The report has further been updated to provide additional commentary regarding the intended function of the internal road network, active transport connections, servicing strategy and future traffic management measures.

The revisions contained within this report do not alter the fundamental findings of the original assessment. The TIA continues to conclude that the proposed development can be accommodated within the surrounding transport network and that future performance constraints identified on the Beeliar Drive corridor are primarily attributable to background traffic growth and broader network conditions rather than the proposed development alone.

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).

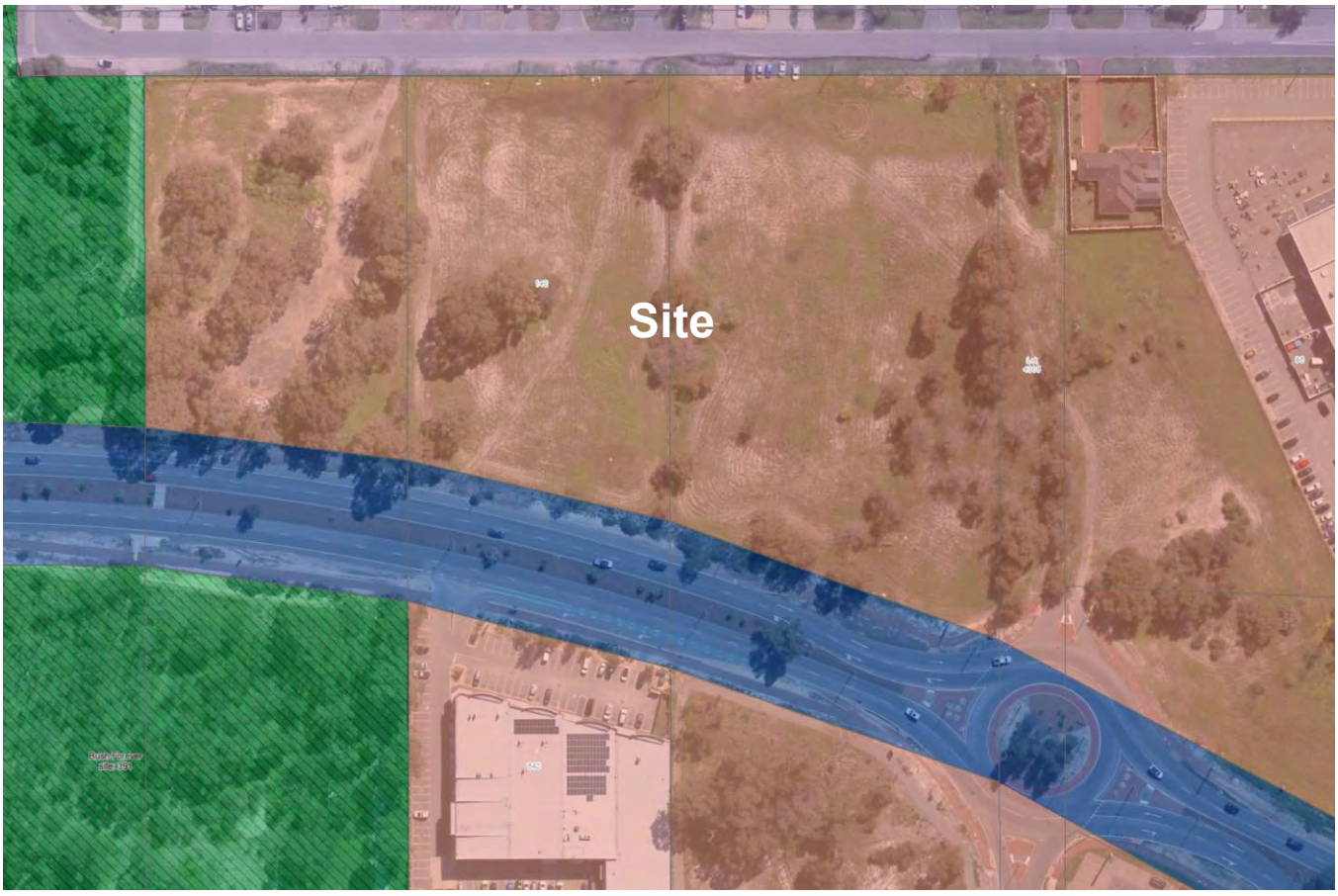


Figure 4: Metropolitan Region Scheme (MRS) – Other Regional Road ORR reservation

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).

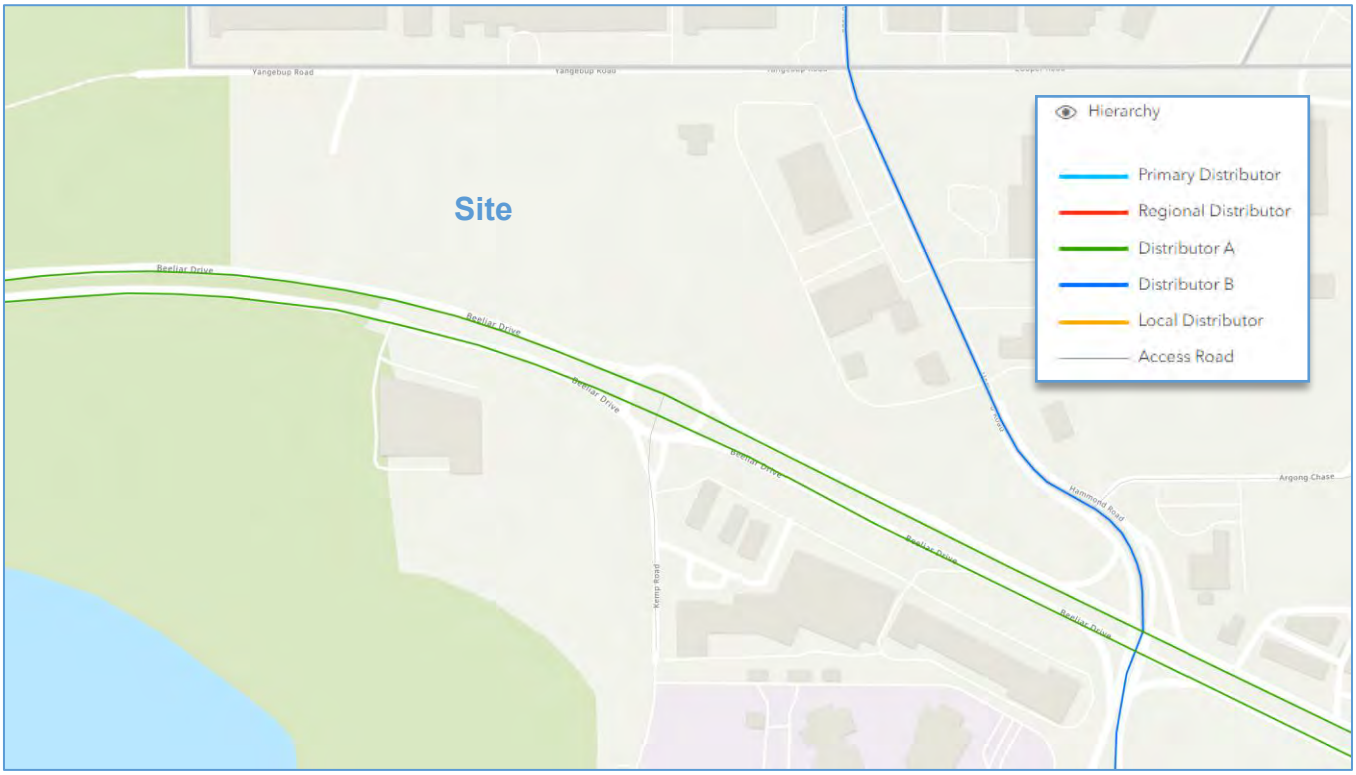


Figure 5: Main Roads WA road hierarchy plan

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

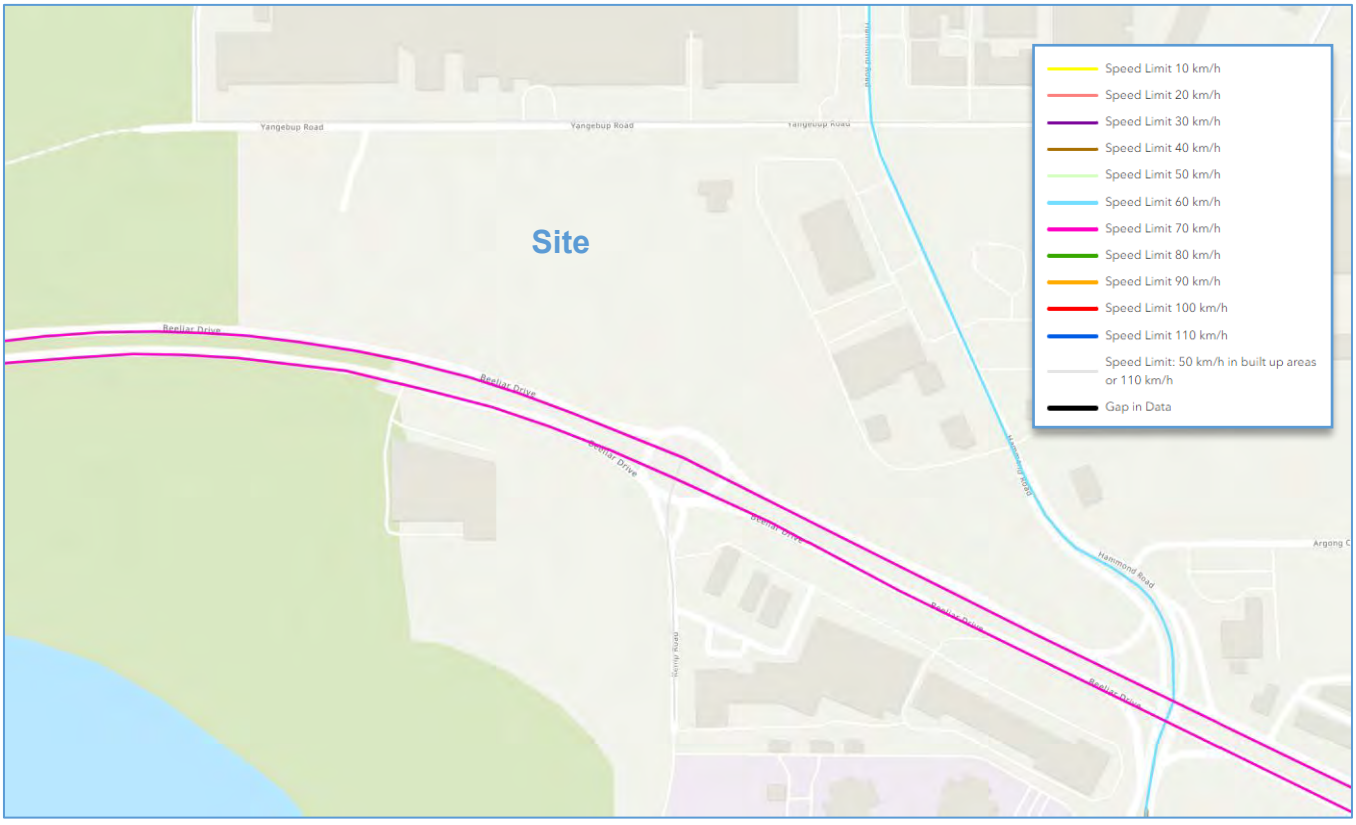


Figure 6: Main Roads WA road speed zoning plan

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 siteing of school bus stops and rest areas.	Yes, with minor safety measures where necessary.	Yes.
11. Buses	Yes.	Yes.	Yes.	Yes.	Yes.	If necessary (see Note 5)
12. On-Road Parking	No (emergency parking on shoulders only).	Generally no. Clearways where necessary.	Not preferred. Clearways where necessary.	No – emergency parking on shoulders – encourage parking in off road rest areas where possible.	Built Up Area – yes, where sufficient width and sight distance allow safe passing. Non Built Up Area – no. Emergency parking on shoulders.	Yes, where sufficient width and sight distance allow safe passing.
13. Signs & Linemarking	Centrelines, speed signs, guide and service signs to highway standard.	Centrelines, speed signs, guide and service signs.	Centrelines, speed signs, guide and service signs.	Centrelines, speed signs and guide signs.	Speed and guide signs.	Urban areas – generally not applicable. Rural areas - Guide signs.
14. Rest Areas/Parking Bays	In accordance with Main Roads' *Roadside Stopping Places Policy*.	Not Applicable.	Not Applicable.	Parking Bays/Rest Areas. Desired at 60km spacing.	Not Applicable.	Not Applicable.

Figure 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.

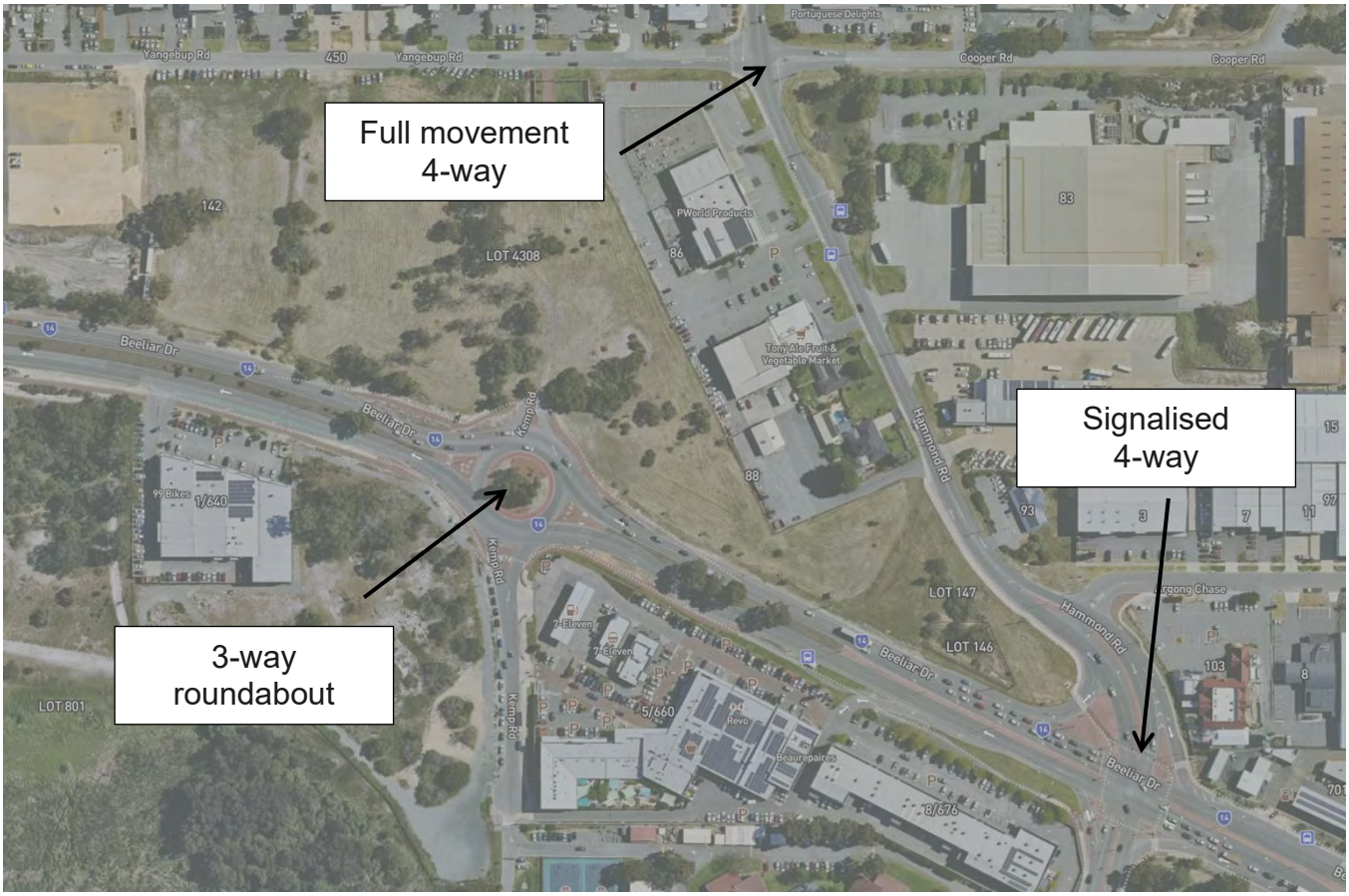


Figure 8: Key local intersections

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.

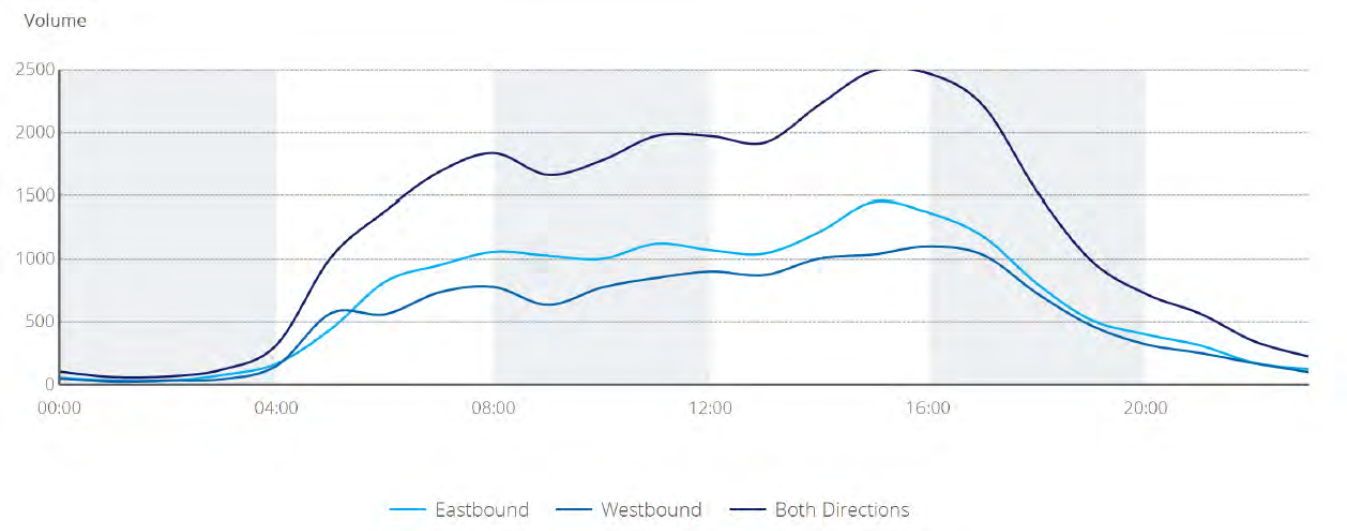


Figure 9: Hourly traffic profile – Beeliar Drive

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.

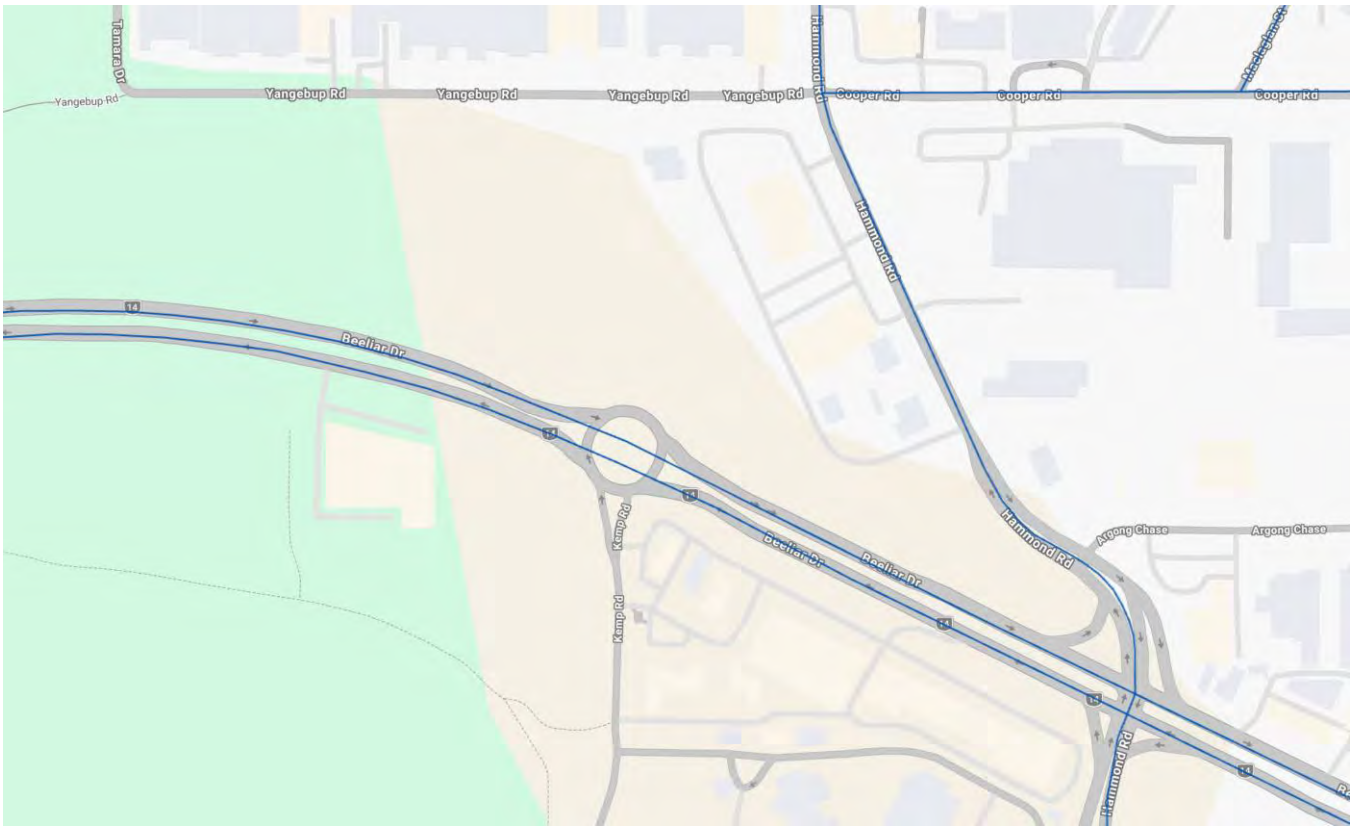


Figure 10: MRWA RAV Network status for Gnangara Road

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

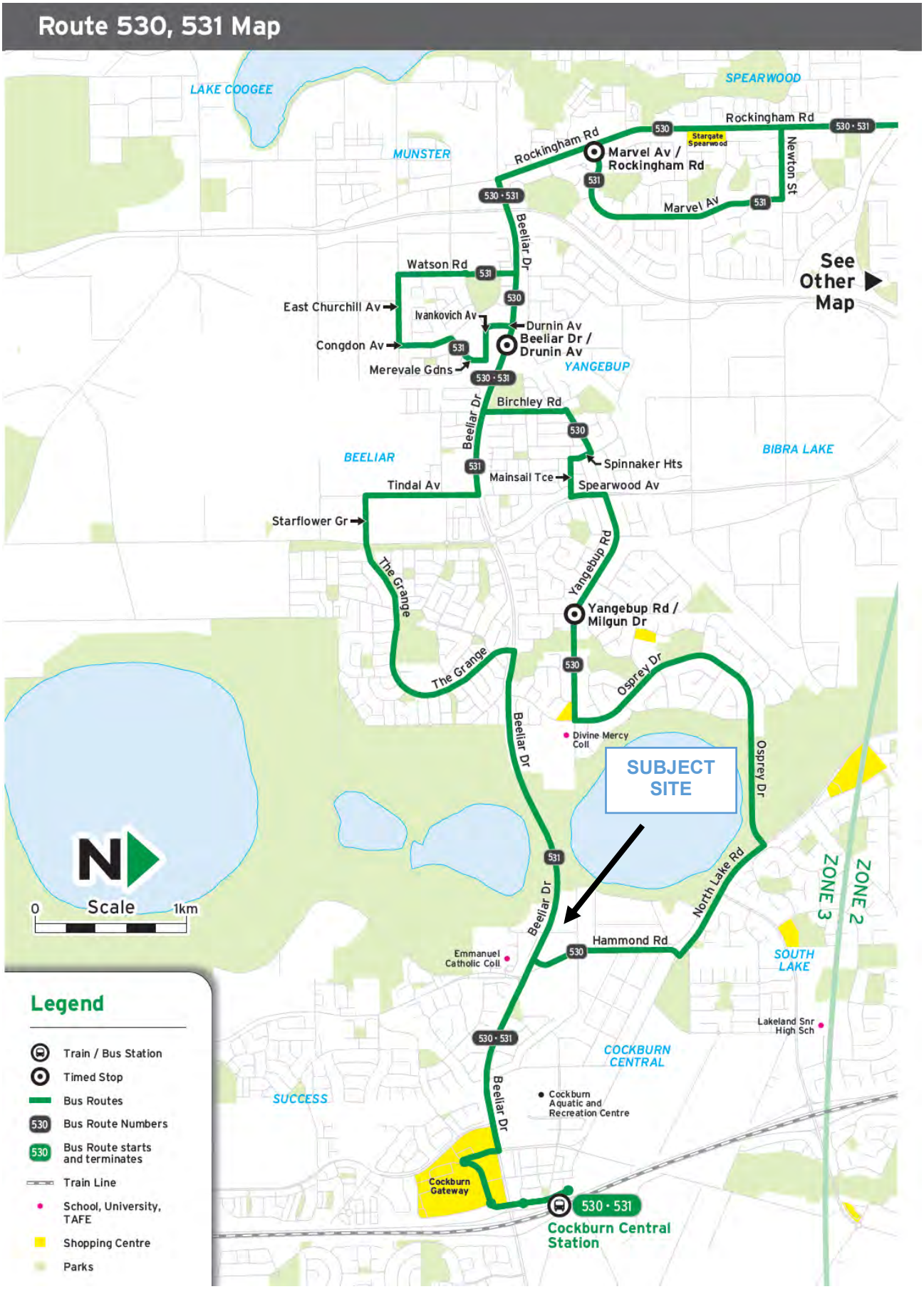


Figure 12: Transperth bus map (route 531)

Source: Transperth

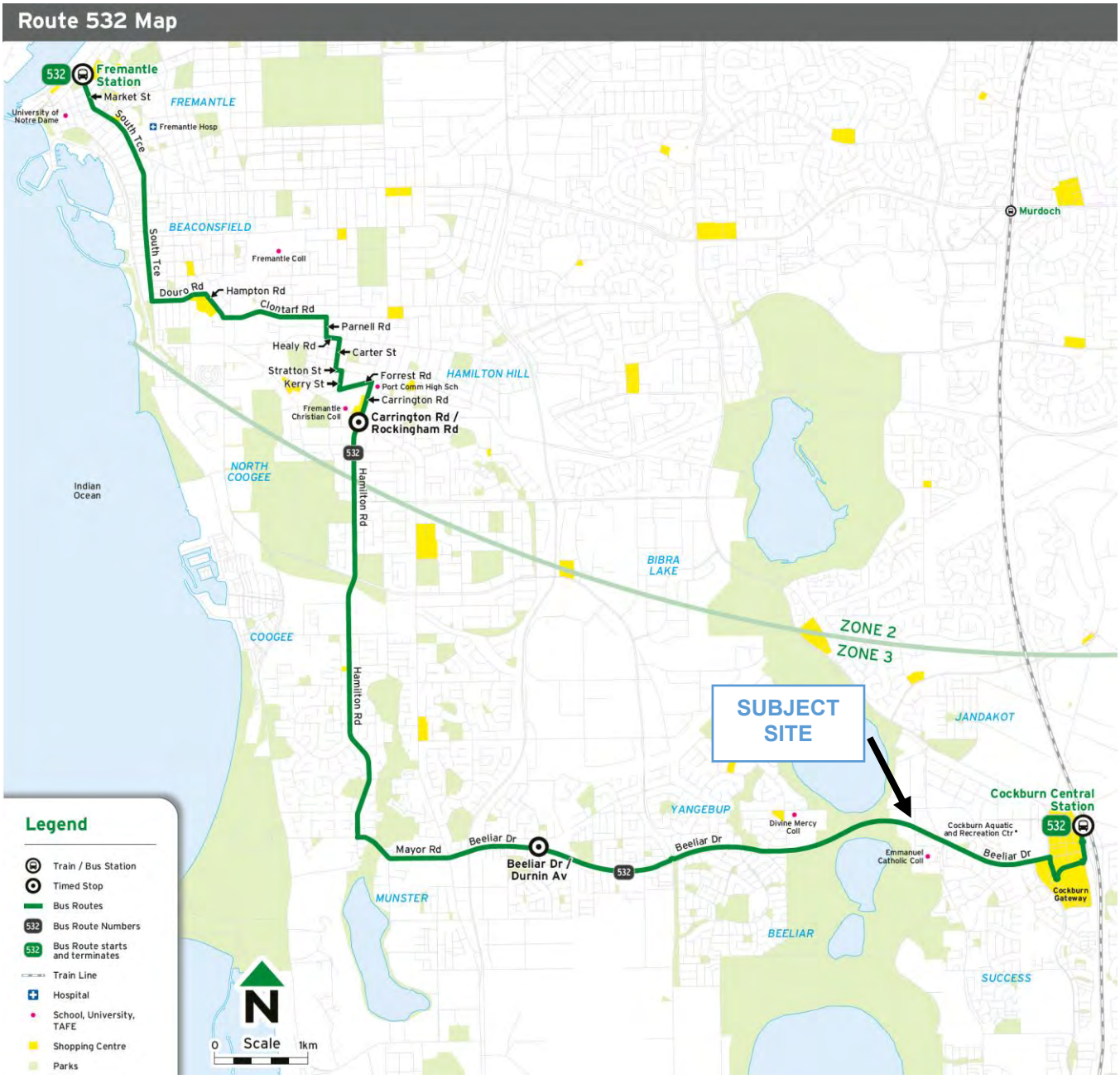


Figure 13: Transperth bus map (route 532)

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.

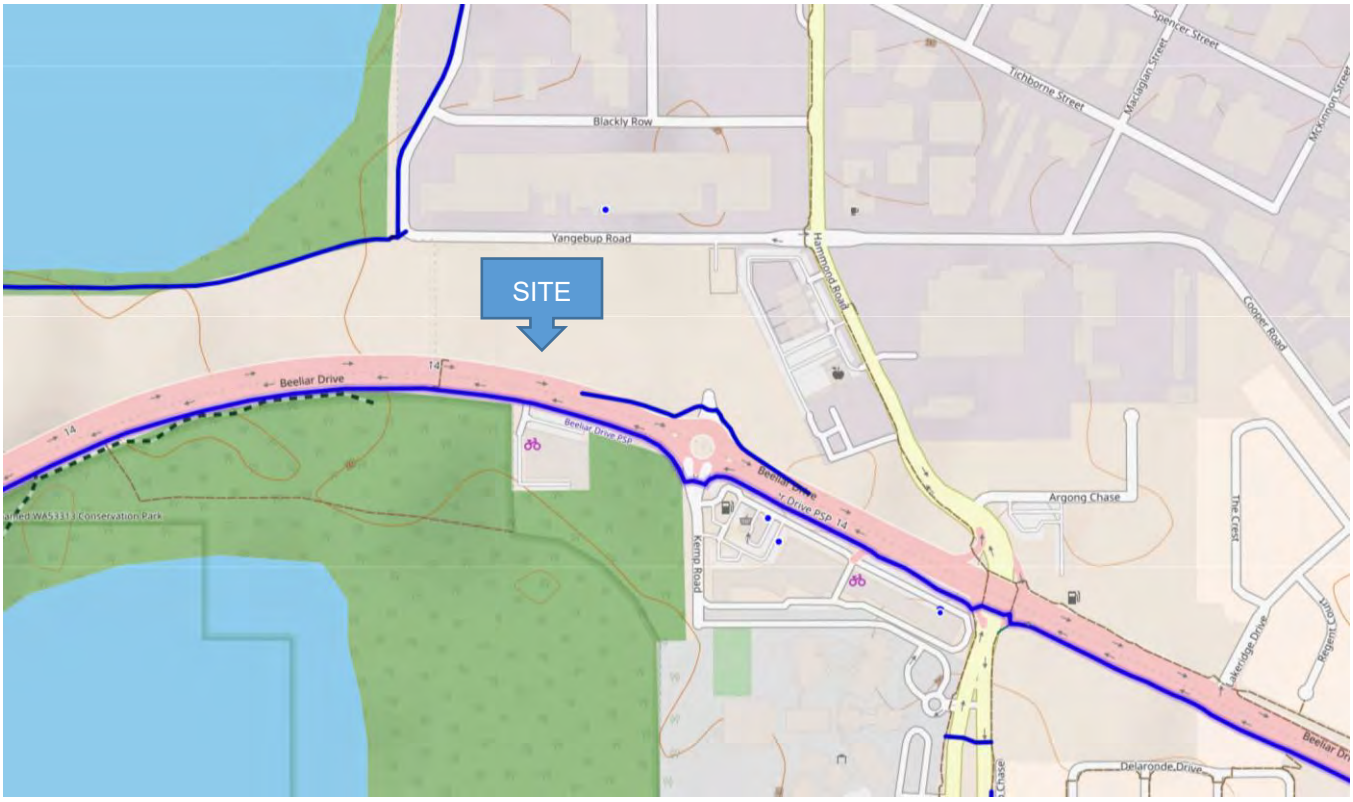


Figure 14: Perth bicycle network plan

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.

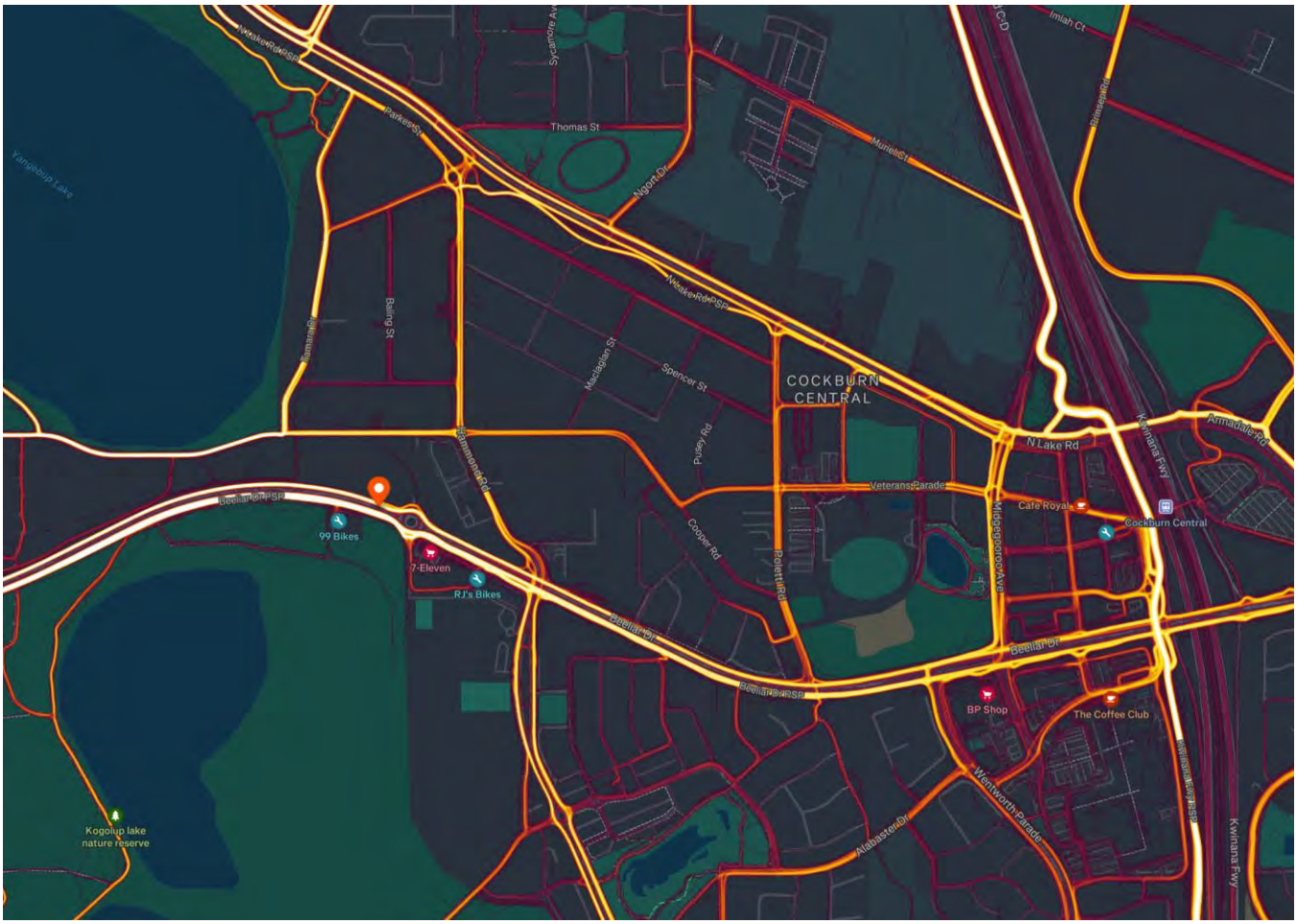


Figure 15: Strava cycling heatmap

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 western portion of the Hammond Road North Structure Plan area. The proposal includes a major supermarket, liquor store, mini-major tenancy, specialty retail, food and beverage tenancies, consulting rooms, fast food pad sites, a fuel station / car wash, and associated at-grade parking and servicing infrastructure.

The development is intended to provide a local retail and services hub to support surrounding residential, employment and community uses. The proposed development yield is summarised in Table 3.

Table 3: Proposed development yield

Tenancy / land use	Tenancy area	Actual retail trading floor area
Supermarket Major	3,860m²	2,760m²
Liquor Store	160m²	160m²
Supermarket / Retail	1,500m²	1,050m²
Mini Major	600m²	450m²
Retail / Commercial	100m²	100m²
Retail / Commercial	100m²	100m²
Retail / Commercial	100m²	100m²
Consulting Room	100m²	-
Retail / Commercial	100m²	100m²
Café	75m²	75m²
Takeaway / dine-in	100m²	100m²
Restaurant	100m²	100m²
Restaurant	100m²	100m²
Fast Food	380m²	380m²
Fast Food	260m²	260m²
Service Station / Car Wash	240m²	240m²
Total	**7,875m²**	**6,075m²**

The proposed development is located within the western portion of the Structure Plan area, which has an allocated retail floorspace allowance of **6,300m²**. The proposal provides an actual retail trading floor area of **6,075m²**, which is **225m² below** the western portion retail floorspace allowance.

The broader Hammond Road North Structure Plan identifies a total retail floorspace allowance of **8,100m²** across both the western and eastern portions of the Structure Plan area. The proposed development does not exceed this overall retail floorspace cap. Rather, the proposal represents a redistribution of retail and complementary land use components within the western portion of the Structure Plan area, while remaining within the retail floorspace limits contemplated by the Structure Plan.

While the proposed tenancy mix is summarised in Table 3, the traffic generation assessment has been undertaken using the TfNSW Shopping Centre land use category. This methodology assesses the development as an integrated shopping centre and therefore does not require separate trip generation calculations for individual tenancy types. For conservatism, the assessment has adopted a gross development area of 8,000m², which exceeds the proposed development area of approximately 7,875m².

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 **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 access to the site is provided via Beeliar Drive and Yangebup Road, with access points designed to provide safe and legible access to the development while maintaining the function of the surrounding road network.

Two new full-movement T-intersections are proposed on Yangebup Road, located toward the western and eastern extents of the site frontage. These intersections will provide access to the main customer parking areas and internal circulation network.

The development also provides a planned fourth (northern) leg to the existing Beeliar Drive / Kemp Road roundabout, via the proposed north-south internal link road. This link will operate as a private car park circulation roadway and will provide access to the development and adjoining property to the east. The connection is not intended to function as a public road and will primarily support shared access arrangements, internal traffic redistribution and local circulation between development parcels.

A widened left-turn entry is also proposed from the north-south link road into the fast-food pad site area. This left-turn entry has been designed to accommodate 12.5m Heavy Rigid Vehicles (HRVs) servicing the fast-food tenancy, while also providing general vehicle access.

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 larger service vehicle movements associated with the main shopping centre building from customer parking areas and internal circulation routes, reducing the potential for conflict and improving overall site safety and operational efficiency. Heavy vehicle movements to the main loading docks are accommodated fully within the site and do not require reversing onto public roads.

Fast-food tenancy delivery and waste collection vehicles will access the fast-food pad site via the widened left-turn entry from the north-south link road. These vehicles will then exit by circulating west through the fuel station area and continuing north to Yangebup Road. This arrangement avoids the need for fast-food service vehicles to circulate through the internal four-way roundabout, while maintaining a low-speed internal servicing route.

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. The roundabout will provide access to the future development parcel to the east of the site and will assist in managing low-speed internal traffic circulation.

The internal roundabout is intended to accommodate passenger vehicles and light commercial vehicles, which represent the predominant vehicle types expected to use this part of the internal circulation network. Larger service vehicles associated with the supermarket and shared loading docks will access the site directly from Yangebup Road, while fast-food service vehicles will use the widened left-turn entry and internal servicing route described above. Accordingly, the roundabout is not relied upon as the primary service vehicle route for larger delivery vehicles.

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.

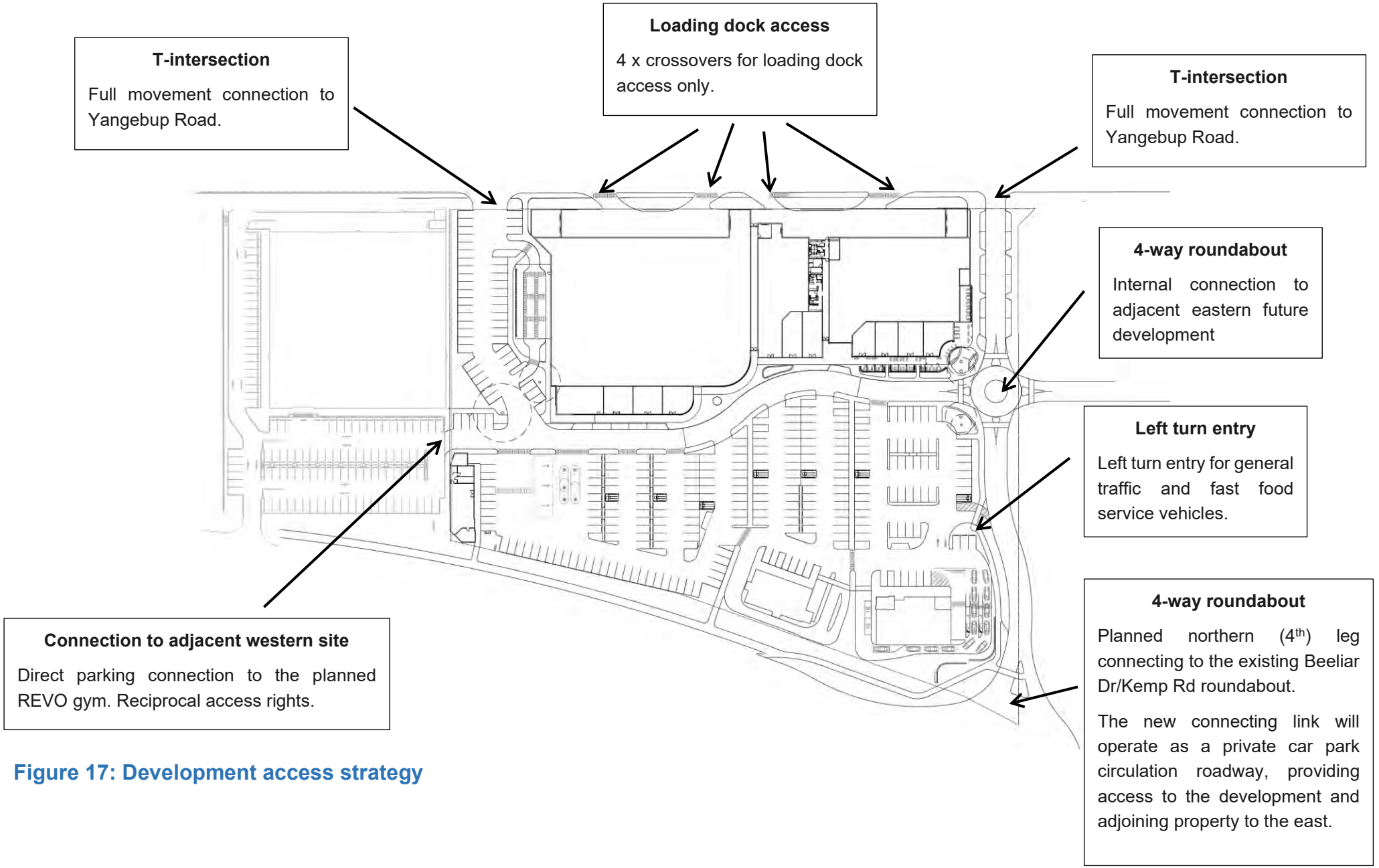


Figure 17: Development access strategy

5.2 Internal 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.

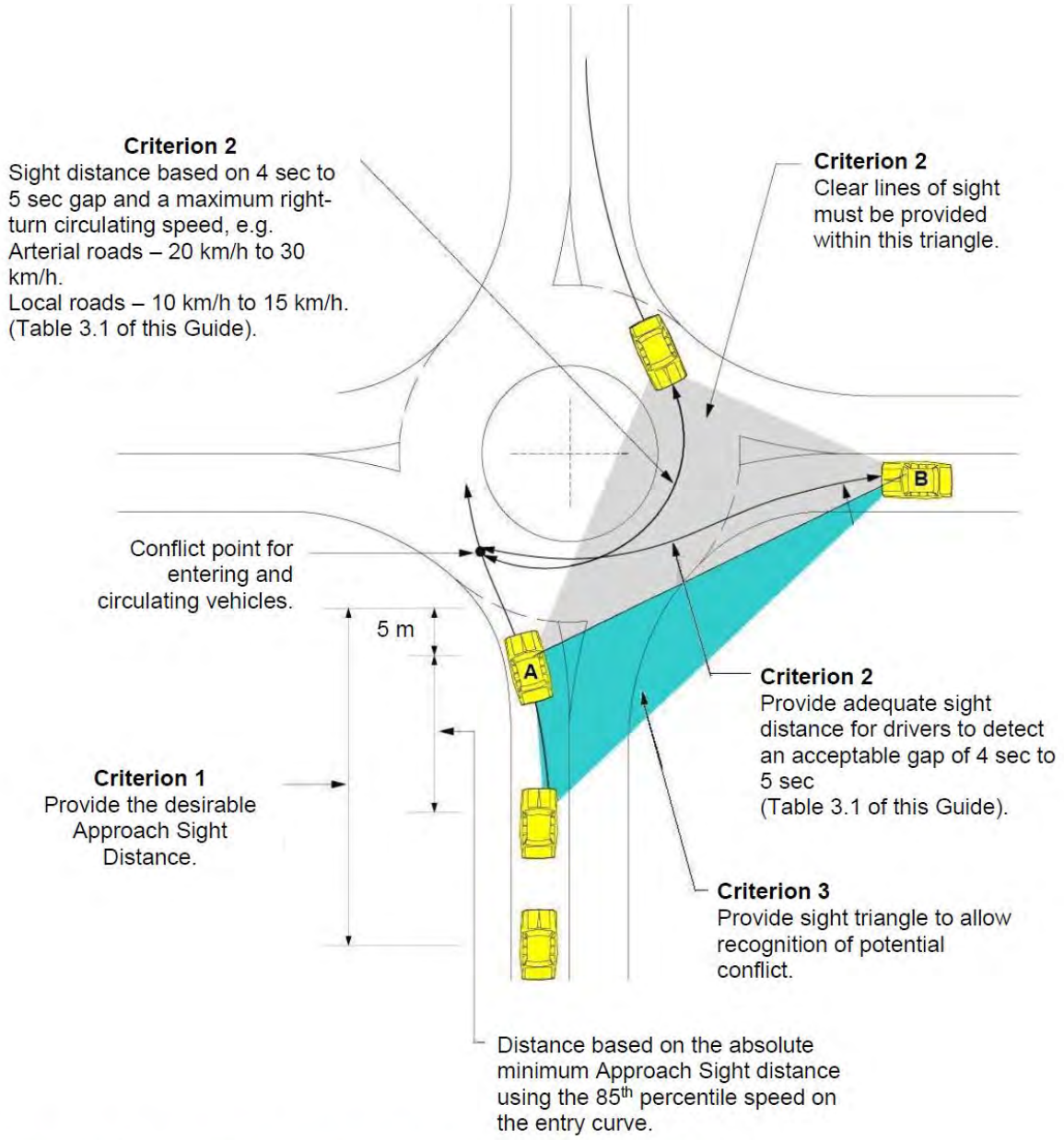
Review of the proposed layout indicates that the required 55 m approach sight distance can be achieved on all roundabout approaches. Sight lines are not obstructed by landscaping, built form or infrastructure within the critical sight envelopes. Detailed sight distance diagrams demonstrating compliance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

Landscaping within the central island of the internal roundabout will be designed to maintain appropriate sightlines for approaching and circulating vehicles. As illustrated in Figure 19, a visual clearance envelope will be maintained between 0.75 m and 2.5 m above the road surface to preserve visibility across the roundabout.

Any trees located within the central island will comprise species with a clear trunk below the visual clearance envelope and a relatively narrow, frangible trunk diameter, while shrubs and groundcover planting will be limited to a maximum height of approximately 0.75 m.

Detailed landscaping design will be undertaken separately by others to ensure compliance with Austroads sight distance requirements and to support safe roundabout operation.

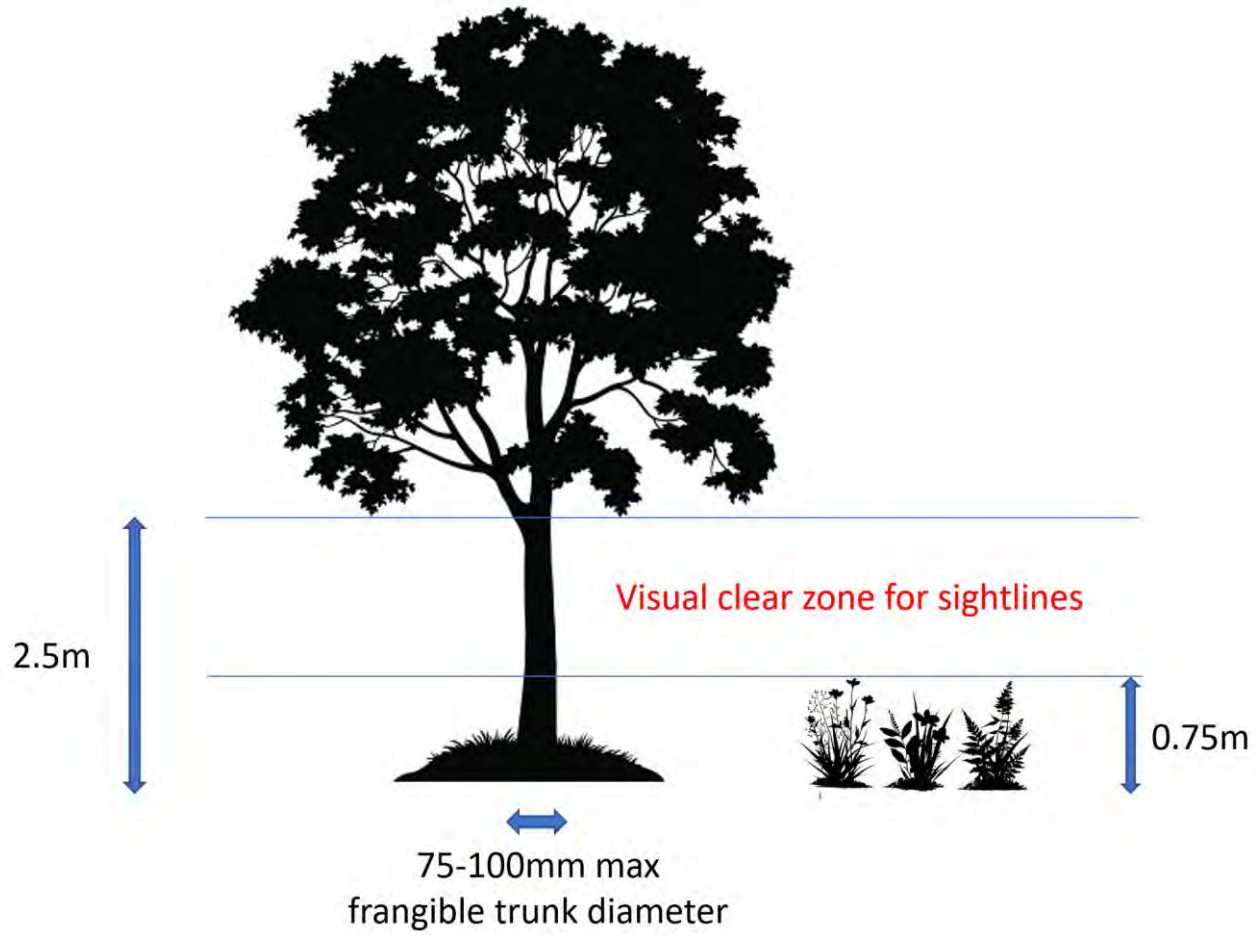


Figure 19: Recommended visual clearance enveloped for roundabout sightlines

5.3 Beeliar Drive / Kemp Road roundabout connection sightlines

Sight distance assessments have been undertaken for the proposed northern connection to the existing Beeliar Drive / Kemp Road roundabout. The assessment has been completed in accordance with the same Austroads sight distance criteria adopted for the internal roundabout assessment presented in Section 5.2, including consideration of both Criterion 1 (Approach Sight Distance) and Criterion 2 (Safe Intersection Sight Distance).

The assessment confirms that appropriate sightlines can be achieved at the proposed connection, subject to maintaining the required sightline envelopes through detailed design and landscape management. Landscaping, signage, street furniture and other infrastructure within the sightline areas will be designed and managed to avoid obstruction of driver visibility.

The detailed sight distance assessment and supporting drawings are provided in Appendix B.

5.4 Yangebup Road driveway sightlines

The crossover sight distance assessment was undertaken in accordance with the Austroads *Guide to Road Design Part 3 – Geometric Design* (AGRD03).

Stopping Sight Distance (SSD) is the distance to enable a normally alert driver, travelling at the design speed on wet pavement, to perceive, react and brake to a stop before reaching a hazard on the road ahead.

SSD is derived from two components:

1. The distance travelled during the total reaction time

2. The distance travelled during the braking time from the design speed to a stop and their relationship is shown in Equation 1.

$$SSD = \frac{R_T V}{3.6} + \frac{V^2}{254(d + 0.01a)} \quad 1$$

where

R_T = reaction time (sec)

V = operating speed (km/h)

d = coefficient of deceleration (longitudinal friction factor)

a = longitudinal grade (%, + for upgrades and – for downgrades)

A reaction time of 2.5 seconds was adopted for the analysis. An operating speed of 60km/h was adopted. The coefficient of deceleration is 0.36.

The calculated Stopping Sight Distance (SSD) is around 81m, as detailed in Table 4.

Table 4: Stopping Sight Distance calculation

Parameter	Value	Units
Rt	2.5	sec
V	60	km/h
d	0.36	
a	0%	
SSD	**81.04**	**m**

The sight distance sketch in Appendix B confirms that the required 81m Stopping Sight Distance can be achieved for the proposed Yangebup Road crossovers.

5.5 Roundabout and main street design

5.5.1 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.

5.5.2 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 20).

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 20: Flush main car park aisle

Source: Place Fabric

5.5.3 North-South private road link

The proposed development includes a north-south road link extending between Beeliar Drive and Yangebup Road, generally consistent with the access framework identified within the Hammond Road North Structure Plan. The link will provide internal connectivity through the Structure Plan area and support access to the proposed shopping centre and adjoining development parcels. The proposed cross-section is capable of accommodating the movement function envisaged by the Structure Plan while maintaining a low-speed internal road environment.

The north-south link is proposed to operate as a private internal road, rather than a ceded public road. Notwithstanding its private tenure, the link will deliver the key transport function identified by the Structure Plan by providing a physical connection between Beeliar Drive and Yangebup Road and facilitating internal access between development parcels. The legal mechanism for ongoing access, maintenance and tenure of the private road link is a planning and land tenure matter to be confirmed by the project team.

The north-south private road link has been conceptually designed to provide a carriageway width of up to approximately 8.0m kerb-to-kerb, which is sufficient to accommodate two-way vehicle movements and internal circulation associated with the proposed development. Additional space is available adjacent to the carriageway to accommodate footpaths, landscaping, lighting, utilities and other streetscape elements as part of the detailed design process. The proposed arrangement is considered capable of achieving the functional requirements of the Structure Plan while supporting the intended low-speed operating environment.

From a transport perspective, the north-south link is intended to function as a low-speed internal access road, not as a higher-order distributor route. The link will serve customer access, internal circulation and connectivity between the shopping centre and adjacent landholdings. Its design includes a low-speed environment, internal roundabout control, pedestrian crossing points, car park access activity and surrounding retail frontage activity, all of which reduce its attractiveness as a through-route for external traffic.

The ultimate cross-section and streetscape treatment will be confirmed during detailed civil design. Consistent with the intended role of the link as a private internal circulation road, consideration will be given to traffic calming and speed management measures to discourage through traffic and reinforce low-speed operation. Potential treatments may include compact lane widths, reduced corner radii, raised pedestrian crossings, threshold treatments at key access points, compact roundabout geometry and deflection, pavement texture or colour changes, landscaping and streetscape elements to visually narrow the carriageway, speed control signage, and other place-based traffic calming measures identified through detailed design.

Service vehicle access to the main shopping centre loading docks will be provided separately from Yangebup Road via dedicated service crossovers. The north-south private road link is therefore not intended to function as the primary service vehicle route for larger delivery vehicles accessing the main shopping centre loading areas.

Overall, the proposed north-south private road link is considered to achieve the functional transport intent of the Structure Plan by improving internal connectivity and supporting access to future development parcels, while maintaining a low-speed internal road environment appropriate to the proposed shopping centre setting.

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.

6.3 Hammond Road North Structure Plan

The subject site forms part of the Hammond Road North Structure Plan area. The Structure Plan establishes the long-term land use, movement network and infrastructure framework for the precinct and identifies a number of transport initiatives intended to support future development and population growth.

A key transport objective of the Structure Plan is the provision of an interconnected road network that distributes traffic throughout the precinct while maintaining the function of the surrounding arterial road network. This includes the establishment of an internal north-south link between Beeliar Drive and Yangebup Road, connections to adjoining development parcels, and upgrades to key intersections along the Hammond Road corridor.

The proposed development has been designed having regard to the Structure Plan transport framework. In particular, the development facilitates delivery of the planned north-south link road connection, provides future connectivity to adjoining eastern and western development parcels, and incorporates pedestrian and shared path infrastructure consistent with the broader movement network envisaged by the Structure Plan.

The Structure Plan identifies the Hammond Road / Yangebup Road / Cooper Road intersection as a future upgrade location. The existing priority-controlled intersection is intended to be upgraded to a single-lane roundabout to accommodate future background traffic growth and support ongoing development within the Structure Plan area. The proposed development has been designed to integrate with this future upgrade and does not preclude its implementation.

The Structure Plan also identifies improvements to Yangebup Road, including upgrading the road corridor to an urban standard with associated pedestrian infrastructure and public transport facilities. The development has been designed to accommodate these future improvements and provides frontage works that are consistent with the intended urbanisation of the corridor.

The proposed development does not seek to increase the overall retail floorspace allocation permitted within the Hammond Road North Structure Plan area. Rather, the development redistributes the retail and commercial land uses within the western portion of the Structure Plan area while remaining within the overall retail floorspace cap established under the Structure Plan. The proposed development provides approximately 6,075 m² of retail trading floor area within the western portion of the Structure Plan area, which remains below the 6,300 m² retail floorspace allowance allocated to the western portion and the 8,100 m² total retail floorspace allowance identified for the broader Structure Plan area.

The City of Cockburn has prepared a preliminary concept design for the future Hammond Road / Cooper Road / Yangebup Road roundabout upgrade. The concept design illustrates a four-leg single-lane roundabout arrangement and includes indicative swept path assessments for both a 12.5 m single unit truck/bus and a 19 m articulated vehicle. A copy of the City's concept design has been included in Appendix C for reference. The concept demonstrates a potential future upgrade arrangement capable of accommodating the design vehicles expected to utilise the route and confirms that the proposed development does not prejudice delivery of the Structure Plan road network.

The timing, funding mechanism and any development contribution arrangements associated with the future Hammond Road / Yangebup Road / Cooper Road roundabout upgrade remain matters for determination by the City through the planning and infrastructure delivery process.

6.4 Beeliar Drive access and bus stop relocation

The development is located adjacent to the approved commercial development on the western adjoining property. As part of that approval, a new crossover to Beeliar Drive and associated bus stop relocation works have been approved, as illustrated in Figure 21.

The approved arrangement provides a formalised access connection from Beeliar Drive into the western adjoining property, together with modifications to the existing bus stop infrastructure on the Beeliar Drive frontage. The drawing indicates that the revised bus stop arrangement has been approved by the Public Transport Authority.

The proposed Beeliar Shopping Centre development will be able to obtain indirect access to Beeliar Drive via the adjoining western property, subject to appropriate reciprocal access arrangements being established between the landowners. This arrangement enables vehicles to circulate between the two developments internally without requiring a separate additional crossover to Beeliar Drive from the subject site.

The use of the adjoining approved Beeliar Drive crossover is consistent with contemporary access management principles, as it avoids the need for multiple closely spaced access points on Beeliar Drive and supports shared access between integrated commercial land uses. It also assists in reducing unnecessary turning movements at external intersections by allowing cross-access and local circulation between adjoining developments.

The proposed development has therefore been designed to integrate with the approved access and bus stop relocation works on the western adjoining property. The final access rights, easement arrangements and operational details will be subject to confirmation by the project team and relevant landowners.

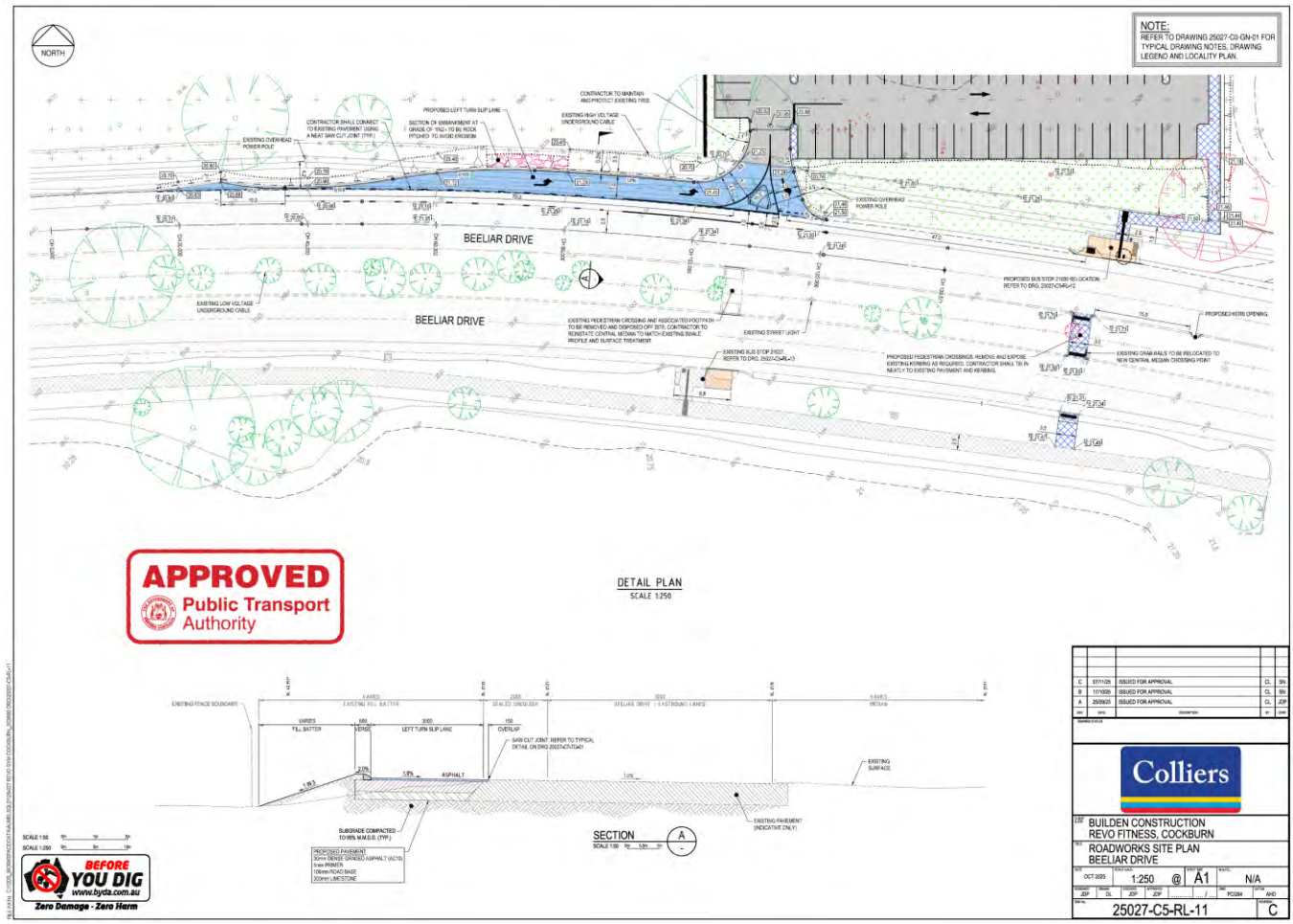


Figure 21: Approved Beeliar Drive access and bus stop relocation

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 is located within the western portion of the Structure Plan area and provides approximately 6,075m² of retail trading floor area. This remains below the 6,300m² retail floorspace allowance identified for the western portion of the Structure Plan area and the 8,100m² total retail floorspace allowance identified for the broader Structure Plan area. The proposal therefore does not seek to increase the overall retail floorspace contemplated by the Structure Plan. Rather, it redistributes retail and complementary land use components within the western portion of the Structure Plan area while maintaining the overall 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.

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 road tenure arrangement contemplated by the Structure Plan, the proposal retains the functional connectivity outcomes required to support internal circulation and future access opportunities. The legal mechanism for access, tenure and ongoing management of the private road link is a planning and land tenure matter to be confirmed separately.

The Structure Plan identifies a four-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 walking and cycling 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 5. *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 5: Adopted trip rates for traffic generation

Land use	Trip rate source	Daily rate	Weekday Peak Hour	Weekend Peak Hour	IN	OUT
Shopping Centre (0 - 20,000m2)	TfNSW	61 trips per 100m2	6.7 trips per 100m2	7.5 trips per 100m2	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 6. 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 6: Daily and peak hour traffic generation – proposed development

Shopping Centre Trips	GLFA (m2)	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 7. An image of the model network is shown in Figure 22.

Table 7: 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 8, with detailed SIDRA outputs provided in Appendix E.

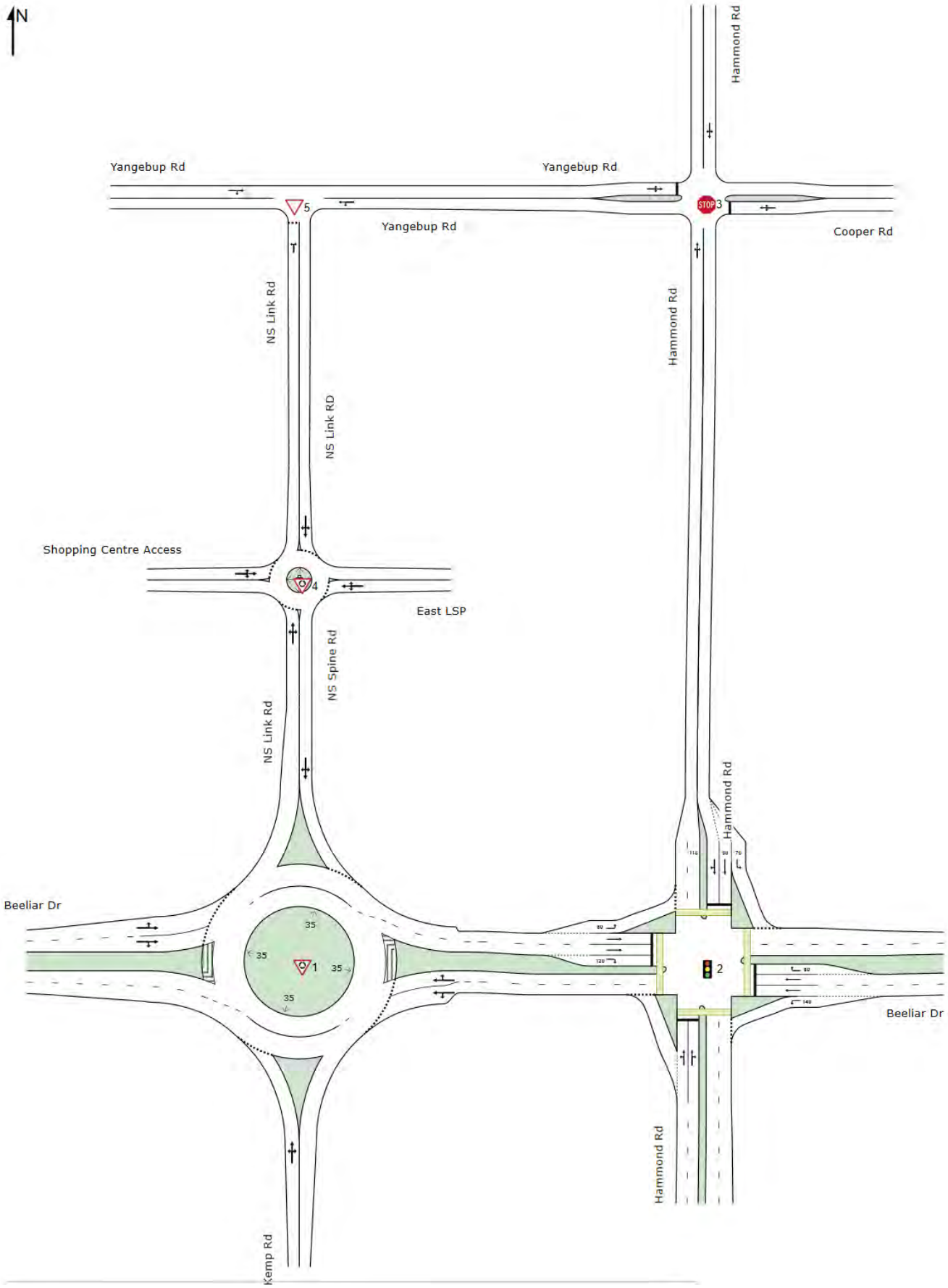


Figure 22: SIDRA network model

Table 8: 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.

The City's RFI requested that remedial measures be identified and assessed for the Beeliar Drive corridor intersections, including the Beeliar Drive / Kemp Road roundabout and the Beeliar Drive / Hammond Road traffic signals. However, the modelling undertaken for this TIA demonstrates that these intersections are already constrained, and that future performance issues are primarily associated with background traffic growth and broader corridor demand rather than the proposed development in isolation.

In this context, undertaking speculative concept modelling of corridor upgrades would have limited practical value. Urbii is not aware of any current planning project, committed funding, adopted delivery timeframe or available land reservation for widening or major capacity upgrades at either the Beeliar Drive / Kemp Road roundabout or Beeliar Drive / Hammond Road signalised intersection. Without a defined road authority upgrade concept, any remedial option tested in SIDRA would be hypothetical and may not reflect a deliverable or acceptable future road design.

The Beeliar Drive corridor performs a broader regional movement function and any meaningful capacity upgrade would require coordinated corridor planning by the relevant road authorities, including consideration of land requirements, property impacts, utilities, drainage, active transport facilities, public transport infrastructure, environmental constraints and funding mechanisms. These matters extend beyond the scope of a site-specific development TIA.

Accordingly, the appropriate role of this assessment is to identify the development's incremental impact on the existing and future network, rather than to design unfunded regional road upgrades. The SIDRA analysis confirms that the development adds only a modest level of traffic to an already constrained corridor and does not materially change the future operational outcome. Future Beeliar Drive corridor upgrades should therefore be progressed through broader network planning and infrastructure funding processes, rather than being attributed to the proposed development in isolation.

8.8 Hammond Road / Yangebup Road roundabout analysis

As discussed in Section 6.3, the Hammond Road North Structure Plan identifies a future upgrade of the Hammond Road / Yangebup Road / Cooper Road intersection from a priority-controlled four-way intersection to a single-lane roundabout. During consultation with the City of Cockburn, Urbii was requested to consider the potential operational performance of this upgrade and assess its implications for the future road network.

To inform this assessment, a SIDRA model was developed based on the City of Cockburn concept roundabout layout, shown in Figure 23. The analysis was undertaken for the critical assessment period for this intersection, being the 2038 weekday PM peak hour. This represents the highest demand scenario identified in the traffic modelling for the intersection. The assessment adopted the same future traffic forecasts used throughout this TIA, including background traffic growth and development-generated traffic.

The results of the roundabout assessment are summarised in Table 9. Overall, the proposed roundabout is forecast to operate with an intersection v/c ratio of 1.036, average delay of 30.9 seconds and Level of Service C during the 2038 weekday PM peak hour. The modelled result indicates that the roundabout would be operating at, or marginally above, practical capacity under the 2038 traffic scenario.

The roundabout option changes the way delay and queuing are distributed across the intersection. Under the existing priority-controlled arrangement, the Hammond Road through movements operate with priority, while side-road movements from Yangebup Road and Cooper Road are required to find acceptable gaps in the Hammond Road traffic stream. Under a roundabout arrangement, all approaches are required to give way to circulating traffic, resulting in a more balanced form of control but also introducing delay to Hammond Road movements that currently operate with priority.

The most constrained movement in the roundabout model is the northern Hammond Road approach. This approach is forecast to operate with a v/c ratio of 1.036, average delay of approximately 47 seconds and a 95th percentile queue of approximately 441 m. This result reflects the high southbound demand on Hammond Road and the effect of introducing roundabout control on an approach that currently benefits from priority movement through the intersection.

The Yangebup Road approach is forecast to operate with a v/c ratio of 0.162, average delay of approximately 8 seconds and a 95th percentile queue of approximately 6 m. These results indicate that the side-road approaches would operate within capacity under the roundabout arrangement.

Compared with the existing priority-controlled intersection results presented in Section 8.6.3, the roundabout option provides a different operational outcome rather than a clear whole-of-intersection capacity solution. The roundabout improves the level of control and access opportunities for side-road traffic, but also introduces additional control delay to the dominant Hammond Road traffic stream. The overall v/c ratio remains slightly above 1.0 in the 2038 weekday PM peak hour, indicating that the concept roundabout would be approaching its operational limit under the future assessment scenario.

On this basis, the analysis should be interpreted as a sensitivity test of the City's concept roundabout arrangement rather than a recommendation for or against the upgrade. The results indicate that the roundabout could provide a more controlled and balanced intersection form, particularly for side-road movements, but may also result in significant queuing on the northern Hammond Road approach under 2038 traffic conditions.

Table 9: Hammond Rd / Yangebup Rd concept roundabout analysis (2038)

MOVEMENT SUMMARY

Site: [3 (2)] Hammond Rd / Yangebup Rd / Cooper Rd - Conversion (Folder1)
Network: [1] 2038 Post Development - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.9.250

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Queued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	24	0.0	**19**	0.0	0.335	4.6	LOS A	2.2	16.1	0.26	0.46	0.26	48.6
2	T1	All MCs	506	6.0	**401**	5.5	0.335	4.9	LOS A	2.2	16.1	0.26	0.46	0.26	52.7
3	R2	All MCs	32	9.0	**25**	8.2	0.335	9.0	LOS A	2.2	16.1	0.26	0.46	0.26	47.9
Approach			562	5.9	**445**	5.4	0.335	5.1	LOS A	2.2	16.1	0.26	0.46	0.26	52.3
East: Cooper Rd															
4	L2	All MCs	81	5.0	81	5.0	0.398	14.1	LOS B	2.3	16.7	1.00	0.88	1.10	35.9
5	T1	All MCs	12	0.0	12	0.0	0.398	13.8	LOS B	2.3	16.7	1.00	0.88	1.10	35.9
6	R2	All MCs	16	9.0	16	9.0	0.398	18.4	LOS B	2.3	16.7	1.00	0.88	1.10	43.1
Approach			108	5.0	108	5.0	0.398	14.7	LOS B	2.3	16.7	1.00	0.88	1.10	37.5
North: Hammond Rd															
7	L2	All MCs	13	11.0	13	11.0	1.036	47.3	LOS D	60.8	440.7	1.00	1.48	1.84	31.4
8	T1	All MCs	912	4.0	912	4.0	1.036	47.1	LOS D	60.8	440.7	1.00	1.48	1.84	23.7
9	R2	All MCs	46	7.0	46	7.0	1.036	51.3	LOS E	60.8	440.7	1.00	1.48	1.84	23.7
Approach			971	4.2	971	4.2	1.036	47.3	LOS D	60.8	440.7	1.00	1.48	1.84	23.8
West: Yangebup Rd															
10	L2	All MCs	51	6.0	**50**	6.0	0.162	6.0	LOS A	0.8	5.9	0.59	0.62	0.59	45.8
11	T1	All MCs	14	0.0	14	0.0	0.162	5.8	LOS A	0.8	5.9	0.59	0.62	0.59	41.9
12	R2	All MCs	57	3.0	57	3.0	0.162	9.9	LOS A	0.8	5.9	0.59	0.62	0.59	26.9
Approach			121	3.9	121	3.9	0.162	7.8	LOS A	0.8	5.9	0.59	0.62	0.59	40.8
All Vehicles			1762	4.8	**1644**	5.1	1.036	30.9	LOS C	60.8	440.7	0.77	1.10	1.27	31.9

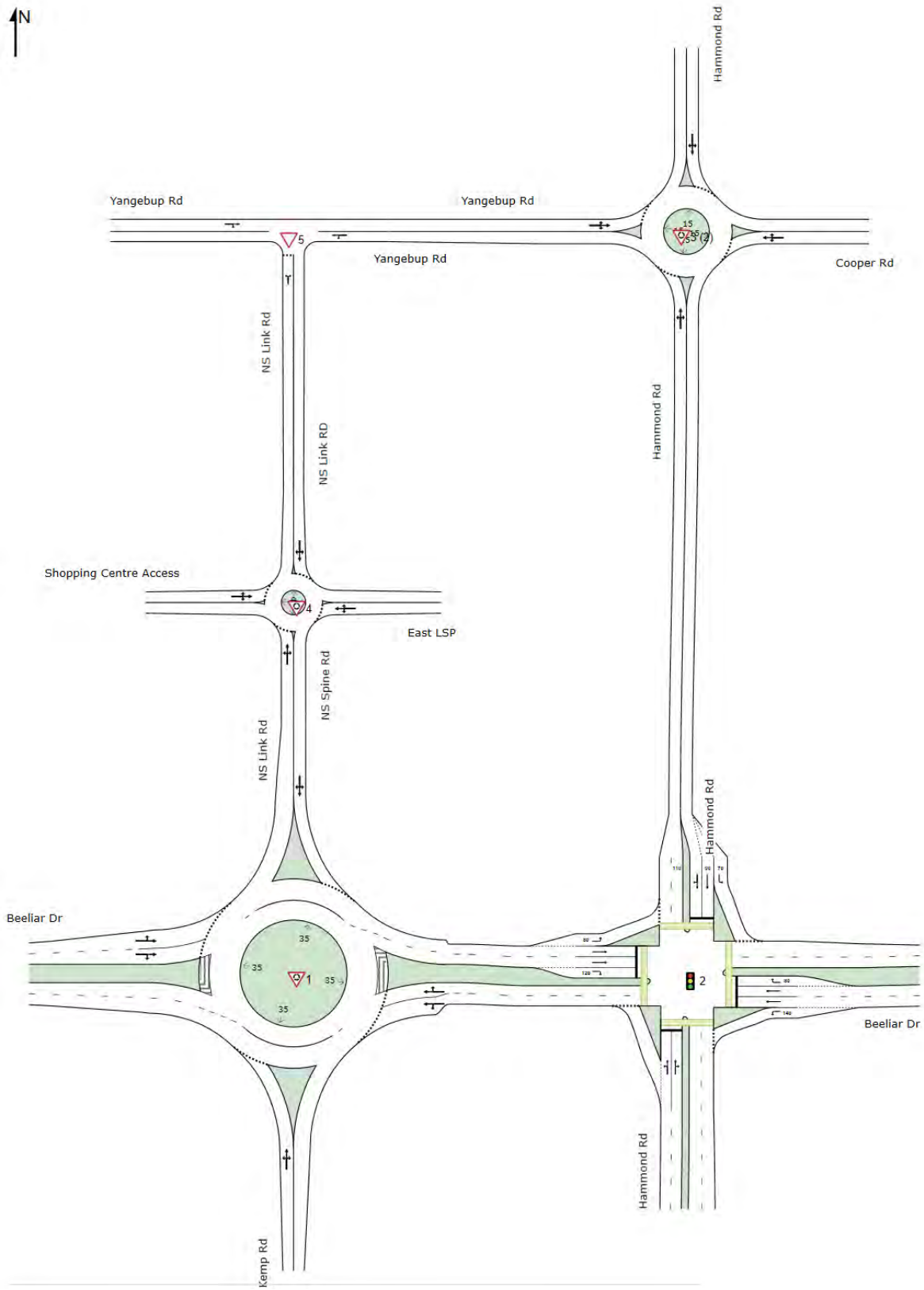


Figure 23: Hammond Rd / Yangebup Rd concept roundabout network

8.9 Proportional contribution assessment – Hammond Rd / Yangebup Rd roundabout

Further assessment has been undertaken to consider the proportion of future traffic through the Hammond Road / Yangebup Road / Cooper Road intersection that is attributable to the proposed development. This assessment has been prepared to inform discussion with the City of Cockburn regarding any potential contribution toward the future roundabout upgrade identified in the Hammond Road North Structure Plan.

The assessment has been based on future 2038 traffic volumes, including background traffic growth, traffic generated by the proposed shopping centre development, and allowance for future development of the eastern land parcel within the Structure Plan area. The proportional traffic assessment is summarised in Table 10.

Table 10: Proportion of future intersection traffic attributable to development

Traffic Component	WD Traffic	WE Traffic	WD %	WE %
2038 Base Traffic	1,614	1,290	91.2%	88.2%
Development Traffic	60	64	**3.4%**	**4.4%**
Eastern Parcel LSP	96	108	5.4%	7.4%
Total Traffic	**1,770**	**1,462**	**100.0%**	**100.0%**

The results indicate that the proposed shopping centre development contributes only a small proportion of future traffic demand at the Hammond Road / Yangebup Road / Cooper Road intersection. The development represents approximately 3.4% of future weekday traffic and 4.4% of future weekend traffic through the intersection. The majority of future traffic demand is associated with background traffic growth and development of other landholdings within the Structure Plan area.

For the purpose of strategic infrastructure planning and contribution discussions, the traffic contribution of the proposed development has been conservatively rounded up to 5%. This provides a reasonable upper-bound estimate of the development's share of future demand at the intersection.

The need for the future roundabout upgrade is not solely attributable to the proposed shopping centre development. Rather, the upgrade is associated with broader background traffic growth, future Structure Plan development and the long-term urbanisation of the Hammond Road / Yangebup Road corridor. Accordingly, any developer contribution should be considered on a proportional basis, having regard to the share of future intersection demand attributable to the proposed development.

For the purpose of high-level contribution discussions, an order-of-magnitude cost estimate of $0.5 million to $1.0 million has been assumed for the construction of a single-lane urban roundabout at this location. This estimate is indicative only and has not been prepared from detailed civil design or quantity survey information. The ultimate cost of the roundabout would be subject to the final design, drainage requirements, utility relocations, lighting, traffic management, construction timing, approvals and other project-specific considerations.

Applying an indicative 5% contribution proportion to the above cost range would equate to an approximate contribution in the order of $25,000 to $50,000. This is summarised in Table 11.

Table 11: Indicative proportional contribution estimate

Assumed Roundabout Cost	Indicative 5% Contribution
$500,000	$25,000
$750,000	$37,500
$1,000,000	$50,000

On this basis, an indicative proportional contribution in the order of $25,000 to $50,000 would be broadly consistent with the estimated traffic contribution of the proposed development. The final contribution amount, timing and delivery mechanism should be agreed with the City of Cockburn through the planning approval process.

8.10 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.

8.11 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 7,875 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 (7,875 m² NLA) indicates an expected peak parking demand of approximately **213 to 291 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

10.1 Service vehicle access and manoeuvrability

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. Dedicated servicing areas have been provided for the shopping centre, fuel station and fast-food tenancies, with swept path analysis undertaken to confirm satisfactory vehicle access and manoeuvrability.

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 largely segregated from customer parking areas and internal circulation aisles, thereby reducing potential conflicts and improving overall site safety and operational efficiency. Service vehicles are able to enter and exit the loading dock area directly from Yangebup Road without traversing customer parking areas.

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. The detailed operation of the loading facilities, including delivery scheduling and management procedures, is discussed further in Section 10.2.

Fuel Station Pad Site

The fuel station pad site incorporates a dedicated fuel delivery area adjacent to the underground fuel storage infrastructure. Fuel deliveries are undertaken by a 19.0 m articulated fuel tanker, with swept path analysis confirming satisfactory access, circulation and egress within the site.

The assessment demonstrates that the fuel tanker can safely enter the site, access the designated refuelling position and depart in a controlled manner. The fuel delivery vehicle temporarily occupies part of the internal circulation network during refuelling operations, consistent with typical service station operations.

Fuel station servicing and delivery vehicles utilise the western crossover connection to Yangebup Road. Access arrangements have been designed to minimise interaction with customer traffic and maintain safe site operation.

Fast-Food Pad Sites

Each of the two fast-food pad sites is provided with dedicated servicing facilities designed to accommodate anticipated delivery and waste collection requirements.

The western fast-food tenancy has been designed to accommodate servicing by an 8.8 m Medium Rigid Vehicle (MRV), with swept path analysis confirming satisfactory access and manoeuvrability.

The eastern fast-food tenancy has been designed to accommodate servicing by a 12.5 m Heavy Rigid Vehicle (HRV). To facilitate these movements, a left-turn service vehicle entry has been incorporated from the internal north-south link road. The entry geometry has been widened to accommodate HRV turning movements and provide direct access to the servicing area.

Following servicing activities, HRVs are able to circulate through the internal road network, passing the fuel station area before exiting via Yangebup Road. This arrangement avoids the need for traversing through the primary traffic aisle fronting the shopping centre.

Swept path analysis has been undertaken for all relevant vehicle types and confirms that service vehicle movements can be accommodated safely and efficiently within the proposed development.

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

10.2 Service, delivery and waste vehicle management

The proposed development has been designed to accommodate service, delivery and waste collection activities within the site while minimising interaction with customer parking areas and internal circulation routes. Service vehicle movements associated with the supermarket, specialty retail tenancies, fuel station and fast-food tenancies will be managed through a combination of dedicated loading facilities, designated access routes and operational controls.

For the main shopping centre building, deliveries, waste collection and servicing activities will occur via the dedicated loading dock facilities accessed directly from Yangebup Road. These arrangements separate servicing activities from customer parking areas and provide efficient access for heavy vehicles.

Fuel deliveries to the service station are proposed to be undertaken by a 19.0 m articulated fuel tanker. In accordance with the operational requirements agreed between the landowner and fuel operator, refuelling activities will occur outside normal retail trading hours, being after 9:00 pm and before 6:00 am. Restricting fuel deliveries to overnight periods will minimise interaction between fuel tankers and customer traffic and will assist in maintaining safe and efficient operation of the site.

Servicing arrangements for the fast-food pad sites will be determined in consultation with future tenants and operators. The development layout provides flexibility for servicing by Medium Rigid Vehicles (MRVs) and Heavy Rigid Vehicles (HRVs), with dedicated service bays and access routes incorporated into the design. The final delivery schedules, waste collection arrangements and service vehicle management procedures will be established as part of tenant fit-out and operational planning.

At a high level, service, delivery and waste vehicle management measures are anticipated to include:

- designated loading and servicing areas for each tenancy;
- scheduling of major deliveries outside peak customer periods where practicable;
- overnight fuel deliveries to the service station;
- designated access routes for service vehicles;
- separation of service vehicle movements from customer parking and pedestrian activity areas where practicable;
- management of waste collection activities to minimise operational conflicts;
- coordination of servicing activities between tenants where shared loading facilities are utilised; and
- tenant-specific servicing arrangements for the fast-food pad sites.

A detailed Service and Delivery Access Plan (SDAP) may be prepared as a condition of development approval if required by the City of Cockburn. The SDAP would address the operational management of service vehicle movements, delivery scheduling, waste collection procedures, tenant servicing arrangements and site management protocols.

As these matters relate to the day-to-day operation of the development rather than the physical design of the site, preparation of the SDAP is appropriately undertaken following approval and prior to occupation of the development. The preparation of an SDAP would not require any modification to the development layout, access arrangements, parking supply or servicing infrastructure assessed within this Transport Impact Assessment.

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.

As discussed in Section 6.4, approved works associated with the adjoining western development include relocation of the existing Beeliar Drive bus stop infrastructure. The revised bus stop arrangement has been approved by the Public Transport Authority and will maintain convenient public transport access in proximity to the subject site.

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 24, 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.

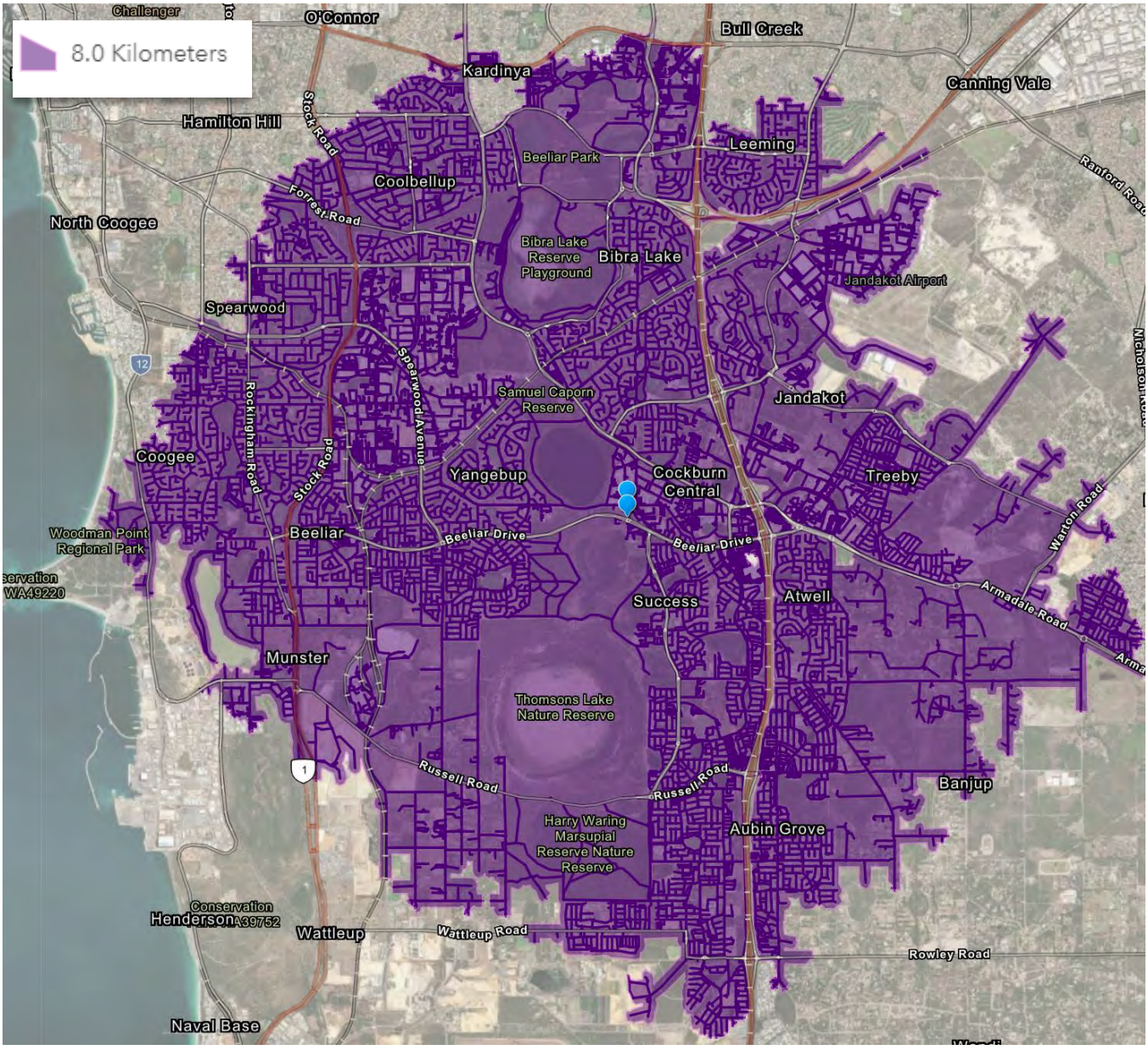


Figure 24: Cycling and micromobility catchment

14 Response to City RFI matters

The revised Transport Impact Assessment has been updated to address the transport-related matters raised by the City of Cockburn in its Request for Further Information. The key RFI matters and the corresponding sections of this report where they have been addressed are summarised in Table 12.

Table 12: Summary of response to City RFI matters

RFI Matter	Addressed in Revised TIA
Development yield and Structure Plan floorspace	Section 4 has been updated to provide a development yield table and clarify the proposed tenancy areas, retail trading floor area and adopted traffic generation floor area. Section 7 has been updated to clarify that the proposal remains within the retail floorspace allocation contemplated by the Hammond Road North Structure Plan.
Surrounding transport network changes	Section 6 has been updated to summarise relevant planned and identified transport network changes, including the Hammond Road upgrade, Beeliar Drive / Dunraven Drive signals, Yangebup Road urbanisation, Beeliar Drive access and bus stop relocation, and transport infrastructure identified in the Hammond Road North Structure Plan.
Hammond Road / Yangebup Road / Cooper Road intersection upgrade	Sections 6.3, 8.8 and 8.9 address the future roundabout upgrade identified for this intersection. The City concept design has been included in Appendix C. SIDRA analysis has been undertaken for the concept roundabout and a proportional contribution assessment has been prepared based on the forecast development traffic share.
Private north-south road link	Sections 5.5.3 and 7 have been updated to clarify that the north-south link is proposed to operate as a private internal road while retaining the functional connectivity outcomes identified by the Structure Plan. Commentary has also been added regarding the conceptual cross-section, low-speed function and potential traffic calming measures.
Potential rat-running through the north-south link	Section 5.5.3 has been updated to explain the intended function of the north-south link as a low-speed internal access road rather than a higher-order through route. The report identifies design characteristics and future traffic calming measures that will discourage shortcut behaviour.
Sight distance assessments	Sections 5.2 and 5.3 have been updated to describe the sight distance requirements for the internal roundabout and the Beeliar Drive / Kemp Road roundabout connection. Supporting sight distance diagrams are provided in Appendix B.
Internal roundabout design and landscaping	Sections 5.2 and 5.3 have been updated to address roundabout sightline requirements, including the need to maintain clear sightlines through the central island and avoid landscaping that would obstruct the required visual clearance envelope.
Beeliar Drive corridor remedial measures	Sections 8.6 and 8.7 have been updated to explain the existing and future congestion conditions along Beeliar Drive and to demonstrate consistency with the City of Cockburn District Traffic Study. Section 8.7 explains why speculative

RFI Matter	Addressed in Revised TIA
	modelling of unfunded and unplanned corridor upgrades is not considered warranted as part of this site-specific TIA.
SIDRA modelling outputs	Section 8.6 has been updated to provide additional commentary on the SIDRA assessment results for each assessed intersection. The commentary distinguishes between existing network constraints, background traffic growth and the incremental impact of the proposed development.
Service vehicle access and swept paths	Section 10.1 has been updated to describe service vehicle access and manoeuvrability for the main shopping centre building, fuel station and fast-food pad sites. Swept path diagrams for relevant service vehicles are provided in Appendix F.
Fast-food service vehicle access	Section 10.1 has been updated to describe the widened left-turn service vehicle entry from the north-south link road, which has been designed to accommodate 12.5 m HRV access to the fast-food pad site.
Fuel tanker servicing	Sections 10.1 and 10.2 have been updated to describe the fuel tanker access route and operational management requirements, including the restriction of refuelling activities to outside normal retail trading hours.
Service, delivery and waste management	Section 10.2 has been added to describe the proposed high-level service, delivery and waste vehicle management approach. The section also notes that a detailed Service and Delivery Access Plan can be prepared as a condition of development approval, as the matters are operational in nature and do not affect the DA design.
Public transport and bus stop relocation	Sections 6.4 and 11 have been updated to address the approved Beeliar Drive access and bus stop relocation associated with the adjoining western development, and to explain how the proposed development will maintain access to nearby public transport facilities.
Walking and cycling connectivity	Sections 12 and 13 describe the proposed walking and cycling infrastructure, including frontage paths, internal pedestrian connections, crossing opportunities, bicycle parking and staff end-of-trip facilities.
Parking provision	Section 9 addresses parking demand and supply, including statutory parking requirements, expected parking demand based on survey data and engineering guidance, and the appropriateness of the proposed parking provision.
Impact on neighbouring areas	Section 8.10 confirms that the proposed development is not expected to result in adverse traffic impacts on surrounding residential or industrial areas, with development traffic largely contained within the surrounding district road network.

15 Conclusion

This Traffic Impact Assessment has examined the transport implications of the proposed Beeliar Shopping Centre development, including traffic operations, site access, parking provision, service vehicle movements, public transport, walking and cycling access, and integration with the surrounding transport network.

The assessment confirms that the proposal has been designed having regard to the Hammond Road North Structure Plan and will deliver key elements of the planned movement network, including the north-south private road link, frontage path infrastructure and internal pedestrian connections. The proposal remains within the retail floorspace allocation contemplated by the Structure Plan and does not represent an intensification beyond the planned activity centre function.

The surrounding road network, particularly the Beeliar Drive corridor, is already subject to congestion during peak periods and is forecast to experience further pressure as a result of broader background traffic growth. The traffic modelling indicates that the proposed development will add only a modest level of traffic to the network and will not materially change the overall performance outcome of the key external intersections.

The Hammond Road / Yangebup Road / Cooper Road intersection has been assessed with consideration to the future roundabout concept identified by the City. The analysis indicates that the intersection is likely to require further consideration within the medium-term planning horizon, primarily due to background traffic growth and broader Structure Plan development. The proposed development represents only a small proportion of future traffic demand through this intersection.

The proposed access arrangements, internal road layout and servicing strategy have been designed to safely and efficiently accommodate customer, delivery and waste collection vehicles. A Service and Delivery Access Plan can be prepared as a condition of approval to manage operational servicing matters, including fuel deliveries, tenant servicing and waste collection arrangements.

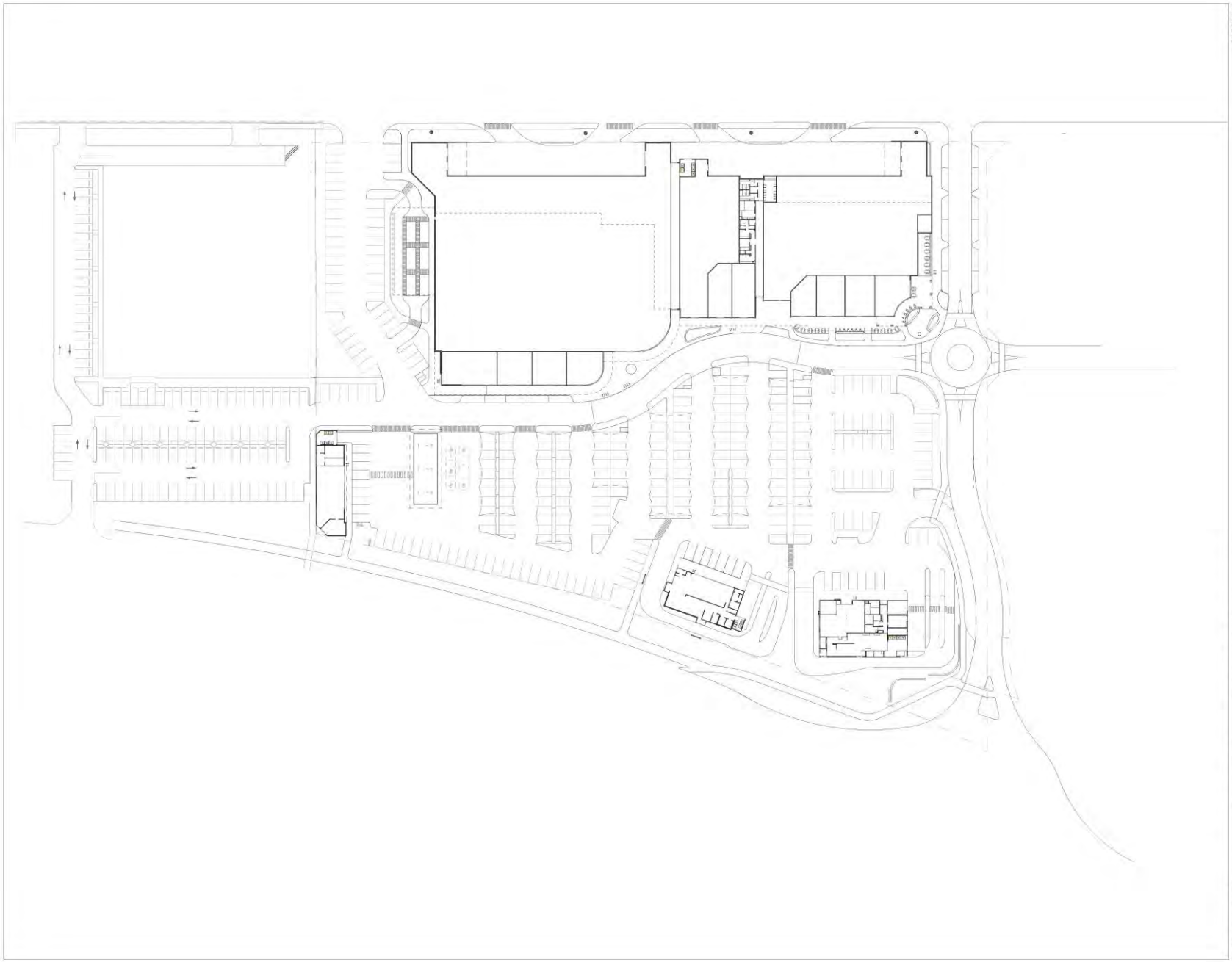
The proposed parking provision is considered appropriate for the scale and function of the development, having regard to relevant planning requirements, survey-based parking demand expectations and the shared parking characteristics of shopping centre developments.

The development is also well positioned to support sustainable transport choices, with nearby bus stops, existing crossing facilities, proposed frontage paths, internal pedestrian connections, bicycle parking and staff end-of-trip facilities collectively supporting access by public transport, walking and cycling.

Overall, the assessment concludes that the proposed development can be appropriately accommodated within the existing and planned transport network, subject to normal detailed design, operational management and approval processes.

Appendices

Appendix A: Proposed development plan



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23/08/2019	M	FOR INFORMATION	SH
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ARCHITECTS

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CLIENT

Windsor Knight

PROJECT NAME

Beeliar SC

Perth, WA

DRAWING NAME

GROUND FLOOR PLAN

Preliminary

SCALE 1 : 500 (A1)

PROJECT No.	DRAWING No.	REV
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	DRAWN BY	CK

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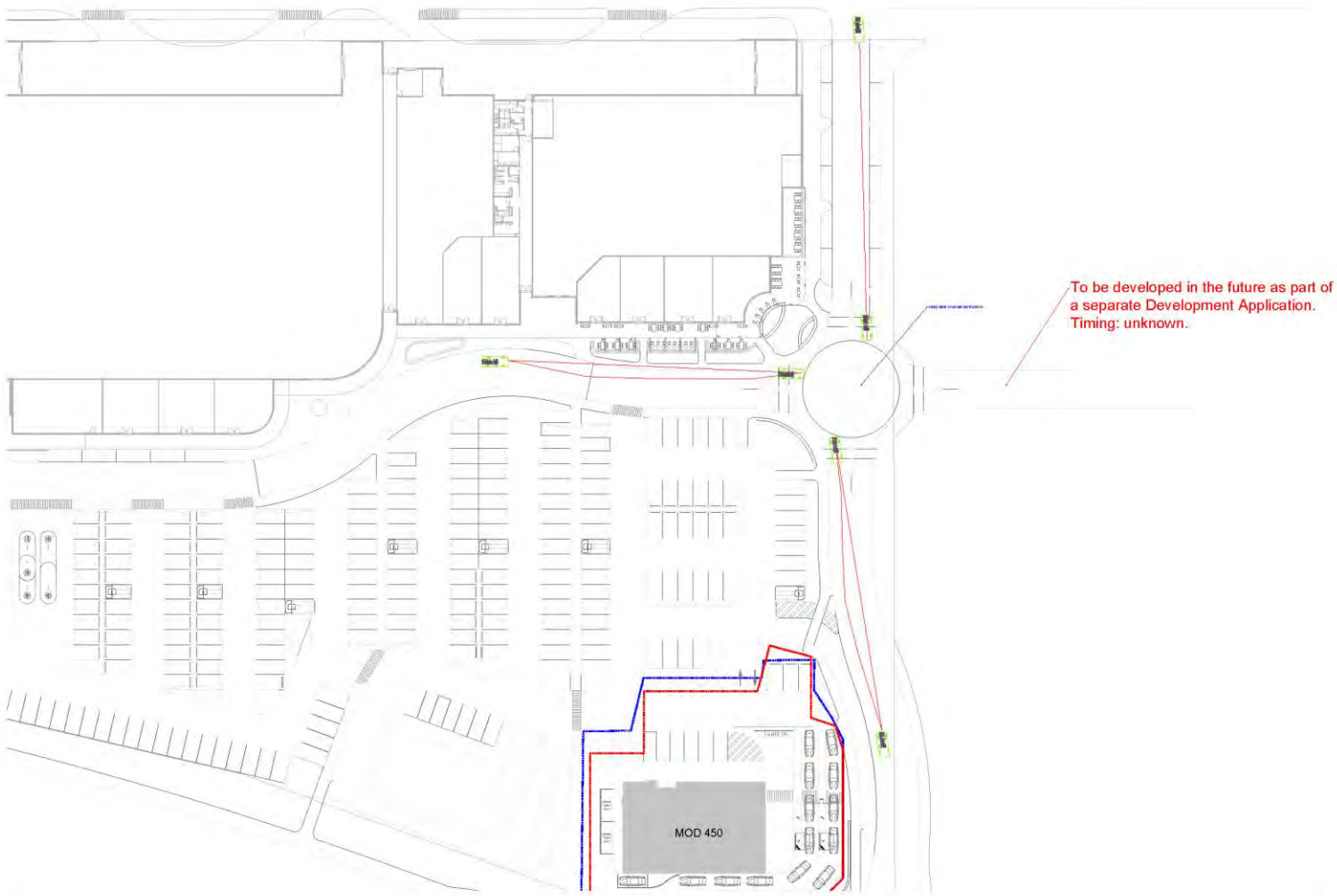
Appendix B: Sightline assessment sketches



Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	AGRD Part 4B: Roundabouts. Approach Speed = 50km/h Approach Sight Distance (ASD) required = 55m Assessment confirms ASD is provided on all roundabout approaches.

Drawn by:	Paul Ghantous
Client:	Albion Park Project Pty Ltd
Project:	U25.105 - Beeliar Drive Shopping Centre Proposed Shopping Centre Development
Drawing Title:	Roundabout Sightline Assessment Criterion 1 - Approach Sight Distance
Date:	23/06/2026
Scale @ A3:	1:750
Revision:	sk01a

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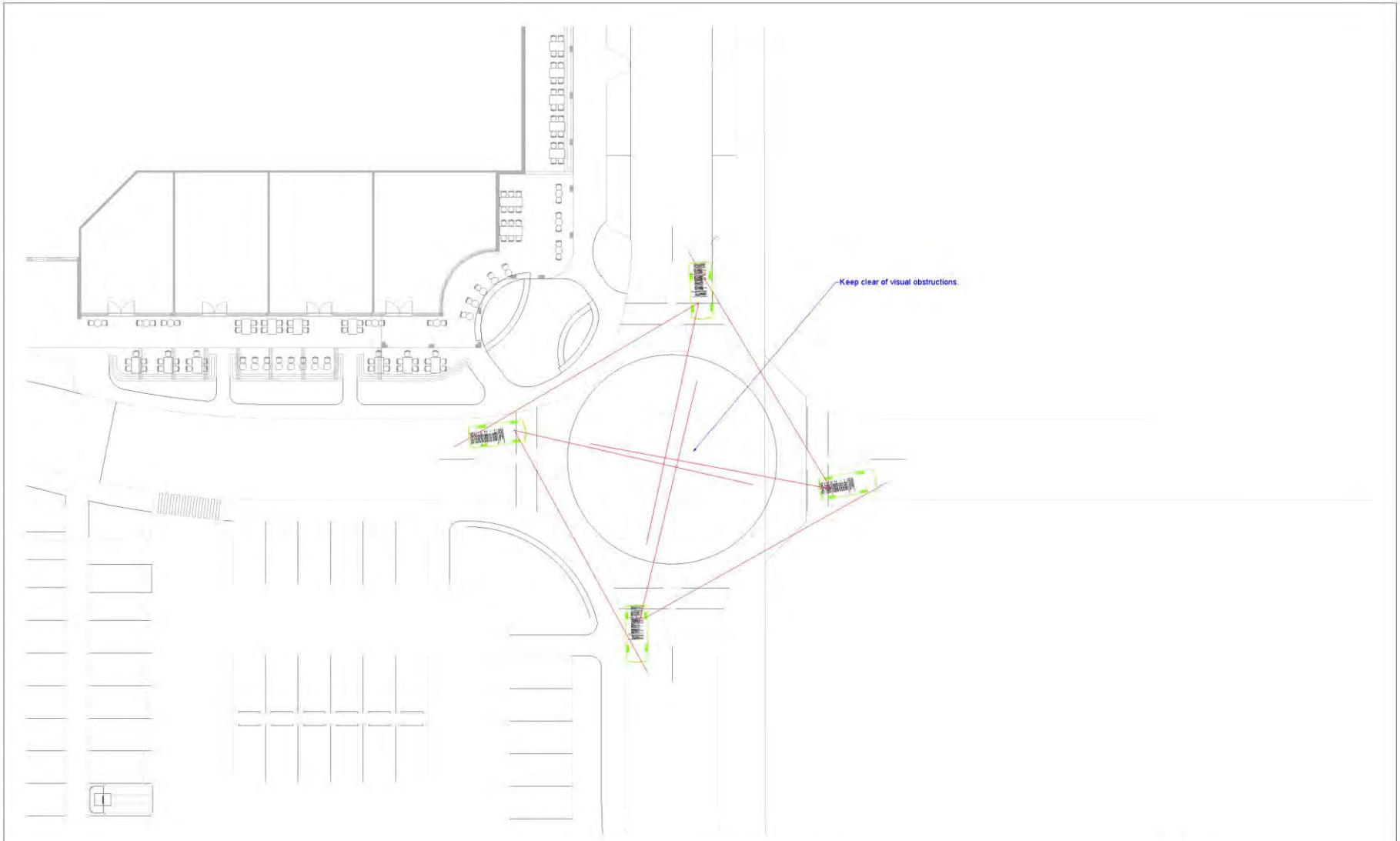

Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	AGRD Part 4B: Roundabouts. Circulating Speed = 20km/h Minimum Sight Distance Required = 22m Assessment confirms sight distance is provided on all roundabout approaches.

Drawn by: Paul Ghantous

Client: Albion Park Project Pty Ltd

Project: U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title: Roundabout Sightline Assessment
Criterion 2 - Sight Distance to Circulating Traffic

Date: 23/06/2026

Scale @ A3: 1:300

Revision: sk02a

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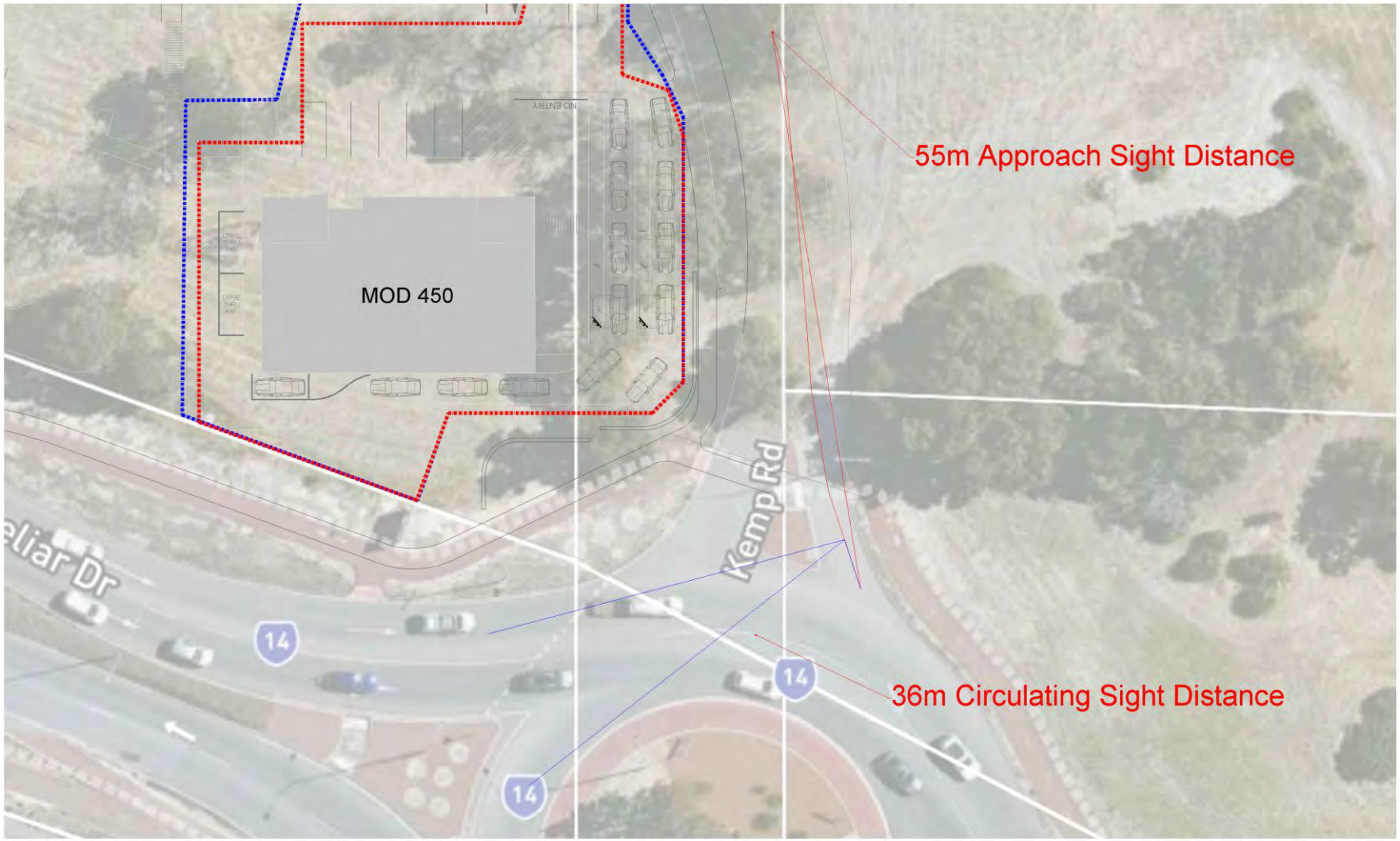

Revision notes:

Rev:	Date:	Notes:
1	23/06/2026	AGRD Part 4B: Roundabouts. Approach Speed = 50km/h Approach Sight Distance (ASD) required = 55m Circulating Speed = 30km/h Minimum Sight Distance Required = 36m Assessment confirms that sight distance is provided on the proposed northern roundabout approach.

Drawn by: Paul Ghantous

Client: Albion Park Project Pty Ltd

Project: U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title: Roundabout Connection Sightline Assessment
Criterion 1 and 2

Date: 23/06/2026

Scale @ A3: 1:350

Revision: sk08a

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Revision notes:

Rev:	Date:	Notes:
1	23/06/2026	Reaction time = 2.5sec Vehicle speed = 60km/h Stopping Sight Distance (SSD) required = 81m

Drawn by: Paul Ghantous

Client: Albion Park Project Pty Ltd

Project: U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title: Driveway Sightline Assessment
AGRD Part 3 - Geometric Design

Date: 23/06/2026

Scale @ A3: 1:1000

Revision: sk09a

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Appendix C: City of Cockburn roundabout concept design

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SHEET No. DWG No.

REV	DESCRIPTION	DRAWN	DATE	CHECKED

\\Operations\Civil Projects\Road Design\Projects\Hammond Road\Yangebup Road Intersection\Working Drawing.dwg

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9 COLEVILLE CRESCENT, SPEARWOOD WA 6163
PHONE: (08) 9411 3444 FAX: (08) 9347 3333

TITLE: XXXXX XXXX XXXX

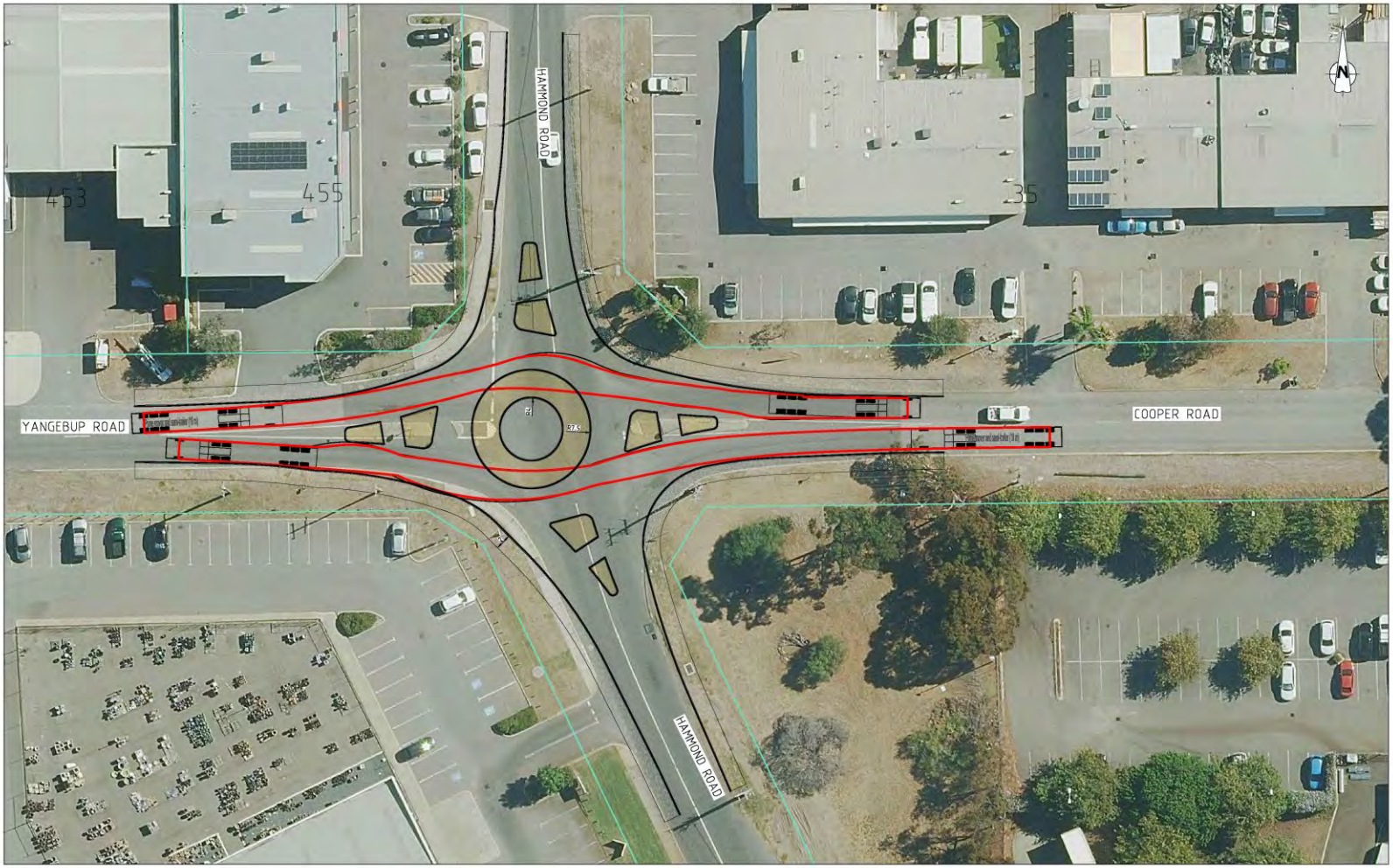
DESIGNED	XX	APPROVED	
DRAWN	XX		
CHECKED		DESIGN MANAGER	

SCALE	xxxxxxxx	JOB No.	XXXXX
DWG No.	XXXXXX	SHEET No.	X
REV			

SCALE (HZ) 1:500 0 10 20 30 40 50

A1

X XXXXXX
SHEET No. DWG No.



REV	DESCRIPTION	DRAWN	DATE	CHECKED

CITY OF COCKBURN
9 COLEVILLE CRESCENT, SPEARWOOD WA 6163
PHONE: (08) 9411 3444 FAX: (08) 9347 3333

TITLE: XXXXX XXXX XXXX

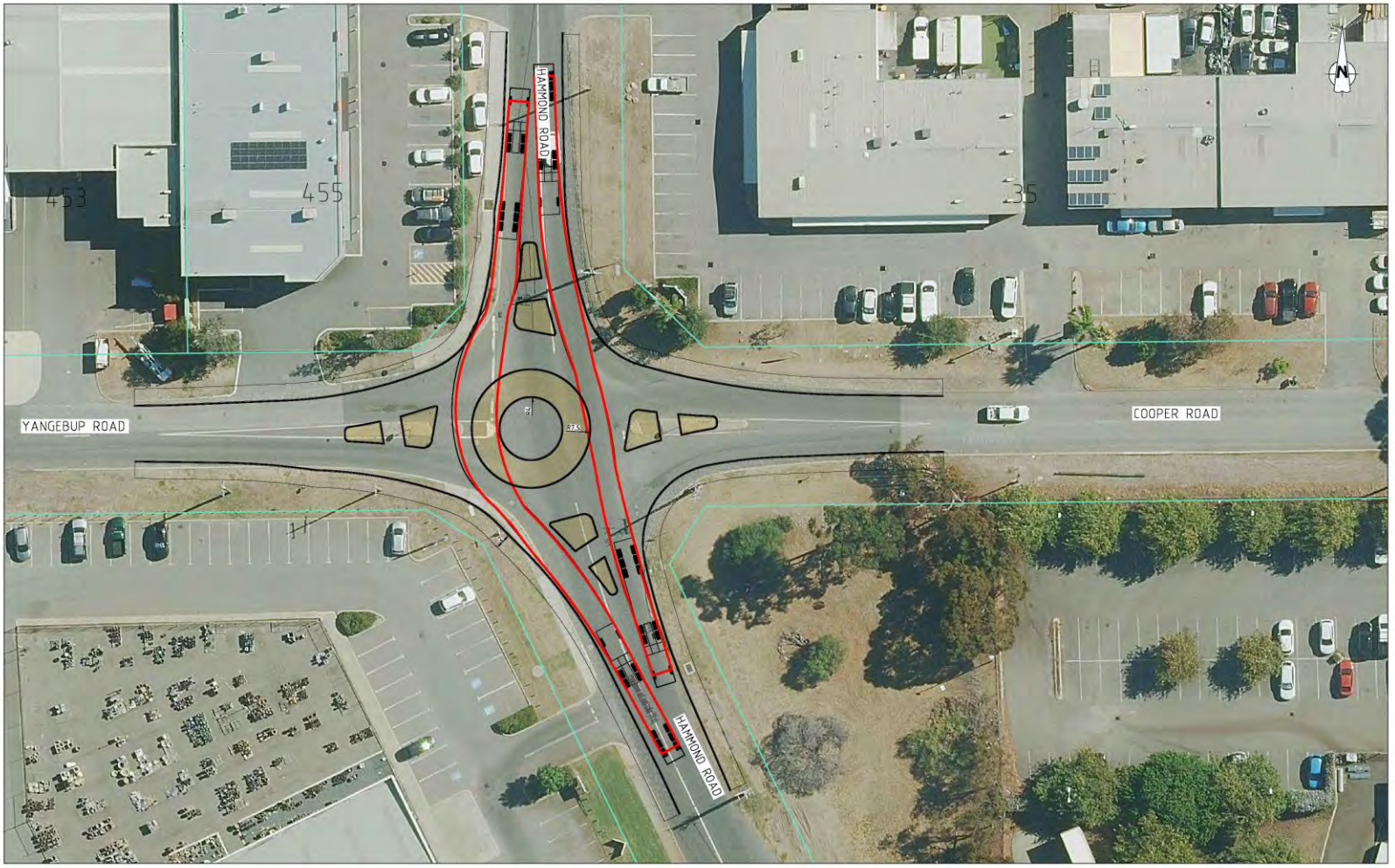
DESIGNED	XX	APPROVED
DRAWN	XX	
CHECKED		DESIGN MANAGER

SCALE xxxxxxxx JOB No. XXXXX
DWG No. XXXXXX SHEET No. X REV

SCALE (HZ) 1:500 0 5 10 15 20 30 40 50
A1

\\Operations\Civil Projects\Road Design\Projects\Hammond Road\Yangebup Road Intersection\Working Drawing.dwg

X XXXXXX
SHEET No. DWG No.



REV	DESCRIPTION	DRAWN	DATE	CHECKED

CITY OF COCKBURN
9 COLEVILLE CRESCENT, SPEARWOOD WA 6163
PHONE: (08) 9411 3444 FAX: (08) 9347 3333

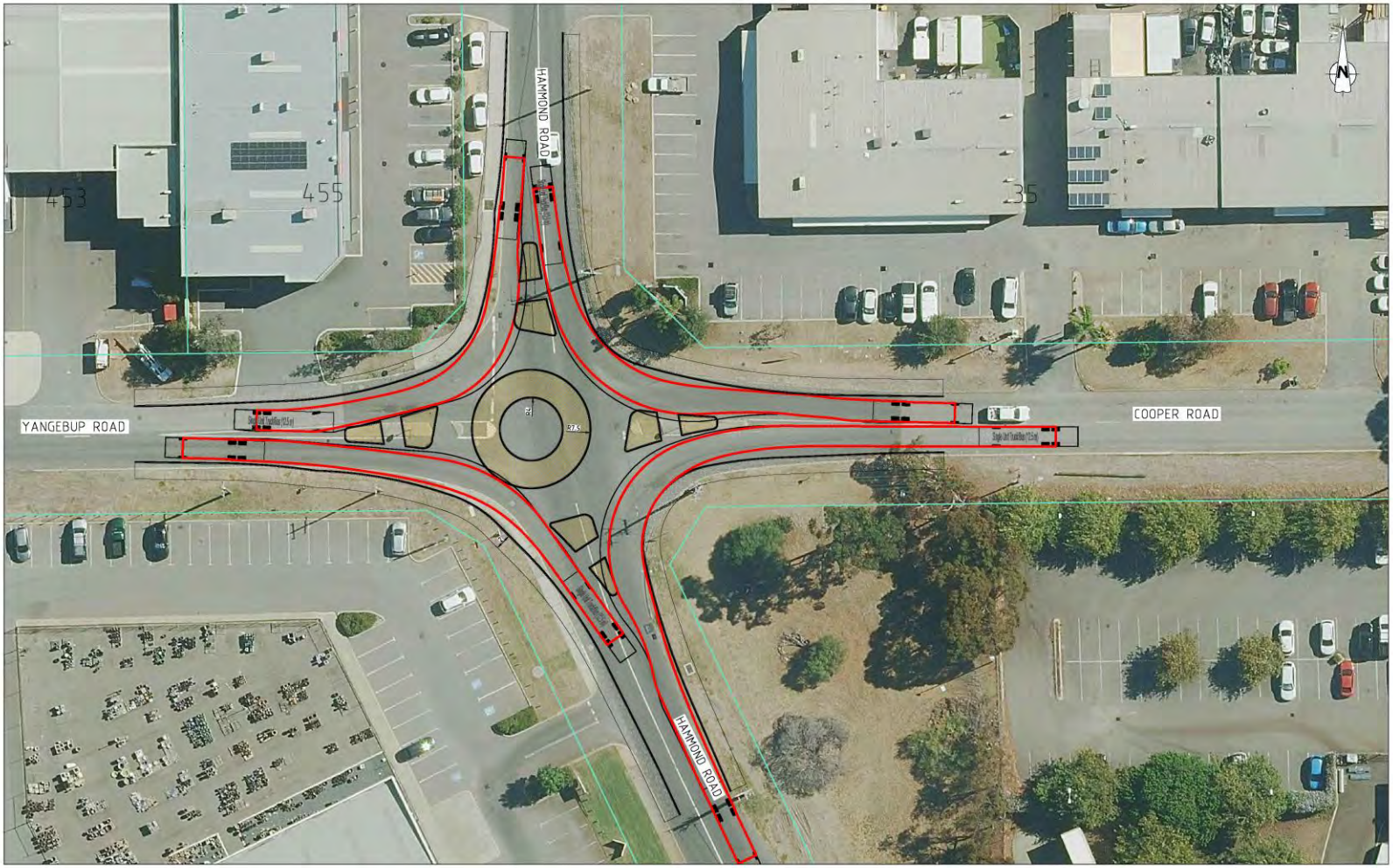
TITLE: XXXXX XXXX XXXX

DESIGNED	XX	APPROVED	
DRAWN	XX		
CHECKED		DESIGN MANAGER	

SCALE xxxxxxxx JOB No. XXXXX
DWG No. XXXXXX SHEET No. X REV

SCALE (HZ) 1:500 0 5 10 15 20 30 40 50

X XXXXXX
SHEET No. DWG No.



REV	DESCRIPTION	DRAWN	DATE	CHECKED

CITY OF COCKBURN
9 COLEVILLE CRESCENT, SPEARWOOD WA 6163
PHONE: (08) 9411 3444 FAX: (08) 9347 3333

TITLE: XXXXX XXXX XXXX

DESIGNED	XX	APPROVED
DRAWN	XX	
CHECKED		DESIGN MANAGER

SCALE xxxxxxxx JOB No. XXXXX
DWG No. XXXXXX SHEET No. X REV

SCALE (HZ) 1:500 0 5 10 15 20 30 40 50
A1

\\Operations\Civil Projects\Road Design\Projects\Hammond Road\Yangebup Road Intersection\Working Drawing.dwg

Appendix D: Traffic volume diagrams

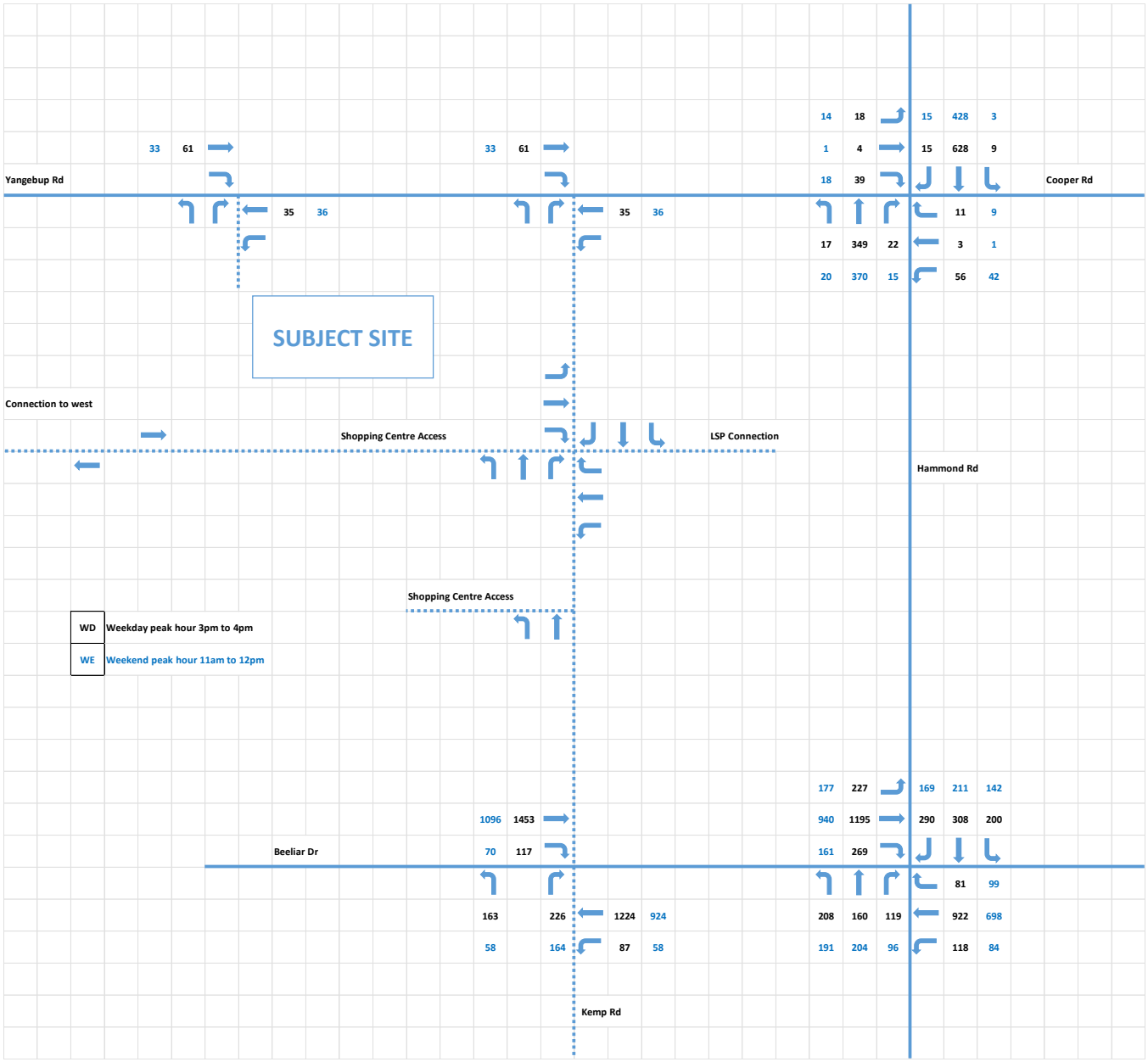


Figure 25: Existing traffic volumes

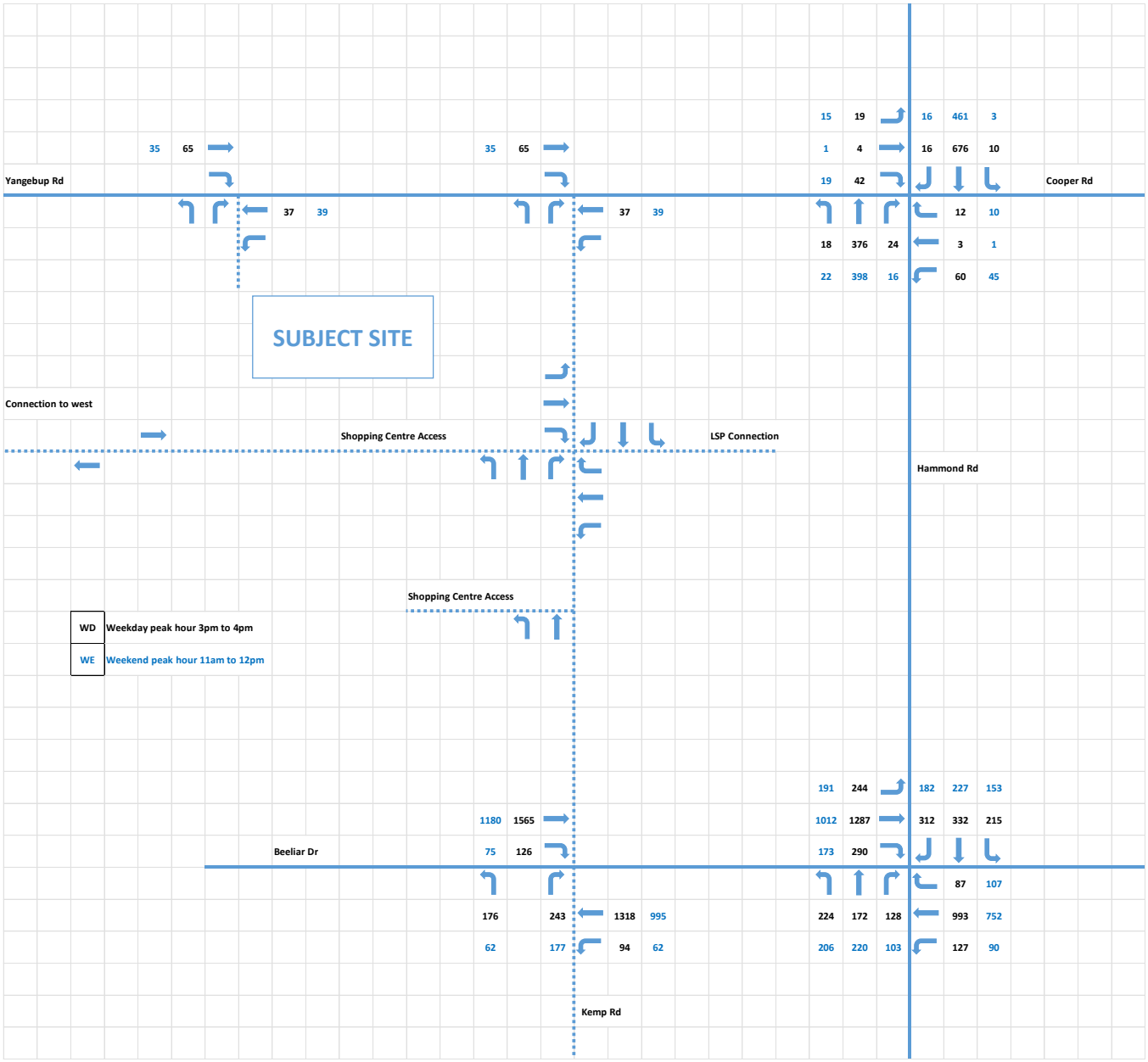


Figure 26: 2028 base traffic volumes

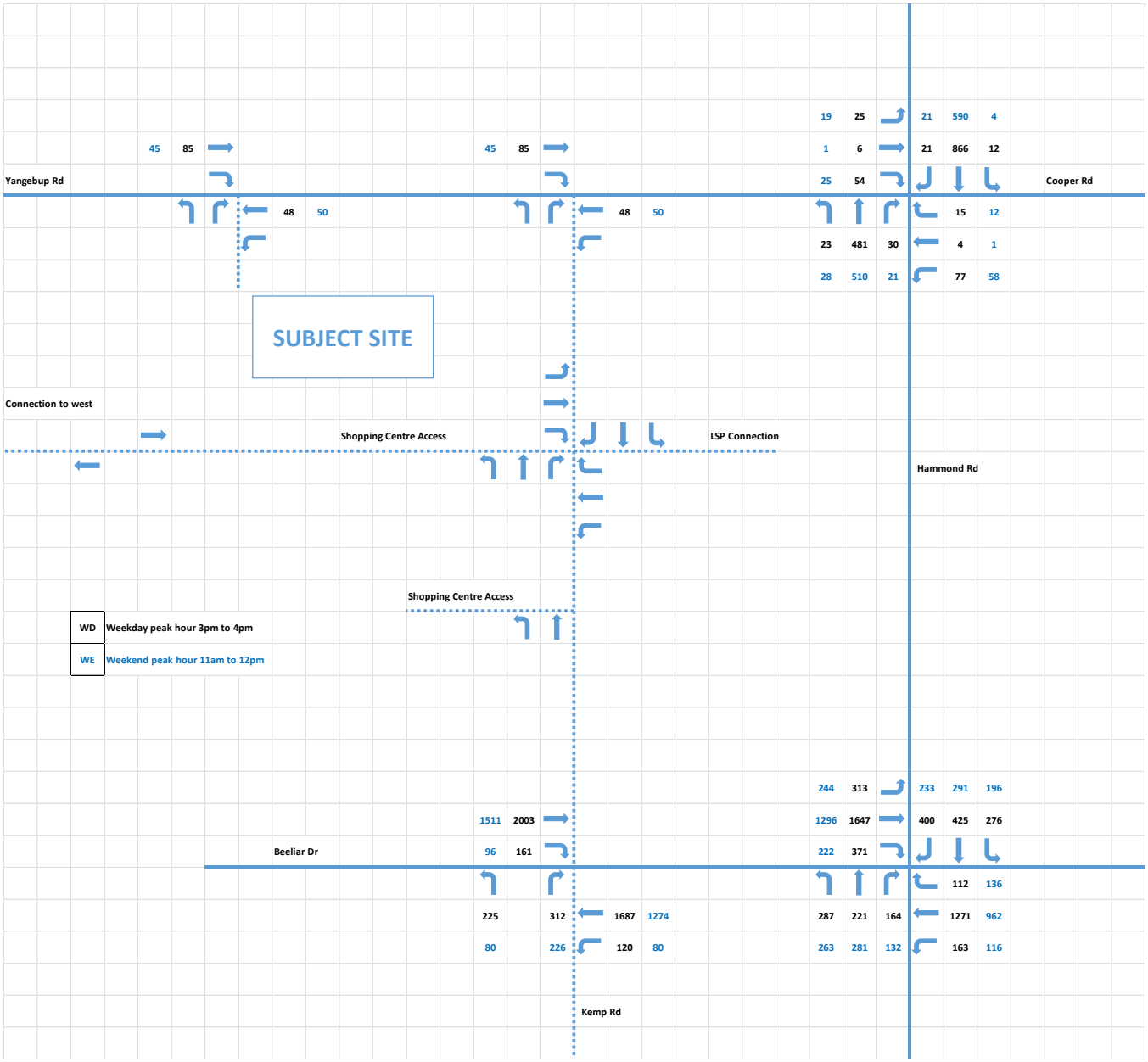


Figure 27: 2038 base traffic volumes

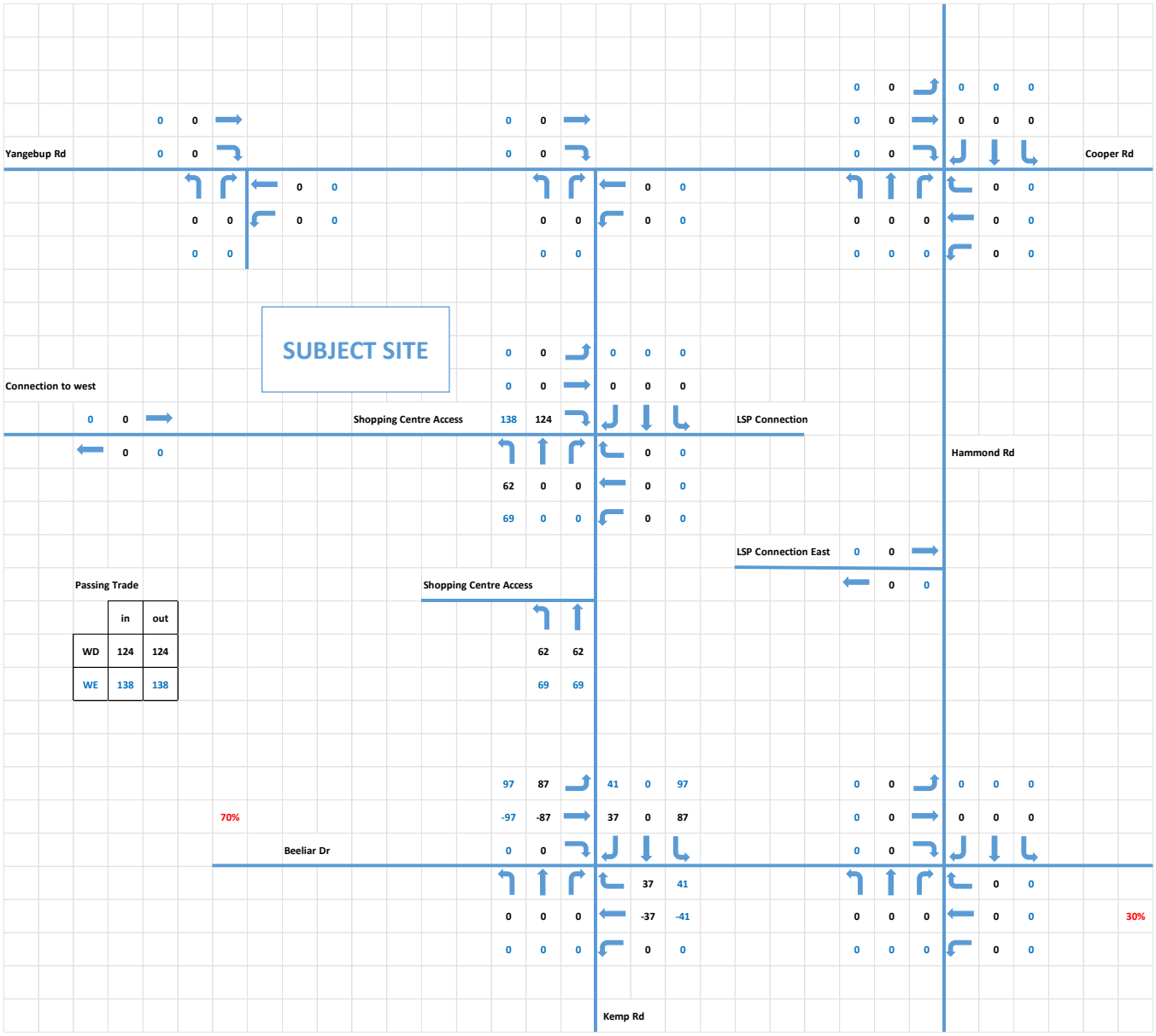


Figure 28: Development traffic volumes – passing trade

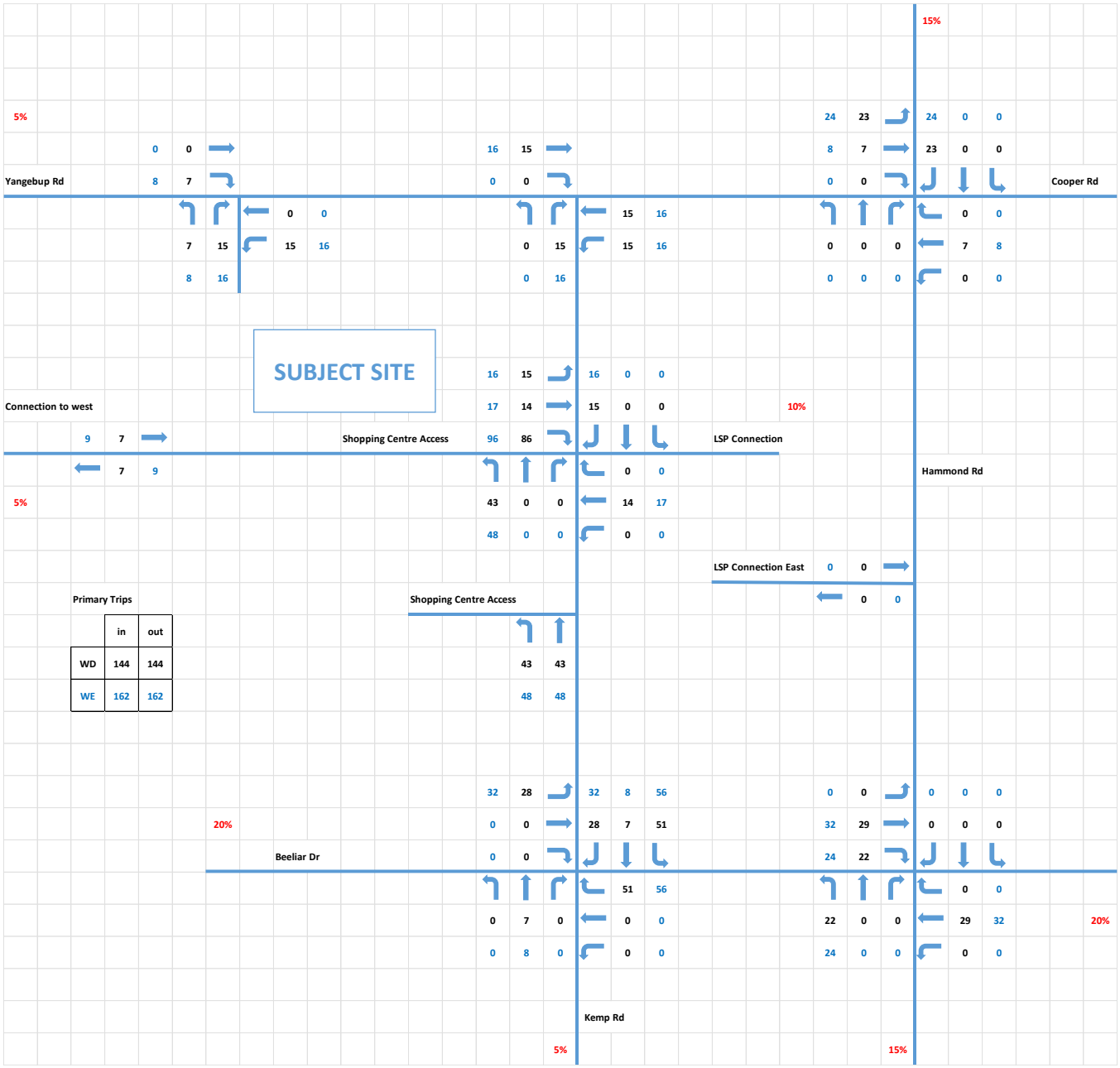


Figure 29: Development traffic volumes – primary trips

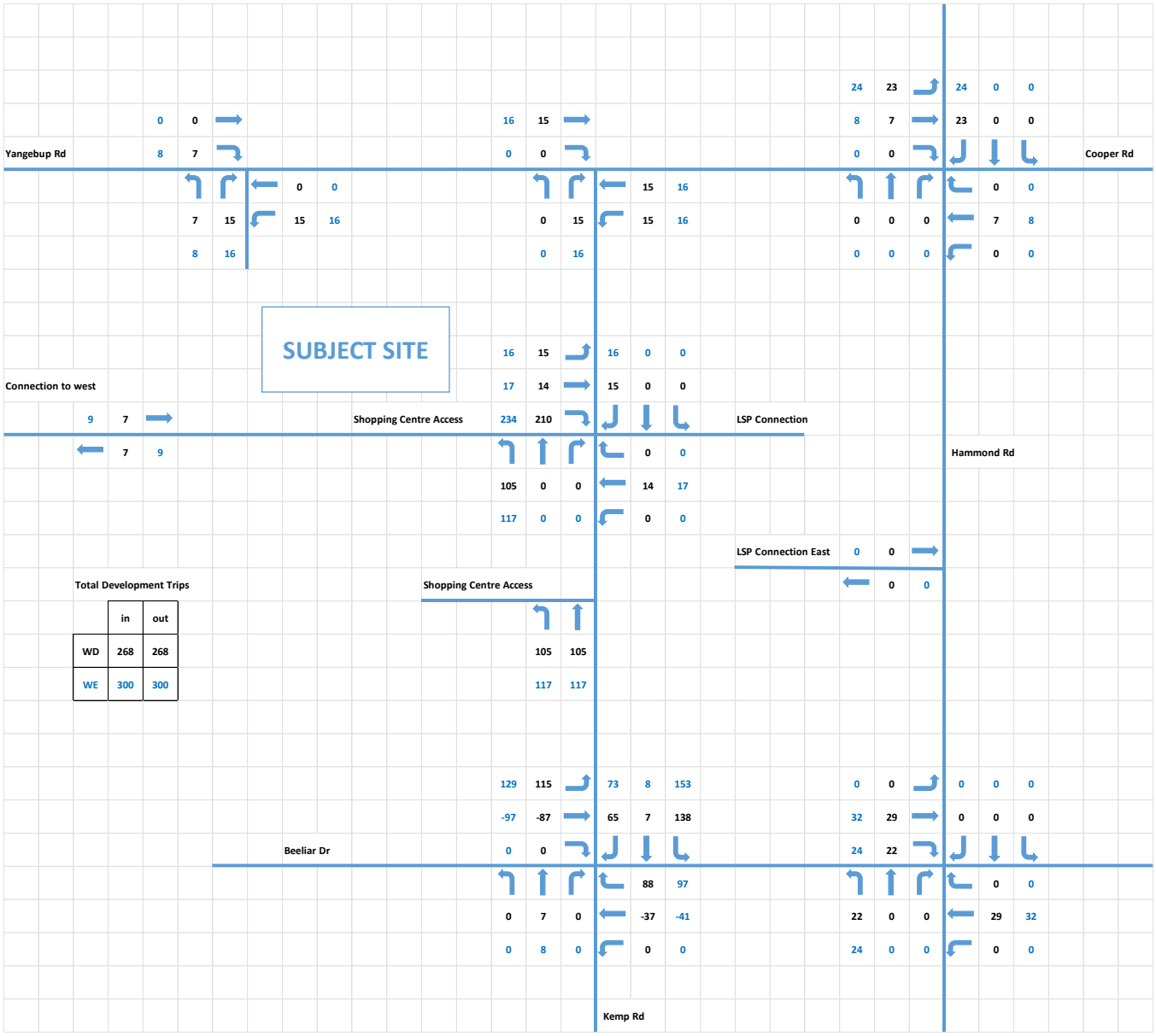


Figure 30: Development traffic volumes – total trips

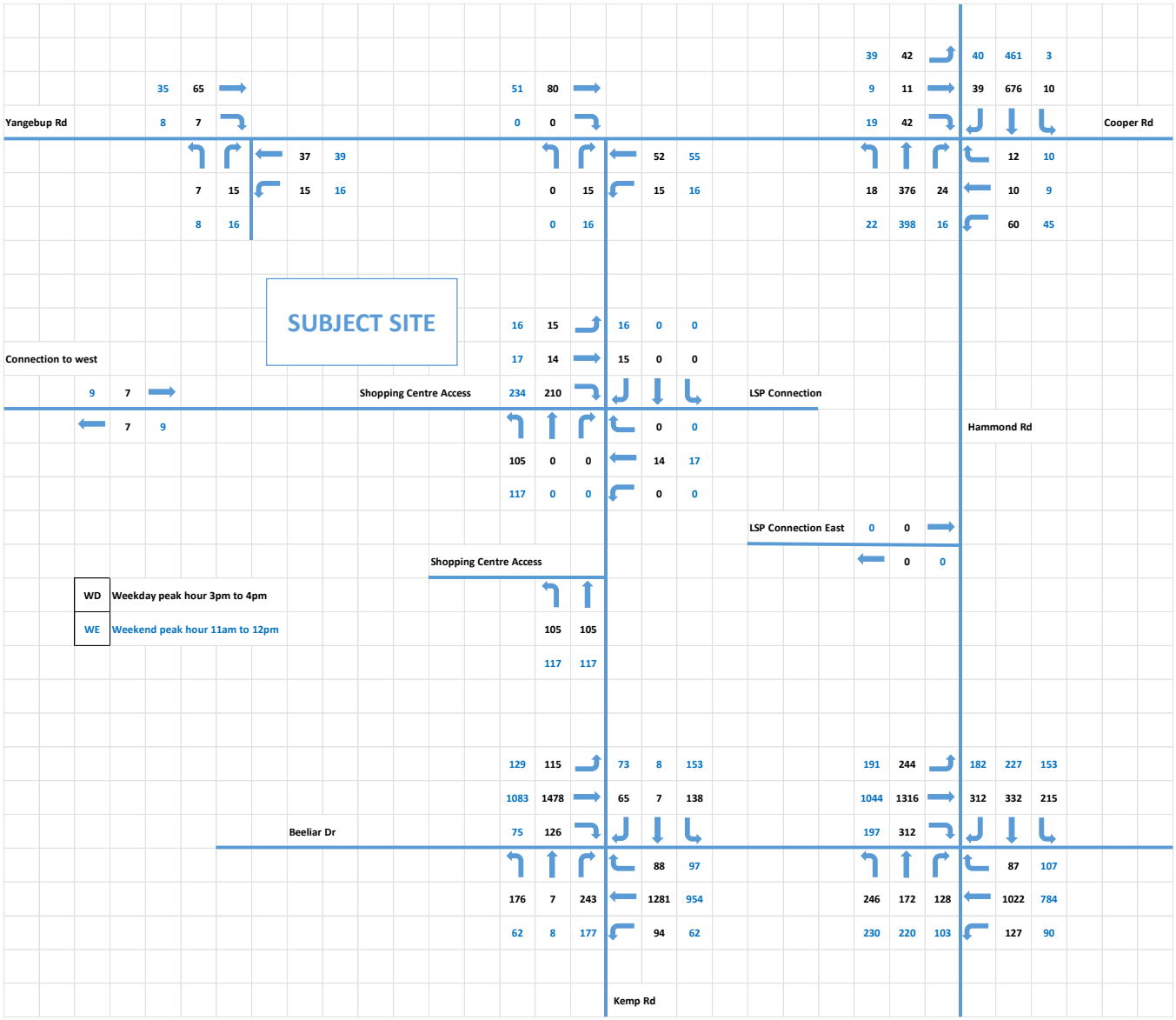


Figure 31: 2028 post development traffic volumes

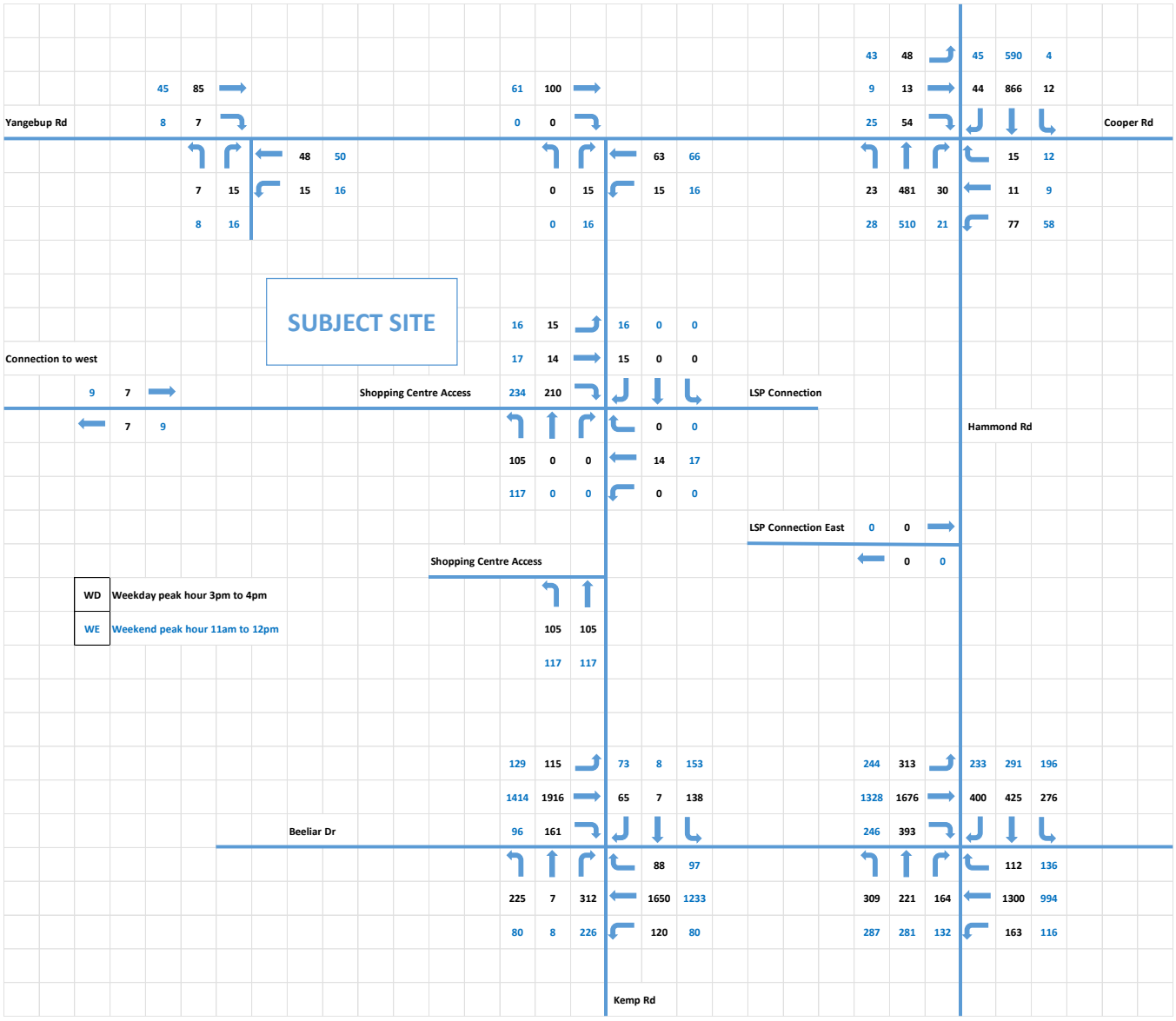


Figure 32: 2038 post development traffic volumes

Appendix E: SIDRA analysis outputs

SIDRA outputs are presented in the form of Degree of Saturation, Level of Service, Average Delay and 95% Queue. These characteristics are defined as follows:

- **Degree of Saturation (DoS):** is the ratio of the arrival traffic flow to the capacity of the approach during the same period. The Degree of Saturation ranges from close to zero for varied traffic flow up to one for saturated flow or capacity.
- **Level of Service (LoS):** is the qualitative measure describing operational conditions within a traffic stream and the perception by motorists and/or passengers. In general, there are 6 levels of service, designated from A to F, with Level of Service A representing the best operating condition (i.e. free flow) and Level of Service F the worst (i.e. forced or breakdown flow).
- **Average Delay:** is the average of all travel time delays for vehicles through the intersection.
- **95% Queue:** is the queue length below which 95% of all observed queue lengths fall.

Existing

MOVEMENT SUMMARY

Site: [1] Beeliar Dr / Kemp Rd (Folder1)
Network: [1] 2025 Existing Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Kemp Rd															
1	L2	All MCs	172	1.0	172	1.0	0.713	10.4	LOS B	5.2	36.5	0.96	0.94	1.30	45.4
2	T1	All MCs	1	1.0	1	1.0	0.713	10.0	LOS B	5.2	36.5	0.96	0.94	1.30	30.3
3	R2	All MCs	238	1.0	238	1.0	0.713	15.8	LOS B	5.2	36.5	0.96	0.94	1.30	25.4
Approach			411	1.0	411	1.0	0.713	13.5	LOS B	5.2	36.5	0.96	0.94	1.30	37.2
East: Beeliar Dr															
4	L2	All MCs	92	3.0	**91**	3.0	0.458	4.9	LOS A	3.2	23.2	0.25	0.44	0.25	50.3
5	T1	All MCs	1288	5.0	**1274**	5.0	0.458	5.1	LOS A	3.2	23.2	0.26	0.44	0.26	59.3
6	R2	All MCs	1	1.0	1	1.0	0.458	11.3	LOS B	3.0	21.6	0.27	0.44	0.27	49.9
Approach			1381	4.9	**1366**	4.9	0.458	5.1	LOS A	3.2	23.2	0.26	0.44	0.26	58.9
North: NS Spine Rd															
7	L2	All MCs	1	1.0	1	1.0	0.010	7.9	LOS A	0.0	0.3	0.83	0.73	0.83	26.7
8	T1	All MCs	1	1.0	1	1.0	0.010	7.5	LOS A	0.0	0.3	0.83	0.73	0.83	33.9
9	R2	All MCs	1	1.0	1	1.0	0.010	13.5	LOS B	0.0	0.3	0.83	0.73	0.83	47.7
Approach			3	1.0	3	1.0	0.010	9.6	LOS A	0.0	0.3	0.83	0.73	0.83	39.2
West: Beeliar Dr															
10	L2	All MCs	1	1.0	1	1.0	1.044	52.0	LOS E	44.1	322.2	1.00	2.09	3.05	25.3
11	T1	All MCs	1529	5.0	1529	5.0	1.044	52.6	LOS E	44.1	322.2	1.00	2.06	3.05	23.3
12	R2	All MCs	123	0.0	123	0.0	1.044	59.6	LOS E	37.4	271.3	1.00	2.02	3.05	25.9
Approach			1654	4.6	1654	4.6	1.044	53.1	LOS E	44.1	322.2	1.00	2.06	3.05	23.6
All Vehicles			3448	4.3	**3433**	4.3	1.044	29.2	LOS C	44.1	322.2	0.70	1.28	1.73	35.2

MOVEMENT SUMMARY

Site: [2] Beeliar Dr / Hammond Rd (Folder1)
Network: [1] 2025 Existing Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	219	2.0	219	2.0	0.791	19.1	LOS B	21.4	151.8	1.00	1.25	1.05	12.6
2	T1	All MCs	168	1.0	168	1.0	*0.791	97.3	LOS F	21.4	151.8	1.00	1.25	1.05	12.6
3	R2	All MCs	125	3.0	125	3.0	0.533	72.8	LOS E	8.7	62.8	0.98	0.80	0.98	27.7
Approach			513	1.9	513	1.9	0.791	57.9	LOS E	21.4	151.8	1.00	1.14	1.02	16.0
East: Beeliar Dr															
4	L2	All MCs	124	3.0	124	3.0	0.102	11.4	LOS B	1.8	13.1	0.38	1.10	0.38	41.6
5	T1	All MCs	971	4.0	971	4.0	0.739	52.3	LOS D	31.8	230.0	0.94	0.83	0.94	26.1
6	R2	All MCs	85	7.0	85	7.0	0.342	84.7	LOS F	5.7	42.4	0.95	0.78	0.95	19.5
Approach			1180	4.1	1180	4.1	0.739	50.3	LOS D	31.8	230.0	0.88	0.86	0.88	25.2
North: Hammond Rd															
7	L2	All MCs	211	4.0	211	4.0	0.226	44.3	LOS D	6.0	43.7	0.54	1.31	0.54	31.8
8	T1	All MCs	324	2.0	324	2.0	*1.058	171.4	LOS F	39.0	281.3	1.00	1.34	1.70	16.2
9	R2	All MCs	305	4.0	305	4.0	1.058	160.8	LOS F	39.0	281.3	1.00	1.27	1.65	8.8
Approach			840	3.2	840	3.2	1.058	135.7	LOS F	39.0	281.3	0.88	1.31	1.39	14.3
West: Beeliar Dr															
10	L2	All MCs	239	7.0	**230**	7.0	0.148	32.0	LOS C	1.5	11.2	0.12	0.81	0.12	36.4
11	T1	All MCs	1258	3.0	**1213**	3.0	*1.046	146.7	LOS F	66.5	477.7	1.00	1.39	1.54	17.6
12	R2	All MCs	283	2.0	**273**	2.0	*1.046	162.0	LOS F	28.5	202.9	1.00	1.14	1.65	15.1
Approach			1780	3.4	**1716**	3.4	1.046	133.7	LOS F	66.5	477.7	0.88	1.28	1.36	15.6
All Vehicles			4313	3.4	**4249**	3.4	1.058	101.8	LOS F	66.5	477.7	0.90	1.15	1.19	16.8

MOVEMENT SUMMARY

Site: [3] Hammond Rd / Yangebup Rd / Cooper Rd (Folder1)
Network: [1] 2025 Existing Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	18	0.0	18	0.0	0.227	8.8	LOS A	0.4	2.9	0.12	0.17	0.12	52.4
2	T1	All MCs	367	6.0	**361**	5.9	0.227	0.5	LOS A	0.4	2.9	0.12	0.17	0.12	58.5
3	R2	All MCs	23	9.0	23	8.9	0.227	9.9	LOS A	0.4	2.9	0.12	0.17	0.12	51.1
Approach			408	5.9	**401**	5.8	0.227	1.4	NA	0.4	2.9	0.12	0.17	0.12	57.8
East: Cooper Rd															
4	L2	All MCs	59	5.0	59	5.0	0.179	12.5	LOS B	0.6	4.3	0.69	1.00	0.69	36.6
5	T1	All MCs	3	0.0	3	0.0	0.179	20.2	LOS C	0.6	4.3	0.69	1.00	0.69	37.0
6	R2	All MCs	12	9.0	12	9.0	0.179	28.2	LOS D	0.6	4.3	0.69	1.00	0.69	43.5
Approach			74	5.4	74	5.4	0.179	15.3	LOS C	0.6	4.3	0.69	1.00	0.69	38.2
North: Hammond Rd															
7	L2	All MCs	9	11.0	9	11.0	0.356	7.2	LOS A	0.2	1.6	0.04	0.05	0.04	52.6
8	T1	All MCs	661	4.0	661	4.0	0.356	0.1	LOS A	0.2	1.6	0.04	0.05	0.04	59.3
9	R2	All MCs	16	7.0	16	7.0	0.356	7.7	LOS A	0.2	1.6	0.04	0.05	0.04	54.3
Approach			686	4.2	686	4.2	0.356	0.4	NA	0.2	1.6	0.04	0.05	0.04	58.9
West: Yangebup Rd															
10	L2	All MCs	19	6.0	19	6.0	0.259	10.5	LOS B	0.9	6.4	0.76	1.04	0.87	35.8
11	T1	All MCs	4	0.0	4	0.0	0.259	21.4	LOS C	0.9	6.4	0.76	1.04	0.87	33.1
12	R2	All MCs	41	3.0	41	3.0	0.259	27.9	LOS D	0.9	6.4	0.76	1.04	0.87	14.3
Approach			64	3.7	64	3.7	0.259	22.3	LOS C	0.9	6.4	0.76	1.04	0.87	25.8
All Vehicles			1233	4.8	**1225**	4.8	0.356	2.8	NA	0.9	6.4	0.14	0.20	0.15	55.1

MOVEMENT SUMMARY

Site: [1] Beeliar Dr / Kemp Rd (Folder1)
Network: [1] 2025 Existing Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Kemp Rd															
1	L2	All MCs	61	0.0	61	0.0	0.234	4.5	LOS A	1.2	8.3	0.57	0.66	0.57	49.9
2	T1	All MCs	1	1.0	1	1.0	0.234	4.1	LOS A	1.2	8.3	0.57	0.66	0.57	35.5
3	R2	All MCs	173	1.0	173	1.0	0.234	9.9	LOS A	1.2	8.3	0.57	0.66	0.57	31.4
Approach			235	0.7	235	0.7	0.234	8.5	LOS A	1.2	8.3	0.57	0.66	0.57	39.4
East: Beeliar Dr															
4	L2	All MCs	61	2.0	61	2.0	0.324	4.7	LOS A	1.5	10.6	0.14	0.41	0.14	51.4
5	T1	All MCs	973	2.0	973	2.0	0.324	4.8	LOS A	1.5	10.6	0.15	0.41	0.15	60.4
6	R2	All MCs	1	1.0	1	1.0	0.324	11.0	LOS B	1.4	10.3	0.15	0.41	0.15	51.2
Approach			1035	2.0	1035	2.0	0.324	4.8	LOS A	1.5	10.6	0.15	0.41	0.15	60.0
North: NS Spine Rd															
7	L2	All MCs	1	1.0	1	1.0	0.004	5.1	LOS A	0.0	0.1	0.64	0.60	0.64	30.2
8	T1	All MCs	1	1.0	1	1.0	0.004	4.7	LOS A	0.0	0.1	0.64	0.60	0.64	36.9
9	R2	All MCs	1	1.0	1	1.0	0.004	10.7	LOS B	0.0	0.1	0.64	0.60	0.64	50.1
Approach			3	1.0	3	1.0	0.004	6.8	LOS A	0.0	0.1	0.64	0.60	0.64	42.2
West: Beeliar Dr															
10	L2	All MCs	1	1.0	1	1.0	0.410	5.0	LOS A	2.4	16.8	0.33	0.43	0.33	54.6
11	T1	All MCs	1154	2.0	1154	2.0	0.410	4.9	LOS A	2.4	16.8	0.34	0.45	0.34	56.2
12	R2	All MCs	74	0.0	74	0.0	0.410	11.4	LOS B	2.3	16.0	0.35	0.48	0.35	54.2
Approach			1228	1.9	1228	1.9	0.410	5.3	LOS A	2.4	16.8	0.34	0.45	0.34	56.0
All Vehicles			2501	1.8	2501	1.8	0.410	5.4	LOS A	2.4	16.8	0.28	0.45	0.28	56.9

MOVEMENT SUMMARY

Site: [2] Beeliar Dr / Hammond Rd (Folder1)
Network: [1] 2025 Existing Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	201	0.0	201	0.0	0.575	7.2	LOS A	10.7	75.1	0.85	1.17	0.85	17.8
2	T1	All MCs	215	0.0	215	0.0	*0.575	35.2	LOS D	10.7	75.1	0.86	1.14	0.86	18.1
3	R2	All MCs	101	0.0	101	0.0	0.382	50.9	LOS D	5.7	40.0	0.94	0.78	0.94	33.5
Approach			517	0.0	517	0.0	0.575	27.4	LOS C	10.7	75.1	0.87	1.08	0.87	21.1
East: Beeliar Dr															
4	L2	All MCs	88	0.0	88	0.0	0.068	7.3	LOS A	0.4	2.8	0.17	0.84	0.17	46.8
5	T1	All MCs	735	2.0	735	2.0	0.606	34.6	LOS C	16.8	119.3	0.91	0.78	0.91	30.6
6	R2	All MCs	104	3.0	104	3.0	0.535	59.0	LOS E	5.5	39.7	0.99	0.78	0.99	22.1
Approach			927	1.9	927	1.9	0.606	34.8	LOS C	16.8	119.3	0.84	0.79	0.84	31.2
North: Hammond Rd															
7	L2	All MCs	149	3.0	149	3.0	0.146	11.5	LOS B	3.0	21.2	0.46	1.31	0.46	35.9
8	T1	All MCs	222	0.0	222	0.0	*0.588	45.9	LOS D	10.4	72.5	0.97	0.80	0.97	32.8
9	R2	All MCs	178	2.0	178	2.0	0.588	51.6	LOS D	9.8	69.7	0.97	0.81	0.97	20.0
Approach			549	1.5	549	1.5	0.588	38.4	LOS D	10.4	72.5	0.83	0.94	0.83	30.2
West: Beeliar Dr															
10	L2	All MCs	186	1.0	186	1.0	0.127	11.7	LOS B	0.5	3.6	0.09	0.75	0.09	38.1
11	T1	All MCs	989	1.0	989	1.0	*0.844	46.5	LOS D	28.2	199.3	1.00	0.96	1.12	34.3
12	R2	All MCs	169	0.0	169	0.0	*0.843	66.4	LOS E	10.0	70.0	1.00	0.94	1.28	25.6
Approach			1345	0.9	1345	0.9	0.844	44.2	LOS D	28.2	199.3	0.87	0.93	1.00	32.0
All Vehicles			3339	1.1	3339	1.1	0.844	38.0	LOS D	28.2	199.3	0.86	0.92	0.91	29.4

MOVEMENT SUMMARY

Site: [3] Hammond Rd / Yangebup Rd / Cooper Rd (Folder1)
Network: [1] 2025 Existing Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	21	0.0	21	0.0	0.220	6.6	LOS A	0.2	1.3	0.06	0.10	0.06	53.4
2	T1	All MCs	389	1.0	389	1.0	0.220	0.1	LOS A	0.2	1.3	0.06	0.10	0.06	59.2
3	R2	All MCs	16	0.0	16	0.0	0.220	7.6	LOS A	0.2	1.3	0.06	0.10	0.06	51.8
Approach			426	0.9	426	0.9	0.220	0.7	NA	0.2	1.3	0.06	0.10	0.06	58.7
East: Cooper Rd															
4	L2	All MCs	44	0.0	44	0.0	0.082	9.7	LOS A	0.3	2.0	0.53	0.93	0.53	39.5
5	T1	All MCs	1	0.0	1	0.0	0.082	14.6	LOS B	0.3	2.0	0.53	0.93	0.53	39.5
6	R2	All MCs	9	0.0	9	0.0	0.082	16.5	LOS C	0.3	2.0	0.53	0.93	0.53	45.9
Approach			55	0.0	55	0.0	0.082	11.0	LOS B	0.3	2.0	0.53	0.93	0.53	41.2
North: Hammond Rd															
7	L2	All MCs	3	0.0	3	0.0	0.242	7.2	LOS A	0.2	1.3	0.05	0.06	0.05	52.8
8	T1	All MCs	451	2.0	451	2.0	0.242	0.1	LOS A	0.2	1.3	0.05	0.06	0.05	59.1
9	R2	All MCs	16	0.0	16	0.0	0.242	7.3	LOS A	0.2	1.3	0.05	0.06	0.05	54.7
Approach			469	1.9	469	1.9	0.242	0.4	NA	0.2	1.3	0.05	0.06	0.05	58.8
West: Yangebup Rd															
10	L2	All MCs	15	7.0	15	7.0	0.079	9.6	LOS A	0.3	1.9	0.60	0.95	0.60	41.2
11	T1	All MCs	1	0.0	1	0.0	0.079	14.3	LOS B	0.3	1.9	0.60	0.95	0.60	37.8
12	R2	All MCs	19	0.0	19	0.0	0.079	17.0	LOS C	0.3	1.9	0.60	0.95	0.60	19.9
Approach			35	3.0	35	3.0	0.079	13.8	LOS B	0.3	1.9	0.60	0.95	0.60	34.3
All Vehicles			985	1.4	985	1.4	0.242	1.6	NA	0.3	2.0	0.10	0.15	0.10	56.8

2028 without development

MOVEMENT SUMMARY

Site: [1] Beeliar Dr / Kemp Rd (Folder1)
Network: [1] 2028 Base - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Kemp Rd															
1	L2	All MCs	185	1.0	185	1.0	0.800	14.9	LOS B	7.6	53.9	1.00	1.11	1.57	42.0
2	T1	All MCs	1	1.0	1	1.0	0.800	14.5	LOS B	7.6	53.9	1.00	1.11	1.57	26.8
3	R2	All MCs	256	1.0	256	1.0	0.800	20.3	LOS C	7.6	53.9	1.00	1.11	1.57	21.8
Approach			442	1.0	442	1.0	0.800	18.0	LOS B	7.6	53.9	1.00	1.11	1.57	33.4
East: Beeliar Dr															
4	L2	All MCs	99	3.0	**97**	3.0	0.489	4.9	LOS A	3.6	26.1	0.25	0.44	0.25	50.3
5	T1	All MCs	1387	5.0	**1367**	5.0	0.489	5.1	LOS A	3.6	26.1	0.26	0.44	0.26	59.3
6	R2	All MCs	1	1.0	1	1.0	0.489	11.3	LOS B	3.3	24.3	0.27	0.44	0.27	50.0
Approach			1487	4.9	**1465**	4.9	0.489	5.1	LOS A	3.6	26.1	0.26	0.44	0.26	58.9
North: NS Spine Rd															
7	L2	All MCs	1	1.0	1	1.0	0.010	7.7	LOS A	0.0	0.3	0.82	0.73	0.82	27.0
8	T1	All MCs	1	1.0	1	1.0	0.010	7.3	LOS A	0.0	0.3	0.82	0.73	0.82	34.2
9	R2	All MCs	1	1.0	1	1.0	0.010	13.2	LOS B	0.0	0.3	0.82	0.73	0.82	47.9
Approach			3	1.0	3	1.0	0.010	9.4	LOS A	0.0	0.3	0.82	0.73	0.82	39.5
West: Beeliar Dr															
10	L2	All MCs	1	1.0	1	1.0	1.170	161.9	LOS F	103.7	757.0	1.00	4.26	7.30	11.6
11	T1	All MCs	1647	5.0	1647	5.0	1.170	162.2	LOS F	103.7	757.0	1.00	4.14	7.23	10.2
12	R2	All MCs	133	0.0	133	0.0	1.170	168.9	LOS F	85.8	622.0	1.00	3.97	7.14	12.1
Approach			1781	4.6	1781	4.6	1.170	162.7	LOS F	103.7	757.0	1.00	4.13	7.23	10.4
All Vehicles			3714	4.3	**3692**	4.3	1.170	82.7	LOS F	103.7	757.0	0.71	2.30	3.78	19.5

MOVEMENT SUMMARY

Site: [2] Beeliar Dr / Hammond Rd (Folder1)
Network: [1] 2028 Base - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	236	2.0	236	2.0	0.885	35.7	LOS D	29.6	209.8	1.00	1.29	1.17	11.0
2	T1	All MCs	181	1.0	181	1.0	*0.885	118.5	LOS F	29.6	209.8	1.00	1.28	1.16	11.1
3	R2	All MCs	135	3.0	135	3.0	0.589	73.4	LOS E	9.8	70.2	0.99	0.80	0.99	27.6
Approach			552	1.9	552	1.9	0.885	72.1	LOS E	29.6	209.8	1.00	1.17	1.08	14.4
East: Beeliar Dr															
4	L2	All MCs	134	3.0	134	3.0	0.112	15.1	LOS B	2.2	15.9	0.40	1.13	0.40	41.0
5	T1	All MCs	1045	4.0	1045	4.0	0.850	65.9	LOS E	38.6	279.4	1.00	0.94	1.07	23.1
6	R2	All MCs	92	7.0	92	7.0	0.383	91.0	LOS F	6.2	46.1	0.96	0.78	0.96	19.3
Approach			1271	4.1	1271	4.1	0.850	62.3	LOS E	38.6	279.4	0.93	0.95	0.99	22.0
North: Hammond Rd															
7	L2	All MCs	226	4.0	226	4.0	0.237	42.1	LOS D	6.3	45.3	0.53	1.31	0.53	31.7
8	T1	All MCs	349	2.0	349	2.0	*1.080	185.9	LOS F	44.8	323.2	1.00	1.40	1.77	15.2
9	R2	All MCs	328	4.0	328	4.0	1.080	179.4	LOS F	44.8	323.2	1.00	1.32	1.72	8.2
Approach			904	3.2	904	3.2	1.080	147.5	LOS F	44.8	323.2	0.88	1.35	1.44	13.5
West: Beeliar Dr															
10	L2	All MCs	257	7.0	**225**	6.9	0.146	32.6	LOS C	1.5	11.0	0.12	0.83	0.12	35.5
11	T1	All MCs	1355	3.0	**1187**	2.9	*1.070	164.3	LOS F	67.6	485.2	1.00	1.45	1.63	15.9
12	R2	All MCs	305	2.0	**268**	2.0	*1.071	179.6	LOS F	29.1	207.4	1.00	1.17	1.73	14.0
Approach			1917	3.4	**1680**	3.3	1.071	149.1	LOS F	67.6	485.2	0.88	1.32	1.44	14.3
All Vehicles			4643	3.4	**4406**	3.6	1.080	114.1	LOS F	67.6	485.2	0.91	1.20	1.27	15.4

MOVEMENT SUMMARY

Site: [3] Hammond Rd / Yangebup Rd / Cooper Rd (Folder1)
Network: [1] 2028 Base - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	19	0.0	**18**	0.0	0.236	9.4	LOS A	0.4	3.2	0.14	0.19	0.14	52.2
2	T1	All MCs	396	6.0	**372**	5.8	0.236	0.6	LOS A	0.4	3.2	0.14	0.19	0.14	58.3
3	R2	All MCs	25	9.0	**24**	8.7	0.236	10.5	LOS B	0.4	3.2	0.14	0.19	0.14	50.9
Approach			440	5.9	**413**	5.7	0.236	1.6	NA	0.4	3.2	0.14	0.19	0.14	57.7
East: Cooper Rd															
4	L2	All MCs	63	5.0	63	5.0	0.217	13.6	LOS B	0.7	5.4	0.73	1.02	0.79	35.4
5	T1	All MCs	3	0.0	3	0.0	0.217	22.8	LOS C	0.7	5.4	0.73	1.02	0.79	36.1
6	R2	All MCs	13	9.0	13	9.0	0.217	32.4	LOS D	0.7	5.4	0.73	1.02	0.79	42.7
Approach			79	5.4	79	5.4	0.217	17.0	LOS C	0.7	5.4	0.73	1.02	0.79	37.2
North: Hammond Rd															
7	L2	All MCs	11	11.0	11	11.0	0.384	7.3	LOS A	0.2	1.8	0.04	0.05	0.04	52.6
8	T1	All MCs	712	4.0	712	4.0	0.384	0.1	LOS A	0.2	1.8	0.04	0.05	0.04	59.3
9	R2	All MCs	17	7.0	17	7.0	0.384	7.8	LOS A	0.2	1.8	0.04	0.05	0.04	54.3
Approach			739	4.2	739	4.2	0.384	0.4	NA	0.2	1.8	0.04	0.05	0.04	58.9
West: Yangebup Rd															
10	L2	All MCs	20	6.0	20	6.0	0.317	11.5	LOS B	1.1	8.0	0.80	1.06	0.98	33.9
11	T1	All MCs	4	0.0	4	0.0	0.317	24.7	LOS C	1.1	8.0	0.80	1.06	0.98	31.5
12	R2	All MCs	44	3.0	44	3.0	0.317	32.4	LOS D	1.1	8.0	0.80	1.06	0.98	12.8
Approach			68	3.7	68	3.7	0.317	25.8	LOS D	1.1	8.0	0.80	1.06	0.98	23.7
All Vehicles			1326	4.8	**1300**	4.9	0.384	3.1	NA	1.1	8.0	0.15	0.21	0.17	54.6

MOVEMENT SUMMARY

Site: [1] Beeliar Dr / Kemp Rd (Folder1)
Network: [1] 2028 Base - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Kemp Rd															
1	L2	All MCs	65	0.0	65	0.0	0.258	4.8	LOS A	1.4	9.6	0.60	0.67	0.60	49.7
2	T1	All MCs	1	1.0	1	1.0	0.258	4.4	LOS A	1.4	9.6	0.60	0.67	0.60	35.3
3	R2	All MCs	186	1.0	186	1.0	0.258	10.2	LOS B	1.4	9.6	0.60	0.67	0.60	31.2
Approach			253	0.7	253	0.7	0.258	8.8	LOS A	1.4	9.6	0.60	0.67	0.60	39.2
East: Beeliar Dr															
4	L2	All MCs	65	2.0	65	2.0	0.350	4.7	LOS A	1.7	12.1	0.15	0.41	0.15	51.3
5	T1	All MCs	1047	2.0	1047	2.0	0.350	4.8	LOS A	1.7	12.1	0.16	0.41	0.16	60.3
6	R2	All MCs	1	1.0	1	1.0	0.350	11.0	LOS B	1.6	11.6	0.16	0.41	0.16	51.1
Approach			1114	2.0	1114	2.0	0.350	4.8	LOS A	1.7	12.1	0.16	0.41	0.16	59.9
North: NS Spine Rd															
7	L2	All MCs	1	1.0	1	1.0	0.005	5.5	LOS A	0.0	0.1	0.66	0.61	0.66	29.7
8	T1	All MCs	1	1.0	1	1.0	0.005	5.0	LOS A	0.0	0.1	0.66	0.61	0.66	36.5
9	R2	All MCs	1	1.0	1	1.0	0.005	11.0	LOS B	0.0	0.1	0.66	0.61	0.66	49.9
Approach			3	1.0	3	1.0	0.005	7.2	LOS A	0.0	0.1	0.66	0.61	0.66	41.9
West: Beeliar Dr															
10	L2	All MCs	1	1.0	1	1.0	0.446	5.1	LOS A	2.7	19.3	0.36	0.43	0.36	54.3
11	T1	All MCs	1242	2.0	1242	2.0	0.446	5.0	LOS A	2.7	19.3	0.37	0.46	0.37	55.9
12	R2	All MCs	79	0.0	79	0.0	0.446	11.4	LOS B	2.6	18.3	0.38	0.48	0.38	54.0
Approach			1322	1.9	1322	1.9	0.446	5.4	LOS A	2.7	19.3	0.37	0.46	0.37	55.7
All Vehicles			2692	1.8	2692	1.8	0.446	5.5	LOS A	2.7	19.3	0.30	0.46	0.30	56.6

MOVEMENT SUMMARY

Site: [2] Beeliar Dr / Hammond Rd (Folder1)
Network: [1] 2028 Base - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	217	0.0	217	0.0	0.649	8.3	LOS A	13.0	91.1	0.91	1.23	0.91	16.0
2	T1	All MCs	232	0.0	232	0.0	*0.649	50.6	LOS D	13.0	91.1	0.91	1.19	0.91	16.5
3	R2	All MCs	108	0.0	108	0.0	0.432	55.4	LOS E	7.1	49.4	0.95	0.79	0.95	32.3
Approach			557	0.0	557	0.0	0.649	35.1	LOS D	13.0	91.1	0.92	1.13	0.92	19.4
East: Beeliar Dr															
4	L2	All MCs	95	0.0	95	0.0	0.068	7.7	LOS A	0.6	4.2	0.20	0.90	0.20	45.9
5	T1	All MCs	792	2.0	792	2.0	0.602	35.4	LOS D	19.2	136.7	0.89	0.77	0.89	30.3
6	R2	All MCs	113	3.0	113	3.0	0.549	62.9	LOS E	6.5	46.4	0.99	0.79	0.99	21.1
Approach			999	1.9	999	1.9	0.602	35.9	LOS D	19.2	136.7	0.84	0.79	0.84	30.7
North: Hammond Rd															
7	L2	All MCs	161	3.0	161	3.0	0.165	13.8	LOS B	3.7	26.3	0.48	1.32	0.48	35.0
8	T1	All MCs	239	0.0	239	0.0	*0.673	52.1	LOS D	12.5	87.4	0.99	0.83	1.01	30.9
9	R2	All MCs	192	2.0	192	2.0	0.673	57.9	LOS E	11.8	84.2	0.99	0.84	1.02	18.5
Approach			592	1.5	592	1.5	0.673	43.6	LOS D	12.5	87.4	0.85	0.97	0.87	28.5
West: Beeliar Dr															
10	L2	All MCs	201	1.0	201	1.0	0.142	16.2	LOS B	1.0	7.3	0.14	0.85	0.14	34.2
11	T1	All MCs	1065	1.0	1065	1.0	*0.861	52.1	LOS D	33.9	239.1	1.00	0.98	1.12	33.1
12	R2	All MCs	182	0.0	182	0.0	*0.860	73.1	LOS E	11.8	82.4	1.00	0.95	1.28	24.4
Approach			1448	0.9	1448	0.9	0.861	49.8	LOS D	33.9	239.1	0.88	0.95	1.00	29.9
All Vehicles			3596	1.1	3596	1.1	0.861	42.6	LOS D	33.9	239.1	0.87	0.94	0.92	27.7

MOVEMENT SUMMARY

Site: [3] Hammond Rd / Yangebup Rd / Cooper Rd (Folder1)
Network: [1] 2028 Base - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	23	0.0	23	0.0	0.238	6.8	LOS A	0.2	1.5	0.06	0.10	0.06	53.4
2	T1	All MCs	419	1.0	419	1.0	0.238	0.2	LOS A	0.2	1.5	0.06	0.10	0.06	59.2
3	R2	All MCs	17	0.0	17	0.0	0.238	7.8	LOS A	0.2	1.5	0.06	0.10	0.06	51.8
Approach			459	0.9	459	0.9	0.238	0.8	NA	0.2	1.5	0.06	0.10	0.06	58.7
East: Cooper Rd															
4	L2	All MCs	47	0.0	47	0.0	0.095	10.0	LOS A	0.3	2.4	0.56	0.95	0.56	39.1
5	T1	All MCs	1	0.0	1	0.0	0.095	15.8	LOS C	0.3	2.4	0.56	0.95	0.56	39.2
6	R2	All MCs	11	0.0	11	0.0	0.095	17.9	LOS C	0.3	2.4	0.56	0.95	0.56	45.6
Approach			59	0.0	59	0.0	0.095	11.5	LOS B	0.3	2.4	0.56	0.95	0.56	40.8
North: Hammond Rd															
7	L2	All MCs	3	0.0	3	0.0	0.261	7.4	LOS A	0.2	1.5	0.05	0.06	0.05	52.8
8	T1	All MCs	485	2.0	485	2.0	0.261	0.1	LOS A	0.2	1.5	0.05	0.06	0.05	59.1
9	R2	All MCs	17	0.0	17	0.0	0.261	7.5	LOS A	0.2	1.5	0.05	0.06	0.05	54.7
Approach			505	1.9	505	1.9	0.261	0.4	NA	0.2	1.5	0.05	0.06	0.05	58.8
West: Yangebup Rd															
10	L2	All MCs	16	7.0	16	7.0	0.092	9.8	LOS A	0.3	2.2	0.62	0.97	0.62	40.5
11	T1	All MCs	1	0.0	1	0.0	0.092	15.5	LOS C	0.3	2.2	0.62	0.97	0.62	37.2
12	R2	All MCs	20	0.0	20	0.0	0.092	18.5	LOS C	0.3	2.2	0.62	0.97	0.62	19.1
Approach			37	3.0	37	3.0	0.092	14.7	LOS B	0.3	2.2	0.62	0.97	0.62	33.6
All Vehicles			1060	1.4	1060	1.4	0.261	1.7	NA	0.3	2.4	0.10	0.16	0.10	56.8

2028 with development

MOVEMENT SUMMARY

Site: [1] Beeliar Dr / Kemp Rd (Folder1)
Network: [1] 2028 Post Development - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Kemp Rd															
1	L2	All MCs	185	1.0	185	1.0	0.856	19.3	LOS B	9.3	65.6	1.00	1.28	1.83	39.1
2	T1	All MCs	7	1.0	7	1.0	0.856	18.8	LOS B	9.3	65.6	1.00	1.28	1.83	19.2
3	R2	All MCs	256	1.0	256	1.0	0.856	24.6	LOS C	9.3	65.6	1.00	1.28	1.83	19.2
Approach			448	1.0	448	1.0	0.856	22.3	LOS C	9.3	65.6	1.00	1.28	1.83	30.3
East: Beeliar Dr															
4	L2	All MCs	99	3.0	**97**	3.0	0.524	5.2	LOS A	3.5	25.4	0.29	0.47	0.29	50.0
5	T1	All MCs	1348	5.0	**1327**	5.0	0.524	5.4	LOS A	3.5	25.4	0.30	0.49	0.30	58.7
6	R2	All MCs	93	1.0	**91**	1.0	0.524	11.6	LOS B	3.3	23.7	0.31	0.52	0.31	49.8
Approach			1540	4.6	**1516**	4.6	0.524	5.7	LOS A	3.5	25.4	0.30	0.49	0.30	58.0
North: NS Spine Rd															
7	L2	All MCs	145	1.0	145	1.0	0.774	13.9	LOS B	3.7	25.8	0.97	1.09	1.36	19.9
8	T1	All MCs	7	1.0	7	1.0	0.774	13.5	LOS B	3.7	25.8	0.97	1.09	1.36	28.0
9	R2	All MCs	68	1.0	68	1.0	0.774	19.4	LOS B	3.7	25.8	0.97	1.09	1.36	42.4
Approach			221	1.0	221	1.0	0.774	15.6	LOS B	3.7	25.8	0.97	1.09	1.36	31.0
West: Beeliar Dr															
10	L2	All MCs	121	1.0	121	1.0	1.226	212.8	LOS F	130.5	948.9	1.00	5.34	9.96	8.1
11	T1	All MCs	1556	5.0	1556	5.0	1.226	213.1	LOS F	130.5	948.9	1.00	5.15	9.84	8.1
12	R2	All MCs	133	0.0	133	0.0	1.226	219.7	LOS F	101.8	738.1	1.00	4.90	9.66	9.7
Approach			1809	4.4	1809	4.4	1.226	213.6	LOS F	130.5	948.9	1.00	5.15	9.83	8.2
All Vehicles			4019	3.9	**3995**	3.9	1.226	102.3	LOS F	130.5	948.9	0.73	2.72	4.85	16.2

MOVEMENT SUMMARY

Site: [2] Beeliar Dr / Hammond Rd (Folder1)
Network: [1] 2028 Post Development - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	259	2.0	259	2.0	0.914	43.7	LOS D	33.6	238.7	1.00	1.29	1.22	10.5
2	T1	All MCs	181	1.0	181	1.0	*0.914	130.2	LOS F	33.6	238.7	1.00	1.27	1.20	10.7
3	R2	All MCs	135	3.0	135	3.0	0.609	73.6	LOS E	10.1	72.8	1.00	0.81	1.00	27.6
Approach			575	1.9	575	1.9	0.914	77.9	LOS E	33.6	238.7	1.00	1.17	1.11	13.7
East: Beeliar Dr															
4	L2	All MCs	134	3.0	134	3.0	0.112	16.9	LOS B	2.2	15.6	0.40	1.13	0.40	41.0
5	T1	All MCs	1076	4.0	1076	4.0	0.888	73.5	LOS E	42.1	304.8	1.00	1.00	1.12	21.5
6	R2	All MCs	92	7.0	92	7.0	0.367	91.7	LOS F	6.2	45.7	0.95	0.78	0.95	19.5
Approach			1301	4.1	1301	4.1	0.888	69.0	LOS E	42.1	304.8	0.94	1.00	1.03	20.5
North: Hammond Rd															
7	L2	All MCs	226	4.0	226	4.0	0.236	41.7	LOS D	6.2	44.9	0.53	1.31	0.53	31.8
8	T1	All MCs	349	2.0	349	2.0	*1.087	191.4	LOS F	45.2	326.1	1.00	1.41	1.79	14.9
9	R2	All MCs	328	4.0	328	4.0	1.087	185.3	LOS F	45.2	326.1	1.00	1.33	1.75	7.9
Approach			904	3.2	904	3.2	1.087	151.7	LOS F	45.2	326.1	0.88	1.36	1.46	13.3
West: Beeliar Dr															
10	L2	All MCs	257	7.0	**220**	6.8	0.140	32.9	LOS C	1.5	10.9	0.11	0.81	0.11	36.8
11	T1	All MCs	1385	3.0	**1186**	2.9	*1.076	169.0	LOS F	68.0	487.5	1.00	1.47	1.65	15.6
12	R2	All MCs	328	2.0	**281**	1.9	*1.077	184.2	LOS F	31.0	220.7	1.00	1.18	1.75	13.7
Approach			1971	3.4	**1687**	3.2	1.077	153.8	LOS F	68.0	487.5	0.88	1.33	1.47	14.0
All Vehicles			4751	3.4	**4467**	3.6	1.087	118.9	LOS F	68.0	487.5	0.91	1.22	1.30	15.0

MOVEMENT SUMMARY

Site: [3] Hammond Rd / Yangebup Rd / Cooper Rd (Folder1)
Network: [1] 2028 Post Development - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	19	0.0	**18**	0.0	0.234	9.4	LOS A	0.4	3.2	0.14	0.19	0.14	56.4
2	T1	All MCs	396	6.0	**368**	5.7	0.234	0.6	LOS A	0.4	3.2	0.14	0.19	0.14	58.3
3	R2	All MCs	25	9.0	**23**	8.5	0.234	10.5	LOS B	0.4	3.2	0.14	0.19	0.14	50.9
Approach			440	5.9	**409**	5.6	0.234	1.6	NA	0.4	3.2	0.14	0.19	0.14	57.8
East: Cooper Rd															
4	L2	All MCs	63	5.0	63	5.0	0.261	14.1	LOS B	0.9	6.6	0.76	1.04	0.87	34.4
5	T1	All MCs	11	0.0	11	0.0	0.261	24.3	LOS C	0.9	6.6	0.76	1.04	0.87	34.4
6	R2	All MCs	13	9.0	13	9.0	0.261	36.4	LOS E	0.9	6.6	0.76	1.04	0.87	41.9
Approach			86	5.0	86	5.0	0.261	18.6	LOS C	0.9	6.6	0.76	1.04	0.87	36.0
North: Hammond Rd															
7	L2	All MCs	11	11.0	11	11.0	0.405	7.6	LOS A	0.5	4.0	0.09	0.10	0.09	52.4
8	T1	All MCs	712	4.0	712	4.0	0.405	0.2	LOS A	0.5	4.0	0.09	0.10	0.09	58.6
9	R2	All MCs	41	7.0	41	7.0	0.405	7.8	LOS A	0.5	4.0	0.09	0.10	0.09	58.6
Approach			763	4.3	763	4.3	0.405	0.7	NA	0.5	4.0	0.09	0.10	0.09	58.4
West: Yangebup Rd															
10	L2	All MCs	44	6.0	44	6.0	0.396	12.2	LOS B	1.6	11.4	0.79	1.09	1.07	34.6
11	T1	All MCs	12	0.0	12	0.0	0.396	27.2	LOS D	1.6	11.4	0.79	1.09	1.07	32.1
12	R2	All MCs	44	3.0	44	3.0	0.396	36.3	LOS E	1.6	11.4	0.79	1.09	1.07	13.3
Approach			100	4.0	100	4.0	0.396	24.6	LOS C	1.6	11.4	0.79	1.09	1.07	28.3
All Vehicles			1389	4.8	**1358**	4.9	0.405	3.9	NA	1.6	11.4	0.20	0.26	0.22	53.5

MOVEMENT SUMMARY

Site: [4] Shopping Centre Roundabout (Folder1)
Network: [1] 2028 Post Development - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: NS Link Rd															
1	L2	All MCs	111	1.0	**99**	1.0	0.077	4.2	LOS A	0.4	2.7	0.13	0.49	0.13	31.9
2	T1	All MCs	1	1.0	1	1.0	0.077	3.9	LOS A	0.4	2.7	0.13	0.49	0.13	31.6
3	R2	All MCs	1	1.0	1	1.0	0.077	6.8	LOS A	0.4	2.7	0.13	0.49	0.13	31.4
Approach			113	1.0	**101**	1.0	0.077	4.3	LOS A	0.4	2.7	0.13	0.49	0.13	31.9
East: East LSP															
4	L2	All MCs	1	1.0	1	1.0	0.017	4.6	LOS A	0.1	0.5	0.38	0.49	0.38	25.2
5	T1	All MCs	15	1.0	15	1.0	0.017	4.3	LOS A	0.1	0.5	0.38	0.49	0.38	24.3
6	R2	All MCs	1	1.0	1	1.0	0.017	7.1	LOS A	0.1	0.5	0.38	0.49	0.38	25.2
Approach			17	1.0	17	1.0	0.017	4.5	LOS A	0.1	0.5	0.38	0.49	0.38	24.3
North: NS Link RD															
7	L2	All MCs	1	1.0	1	1.0	0.017	5.0	LOS A	0.1	0.6	0.38	0.60	0.38	21.8
8	T1	All MCs	1	1.0	1	1.0	0.017	4.6	LOS A	0.1	0.6	0.38	0.60	0.38	22.4
9	R2	All MCs	16	1.0	16	1.0	0.017	7.6	LOS A	0.1	0.6	0.38	0.60	0.38	21.4
Approach			18	1.0	18	1.0	0.017	7.3	LOS A	0.1	0.6	0.38	0.60	0.38	21.5
West: Shopping Centre Access															
10	L2	All MCs	16	1.0	16	1.0	0.156	3.4	LOS A	0.8	5.8	0.03	0.62	0.03	24.0
11	T1	All MCs	15	1.0	15	1.0	0.156	3.1	LOS A	0.8	5.8	0.03	0.62	0.03	23.8
12	R2	All MCs	221	1.0	221	1.0	0.156	5.9	LOS A	0.8	5.8	0.03	0.62	0.03	24.0
Approach			252	1.0	252	1.0	0.156	5.6	LOS A	0.8	5.8	0.03	0.62	0.03	23.9
All Vehicles			399	1.0	**387**	1.0	0.156	5.3	LOS A	0.8	5.8	0.09	0.58	0.09	26.5

MOVEMENT SUMMARY

Site: [5] Yangebup Rd / NS Link Rd (Folder1)
Network: [1] 2028 Post Development - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: NS Link Rd															
1	L2	All MCs	1	1.0	1	1.0	0.015	4.4	LOS A	0.0	0.3	0.20	0.52	0.20	36.0
3	R2	All MCs	16	1.0	16	1.0	0.015	4.8	LOS A	0.0	0.3	0.20	0.52	0.20	25.2
Approach			17	1.0	17	1.0	0.015	4.8	LOS A	0.0	0.3	0.20	0.52	0.20	26.7
East: Yangebup Rd															
4	L2	All MCs	16	1.0	**15**	1.0	0.037	4.6	LOS A	0.0	0.0	0.00	0.12	0.00	44.3
5	T1	All MCs	55	3.0	**54**	3.1	0.037	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	47.6
Approach			71	2.6	**69**	2.6	0.037	1.0	NA	0.0	0.0	0.00	0.12	0.00	47.2
West: Yangebup Rd															
11	T1	All MCs	84	3.0	84	3.0	0.043	0.0	LOS A	0.0	0.0	0.01	0.01	0.01	49.7
12	R2	All MCs	1	1.0	1	1.0	0.043	4.6	LOS A	0.0	0.0	0.01	0.01	0.01	49.7
Approach			85	3.0	85	3.0	0.043	0.1	NA	0.0	0.0	0.01	0.01	0.01	49.7
All Vehicles			173	2.6	**171**	2.6	0.043	0.9	NA	0.0	0.3	0.02	0.10	0.02	46.9

MOVEMENT SUMMARY

Site: [1] Beeliar Dr / Kemp Rd (Folder1)
Network: [1] 2028 Post Development - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Kemp Rd															
1	L2	All MCs	65	0.0	65	0.0	0.285	5.2	LOS A	1.6	10.9	0.66	0.70	0.66	49.4
2	T1	All MCs	8	1.0	8	1.0	0.285	4.8	LOS A	1.6	10.9	0.66	0.70	0.66	30.8
3	R2	All MCs	186	1.0	186	1.0	0.285	10.6	LOS B	1.6	10.9	0.66	0.70	0.66	30.8
Approach			260	0.7	260	0.7	0.285	9.0	LOS A	1.6	10.9	0.66	0.70	0.66	38.6
East: Beeliar Dr															
4	L2	All MCs	65	2.0	65	2.0	0.391	5.0	LOS A	2.0	14.4	0.23	0.45	0.23	50.5
5	T1	All MCs	1004	2.0	1004	2.0	0.391	5.1	LOS A	2.0	14.4	0.24	0.47	0.24	59.2
6	R2	All MCs	102	1.0	102	1.0	0.391	11.4	LOS B	1.9	13.6	0.25	0.51	0.25	50.1
Approach			1172	1.9	1172	1.9	0.391	5.7	LOS A	2.0	14.4	0.24	0.48	0.24	58.4
North: NS Spine Rd															
7	L2	All MCs	161	1.0	161	1.0	0.380	7.0	LOS A	2.0	14.0	0.77	0.85	0.86	27.1
8	T1	All MCs	8	1.0	8	1.0	0.380	6.5	LOS A	2.0	14.0	0.77	0.85	0.86	34.6
9	R2	All MCs	77	1.0	77	1.0	0.380	12.5	LOS B	2.0	14.0	0.77	0.85	0.86	48.6
Approach			246	1.0	246	1.0	0.380	8.7	LOS A	2.0	14.0	0.77	0.85	0.86	38.6
West: Beeliar Dr															
10	L2	All MCs	136	1.0	136	1.0	0.482	5.5	LOS A	3.3	23.2	0.47	0.49	0.47	55.3
11	T1	All MCs	1140	2.0	1140	2.0	0.482	5.5	LOS A	3.3	23.2	0.48	0.51	0.48	54.8
12	R2	All MCs	79	0.0	79	0.0	0.482	12.0	LOS B	3.1	21.7	0.49	0.53	0.49	53.2
Approach			1355	1.8	1355	1.8	0.482	5.9	LOS A	3.3	23.2	0.48	0.51	0.48	54.7
All Vehicles			3033	1.7	3033	1.7	0.482	6.3	LOS A	3.3	23.2	0.43	0.54	0.43	54.5

MOVEMENT SUMMARY

Site: [2] Beeliar Dr / Hammond Rd (Folder1)
Network: [1] 2028 Post Development - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 130.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Queued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	242	0.0	242	0.0	0.666	8.8	LOS A	15.1	105.4	0.91	1.24	0.91	15.7
2	T1	All MCs	232	0.0	232	0.0	*0.666	55.5	LOS E	15.1	105.4	0.92	1.18	0.92	16.2
3	R2	All MCs	108	0.0	108	0.0	0.443	59.3	LOS E	7.9	55.4	0.95	0.79	0.95	31.3
Approach			582	0.0	582	0.0	0.666	36.8	LOS D	15.1	105.4	0.92	1.13	0.92	18.8
East: Beeliar Dr															
4	L2	All MCs	95	0.0	95	0.0	0.063	7.9	LOS A	0.6	4.3	0.22	0.91	0.22	45.7
5	T1	All MCs	825	2.0	825	2.0	0.611	38.6	LOS D	21.7	154.5	0.89	0.77	0.89	29.4
6	R2	All MCs	113	3.0	113	3.0	0.493	67.9	LOS E	6.8	49.1	0.98	0.79	0.98	20.5
Approach			1033	1.9	1033	1.9	0.611	39.0	LOS D	21.7	154.5	0.83	0.79	0.83	29.3
North: Hammond Rd															
7	L2	All MCs	161	3.0	161	3.0	0.168	15.6	LOS B	4.0	29.0	0.49	1.33	0.49	34.4
8	T1	All MCs	239	0.0	239	0.0	*0.714	58.2	LOS E	13.8	96.5	1.00	0.86	1.04	29.2
9	R2	All MCs	192	2.0	192	2.0	0.714	64.1	LOS E	13.1	92.9	1.00	0.86	1.05	17.2
Approach			592	1.5	592	1.5	0.714	48.5	LOS D	13.8	96.5	0.86	0.99	0.90	27.2
West: Beeliar Dr															
10	L2	All MCs	201	1.0	201	1.0	0.141	20.4	LOS C	1.0	7.3	0.13	0.82	0.13	35.3
11	T1	All MCs	1099	1.0	1099	1.0	*0.880	61.0	LOS E	38.4	271.0	1.00	1.00	1.13	31.4
12	R2	All MCs	207	0.0	207	0.0	*0.880	82.4	LOS F	14.6	102.4	1.00	0.96	1.28	23.3
Approach			1507	0.9	1507	0.9	0.880	58.5	LOS E	38.4	271.0	0.88	0.97	1.02	27.4
All Vehicles			3714	1.1	3714	1.1	0.880	48.1	LOS D	38.4	271.0	0.87	0.95	0.93	26.0

MOVEMENT SUMMARY

Site: [3] Hammond Rd / Yangebup Rd / Cooper Rd (Folder1)
Network: [1] 2028 Post Development - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Queued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	23	0.0	23	0.0	0.238	6.8	LOS A	0.2	1.5	0.06	0.10	0.06	58.2
2	T1	All MCs	419	1.0	419	1.0	0.238	0.2	LOS A	0.2	1.5	0.06	0.10	0.06	59.2
3	R2	All MCs	17	0.0	17	0.0	0.238	7.8	LOS A	0.2	1.5	0.06	0.10	0.06	51.8
Approach			459	0.9	459	0.9	0.238	0.8	NA	0.2	1.5	0.06	0.10	0.06	58.8
East: Cooper Rd															
4	L2	All MCs	47	0.0	47	0.0	0.123	10.0	LOS B	0.4	3.0	0.59	0.97	0.59	38.4
5	T1	All MCs	9	0.0	9	0.0	0.123	16.4	LOS C	0.4	3.0	0.59	0.97	0.59	38.4
6	R2	All MCs	11	0.0	11	0.0	0.123	19.5	LOS C	0.4	3.0	0.59	0.97	0.59	45.1
Approach			67	0.0	67	0.0	0.123	12.4	LOS B	0.4	3.0	0.59	0.97	0.59	40.0
North: Hammond Rd															
7	L2	All MCs	3	0.0	3	0.0	0.282	7.5	LOS A	0.5	3.5	0.12	0.13	0.12	52.4
8	T1	All MCs	485	2.0	485	2.0	0.282	0.3	LOS A	0.5	3.5	0.12	0.13	0.12	58.1
9	R2	All MCs	42	0.0	42	0.0	0.282	7.6	LOS A	0.5	3.5	0.12	0.13	0.12	58.1
Approach			531	1.8	531	1.8	0.282	0.9	NA	0.5	3.5	0.12	0.13	0.12	58.0
West: Yangebup Rd															
10	L2	All MCs	41	7.0	41	7.0	0.149	9.9	LOS A	0.5	3.8	0.62	0.95	0.62	41.4
11	T1	All MCs	9	0.0	9	0.0	0.149	16.4	LOS C	0.5	3.8	0.62	0.95	0.62	37.9
12	R2	All MCs	20	0.0	20	0.0	0.149	20.0	LOS C	0.5	3.8	0.62	0.95	0.62	20.1
Approach			71	4.1	71	4.1	0.149	13.7	LOS B	0.5	3.8	0.62	0.95	0.62	38.0
All Vehicles			1127	1.5	1127	1.5	0.282	2.3	NA	0.5	3.8	0.15	0.22	0.15	55.8

MOVEMENT SUMMARY

Site: [4] Shopping Centre Roundabout - Import (Folder1)
Network: [1] 2028 Post Development - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: NS Link Rd															
1	L2	All MCs	123	1.0	123	1.0	0.096	4.3	LOS A	0.5	3.5	0.15	0.49	0.15	31.9
2	T1	All MCs	1	1.0	1	1.0	0.096	3.9	LOS A	0.5	3.5	0.15	0.49	0.15	31.5
3	R2	All MCs	1	1.0	1	1.0	0.096	6.8	LOS A	0.5	3.5	0.15	0.49	0.15	31.3
Approach			125	1.0	125	1.0	0.096	4.3	LOS A	0.5	3.5	0.15	0.49	0.15	31.8
East: East LSP															
4	L2	All MCs	1	1.0	1	1.0	0.020	4.8	LOS A	0.1	0.7	0.40	0.50	0.40	25.0
5	T1	All MCs	18	1.0	18	1.0	0.020	4.4	LOS A	0.1	0.7	0.40	0.50	0.40	24.2
6	R2	All MCs	1	1.0	1	1.0	0.020	7.3	LOS A	0.1	0.7	0.40	0.50	0.40	25.0
Approach			20	1.0	20	1.0	0.020	4.6	LOS A	0.1	0.7	0.40	0.50	0.40	24.2
North: NS Link RD															
7	L2	All MCs	1	1.0	1	1.0	0.019	5.2	LOS A	0.1	0.6	0.40	0.61	0.40	21.6
8	T1	All MCs	1	1.0	1	1.0	0.019	4.8	LOS A	0.1	0.6	0.40	0.61	0.40	22.1
9	R2	All MCs	17	1.0	17	1.0	0.019	7.8	LOS A	0.1	0.6	0.40	0.61	0.40	21.3
Approach			19	1.0	19	1.0	0.019	7.5	LOS A	0.1	0.6	0.40	0.61	0.40	21.3
West: Shopping Centre Access															
10	L2	All MCs	17	1.0	17	1.0	0.174	3.4	LOS A	0.9	6.6	0.03	0.62	0.03	24.0
11	T1	All MCs	18	1.0	18	1.0	0.174	3.1	LOS A	0.9	6.6	0.03	0.62	0.03	23.8
12	R2	All MCs	246	1.0	246	1.0	0.174	5.9	LOS A	0.9	6.6	0.03	0.62	0.03	24.0
Approach			281	1.0	281	1.0	0.174	5.6	LOS A	0.9	6.6	0.03	0.62	0.03	23.9
All Vehicles			445	1.0	445	1.0	0.174	5.2	LOS A	0.9	6.6	0.10	0.58	0.10	26.7

MOVEMENT SUMMARY

Site: [5] Yangebup Rd / NS Link Rd - Import (Folder1)
Network: [1] 2028 Post Development - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: NS Link Rd															
1	L2	All MCs	1	1.0	1	1.0	0.015	4.4	LOS A	0.0	0.3	0.19	0.52	0.19	36.1
3	R2	All MCs	17	1.0	17	1.0	0.015	4.7	LOS A	0.0	0.3	0.19	0.52	0.19	25.4
Approach			18	1.0	18	1.0	0.015	4.7	LOS A	0.0	0.3	0.19	0.52	0.19	26.8
East: Yangebup Rd															
4	L2	All MCs	17	1.0	17	1.0	0.039	4.6	LOS A	0.0	0.0	0.00	0.12	0.00	44.4
5	T1	All MCs	58	0.0	58	0.0	0.039	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	47.6
Approach			75	0.2	75	0.2	0.039	1.0	NA	0.0	0.0	0.00	0.12	0.00	47.3
West: Yangebup Rd															
11	T1	All MCs	54	3.0	54	3.0	0.028	0.0	LOS A	0.0	0.0	0.01	0.01	0.01	49.5
12	R2	All MCs	1	1.0	1	1.0	0.028	4.6	LOS A	0.0	0.0	0.01	0.01	0.01	49.5
Approach			55	3.0	55	3.0	0.028	0.1	NA	0.0	0.0	0.01	0.01	0.01	49.5
All Vehicles			147	1.3	147	1.3	0.039	1.1	NA	0.0	0.3	0.03	0.13	0.03	46.3

2038 without development

MOVEMENT SUMMARY

Site: [1] Beeliar Dr / Kemp Rd (Folder1)
Network: [1] 2038 Base - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Kemp Rd															
1	L2	All MCs	237	1.0	237	1.0	1.072	96.7	LOS F	40.8	287.8	1.00	3.28	5.61	17.7
2	T1	All MCs	1	1.0	1	1.0	1.072	96.2	LOS F	40.8	287.8	1.00	3.28	5.61	8.7
3	R2	All MCs	328	1.0	328	1.0	1.072	102.0	LOS F	40.8	287.8	1.00	3.28	5.61	6.1
Approach			566	1.0	566	1.0	1.072	99.8	LOS F	40.8	287.8	1.00	3.28	5.61	11.6
East: Beeliar Dr															
4	L2	All MCs	126	3.0	**104**	3.1	0.519	4.9	LOS A	4.0	29.4	0.25	0.43	0.25	50.3
5	T1	All MCs	1776	5.0	**1462**	5.2	0.519	5.1	LOS A	4.0	29.4	0.26	0.44	0.26	59.3
6	R2	All MCs	1	1.0	1	1.0	0.519	11.2	LOS B	3.7	27.3	0.27	0.44	0.27	50.0
Approach			1903	4.9	**1567**	5.0	0.519	5.0	LOS A	4.0	29.4	0.26	0.44	0.26	58.9
North: NS Spine Rd															
7	L2	All MCs	1	1.0	1	1.0	0.010	7.4	LOS A	0.0	0.3	0.82	0.72	0.82	27.3
8	T1	All MCs	1	1.0	1	1.0	0.010	7.0	LOS A	0.0	0.3	0.82	0.72	0.82	34.5
9	R2	All MCs	1	1.0	1	1.0	0.010	12.9	LOS B	0.0	0.3	0.82	0.72	0.82	48.2
Approach			3	1.0	3	1.0	0.010	9.1	LOS A	0.0	0.3	0.82	0.72	0.82	39.8
West: Beeliar Dr															
10	L2	All MCs	1	1.0	1	1.0	1.632	576.7	LOS F	305.3	2228.7	1.00	9.97	19.29	3.9
11	T1	All MCs	2108	5.0	2108	5.0	1.632	576.9	LOS F	305.3	2228.7	1.00	9.60	19.04	3.5
12	R2	All MCs	169	0.0	169	0.0	1.632	583.5	LOS F	264.9	1921.4	1.00	9.10	18.69	4.3
Approach			2279	4.6	2279	4.6	1.632	577.4	LOS F	305.3	2228.7	1.00	9.56	19.01	3.5
All Vehicles			4752	4.3	**4415**	4.6	1.632	312.6	LOS F	305.3	2228.7	0.74	5.51	10.62	6.9

MOVEMENT SUMMARY

Site: [2] Beeliar Dr / Hammond Rd (Folder1)
Network: [1] 2038 Base - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	302	2.0	302	2.0	1.143	168.6	LOS F	64.2	455.8	1.00	1.46	1.94	6.6
2	T1	All MCs	233	1.0	233	1.0	*1.143	205.8	LOS F	64.2	455.8	1.00	1.42	1.88	6.9
3	R2	All MCs	173	3.0	173	3.0	0.761	76.9	LOS E	13.9	99.5	1.00	0.88	1.09	26.9
Approach			707	1.9	707	1.9	1.143	158.5	LOS F	64.2	455.8	1.00	1.31	1.48	9.5
East: Beeliar Dr															
4	L2	All MCs	172	3.0	172	3.0	0.150	33.3	LOS C	3.6	25.5	0.44	1.16	0.44	40.0
5	T1	All MCs	1338	4.0	1338	4.0	*1.227	297.6	LOS F	96.9	701.7	1.00	1.89	2.21	7.0
6	R2	All MCs	118	7.0	118	7.0	0.586	108.6	LOS F	8.4	62.4	1.00	0.80	1.00	18.3
Approach			1627	4.1	1627	4.1	1.227	256.1	LOS F	96.9	701.7	0.94	1.73	1.94	7.9
North: Hammond Rd															
7	L2	All MCs	291	4.0	**290**	4.0	0.296	38.4	LOS D	7.7	55.8	0.54	1.30	0.54	31.0
8	T1	All MCs	447	2.0	447	2.0	*1.241	316.1	LOS F	77.1	556.4	1.00	1.76	2.32	10.7
9	R2	All MCs	421	4.0	421	4.0	1.241	317.9	LOS F	77.1	556.4	1.00	1.66	2.28	5.4
Approach			1159	3.2	**1158**	3.2	1.241	247.1	LOS F	77.1	556.4	0.88	1.61	1.86	9.8
West: Beeliar Dr															
10	L2	All MCs	329	7.0	**218**	6.6	0.145	33.9	LOS C	1.7	12.6	0.16	0.92	0.16	32.3
11	T1	All MCs	1734	3.0	**1148**	2.8	1.121	206.3	LOS F	71.5[N8]	512.7[N8]	1.00	1.58	1.83	13.4
12	R2	All MCs	391	2.0	**259**	1.9	*1.229	311.6	LOS F	36.6	260.6	1.00	1.38	2.29	9.5
Approach			2454	3.4	**1625**	3.2	1.229	200.0	LOS F	71.5[N8]	512.7[N8]	0.89	1.46	1.68	11.7
All Vehicles			5947	3.4	**5117**	3.9	1.241	222.8	LOS F	96.9[N8]	701.7[N8]	0.92	1.56	1.81	9.7

MOVEMENT SUMMARY

Site: [3] Hammond Rd / Yangebup Rd / Cooper Rd (Folder1)
Network: [1] 2038 Base - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	24	0.0	**19**	0.0	0.273	12.6	LOS B	0.7	5.2	0.19	0.23	0.19	50.8
2	T1	All MCs	506	6.0	**402**	5.5	0.273	1.4	LOS A	0.7	5.2	0.19	0.23	0.19	57.3
3	R2	All MCs	32	9.0	**25**	8.3	0.273	14.0	LOS B	0.7	5.2	0.19	0.23	0.19	50.2
Approach			562	5.9	**447**	5.5	0.273	2.5	NA	0.7	5.2	0.19	0.23	0.19	56.7
East: Cooper Rd															
4	L2	All MCs	81	5.0	81	5.0	0.685	24.9	LOS C	1.8	13.2	0.93	1.16	1.47	27.6
5	T1	All MCs	4	0.0	4	0.0	0.685	44.3	LOS E	1.8	13.2	0.93	1.16	1.47	29.0
6	R2	All MCs	16	9.0	16	9.0	0.685	67.0	LOS F	1.8	13.2	0.93	1.16	1.47	36.4
Approach			101	5.4	101	5.4	0.685	32.2	LOS D	1.8	13.2	0.93	1.16	1.47	29.6
North: Hammond Rd															
7	L2	All MCs	13	11.0	13	11.0	0.749	8.7	LOS A	1.1	8.0	0.06	0.07	0.12	52.3
8	T1	All MCs	912	4.0	912	4.0	0.749	0.5	LOS A	1.1	8.0	0.06	0.07	0.12	58.5
9	R2	All MCs	22	7.0	22	7.0	0.749	9.5	LOS A	1.1	8.0	0.06	0.07	0.12	53.8
Approach			946	4.2	946	4.2	0.749	0.8	NA	1.1	8.0	0.06	0.07	0.12	58.2
West: Yangebup Rd															
10	L2	All MCs	26	6.0	26	6.0	1.016	83.3	LOS F	5.9	42.5	1.00	1.85	3.63	14.5
11	T1	All MCs	6	0.0	6	0.0	1.016	112.6	LOS F	5.9	42.5	1.00	1.85	3.63	14.0
12	R2	All MCs	57	3.0	57	3.0	1.016	130.3	LOS F	5.9	42.5	1.00	1.85	3.63	3.4
Approach			89	3.7	89	3.7	1.016	115.2	LOS F	5.9	42.5	1.00	1.85	3.63	8.1
All Vehicles			1699	4.8	**1584**	5.1	1.016	9.7	NA	5.9	42.5	0.20	0.29	0.42	47.0

MOVEMENT SUMMARY

Site: [1] Beeliar Dr / Kemp Rd (Folder1)
Network: [1] 2038 Base - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Kemp Rd															
1	L2	All MCs	84	0.0	84	0.0	0.619	9.3	LOS A	3.7	25.9	0.92	0.86	1.16	45.7
2	T1	All MCs	1	1.0	1	1.0	0.619	8.9	LOS A	3.7	25.9	0.92	0.86	1.16	30.9
3	R2	All MCs	238	1.0	238	1.0	0.619	14.7	LOS B	3.7	25.9	0.92	0.86	1.16	26.2
Approach			323	0.7	323	0.7	0.619	13.3	LOS B	3.7	25.9	0.92	0.86	1.16	34.3
East: Beeliar Dr															
4	L2	All MCs	84	2.0	84	2.0	0.462	4.8	LOS A	3.3	23.5	0.23	0.43	0.23	50.5
5	T1	All MCs	1341	2.0	1341	2.0	0.462	4.9	LOS A	3.3	23.5	0.24	0.43	0.24	59.7
6	R2	All MCs	1	1.0	1	1.0	0.462	11.2	LOS B	3.1	21.9	0.25	0.43	0.25	50.2
Approach			1426	2.0	1426	2.0	0.462	4.9	LOS A	3.3	23.5	0.24	0.43	0.24	59.3
North: NS Spine Rd															
7	L2	All MCs	1	1.0	1	1.0	0.010	7.9	LOS A	0.0	0.3	0.83	0.73	0.83	26.8
8	T1	All MCs	1	1.0	1	1.0	0.010	7.4	LOS A	0.0	0.3	0.83	0.73	0.83	34.0
9	R2	All MCs	1	1.0	1	1.0	0.010	13.4	LOS B	0.0	0.3	0.83	0.73	0.83	47.8
Approach			3	1.0	3	1.0	0.010	9.6	LOS A	0.0	0.3	0.83	0.73	0.83	39.3
West: Beeliar Dr															
10	L2	All MCs	1	1.0	1	1.0	1.047	54.5	LOS E	47.3	337.0	1.00	2.14	3.15	24.7
11	T1	All MCs	1591	2.0	1591	2.0	1.047	54.9	LOS E	47.3	337.0	1.00	2.11	3.15	22.7
12	R2	All MCs	101	0.0	101	0.0	1.047	62.0	LOS E	38.1	270.4	1.00	2.06	3.15	25.3
Approach			1693	1.9	1693	1.9	1.047	55.3	LOS E	47.3	337.0	1.00	2.10	3.15	22.9
All Vehicles			3445	1.8	3445	1.8	1.047	30.5	LOS C	47.3	337.0	0.68	1.29	1.76	34.7

MOVEMENT SUMMARY

Site: [2] Beeliar Dr / Hammond Rd (Folder1)
Network: [1] 2038 Base - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 130.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	277	0.0	277	0.0	0.905	33.4	LOS C	33.3	233.0	1.00	1.32	1.20	11.6
2	T1	All MCs	296	0.0	296	0.0	*0.905	91.4	LOS F	33.3	233.0	1.00	1.24	1.16	12.5
3	R2	All MCs	139	0.0	139	0.0	0.603	60.8	LOS E	11.2	78.5	0.98	0.81	0.98	31.0
Approach			712	0.0	712	0.0	0.905	62.9	LOS E	33.3	233.0	0.99	1.19	1.09	15.0
East: Beeliar Dr															
4	L2	All MCs	122	0.0	122	0.0	0.086	8.7	LOS A	1.1	7.4	0.27	0.98	0.27	44.6
5	T1	All MCs	1013	2.0	1013	2.0	0.746	43.4	LOS D	28.9	205.7	0.94	0.83	0.94	28.7
6	R2	All MCs	143	3.0	143	3.0	0.694	78.8	LOS E	9.2	65.9	1.00	0.84	1.07	19.6
Approach			1278	1.9	1278	1.9	0.746	44.0	LOS D	28.9	205.7	0.88	0.85	0.89	27.3
North: Hammond Rd															
7	L2	All MCs	206	3.0	206	3.0	0.236	37.6	LOS D	5.3	38.3	0.56	1.30	0.56	31.5
8	T1	All MCs	306	0.0	306	0.0	0.920	91.6	LOS F	20.7	144.6	1.00	1.07	1.32	25.7
9	R2	All MCs	245	2.0	245	2.0	*0.920	80.5	LOS F	19.9	141.5	1.00	1.04	1.33	14.6
Approach			758	1.5	758	1.5	0.920	73.3	LOS E	20.7	144.6	0.88	1.13	1.11	21.5
West: Beeliar Dr															
10	L2	All MCs	257	1.0	**247**	1.0	0.165	27.2	LOS C	2.1	15.1	0.21	1.01	0.21	29.7
11	T1	All MCs	1364	1.0	**1312**	1.0	*1.058	141.9	LOS F	67.5	476.7	1.00	1.47	1.66	17.6
12	R2	All MCs	234	0.0	**225**	0.0	*1.056	155.8	LOS F	21.5	150.7	1.00	1.18	1.80	15.4
Approach			1855	0.9	**1784**	0.9	1.058	127.8	LOS F	67.5	476.7	0.89	1.37	1.48	16.0
All Vehicles			4602	1.1	**4531**	1.1	1.058	84.8	LOS F	67.5	476.7	0.90	1.15	1.20	18.5

MOVEMENT SUMMARY

Site: [3] Hammond Rd / Yangebup Rd / Cooper Rd (Folder1)
Network: [1] 2038 Base - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	29	0.0	29	0.0	0.305	7.6	LOS A	0.3	2.4	0.08	0.12	0.08	53.1
2	T1	All MCs	537	1.0	**529**	1.0	0.305	0.3	LOS A	0.3	2.4	0.08	0.12	0.08	59.0
3	R2	All MCs	22	0.0	22	0.0	0.305	8.9	LOS A	0.3	2.4	0.08	0.12	0.08	51.6
Approach			588	0.9	**580**	0.9	0.305	1.0	NA	0.3	2.4	0.08	0.12	0.08	58.5
East: Cooper Rd															
4	L2	All MCs	61	0.0	61	0.0	0.161	11.3	LOS B	0.6	3.9	0.65	1.00	0.65	37.4
5	T1	All MCs	1	0.0	1	0.0	0.161	22.2	LOS C	0.6	3.9	0.65	1.00	0.65	37.7
6	R2	All MCs	13	0.0	13	0.0	0.161	25.9	LOS D	0.6	3.9	0.65	1.00	0.65	44.4
Approach			75	0.0	75	0.0	0.161	13.9	LOS B	0.6	3.9	0.65	1.00	0.65	39.1
North: Hammond Rd															
7	L2	All MCs	4	0.0	4	0.0	0.337	8.3	LOS A	0.3	2.3	0.06	0.08	0.06	52.7
8	T1	All MCs	621	2.0	621	2.0	0.337	0.2	LOS A	0.3	2.3	0.06	0.08	0.06	59.0
9	R2	All MCs	22	0.0	22	0.0	0.337	8.4	LOS A	0.3	2.3	0.06	0.08	0.06	54.6
Approach			647	1.9	647	1.9	0.337	0.5	NA	0.3	2.3	0.06	0.08	0.06	58.7
West: Yangebup Rd															
10	L2	All MCs	20	7.0	20	7.0	0.179	10.8	LOS B	0.6	4.2	0.75	1.01	0.76	37.0
11	T1	All MCs	1	0.0	1	0.0	0.179	21.8	LOS C	0.6	4.2	0.75	1.01	0.76	34.2
12	R2	All MCs	26	0.0	26	0.0	0.179	27.2	LOS D	0.6	4.2	0.75	1.01	0.76	15.4
Approach			47	3.0	47	3.0	0.179	20.2	LOS C	0.6	4.2	0.75	1.01	0.76	29.2
All Vehicles			1358	1.4	**1350**	1.4	0.337	2.1	NA	0.6	4.2	0.13	0.18	0.13	56.2

2038 with development

MOVEMENT SUMMARY

Site: [1] Beeliar Dr / Kemp Rd (Folder1)
Network: [1] 2038 Post Development - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Kemp Rd															
1	L2	All MCs	237	1.0	237	1.0	1.130	141.3	LOS F	54.2	382.3	1.00	4.18	7.61	13.4
2	T1	All MCs	7	1.0	7	1.0	1.130	140.9	LOS F	54.2	382.3	1.00	4.18	7.61	4.4
3	R2	All MCs	328	1.0	328	1.0	1.130	146.6	LOS F	54.2	382.3	1.00	4.18	7.61	4.4
Approach			573	1.0	573	1.0	1.130	144.4	LOS F	54.2	382.3	1.00	4.18	7.61	8.5
East: Beeliar Dr															
4	L2	All MCs	126	3.0	**103**	3.1	0.546	5.2	LOS A	3.8	27.4	0.29	0.47	0.29	50.0
5	T1	All MCs	1737	5.0	**1410**	5.1	0.546	5.4	LOS A	3.8	27.4	0.30	0.48	0.30	58.8
6	R2	All MCs	93	1.0	**75**	1.0	0.546	11.6	LOS B	3.5	25.6	0.31	0.51	0.31	50.1
Approach			1956	4.7	**1588**	4.8	0.546	5.7	LOS A	3.8	27.4	0.30	0.48	0.30	58.2
North: NS Spine Rd															
7	L2	All MCs	145	1.0	145	1.0	0.820	15.0	LOS B	3.8	26.8	0.99	1.12	1.46	19.1
8	T1	All MCs	7	1.0	7	1.0	0.820	14.6	LOS B	3.8	26.8	0.99	1.12	1.46	27.1
9	R2	All MCs	68	1.0	68	1.0	0.820	20.5	LOS C	3.8	26.8	0.99	1.12	1.46	41.6
Approach			221	1.0	221	1.0	0.820	16.7	LOS B	3.8	26.8	0.99	1.12	1.46	30.1
West: Beeliar Dr															
10	L2	All MCs	121	1.0	121	1.0	1.691	630.1	LOS F	328.0	2387.1	1.00	10.63	21.31	3.3
11	T1	All MCs	2017	5.0	2017	5.0	1.691	630.4	LOS F	328.0	2387.1	1.00	10.20	20.98	3.4
12	R2	All MCs	169	0.0	169	0.0	1.691	637.0	LOS F	278.3	2017.9	1.00	9.66	20.57	4.3
Approach			2307	4.4	2307	4.4	1.691	630.9	LOS F	328.0	2387.1	1.00	10.18	20.97	3.4
All Vehicles			5057	4.0	**4689**	4.3	1.691	330.8	LOS F	328.0	2387.1	0.76	5.74	11.42	6.7

MOVEMENT SUMMARY

Site: [2] Beeliar Dr / Hammond Rd (Folder1)
Network: [1] 2038 Post Development - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	325	2.0	325	2.0	1.162	183.4	LOS F	68.7	487.4	1.00	1.47	2.00	6.4
2	T1	All MCs	233	1.0	233	1.0	*1.162	219.1	LOS F	68.7	487.4	1.00	1.43	1.93	6.7
3	R2	All MCs	173	3.0	173	3.0	0.773	77.4	LOS E	14.2	101.9	1.00	0.89	1.10	26.8
Approach			731	1.9	731	1.9	1.162	169.7	LOS F	68.7	487.4	1.00	1.32	1.52	9.2
East: Beeliar Dr															
4	L2	All MCs	172	3.0	172	3.0	0.150	34.1	LOS C	3.5	25.4	0.45	1.16	0.45	40.0
5	T1	All MCs	1368	4.0	1368	4.0	*1.241	310.3	LOS F	101.0	731.0	1.00	1.93	2.26	6.8
6	R2	All MCs	118	7.0	118	7.0	0.562	108.2	LOS F	8.4	62.0	0.99	0.80	0.99	18.5
Approach			1658	4.1	1658	4.1	1.241	267.3	LOS F	101.0	731.0	0.94	1.77	1.98	7.6
North: Hammond Rd															
7	L2	All MCs	291	4.0	**289**	4.0	0.266	38.9	LOS D	7.7	55.9	0.55	1.30	0.55	30.8
8	T1	All MCs	447	2.0	**444**	2.0	*1.257	330.4	LOS F	77.7	560.8	1.00	1.79	2.37	10.4
9	R2	All MCs	421	4.0	**418**	4.0	1.257	332.5	LOS F	77.7	560.8	1.00	1.68	2.34	5.3
Approach			1159	3.2	**1151**	3.2	1.257	258.1	LOS F	77.7	560.8	0.89	1.63	1.90	9.5
West: Beeliar Dr															
10	L2	All MCs	329	7.0	**217**	6.5	0.142	34.1	LOS C	1.6	11.7	0.13	0.87	0.13	34.0
11	T1	All MCs	1764	3.0	**1164**	2.8	1.126	210.6	LOS F	72.9[N8]	522.4[N8]	1.00	1.59	1.85	13.2
12	R2	All MCs	414	2.0	**273**	1.8	*1.243	323.8	LOS F	39.4	280.4	1.00	1.40	2.33	9.3
Approach			2507	3.4	**1654**	3.1	1.243	206.2	LOS F	72.9[N8]	522.4[N8]	0.89	1.47	1.70	11.5
All Vehicles			6055	3.4	**5194**	3.9	1.257	232.1	LOS F	101.0[N8]	731.0[N8]	0.92	1.58	1.85	9.4

MOVEMENT SUMMARY

Site: [3] Hammond Rd / Yangebup Rd / Cooper Rd (Folder1)
Network: [1] 2038 Post Development - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	24	0.0	**19**	0.0	0.271	12.6	LOS B	0.7	5.2	0.19	0.23	0.19	54.4
2	T1	All MCs	506	6.0	**400**	5.5	0.271	1.3	LOS A	0.7	5.2	0.19	0.23	0.19	57.3
3	R2	All MCs	32	9.0	**25**	8.2	0.271	14.0	LOS B	0.7	5.2	0.19	0.23	0.19	50.2
Approach			562	5.9	**444**	5.4	0.271	2.5	NA	0.7	5.2	0.19	0.23	0.19	56.8
East: Cooper Rd															
4	L2	All MCs	81	5.0	81	5.0	0.813	31.6	LOS D	2.4	17.6	0.96	1.28	1.88	24.3
5	T1	All MCs	12	0.0	12	0.0	0.813	53.7	LOS F	2.4	17.6	0.96	1.28	1.88	24.3
6	R2	All MCs	16	9.0	16	9.0	0.813	82.7	LOS F	2.4	17.6	0.96	1.28	1.88	33.3
Approach			108	5.0	108	5.0	0.813	41.4	LOS E	2.4	17.6	0.96	1.28	1.88	26.1
North: Hammond Rd															
7	L2	All MCs	13	11.0	13	11.0	0.785	9.7	LOS A	2.4	17.3	0.12	0.13	0.26	51.8
8	T1	All MCs	912	4.0	912	4.0	0.785	1.0	LOS A	2.4	17.3	0.12	0.13	0.26	57.2
9	R2	All MCs	46	7.0	46	7.0	0.785	10.0	LOS B	2.4	17.3	0.12	0.13	0.26	57.2
Approach			971	4.2	971	4.2	0.785	1.5	NA	2.4	17.3	0.12	0.13	0.26	57.0
West: Yangebup Rd															
10	L2	All MCs	51	6.0	**50**	6.0	1.147	168.1	LOS F	13.7	99.3	1.00	2.76	6.08	10.3
11	T1	All MCs	14	0.0	14	0.0	1.147	201.4	LOS F	13.7	99.3	1.00	2.76	6.08	10.1
12	R2	All MCs	57	3.0	57	3.0	1.147	222.3	LOS F	13.7	99.3	1.00	2.76	6.08	2.3
Approach			121	3.9	121	3.9	1.147	197.3	LOS F	13.7	99.3	1.00	2.76	6.08	6.9
All Vehicles			1762	4.8	**1643**	5.1	1.147	18.8	NA	13.7	99.3	0.26	0.43	0.77	40.5

MOVEMENT SUMMARY

Site: [4] Shopping Centre Roundabout (Folder1)
Network: [1] 2038 Post Development - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: NS Link Rd															
1	L2	All MCs	111	1.0	**77**	1.0	0.061	4.2	LOS A	0.3	2.1	0.13	0.49	0.13	32.0
2	T1	All MCs	1	1.0	1	1.0	0.061	3.9	LOS A	0.3	2.1	0.13	0.49	0.13	31.7
3	R2	All MCs	1	1.0	1	1.0	0.061	6.8	LOS A	0.3	2.1	0.13	0.49	0.13	31.4
Approach			113	1.0	**78**	1.0	0.061	4.3	LOS A	0.3	2.1	0.13	0.49	0.13	31.9
East: East LSP															
4	L2	All MCs	1	1.0	1	1.0	0.017	4.6	LOS A	0.1	0.5	0.38	0.49	0.38	25.2
5	T1	All MCs	15	1.0	15	1.0	0.017	4.3	LOS A	0.1	0.5	0.38	0.49	0.38	24.3
6	R2	All MCs	1	1.0	1	1.0	0.017	7.1	LOS A	0.1	0.5	0.38	0.49	0.38	25.2
Approach			17	1.0	17	1.0	0.017	4.5	LOS A	0.1	0.5	0.38	0.49	0.38	24.3
North: NS Link RD															
7	L2	All MCs	1	1.0	1	1.1	0.017	5.0	LOS A	0.1	0.5	0.38	0.60	0.38	21.8
8	T1	All MCs	1	1.0	1	1.1	0.017	4.6	LOS A	0.1	0.5	0.38	0.60	0.38	22.4
9	R2	All MCs	16	1.0	**15**	1.1	0.017	7.6	LOS A	0.1	0.5	0.38	0.60	0.38	21.4
Approach			18	1.0	**17**	1.1	0.017	7.3	LOS A	0.1	0.5	0.38	0.60	0.38	21.5
West: Shopping Centre Access															
10	L2	All MCs	16	1.0	16	1.0	0.155	3.4	LOS A	0.8	5.9	0.03	0.62	0.03	24.0
11	T1	All MCs	15	1.0	15	1.0	0.155	3.1	LOS A	0.8	5.9	0.03	0.62	0.03	23.8
12	R2	All MCs	221	1.0	221	1.0	0.155	5.9	LOS A	0.8	5.9	0.03	0.62	0.03	24.0
Approach			252	1.0	252	1.0	0.155	5.6	LOS A	0.8	5.9	0.03	0.62	0.03	24.0
All Vehicles			399	1.0	**363**	1.1	0.155	5.3	LOS A	0.8	5.9	0.08	0.59	0.08	26.1

MOVEMENT SUMMARY

Site: [5] Yangebup Rd / NS Link Rd (Folder1)
Network: [1] 2038 Post Development - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: NS Link Rd															
1	L2	All MCs	1	1.0	1	1.0	0.016	4.5	LOS A	0.0	0.3	0.23	0.53	0.23	35.8
3	R2	All MCs	16	1.0	16	1.0	0.016	4.9	LOS A	0.0	0.3	0.23	0.53	0.23	25.0
Approach			17	1.0	17	1.0	0.016	4.9	LOS A	0.0	0.3	0.23	0.53	0.23	26.5
East: Yangebup Rd															
4	L2	All MCs	16	1.0	**15**	1.1	0.041	4.6	LOS A	0.0	0.0	0.00	0.10	0.00	45.0
5	T1	All MCs	66	3.0	**62**	3.2	0.041	0.0	LOS A	0.0	0.0	0.00	0.10	0.00	47.9
Approach			82	2.6	**77**	2.8	0.041	0.9	NA	0.0	0.0	0.00	0.10	0.00	47.7
West: Yangebup Rd															
11	T1	All MCs	105	3.0	105	3.0	0.057	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	49.8
12	R2	All MCs	1	1.0	1	1.0	0.057	4.6	LOS A	0.0	0.0	0.00	0.01	0.00	49.8
Approach			106	3.0	106	3.0	0.057	0.0	NA	0.0	0.0	0.00	0.01	0.00	49.8
All Vehicles			205	2.7	**200**	2.7	0.057	0.8	NA	0.0	0.3	0.02	0.09	0.02	47.4

MOVEMENT SUMMARY

Site: [1] Beeliar Dr / Kemp Rd (Folder1)
Network: [1] 2038 Post Development - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Kemp Rd															
1	L2	All MCs	84	0.0	84	0.0	0.663	10.8	LOS B	4.2	29.9	0.97	0.92	1.28	44.6
2	T1	All MCs	8	1.0	8	1.0	0.663	10.4	LOS B	4.2	29.9	0.97	0.92	1.28	24.9
3	R2	All MCs	238	1.0	238	1.0	0.663	16.2	LOS B	4.2	29.9	0.97	0.92	1.28	24.9
Approach			331	0.7	331	0.7	0.663	14.7	LOS B	4.2	29.9	0.97	0.92	1.28	32.8
East: Beeliar Dr															
4	L2	All MCs	84	2.0	84	2.0	0.501	5.1	LOS A	3.2	22.6	0.27	0.46	0.27	50.1
5	T1	All MCs	1298	2.0	1298	2.0	0.501	5.3	LOS A	3.2	22.6	0.28	0.48	0.28	59.0
6	R2	All MCs	102	1.0	102	1.0	0.501	11.5	LOS B	3.0	21.2	0.29	0.51	0.29	49.9
Approach			1484	1.9	1484	1.9	0.501	5.7	LOS A	3.2	22.6	0.28	0.48	0.28	58.3
North: NS Spine Rd															
7	L2	All MCs	161	1.0	161	1.0	0.838	17.0	LOS B	4.5	31.7	0.98	1.16	1.54	17.8
8	T1	All MCs	8	1.0	8	1.0	0.838	16.5	LOS B	4.5	31.7	0.98	1.16	1.54	25.7
9	R2	All MCs	77	1.0	77	1.0	0.838	22.5	LOS C	4.5	31.7	0.98	1.16	1.54	40.2
Approach			246	1.0	246	1.0	0.838	18.7	LOS B	4.5	31.7	0.98	1.16	1.54	28.6
West: Beeliar Dr															
10	L2	All MCs	136	1.0	136	1.0	1.099	101.0	LOS F	73.3	521.6	1.00	3.22	5.56	14.9
11	T1	All MCs	1488	2.0	1488	2.0	1.099	101.2	LOS F	73.3	521.6	1.00	3.13	5.51	14.9
12	R2	All MCs	101	0.0	101	0.0	1.099	108.1	LOS F	54.5	387.3	1.00	3.00	5.43	17.3
Approach			1725	1.8	1725	1.8	1.099	101.6	LOS F	73.3	521.6	1.00	3.13	5.51	15.1
All Vehicles			3786	1.7	3786	1.7	1.099	51.0	LOS E	73.3	521.6	0.72	1.77	2.83	25.8

MOVEMENT SUMMARY

Site: [2] Beeliar Dr / Hammond Rd (Folder1)
Network: [1] 2038 Post Development - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 130.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	302	0.0	302	0.0	0.944	45.8	LOS D	39.1	273.5	1.00	1.35	1.29	10.6
2	T1	All MCs	296	0.0	296	0.0	*0.944	104.9	LOS F	39.1	273.5	1.00	1.25	1.23	11.7
3	R2	All MCs	139	0.0	139	0.0	0.628	61.2	LOS E	11.7	82.0	0.99	0.82	0.99	30.9
Approach			737	0.0	737	0.0	0.944	72.4	LOS E	39.1	273.5	1.00	1.21	1.14	13.9
East: Beeliar Dr															
4	L2	All MCs	122	0.0	122	0.0	0.087	8.7	LOS A	1.0	7.1	0.28	0.98	0.28	44.5
5	T1	All MCs	1046	2.0	1046	2.0	0.789	46.9	LOS D	31.3	222.9	0.96	0.87	0.99	27.5
6	R2	All MCs	143	3.0	143	3.0	0.653	78.7	LOS E	9.0	64.6	1.00	0.82	1.03	20.0
Approach			1312	1.9	1312	1.9	0.789	46.8	LOS D	31.3	222.9	0.90	0.88	0.93	26.3
North: Hammond Rd															
7	L2	All MCs	206	3.0	206	3.0	0.233	35.6	LOS D	5.3	37.7	0.55	1.30	0.55	31.7
8	T1	All MCs	306	0.0	306	0.0	0.920	90.1	LOS F	20.7	144.6	1.00	1.07	1.32	25.7
9	R2	All MCs	245	2.0	245	2.0	*0.920	80.5	LOS F	19.9	141.5	1.00	1.04	1.33	14.6
Approach			758	1.5	758	1.5	0.920	72.1	LOS E	20.7	144.6	0.88	1.13	1.11	21.8
West: Beeliar Dr															
10	L2	All MCs	257	1.0	**239**	1.0	0.160	27.5	LOS C	2.0	14.4	0.20	0.97	0.20	31.0
11	T1	All MCs	1398	1.0	**1301**	1.0	*1.066	147.8	LOS F	67.7	478.0	1.00	1.49	1.70	17.0
12	R2	All MCs	259	0.0	**241**	0.0	*1.065	162.3	LOS F	23.6	165.2	1.00	1.20	1.83	14.9
Approach			1914	0.9	**1781**	0.9	1.066	133.6	LOS F	67.7	478.0	0.89	1.38	1.51	15.6
All Vehicles			4720	1.1	**4587**	1.2	1.066	88.8	LOS F	67.7	478.0	0.91	1.17	1.23	18.0

MOVEMENT SUMMARY

Site: [3] Hammond Rd / Yangebup Rd / Cooper Rd (Folder1)
Network: [1] 2038 Post Development - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	29	0.0	29	0.0	0.301	7.6	LOS A	0.3	2.3	0.08	0.12	0.08	57.8
2	T1	All MCs	537	1.0	**523**	1.0	0.301	0.3	LOS A	0.3	2.3	0.08	0.12	0.08	59.0
3	R2	All MCs	22	0.0	22	0.0	0.301	8.9	LOS A	0.3	2.3	0.08	0.12	0.08	51.6
Approach			588	0.9	**573**	0.9	0.301	1.0	NA	0.3	2.3	0.08	0.12	0.08	58.6
East: Cooper Rd															
4	L2	All MCs	61	0.0	61	0.0	0.205	11.5	LOS B	0.7	5.0	0.70	1.01	0.73	36.3
5	T1	All MCs	9	0.0	9	0.0	0.205	23.4	LOS C	0.7	5.0	0.70	1.01	0.73	36.3
6	R2	All MCs	13	0.0	13	0.0	0.205	28.4	LOS D	0.7	5.0	0.70	1.01	0.73	43.6
Approach			83	0.0	83	0.0	0.205	15.4	LOS C	0.7	5.0	0.70	1.01	0.73	38.0
North: Hammond Rd															
7	L2	All MCs	4	0.0	4	0.0	0.361	8.4	LOS A	0.7	4.6	0.12	0.15	0.12	52.4
8	T1	All MCs	621	2.0	621	2.0	0.361	0.4	LOS A	0.7	4.6	0.12	0.15	0.12	58.1
9	R2	All MCs	47	0.0	47	0.0	0.361	8.5	LOS A	0.7	4.6	0.12	0.15	0.12	58.1
Approach			673	1.8	673	1.8	0.361	1.0	NA	0.7	4.6	0.12	0.15	0.12	58.0
West: Yangebup Rd															
10	L2	All MCs	45	7.0	45	7.0	0.257	11.6	LOS B	0.9	6.8	0.73	1.04	0.83	37.7
11	T1	All MCs	9	0.0	9	0.0	0.257	24.0	LOS C	0.9	6.8	0.73	1.04	0.83	34.8
12	R2	All MCs	26	0.0	26	0.0	0.257	30.3	LOS D	0.9	6.8	0.73	1.04	0.83	16.0
Approach			81	3.9	81	3.9	0.257	19.1	LOS C	0.9	6.8	0.73	1.04	0.83	33.5
All Vehicles			1425	1.5	**1410**	1.5	0.361	2.9	NA	0.9	6.8	0.17	0.24	0.18	55.2

MOVEMENT SUMMARY

Site: [4] Shopping Centre Roundabout (Folder1)
Network: [1] 2038 Post Development - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: NS Link Rd															
1	L2	All MCs	123	1.0	**117**	1.0	0.092	4.3	LOS A	0.5	3.3	0.15	0.49	0.15	31.9
2	T1	All MCs	1	1.0	1	1.0	0.092	3.9	LOS A	0.5	3.3	0.15	0.49	0.15	31.5
3	R2	All MCs	1	1.0	1	1.0	0.092	6.8	LOS A	0.5	3.3	0.15	0.49	0.15	31.3
Approach			125	1.0	**119**	1.0	0.092	4.3	LOS A	0.5	3.3	0.15	0.49	0.15	31.9
East: East LSP															
4	L2	All MCs	1	1.0	1	1.0	0.020	4.8	LOS A	0.1	0.7	0.40	0.50	0.40	25.0
5	T1	All MCs	18	1.0	18	1.0	0.020	4.4	LOS A	0.1	0.7	0.40	0.50	0.40	24.2
6	R2	All MCs	1	1.0	1	1.0	0.020	7.3	LOS A	0.1	0.7	0.40	0.50	0.40	25.0
Approach			20	1.0	20	1.0	0.020	4.6	LOS A	0.1	0.7	0.40	0.50	0.40	24.2
North: NS Link RD															
7	L2	All MCs	1	1.0	1	1.0	0.019	5.2	LOS A	0.1	0.6	0.40	0.61	0.40	21.6
8	T1	All MCs	1	1.0	1	1.0	0.019	4.8	LOS A	0.1	0.6	0.40	0.61	0.40	22.1
9	R2	All MCs	17	1.0	17	1.0	0.019	7.8	LOS A	0.1	0.6	0.40	0.61	0.40	21.3
Approach			19	1.0	19	1.0	0.019	7.5	LOS A	0.1	0.6	0.40	0.61	0.40	21.3
West: Shopping Centre Access															
10	L2	All MCs	17	1.0	17	1.0	0.173	3.4	LOS A	0.9	6.6	0.03	0.62	0.03	24.0
11	T1	All MCs	18	1.0	18	1.0	0.173	3.1	LOS A	0.9	6.6	0.03	0.62	0.03	23.8
12	R2	All MCs	246	1.0	246	1.0	0.173	5.9	LOS A	0.9	6.6	0.03	0.62	0.03	24.0
Approach			281	1.0	281	1.0	0.173	5.6	LOS A	0.9	6.6	0.03	0.62	0.03	23.9
All Vehicles			445	1.0	**439**	1.0	0.173	5.3	LOS A	0.9	6.6	0.10	0.58	0.10	26.6

MOVEMENT SUMMARY

▽ **Site: [5] Yangebup Rd / NS Link Rd** (Folder1)
Network: [1] 2038 Post Development - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: NS Link Rd															
1	L2	All MCs	1	1.0	1	1.0	0.016	4.5	LOS A	0.0	0.3	0.20	0.52	0.20	36.0
3	R2	All MCs	17	1.0	17	1.0	0.016	4.8	LOS A	0.0	0.3	0.20	0.52	0.20	25.2
Approach			18	1.0	18	1.0	0.016	4.8	LOS A	0.0	0.3	0.20	0.52	0.20	26.6
East: Yangebup Rd															
4	L2	All MCs	17	1.0	17	1.0	0.044	4.6	LOS A	0.0	0.0	0.00	0.11	0.00	45.0
5	T1	All MCs	69	0.0	69	0.0	0.044	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	47.9
Approach			86	0.2	86	0.2	0.044	0.9	NA	0.0	0.0	0.00	0.11	0.00	47.7
West: Yangebup Rd															
11	T1	All MCs	64	3.0	64	3.0	0.033	0.0	LOS A	0.0	0.0	0.01	0.01	0.01	49.6
12	R2	All MCs	1	1.0	1	1.0	0.033	4.6	LOS A	0.0	0.0	0.01	0.01	0.01	49.6
Approach			65	3.0	65	3.0	0.033	0.1	NA	0.0	0.0	0.01	0.01	0.01	49.6
All Vehicles			169	1.3	169	1.4	0.044	1.0	NA	0.0	0.3	0.02	0.11	0.02	46.8

Appendix F: Swept path diagrams

Swept path diagrams are included in this section of the report. Different coloured lines are employed to represent the various envelopes of the vehicle swept path, as described below:

Cyan represents the wheel path of the vehicle

Green represents the vehicle body envelope

Blue represents a 300/500mm buffer line, offset from the vehicle swept path

The swept path diagrams are also provided separately in high-quality, A3 PDF format.

Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	Dark blue swept path line represents a 500mm buffer.

Drawn by: Paul Ghantous

Client: Albion Park Project Pty Ltd

Project: U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title: Swept path analysis - fuel truck delivery
AS2890.2 - 19m Articulated Vehicle (AV)

Date: 30/06/2026

Scale @ A3: 1:800

Revision: sk03a

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Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	Dark blue swept path line represents a 300mm buffer.

Drawn by: Paul Ghantous

Client: Albion Park Project Pty Ltd

Project: U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title: Swept path analysis - drive through
AS 2890.1 - B99 Vehicle

Date: 30/06/2026

Scale @ A3: 1:300

Revision: sk04a

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Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	Dark blue swept path line represents a 500mm buffer.

Drawn by: Paul Ghantous

Client: Albion Park Project Pty Ltd

Project: U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title: Swept path analysis - fast food servicing
Austroads 2013:12.5m Heavy Rigid Vehicle (HRV)

Date: 30/06/2026

Scale @ A3: 1:350

Revision: sk05.1a

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Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	Dark blue swept path line represents a 500mm buffer.

Drawn by: Paul Ghantous

Client: Albion Park Project Pty Ltd

Project: U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title: Swept path analysis - fast food servicing
Austroads 2013:12.5m Heavy Rigid Vehicle (HRV)

Date: 30/06/2026

Scale @ A3: 1:750

Revision: sk05.2a

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Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	Dark blue swept path line represents a 500mm buffer.

Drawn by: Paul Ghantous

Client: Albion Park Project Pty Ltd

Project: U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title: Swept path analysis - fast food servicing
AS 2890.2: 8.8m Medium Rigid Vehicle (MRV)

Date: 30/06/2026

Scale @ A3: 1:350

Revision: sk05.3a

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Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	Dark blue swept path line represents a 500mm buffer.

Drawn by: Paul Ghantous

Client: Albion Park Project Pty Ltd

Project: U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title: Swept path analysis - rear loading dock areas
AS 2890.2 - 19m AV

Date: 30/06/2026

Scale @ A3: 1:600

Revision: sk06a

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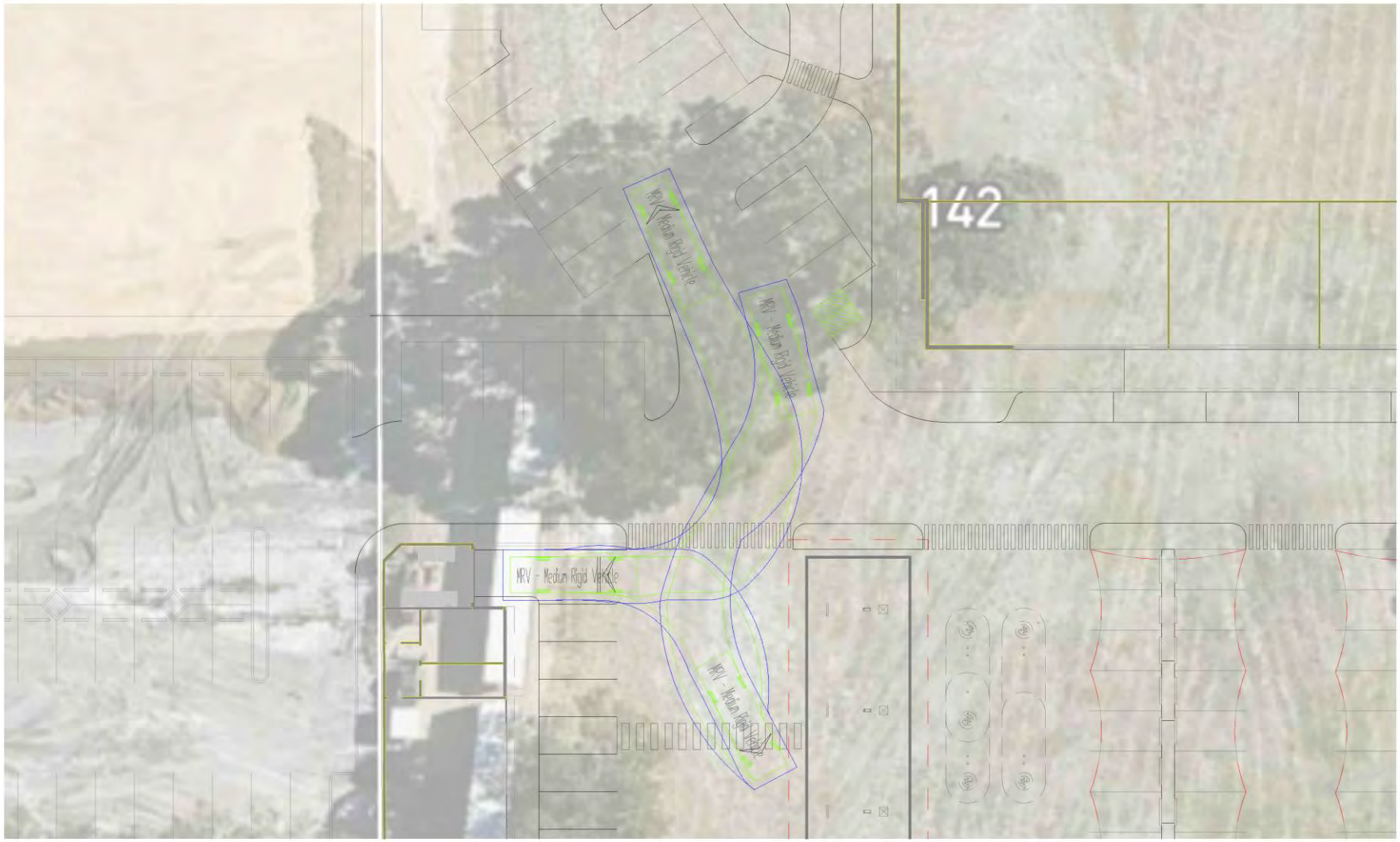

Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	Dark blue swept path line represents a 500mm buffer.

Drawn by: Paul Ghantous

Client: Albion Park Project Pty Ltd

Project: U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title: Swept path analysis - fuel station deliveries and waste
AS 2890.2 - 8.8m MRV

Date: 30/06/2026

Scale @ A3: 1:300

Revision: sk07a

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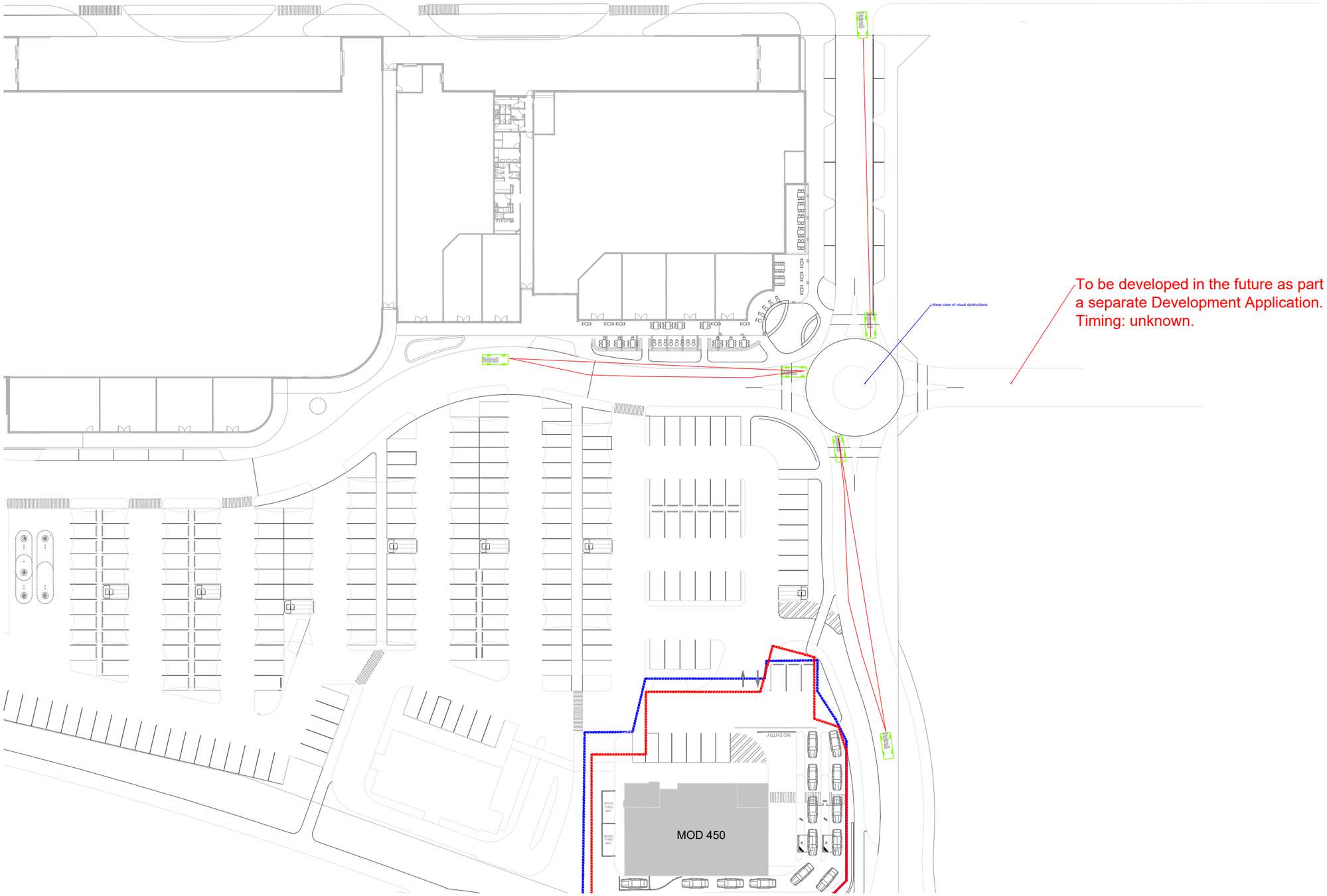

Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	AGRD Part 4B: Roundabouts. Approach Speed = 50km/h Approach Sight Distance (ASD) required = 55m Assessment confirms ASD is provided on all roundabout approaches.

Drawn by:
Paul Ghantous

Client:
Albion Park Project Pty Ltd

Project:
U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title:
Roundabout Sightline Assessment
Criterion 1 - Approach Sight Distance

Date:
23/06/2026

Scale @ A3:
1:750

Revision:
sk01a

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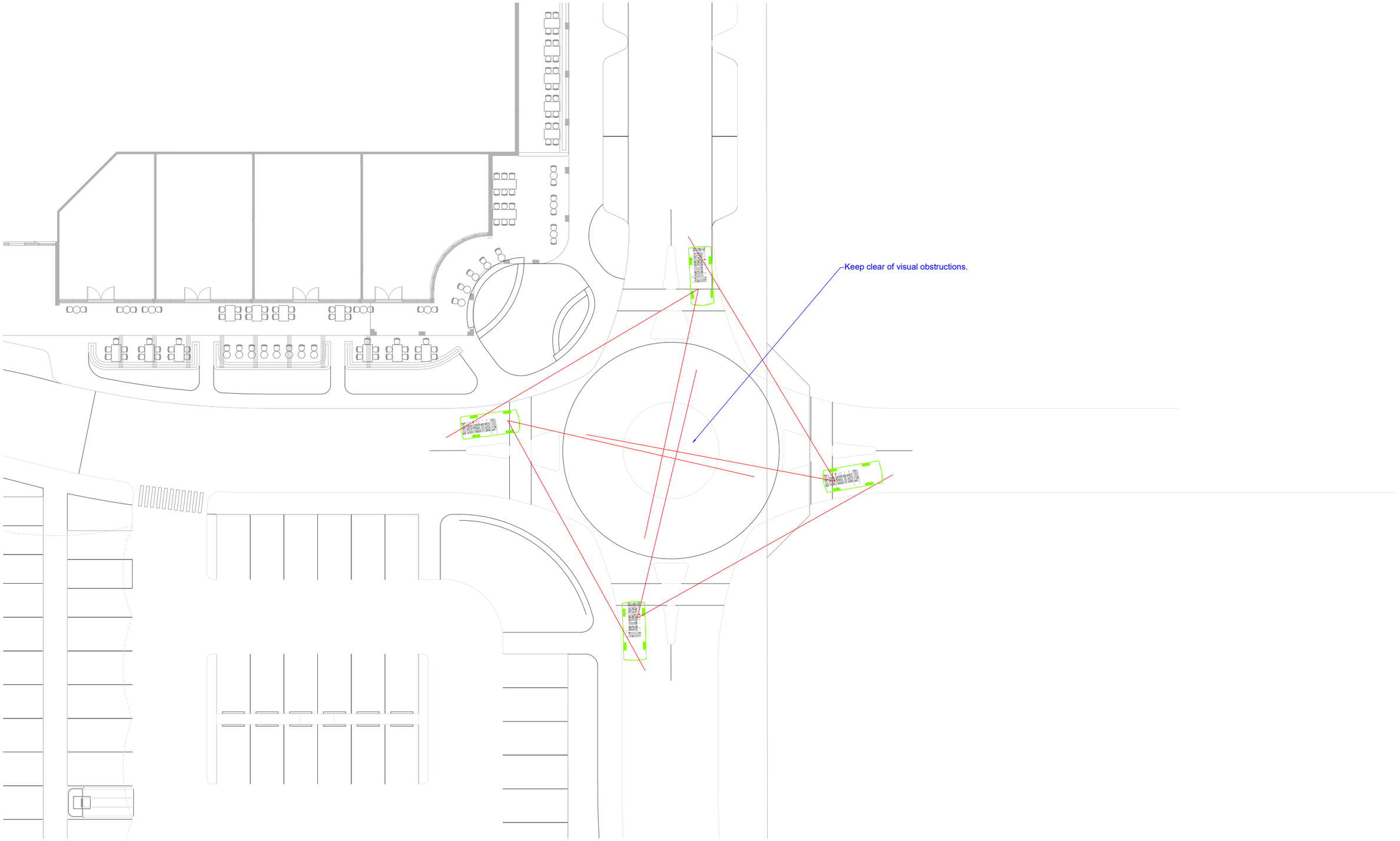

Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	AGRD Part 4B: Roundabouts. Circulating Speed = 20km/h Minimum Sight Distance Required = 22m Assessment confirms sight distance is provided on all roundabout approaches.

Drawn by:
Paul Ghantous

Client:
Albion Park Project Pty Ltd

Project:
U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title:
Roundabout Sightline Assessment
Criterion 2 - Sight Distance to Circulating Traffic

Date:
23/06/2026

Scale @ A3:
1:300

Revision:
sk02a

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Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	Dark blue swept path line represents a 500mm buffer.

Drawn by:
Paul Ghantous

Client:
Albion Park Project Pty Ltd

Project:
U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title:
Swept path analysis - fuel truck delivery
AS2890.2 - 19m Articulated Vehicle (AV)

Date:
30/06/2026

Scale @ A3:
1:800

Revision:
sk03a

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Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	Dark blue swept path line represents a 300mm buffer.

Drawn by:
Paul Ghantous

Client:
Albion Park Project Pty Ltd

Project:
U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title:
Swept path analysis - drive through
AS 2890.1 - B99 Vehicle

Date:
30/06/2026

Scale @ A3:
1:300

Revision:
sk04a

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Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	Dark blue swept path line represents a 500mm buffer.

Drawn by:
Paul Ghantous

Client:
Albion Park Project Pty Ltd

Project:
U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title:
Swept path analysis - fast food servicing
Austroads 2013:12.5m Heavy Rigid Vehicle (HRV)

Date:
30/06/2026

Scale @ A3:
1:350

Revision:
sk05.1a

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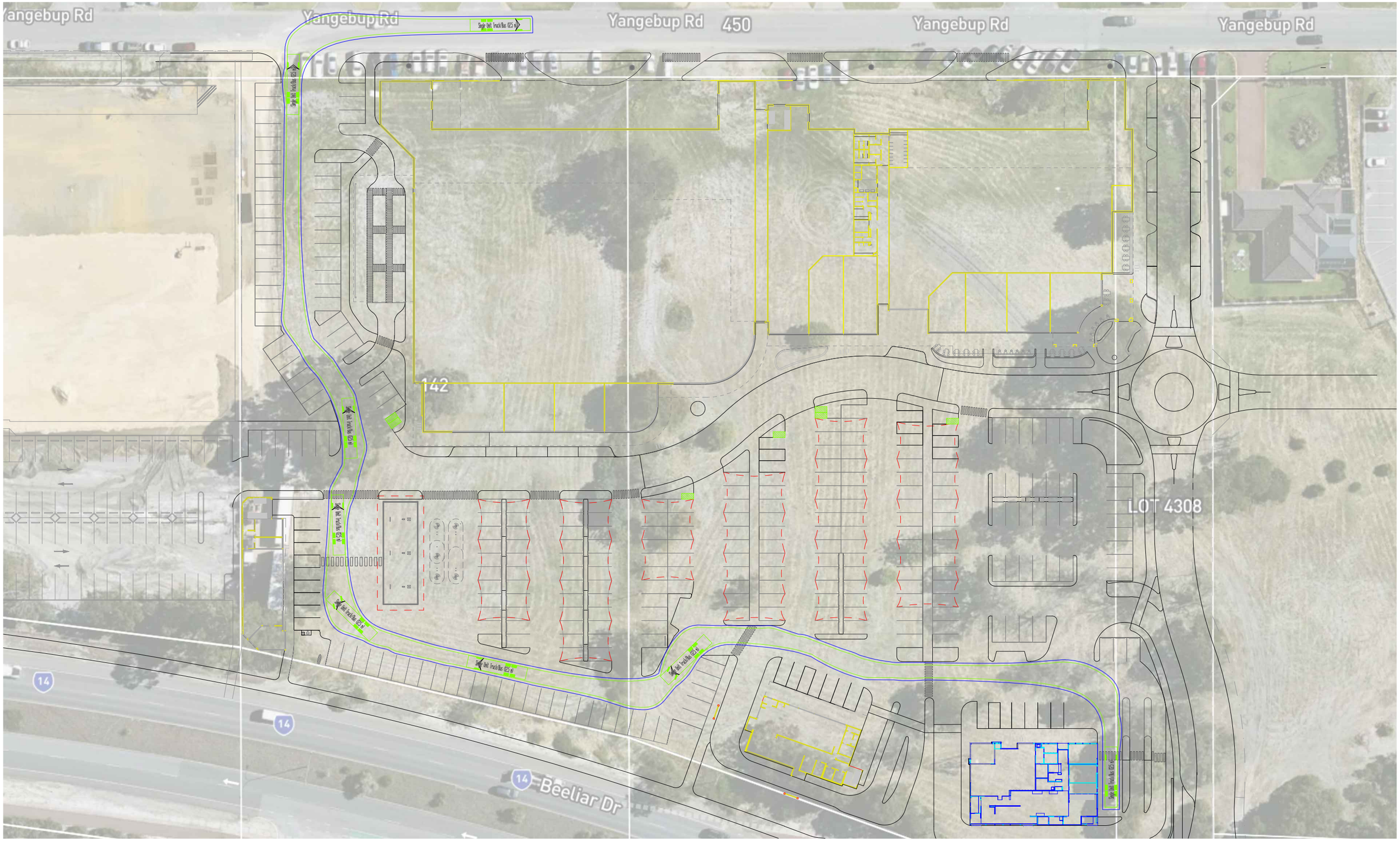

Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	Dark blue swept path line represents a 500mm buffer.

Drawn by:
Paul Ghantous

Client:
Albion Park Project Pty Ltd

Project:
U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title:
Swept path analysis - fast food servicing
Austroads 2013:12.5m Heavy Rigid Vehicle (HRV)

Date:
30/06/2026

Scale @ A3:
1:750

Revision:
sk05.2a

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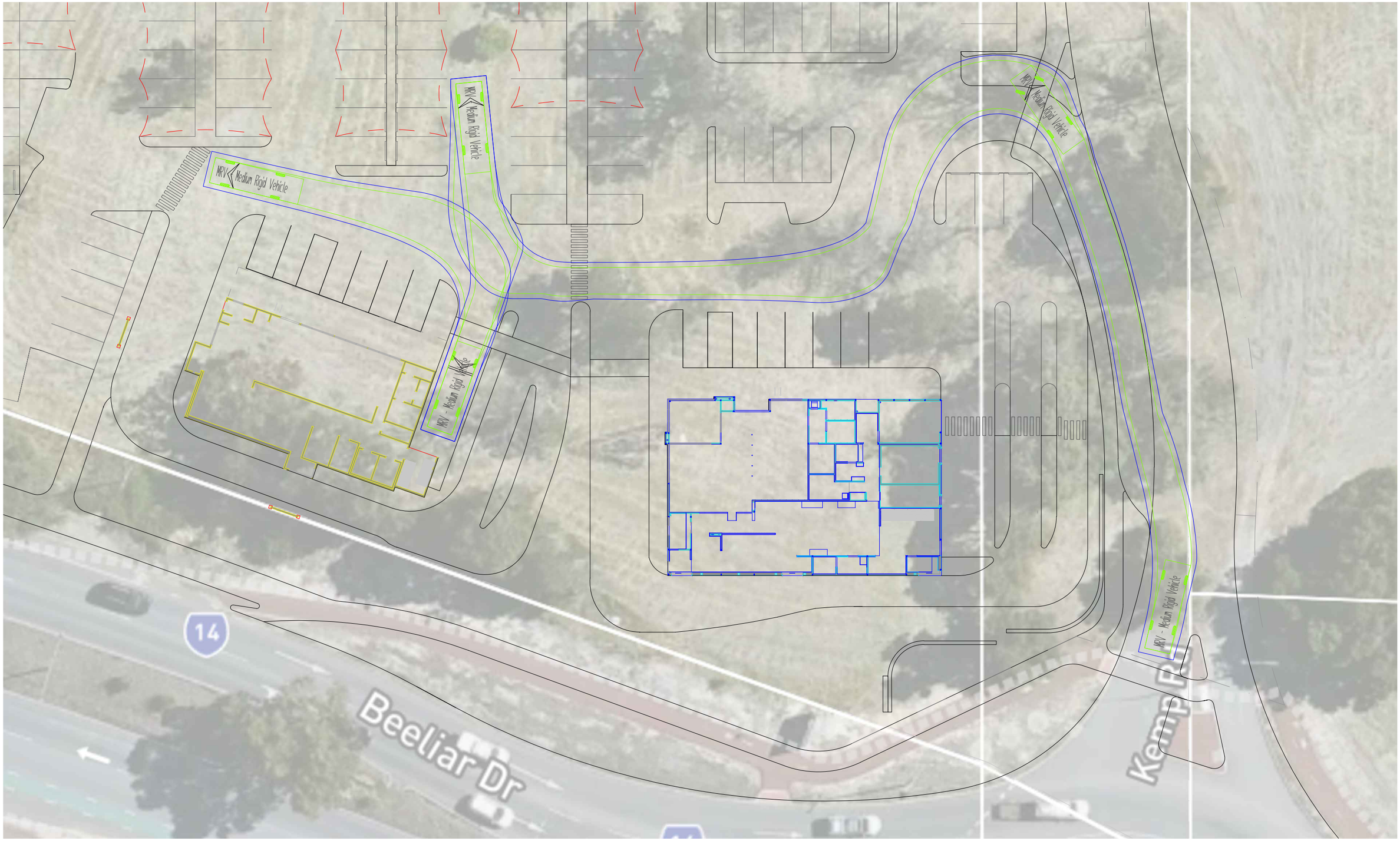

Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	Dark blue swept path line represents a 500mm buffer.

Drawn by:
Paul Ghantous

Client:
Albion Park Project Pty Ltd

Project:
U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title:
Swept path analysis - fast food servicing
AS 2890.2: 8.8m Medium Rigid Vehicle (MRV)

Date:
30/06/2026

Scale @ A3:
1:350

Revision:
sk05.3a

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Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	Dark blue swept path line represents a 500mm buffer.

Drawn by:
Paul Ghantous

Client:
Albion Park Project Pty Ltd

Project:
U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title:
Swept path analysis - rear loading dock areas
AS 2890.2 - 19m AV

Date:
30/06/2026

Scale @ A3:
1:600

Revision:
sk06a

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Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	Dark blue swept path line represents a 500mm buffer.

Drawn by: Paul Ghantous

Client: Albion Park Project Pty Ltd

Project: U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title: Swept path analysis - fuel station deliveries and waste
AS 2890.2 - 8.8m MRV

Date: 30/06/2026

Scale @ A3: 1:300

Revision: sk07a

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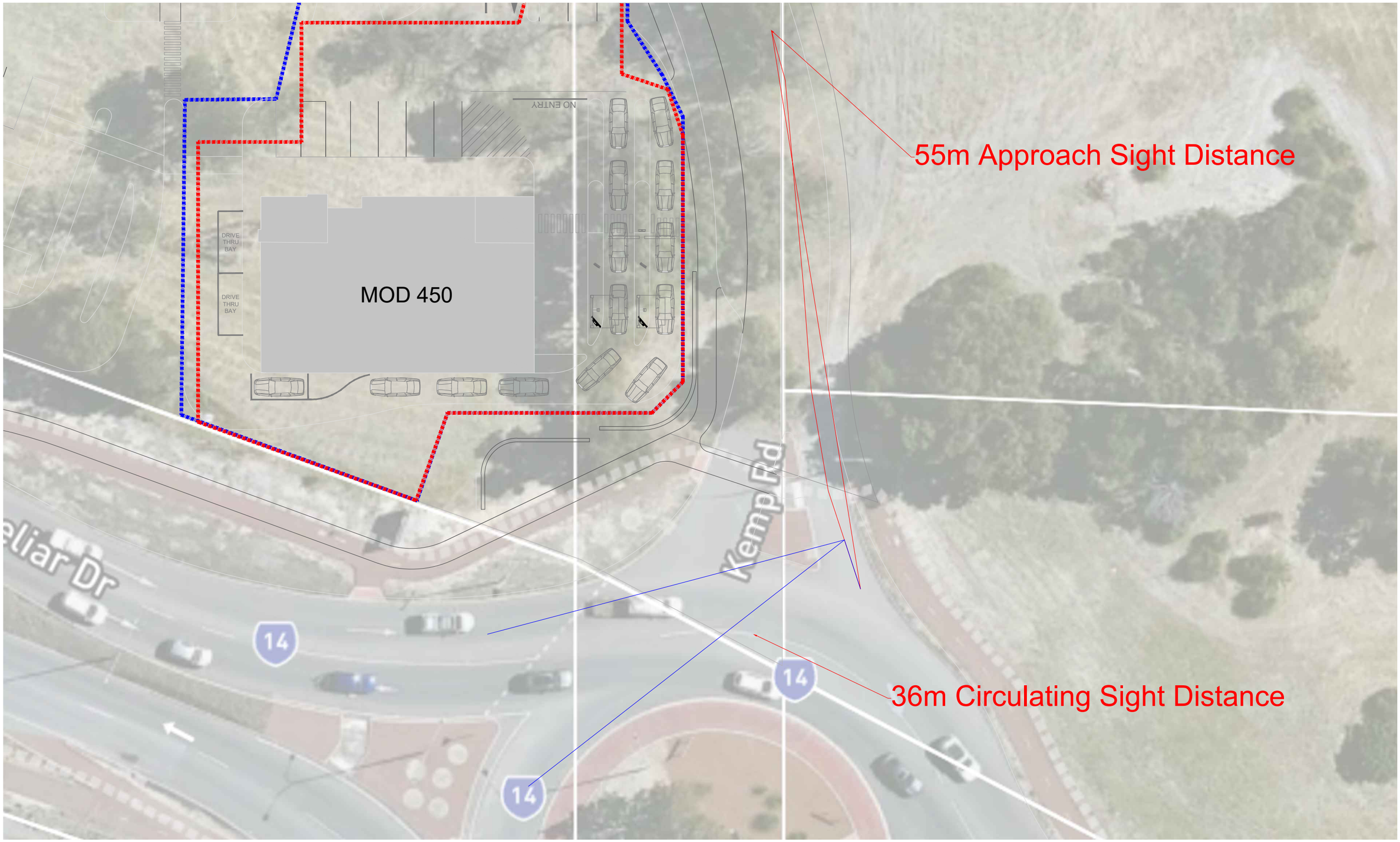

Revision notes:

Rev:	Date:	Notes:
1	23/06/2026	AGRD Part 4B: Roundabouts. Approach Speed = 50km/h Approach Sight Distance (ASD) required = 55m Circulating Speed = 30km/h Minimum Sight Distance Required = 36m Assessment confirms that sight distance is provided on the proposed northern roundabout approach.

Drawn by: Paul Ghantous

Client: Albion Park Project Pty Ltd

Project: U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title: Roundabout Connection Sightline Assessment
Criterion 1 and 2

Date: 23/06/2026

Scale @ A3: 1:350

Revision: sk08a

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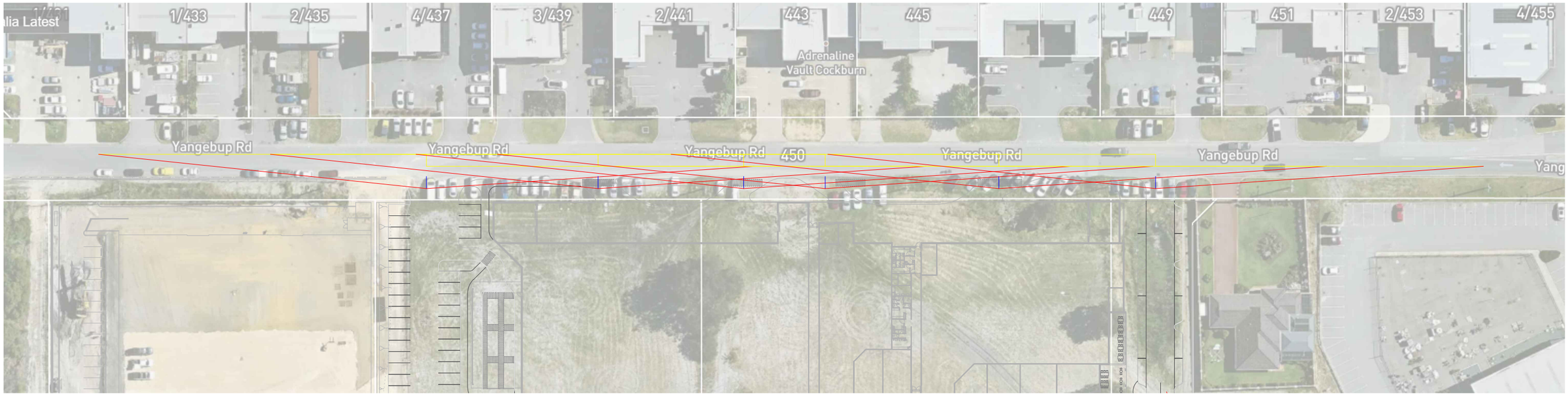

Revision notes:

Rev:	Date:	Notes:
1	23/06/2026	Reaction time = 2.5sec Vehicle speed = 60km/h Stopping Sight Distance (SSD) required = 81m

Drawn by:
Paul Ghantous

Client:
Albion Park Project Pty Ltd

Project:
U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title:
Driveway Sightline Assessment
AGRD Part 3 - Geometric Design

Date:
23/06/2026

Scale @ A3:
1:1000

Revision:
sk09a

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ARBORICULTURAL ASSESSMENT

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BEELAIR DRIVE SHOPPING CENTRE / BEELAIR

Windsor Knight Pty Ltd
Suite 1, Level 3
18 Richardson Street
West Perth, 6005

General Manager
Tarryn Stain

03/03/2026

Re: Initial tree assessment and design recommendations for the above project

Tarryn,

Please find attached a report regarding your request to assess the trees in question. If you would like any further information regarding the assessment or matters contained in the report, please contact me anytime during normal business hours.

JACK PAYNE
ND ARB – *Merrist Wood U.K*
QTRA Registered User no.6191
VALID Licenced User

SENIOR CONSULTANT

CONTENTS

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2 - INTRODUCTION 3

3 - OBSERVATIONS 4-6

4 - DISCUSSION 7

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6 – DESIGN OPTIONS 12-16

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APPENDIX 18-23

1 - SUMMARY

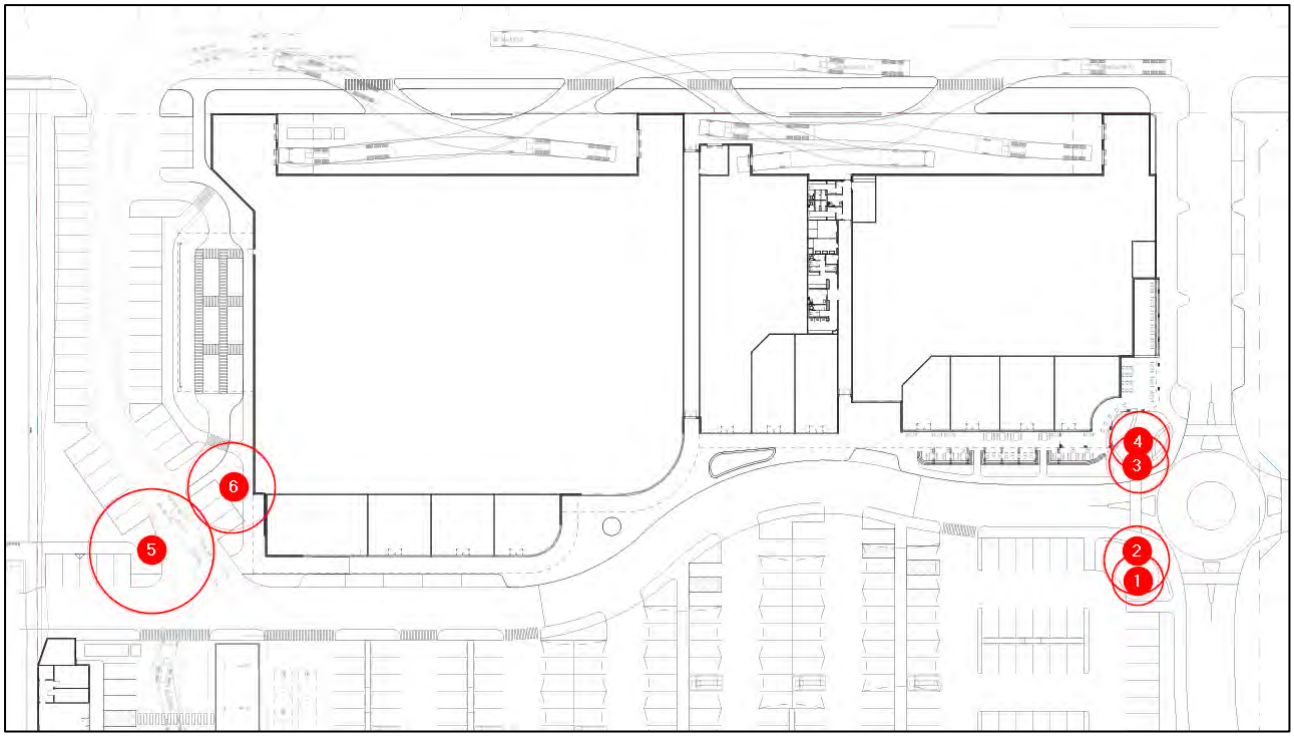
Six (6) trees identified for retention as part of a proposed new shopping centre were inspected regarding current health and condition, and to assess the degree of impact the proposed design is likely to have on their development.
The report will conclude that all six trees maintain high vitality and good structural integrity overall. The project will alter the environment around the trees substantially requiring significant canopy pruning and encroachment into calculated root zones, which has the possibility to detrimentally impact vitality, structural integrity and stability.
The report will recommend staging substantial pruning works 3-6 months prior to other works impacting the root zones to reduce overall impact and allow time for the trees to adapt. Several alterations to the current design will be discussed including relocation of footpaths and other infrastructure to increase clearances from structural root zones. Exploratory excavation to determine the degree of root mass in key areas will also be recommended.
The report will also discuss potential design options to minimise the degree of impact further including permeable surface dressings and the use of raised walkways or decking.

2 - INTRODUCTION

2.1 Windsor Knight has requested an inspection to assess the structural integrity and vitality of six trees which have been selected for retention within the proposed Beelair Drive Shopping Centre project. A review of the current design and recommendations of how best to retain the trees and minimise the degree of impact has also been supplied.

2.2 The subject trees were inspected from ground level in calm conditions and sunny weather on several occasions between the 16th October 2025 and 26th February 2026.

2.3 Image one below notes the location of the identified trees within the preliminary design.



IMG 1 – Preliminary design A2.01 W, showing locations of subject trees relative to the design.

3 - OBSERVATIONS

3.1 Tree details;

TREE #	SPECIES	HEIGHT (m)	DSH (mm)	DGL (mm)	SRZ (m)	NRZ (m)	VITALITY	STRUCTURAL CONDITION
1	*Eucalyptus rudis*	15.5	620	710	2.86	7.44	High	Good
2	*Eucalyptus rudis*	17	810	990	3.29	9.72	High	Good
3	*Eucalyptus rudis*	17.5	890	980	3.28	10.68	High	Good
4	*Eucalyptus rudis*	16	690	840	3.07	8.28	High	Good
5	*Eucalyptus grandis*	20	860	1000	3.30	10.32	High	Good
6	*Eucalyptus camaldulensis*	18	620	780	2.98	7.44	High	Good

Legend:

DSH: Diameter at Standard Height (measured at 1400mm, or from the closest appropriate height)
DGL: Diameter at Ground Level (measured above any root flare or buttresses)
SRZ: Structural Root Zone (calculated as a radius, measured from the centre of the stem)
NRZ: Notional Root Zone (calculated as a radius, measured from the centre of the stem)

3.2 Individual tree assessments have been included within the appendix of the report. A summary of the observations is below.

3.3 The subject trees form part of a large mixed group of species located within the proposed shopping centre site. Trees 1-4 within the eastern portion of the site are located in a line and appear to form part of a historical windbreak or boundary-line. Trees 5 and 6 within the western portion of the site and are more naturally arranged. Due to the open nature and previous use of the site all trees have retained naturally formed lower branches and stem growth, giving them full canopies from ground level with no signs of pruning or previous management noted.

3.4 Vitality is high in all trees with dense canopies formed from foliage of a good size and colour noted throughout. Minimal signs of pest and disease were observed and no notable signs of nutrient deficiency or prolonged environmental stresses were observed.

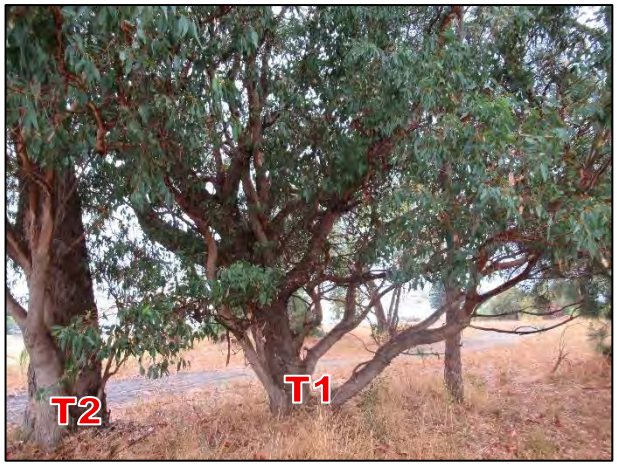
3.5 Structural condition overall is good but many of the trees retain hung-up stems or branches, deadwood and other common features seen in trees which have not received historical management. Tree 4 retains a large dead stem with signs of separation and initial fracturing, Tree 3 shows signs of basal fire but displays a good amount of healthy supportive tissue at the wound margins. In all cases the trees retain good scaffold structure and remedial pruning works can be undertaken to rectify any of the noted features to increase structural integrity to a level appropriate for the new use of the area.

IMG 2 – Looking west at Trees 1 and 2 (left) and Trees 3 and 4 (right)

IMG 3 – Tree 3 and 4, with full canopy to ground

IMG 4 – Tree 5, lower full branch structure

IMG 5 – Tree 3 and 4, with lower sub-dominant stems



IMG 6 – Tree 1 and 2, full branch structure to ground

IMG 7 – Tree 3, historical basal fire damage

IMG 8 – Tree 4, dead and separated lower stem

Report continues on following page

4 – DISCUSSION

4.1 The subject trees are some of the largest and most well-formed specimens within the site which all currently display high vitality and good structural condition. Retention of the trees throughout the project will provide very high amenity and aesthetic value for the new shopping centre and local area as a whole. Trees 1-4 will also be located either side of the main entrance road, framing the area and justifying an even higher amenity value as a result. Preservation of the trees in their current high value form should therefore be a clear aim of the project and one that warrants additional provisions and protection where necessary.

4.2 Impact to trees from the proposed development can occur in three main ways:

1. Roots - Impact to the below ground root structure by root pruning, direct damage, or changes to the rooting environment.
2. Canopy - Impact to the above ground canopy by direct stem or branch damage or excessive canopy pruning.
3. Environment - Changes to the immediate environment and microclimate - such as changes to the water table, increased wind exposure or reduced light levels due to shading.

4.3 Root Impact

Preliminary design drawings show significant encroachment into the root zones of all subject trees. Due to their unrestricted growth and lack of existing infrastructure, root development is expected to follow a relatively symmetrical distribution and as such the calculated SRZ and NRZ areas are likely to provide accurate estimates on overall development. In all causes the degree of encroachment is classified as major within AS4970: 2025– *Protection of trees on development sites* which has the potential to significantly impact vitality and physiological function. Additionally, encroachment into SRZ areas is noted at several locations which has the possibility to also impact stability and overall structural integrity. Information supplied during initial site inspection suggests the final surface grade around some of the trees may be increased, this is a notable benefit as it may allow a greater portion of root mass to be retained, due to reduced excavation requirements.

4.4 Canopy Impact

Due to their open growth all trees will require significant pruning to accommodate the proposed design, in most cases this will require removal of established lower branches and sub dominate stems to lift the canopies and allow vehicle and pedestrian movement below. These lower branches and stems are providing substantial carbohydrates to the trees and are often more efficient than material within the upper canopy. This material is likely to account for approximately 30% of total canopy cover which is commonly cited as the upper limit recommended for mature trees, whereby any further loss has the potential to cause a reduction in vitality and possible decline.

4.5 Environmental Impact

The proposed works will significantly alter the environmental conditions, removal of surrounding trees and canopy pruning can significantly increase wind and sun exposure, while changes to surrounding surfaces will alter gaseous exchange, heat retention and moisture levels. Soil level changes and changes to the ground water levels are also likely which can both cause further impact.

4.6 When combined, the extent and degree of works around the subject trees have a high chance of detrimentally impacting short term vitality as well as long term viability if not carefully managed. Options to move various infrastructure further from the tree will be discussed within the Design Review, Section 5. Exploratory excavation may also be beneficial in select areas to determine the exact degree of root mass present down to the required excavation depth, as this does not always follow the calculated figures. All works within the tree canopy and root zones must be undertaken in ways to reduce the degree of impact as much as practicable and reduce overall stress, giving the trees the best opportunity to adapt to the new conditions. Additional aftercare including semi or permanent supplementary watering and regular assessments will also be recommended.

5 - DESIGN REVIEW

5.1 - Tree 1 and Tree 2

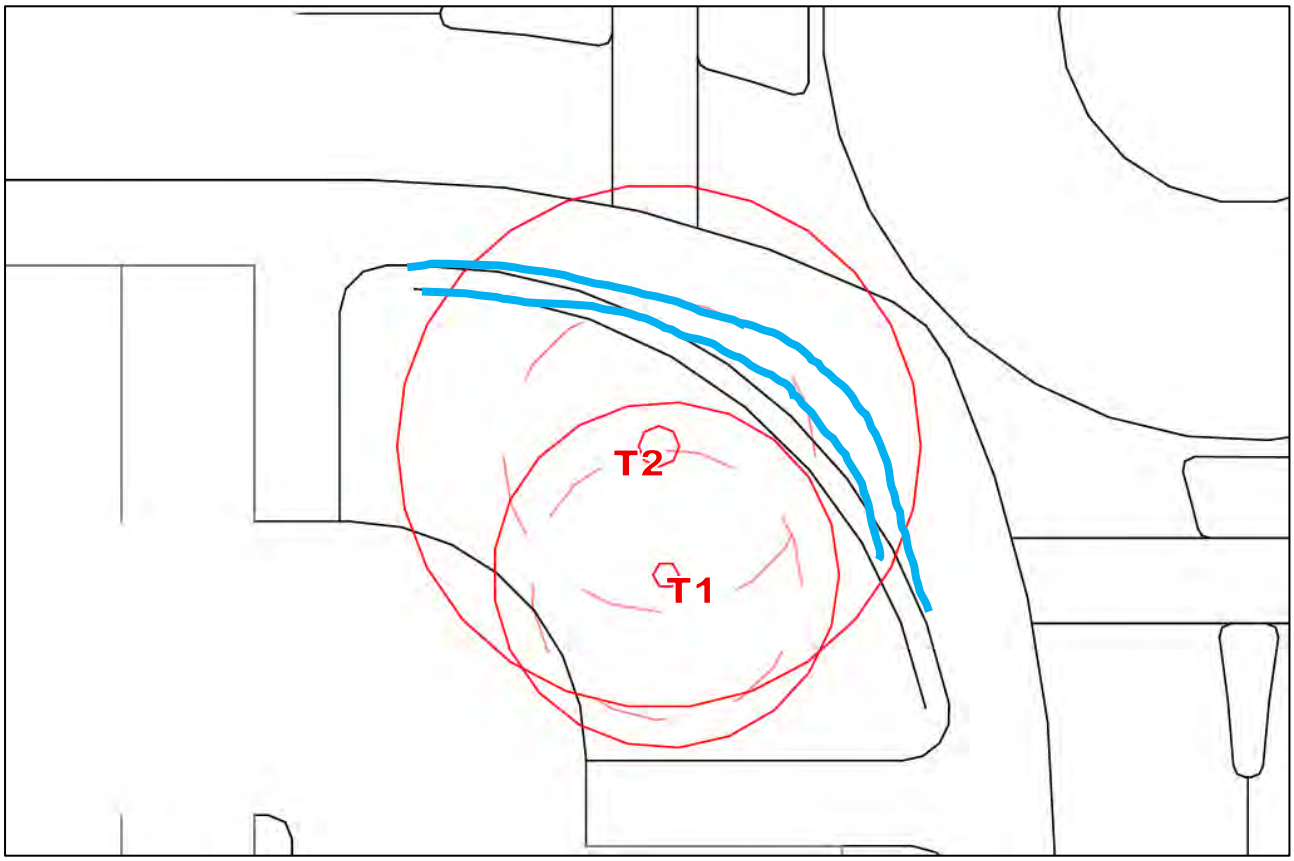
5.1.1 These two trees are located to the south of the proposed main entrance. Pruning required will be to crown lift to approximately 5m over the roadway and 3m over surrounding footpaths. Removal of sub-dominate stems and a large limb from Tree 2 extending towards the proposed roundabout will also likely be required.

5.1.2 Much of the calculated NRZ and SRZ for both trees is contained within a large planting area which should be preserved throughout the project with minimal disturbance, ideally simply mulched or planted with small plants at completion.

5.1.3 The proposed carpark and roadway areas fall largely outside the calculated NRZ. These areas are likely to require the most significant excavation works meaning overall impact to the trees will be reduced.

5.1.4 A footpath and small retaining wall to the north of Tree 2 encroach on both the SRZ and NRZ area. The NRZ encroachment and subsequent loss of rootzone is likely to be tolerable although the encroachment into the SRZ is of more concern. In addition to increasing the likelihood of damage to structural roots further stem or root growth may distort the new infrastructure.

5.1.5 Altering the wall alignment to bring it further from the tree stem and to the edge of the SRZ would reduce the issue notably if achievable. The degree of impact will also be determined by depth of excavation required and actual root mass present. Exploratory excavation to determine the degree of root mass along the alignment could be undertaken if relocation further outside the SRZ is not possible and would provide a more accurate assessment.



IMG 9 – Tree 1 and Tree 2. NRZ are noted as the outer solid red line, SRZ are noted as the dashed red line. Proposed wall alignment change in blue. Extracted from Preliminary design A2.01 W

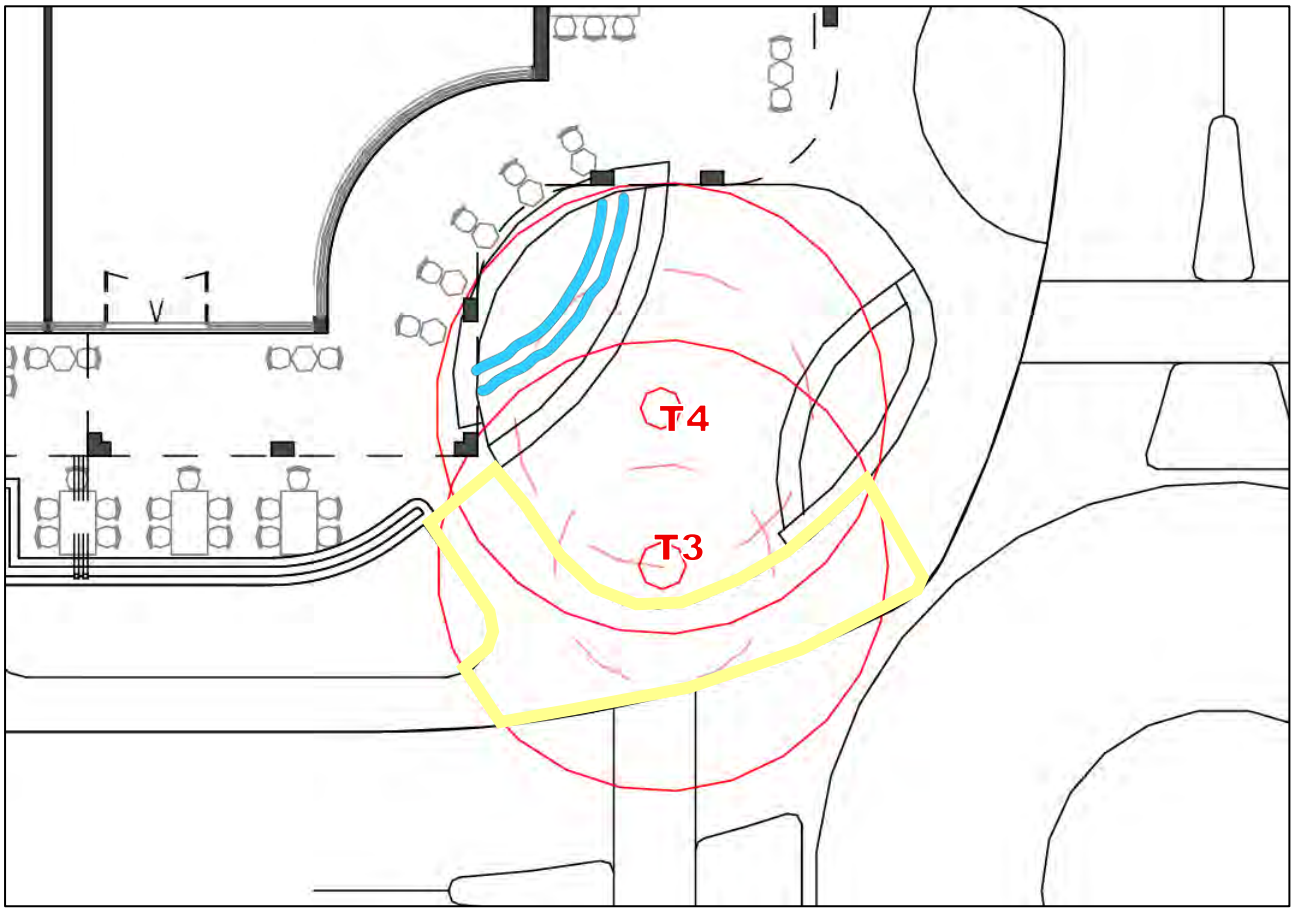
5.2 Tree 3 and Tree 4

5.2.1 These two trees are located to the north of the proposed entrance roadway. Required pruning includes removal of all hung-up material and the compromised dead stem from Tree 4. Crown-lifting both canopies over the road to 5m and to 3m in surrounding areas. Removal of sub dominant stems will also likely be required.

5.2.2 A large portion of NRZ from Tree 3 and the majority of NRZ from Tree 4 will again be located within a large open area. In this instance two additional large planters have been located within the area, one of which impacts the SRZ of Tree 4, increasing the likelihood of damage to structural roots. Distortion to the new infrastructure from continued tree growth is also a possibility. Modification to the western planter to reduce its size and move it away from the tree stem and SRZ would reduce the issue notably.

5.2.3 The adjacent building has been designed to follow the canopy shape and rootzone of Tree 4 and is set back a sufficient distance that overall impact in likely to be acceptable, provided all required excavations follow a similar layout and do not extend past the edge of the NRZ.

5.2.4 The proposed footpath running south of Tree 3 bisects the SRZ approximately 0.5-1m from the stem. Excavations required to install this have significant risk of impacting structural root mass and once installed distortion of the surface also has a high likelihood from continued tree development. If level changes are required and will increase the final grade at this location then installation over any existing roots may be possible, reducing the degree of impact, however the likelihood of eventual distortion is still high. Removal of the footpath at this location or relocating it further from the tree stem would be the preferred option but if this is not achievable then use of a raised decking or platform design is recommended to allow healthy root development to continue below, while also minimising the likelihood of distortion occurring to the footpath edge or surface.



IMG 10 – Tree 3 and Tree 4. Proposed planter wall alignment change in blue. Section of footpath requiring removal or use of alternative design is in yellow. – Extracted from Preliminary design A2.01 W

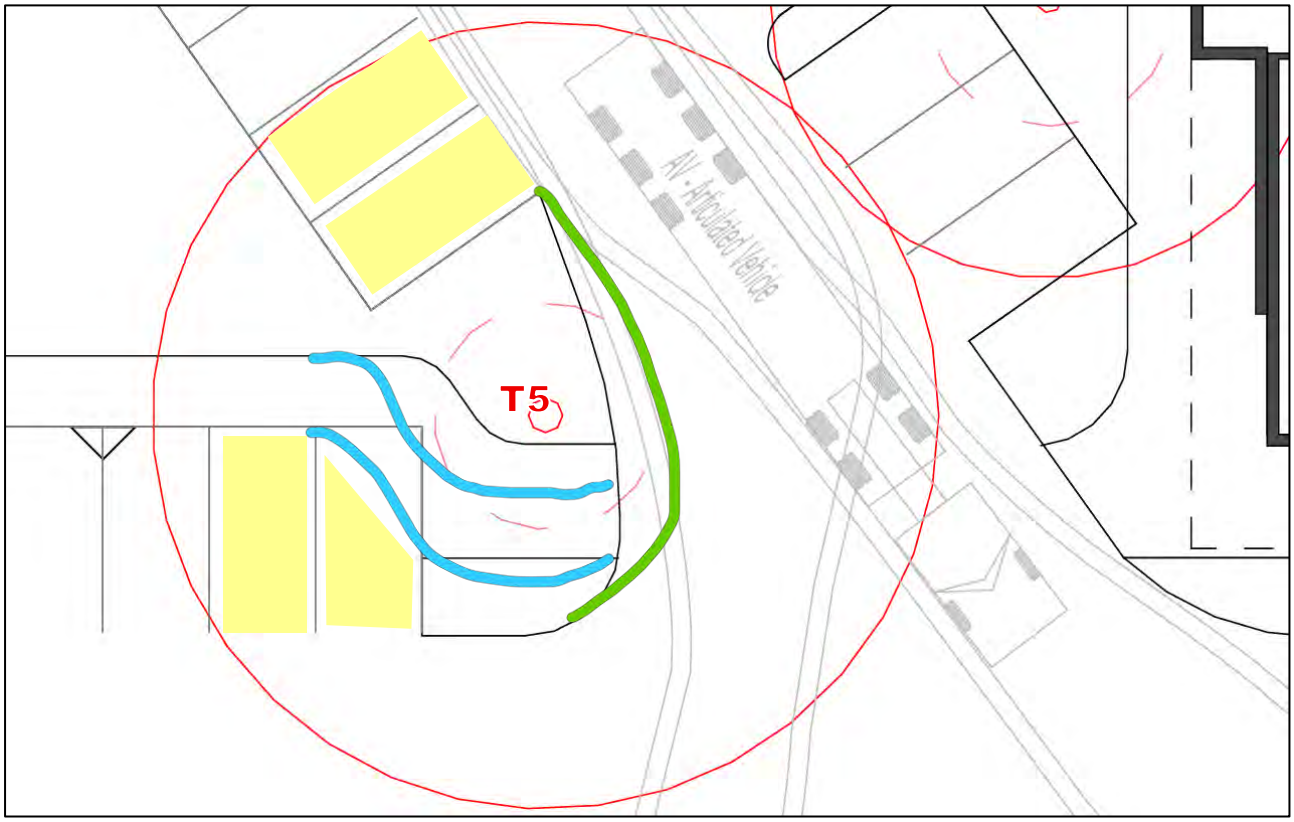
5.3 Tree 5

5.3.1 This tree has retained the most substantial lower canopy structure, removal up to 5m will be required over the roadway and around 4m for the surrounding areas. The tree stem is located above the surrounding grade, indicating increased likelihood of impact to structural roots within the area.

5.3.2 Installation of the roadway to the east of the tree will require the loss of a signficant portion of the calculated root zone. The roadway also cuts into the SRZ on this side which has a high likelihood of impacting structural integrity. Realignment of the road slightly to bring it to the edge of the SRZ, will still amount to a signficant encroachment, but would be less likely impact stability or structural integrity. Exploratory excavation along the final alignment would be beneficial to determine the exact degree of impact and whether this is achievable.

5.3.3 The footpath to the south of the tree runs extremely close to stem edge. In addition to impacting the root zone, continued root and stem development has a very high likelihood of distorting the surface in the relative short term. Removing this section of footpath completely would be the preferred option, however if this is not achievable removal of one parking bay would allow for footpath to be rerouted further from the tree. While still inside SRZ the additional distance would reduce the issue notably. Use of permeable surface dressing or a raised walkway depending on the final distance from the tree is also recommended.

5.3.4 Multiple carparking bays are located within the NRZ. Removal of some or all of these bays and creating a larger planting area would reduce overall impact notably. However, if this is not achievable then use of a permeable paving or similar product within the bays is recommended to allow for continued water and gaseous exchange within these areas, and healthy root growth below.



IMG 11 – Tree 5. Proposed footpath realignment in blue. Road realignment in green. Car bay removal or use of permeable surfaces marked in yellow. – Extracted from Preliminary design A2.01 W

5.4 Tree 6

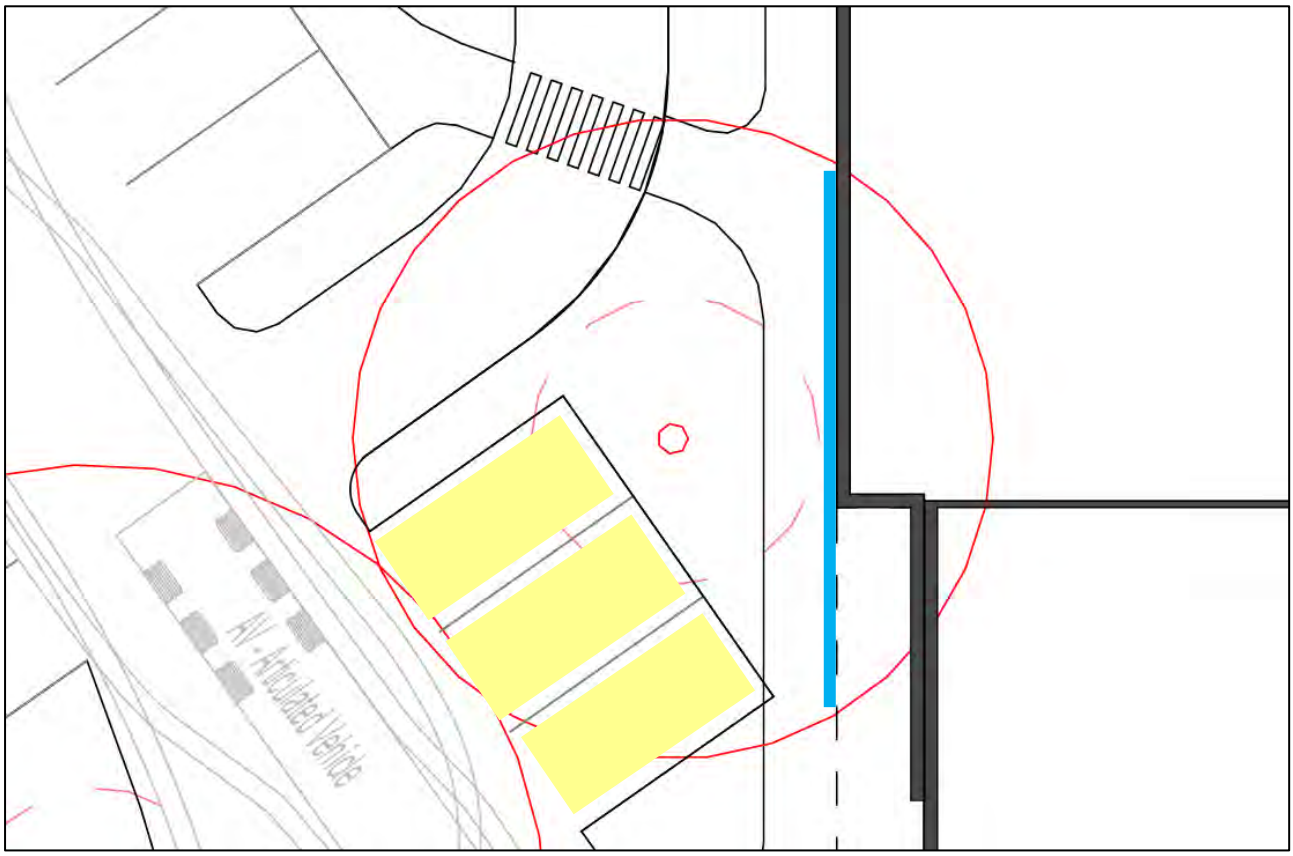
5.4.1 This tree has a more upright form with reduced lower branch development. As a result only minimal pruning to accommodate the roadway is required. Removal of two large branches within the upper canopy may be required in order to accommodate the adjacent building however, so total combined canopy loss still equates to approximately 30%.

5.4.2 The main building has been located in very close proximity on the eastern side, with the exterior wall falling just outside on the SRZ and with a footpath running between this and inside the SRZ. While the exterior wall itself is acceptable, suitability of this location will be determined by the additional excavation space required to install the building footing/foundations. This is likely to be at least 1m out from the wall, placing it within the SRZ and as a result there is a high likelihood of impact to structural root development. Moving of the wall further from the tree is preferable but if this is not achievable then confirmation of pad/foundation requirements is recommended, followed by exploratory excavation along this alignment to confirm actual root mass present and whether this design is achievable without compromising stability of the tree.

5.4.3 The tree is located within an irregular shaped planting area, as with the other subject trees minimal disturbance within this area will be required and mulching as the final dressing is recommended.

5.4.4 A small access road encroaches into the NRZ and three parking bays encroach further into the SRZ. Removal of these bays would be beneficial by creating a larger undisturbed root area. However, if this is not achievable then use of a permeable paving or similar product is recommended to allow for continued water and gaseous exchange within these areas and healthy root growth below.

5.4.5 Use of permeable resin bound aggregate for the section of footpath to the east of the tree stem may also be beneficial, although this will depend on the degree of excavation required for the building.



IMG 12 – Tree 6. Assessment of building footprint and additional excavtion area in blue. Proposed road realignment in green. Proposed car bay removed marked in yellow. – Extracted from Preliminary design A2.01 W

6 - DESIGN OPTIONS

6.1 Use of a raised wooden decking or walkways would provide significant benefit for any areas where pedestrian movement over roots zones is required. This option would provide the necessary permeability to maintain healthy root development below. It will also act as an effective barrier preventing damage to the root zone from foot traffic and preventing root or stem development from distorting the surface layer as the tree continues to grow. Installing footings within root zones would require small trial pits to be hand dug to assess the degree of root development below and the ability for their location to be moved slightly if large root mass is discovered. Footings should generally be located as far from the stem as practicable and to the minimum number and size required.

IMG 13 – Example of raised wooden decking built around palm stems – Elizabeth Quay, Perth

IMG 14 - Example of raised wooden decking built around palm stems – Elizabeth Quay, Perth

IMG 15 – Example of steel framed raised boardwalk in close proximity to tree stems – Stirling Gardens, Perth

IMG 16 – Example of steel framed raised boardwalk in close proximity to tree stems – Stirling Gardens, Perth

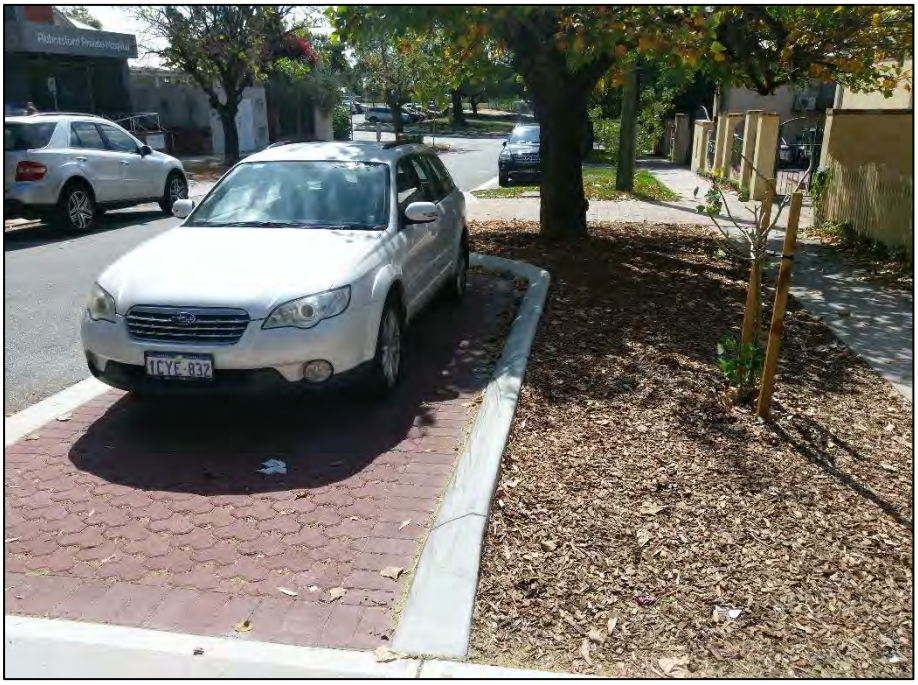
6.2 In locations where raised platforms are not practical or in locations further from the trees the use of permeable resin bound aggregate can be used to allow continued pedestrian movement over the areas. Such surfaces provide significant benefit compared to traditional asphalt or concrete allowing continued gaseous and water exchange and allowing healthy root growth to continue below. Sections of aggregate can be formulated to various specifications of aggregate size, colour and structural performance.

IMG 17 - Permeable resin bound aggregate footpath – Wellington Square, Perth

IMG 18 - Permeable resin bound aggregate footpath – Wellington Square, Perth

6.3 Permeable block paving is another option to create a porous surface. While less suitable for pedestrian areas it performs very well for light vehicle parking bays etc. The paving blocks are laid over an open graded base of structural material and an uncompacted soil sub-grade. This design works especially well if an increased final grade is required, allowing the surface to be laid over the existing material with minimal or no excavation required. Pavers come in multiple designs and colours and large voids created within some designs can be infilled with small aggregate or left open depending on design preference.

IMG 19 - Permeable paving off street parking bays installed around existing trees – Abbotsford Street, West Leederville



IMG 20 - Permeable paving off street parking bays installed around existing trees – Abbotsford Street, West Leederville

6.4 Due to the required loss of available root zone increasing the amount of fine absorbative root mass within the retained root zone areas and supplying this root mass within supplementary water will be essential to prevent heat and drought stress during the warmer period of the year, and to maintain long term viability of the trees. Installation of reticulation within these areas would therefore be of signficant benefit and should be specified within the final design. It should be installed where practicable to do so and without requiring significant further excavation.

Report continues on following page

7 – RECOMMENDATIONS

7.1 Tree 1

7.1.1 Preserve the retained root zone with no signficant disturbance, use mulch or similar permeable material as the final surface cover

7.2 Tree 2

7.2.1 Realign retaining wall further from SRZ
7.2.2 Conduct exploratory excavation along final alignment if it is still within SRZ to determine exact degree of root mass present and if structural integrity will be impacted.

7.3 Tree 3

7.3.1 Remove or relocate footpath on the south side of the tree stem.
7.3.2 If not achievable use a raised platform or increase the final grade to reduce excavation required and use permeable resin bound aggregate.

7.4 Tree 4

7.4.1 Preserve the retained root zone with no signficant disturbance, use mulch or similar permeable material as the final surface cover
7.4.2 Modify western planter to fall further from the tree
7.4.3 Confirm limit of approach and amount of excavation required for building/seating area and that it falls outside of the calculated NRZ.

7.5 Tree 5

7.5.1 Realign road edge outside SRZ
7.5.2 Conduct exploratory excavation along final alignment if it is still within SRZ to determine exact degree of root mass present and if structural integrity will be impacted.
7.5.3 Remove parking bays within NRZ if practical to do so.
7.5.4 If not achievable, use permeable paving or similar to maintain root zone
7.5.5 Remove footpath to the south of the tree
7.5.6 If not achievable, use a raised platform or remove 1x parking bay and modify layout to increase distance from the tree, then use permeable resin bound aggregate.

7.6 Tree 6

7.6.1 Confirm limit of approach and degree of excavation required for building, if required and achievable move this outside SRZ.
7.6.2 Conduct exploratory excavation along final alignment if it is still within SRZ to determine exact degree of root mass present and if structural integrity will be impacted.
7.5.3 Remove parking bays within NRZ if practical to do so
7.5.4 If not achievable, use permeable paving or similar material to maintain root zone
7.6.5 Preserve remaining root zone with no signficant disturbance, use mulch or similar permeable material as the final surface cover

7.7 Undertake all pruning works outside of the summer period when stress conditions on the tree will be highest. Ideally undertake the works 3-6 months before excavation works directly around the root zones of the trees commence to allow sufficient time for the tree to adapt before additional stresses from root loss occurs.

7.8 Build in provisions for reticulation within the design for all subject trees to provide semi or permanent watering to assist in adapting to the new environmental conditions

Jack Payne – March 2026

APPENDIX – TREE SURVEY DATA

i. Tree 1

Species	*Eucalyptus rudis*
Location	Eastern side of development lot, most southern of the four
Height	15.5m
DSH	620mm
DGL	710mm
SRZ	2.86m
NRZ	7.44m
Canopy density	Good
Foliage colour	Deep blue green, typical for species
Foliage size	Good
Root zone	Undisturbed paddock, sparse grass
Basal area	No recent damage, multiple lower branches
Acoustic resonance	Good, no indication of internal decay
Structural issues in stem	None visible
Structural issues in canopy	None visible
Deadwood	Minimal
Pathogen activity	Minimal
Vandalism	None
Previous pruning	None

ii. Tree 2

Species	*Eucalyptus rudis*
Location	Eastern side of development lot, 2nd most southern of the four
Height	17m
DSH	810mm
DGL	990mm
SRZ	3.29m
NRZ	9.72m
Canopy density	Good
Foliage colour	Deep blue green, typical for species
Foliage size	Good
Root zone	Undisturbed paddock, sparse grass
Basal area	No recent damage
Acoustic resonance	Good, no indication of internal decay
Structural issues in stem	None visible
Structural issues in canopy	None visible
Deadwood	Minimal
Pathogen activity	Minimal
Vandalism	None
Previous pruning	None

iii. Tree 3

Species	*Eucalyptus rudis*
Location	Eastern side of development lot, 2nd most northern of the four
Height	17.5m
DSH	890mm
DGL	980mm
SRZ	3.28m
NRZ	10.68m
Canopy density	Good
Foliage colour	Deep blue green, typical for species
Foliage size	Good
Root zone	Undisturbed paddock, sparse grass
Basal area	Large historical wound, fire damage. Good rates of supportive tissue
Acoustic resonance	N/A
Structural issues in stem	None visible
Structural issues in canopy	None visible
Deadwood	Sporadic sections in mid canopy
Pathogen activity	Minimal
Vandalism	None
Previous pruning	None

iv. Tree 4

Species	*Eucalyptus rudis*
Location	Eastern side of development lot, most northern of the four
Height	16m
DSH	690mm
DGL	840mm
SRZ	3.07m
NRZ	8.28m
Canopy density	Good
Foliage colour	Deep blue green, typical for species
Foliage size	Good
Root zone	Undisturbed paddock, sparse grass
Basal area	Large dead stem, partial separation
Acoustic resonance	Good, no indication of internal decay
Structural issues in stem	Hung up stem from neighbouring tree
Structural issues in canopy	None visible
Deadwood	Minimal
Pathogen activity	Minimal
Vandalism	None
Previous pruning	None

v. Tree 5

Species	*Eucalyptus grandis*
Location	Western side of development lot
Height	20m
DSH	860mm
DGL	1000mm
SRZ	3.30m
NRZ	10.32m
Canopy density	Good
Foliage colour	Deep green and glossy, typical for species
Foliage size	Good
Root zone	Undisturbed paddock, raised above surrounding grade
Basal area	Multiple hung up branches
Acoustic resonance	No access to stem
Structural issues in stem	None visible
Structural issues in canopy	None visible
Deadwood	Sporadic sections in upper canopy
Pathogen activity	None visible
Vandalism	None
Previous pruning	None

vi. Tree 6

Species	*Eucalyptus camaldulensis*
Location	Western side of development lot
Height	18m
DSH	620mm
DGL	780mm
SRZ	2.98m
NRZ	7.44m
Canopy density	Good
Foliage colour	Rich green, typical for species
Foliage size	Good
Root zone	Undisturbed paddock, sparse grass
Basal area	Good
Acoustic resonance	Good, no indication of internal decay
Structural issues in stem	None visible
Structural issues in canopy	None visible
Deadwood	None visible
Pathogen activity	None visible
Vandalism	None
Previous pruning	None

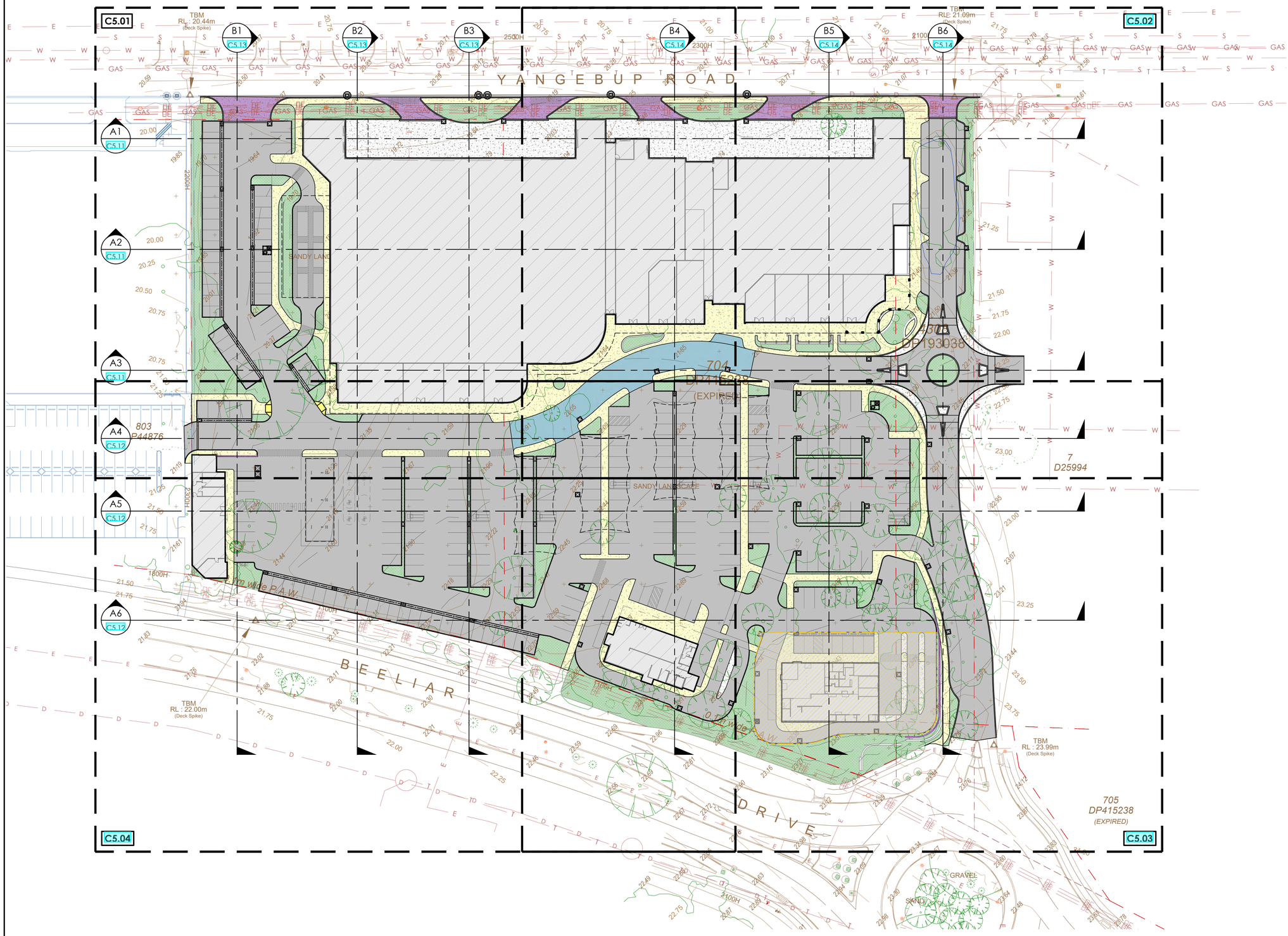
Liability and Limitation

Tree risk inspections are based on reasonably practicable assessment methods. Every condition that could possibly lead to a stem or tree failure cannot be expected to be detected. Trees may fail from a range of singular or cumulative reasons, some of which are not yet fully understood. Recommendations following inspections may or may not be accepted by clients.

Assessment tools are variable and unless otherwise stated inspections are undertaken at ground level based on the permissible access granted. Inspection of underground portions is limited and potential reasons for failure are not always available for consideration. CTS cannot guarantee against tree or limb failure.

It is not possible to make a tree "safe" rather they can be managed to reduce the potential risk of harm to acceptable levels, should the consultant feel this is necessary. Recommendations in this report are based on qualifications, experience, knowledge and the use of assessment tools deemed necessary for the individual inspection.

The report is to be considered in full and sections are not to be selected for legal consideration without advice and approval from CTS.
No portion of this report may be forwarded without the expressed permission of the author.



LEGEND

SYMBOL	DESCRIPTION
	EXISTING CADASTRAL BOUNDARY
	EXISTING SURVEY
	ARCHITECTURAL DESIGN
	McDONALD'S VENUE SCOPE OF WORKS BOUNDARY
	EXISTING CONTOUR LINES (0.25m)
	DESIGN CONTOUR LINES (0.25m)
	BATTER
	RW - RETAINING WALL
	BK - 155mm HIGH CONCRETE BARRIER KERB SMK - 155mm HIGH CONC. SEMI-MOUNTABLE KERB MK - 120mm HIGH CONC. MOUNTABLE KERB
	FK - FLUSH KERB
	KR - KERB RAMP CROSSING
	DD - DISH DRAIN (U.N.O.)
	GD - GRATED DRAIN (U.N.O.)
	GIP - PROPOSED GRATED INLET PIT (U.N.O.)
	SEP - PROPOSED SIDE ENTRY PIT (U.N.O.)
	JP - JUNCTION (SEALED) PIT (U.N.O.)
	BUILDING FOOTPRINT
	BUILDING ROOF ABOVE
	ASPHALT PAVEMENT
	COLOURED ASPHALT PAVEMENT
	CONCRETE VEHICULAR PAVEMENT
	COUNCIL CROSSOVER CONCRETE PAVEMENT
	CONCRETE PEDESTRIAN PAVEMENT
	LANDSCAPING

EXISTING SERVICES LEGEND - BYDA

SYMBOL	DESCRIPTION
D	EXISTING STORMWATER LINE
S	EXISTING SEWER LINE
W	EXISTING WATER LINE
GAS	EXISTING GAS LINE
OE	EXISTING ELECTRICITY OVERHEAD LINE
E	EXISTING ELECTRICITY UNDERGROUND LINE
T	EXISTING COMMS CABLE

WARNING:
BEWARE OF UNDERGROUND SERVICES. THE LOCATION OF SERVICES IF SHOWN, ARE INDICATIVE ONLY AND NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES HAVE BEEN DOCUMENTED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES WITHIN THE WORKS AFFECTED AREAS PRIOR TO ANY ON-SITE EXCAVATION.

GRADING PLAN

SCALE 1:500 AT A1

5.0m 0.0 10.0 20.0 30.0 40.0 50.0m

SCALE 1:500 AT A1 SHEET | 1:1000 AT A3 SHEET

PRELIMINARY

ISSUE	DATE	REV.	BY
ISSUED FOR CLIENT REVIEW	06.03.2026	A	FI.K

NOT FOR CONSTRUCTION

NORTH POINT U.N.O.

ARCHITECT
PLACE FABRIC
SUITE 5, LEVEL 3
16 VICTORIA AVENUE
WA 6000

CLIENT
GLASK CONSTRUCTION
48 FAIRBROTHER STREET
BELMONT, WA 6104

PROJECT
BEELIAR SHOPPING CENTRE
142 YANGEBUP ROAD
COCKBURN CENTRAL, WA 6164

DESIGNED	DRAWN	DATE	SIZE	CAD REF
FI.K	FI.K	MAR 26	A1	TX18628.00 - C01

TRIAXIAL CONSULTING
COMPLEX PROBLEMS RESOLVED SIMPLY
HEAD OFFICE CERTIFICATIONS ISO 45001 ISO 9001 ISO 14001

1300 874 294 | TRIAXIAL.AU

SUITE 12, LEVEL 14, 327 PITT STREET, SYDNEY NSW 2000
PO BOX A203, SYDNEY SOUTH NSW 1235

TO BE PRINTED IN COLOUR

DRAWING TITLE
GRADING PLAN
- OVERALL PLAN

PROJECT No.	DRAWING No.	REVISION
TX18628.00 -	C5.01	A

Town Planning Report

Proposed Neighbourhood Centre / Yangebup Road, Hammond Road and Beeliar Drive Cockburn Central

ROWE GROUP 35 YEARS 1991 – 2026

OUR REF: 10033 19/02/2026

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

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This report has been authorised by;

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Director

Claire Richards
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Jamie Baxter
Quality Control

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13. Matters to be Considered by Local Government

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1. Introduction

Rowe Groups acts on behalf of Beeliar Drive Project Pty Ltd, being the contracted purchaser of Lots 1, 300 and 4308 Yangebup Road/Beeliar Drive, Cockburn Central (site). We are instructed by our Client to prepare and lodge an Application seeking Development Approval for a proposed commercial development (Neighbourhood Centre) on the site. The proposed development comprises two (2) 'major' retail outlets along with a number of speciality retail, food and beverage tenancies, consulting rooms, a service station and two (2) drive thru fast food outlets with a combined total Net Lettable Area (NLA) of approximately 7,855m^2 (inclusive of retail and non-retail floorspace).

This report has been prepared in support of the proposed development and addresses the following matters:

- Site location and description;
- Surrounding land uses and context;
- Overview of relevant planning and design issues;
- Detailed explanation of the proposed development; and
- Justification for the proposed development.

The proposed development has been informed by technical input from the following consultants:

Discipline	Consultant
Arborist	Classic Tree Services
Architectural Design	Place Fabric
Bushfire	WA Fire and Safety
ESD	Summation
Landscape Architect	KDLA
Retail	Pracsys
Town Planning	Rowe Group
Traffic	Urbii
Waste Management	Talis Consultants

Table 1: Project Team

The proposed development has an estimated construction value of $28 million and therefore meets the threshold for determination by the Outer Metro Development Assessment Panel (DAP). On this basis, our Client has elected for the proposed development to be determined under Regulation 17 of the *Planning and Development (Development Assessment Panels) Regulations 2011* (DAP Regulations). The associated forms and fees have been included to facilitate determination by the DAP.

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2. Description of Site

2.1 Location

The site is located in the suburb of Cockburn Central, in the municipality of the City of Cockburn, approximately 19km south of the Perth Central Area. The site benefits from direct access to the district and regional road network, including Beeliar Drive, Hammond Road and the Kwinana Freeway and is located approximately 1.3km north-west of the Cockburn Central Regional Centre.

Refer to **Figure 1 – Regional Location**

The site is located within an established urban area characterised by a mix of commercial, community, industrial and residential land uses. It is positioned on the northern side of Beeliar Drive and is bound by Yangebup Road to the north, Ale's Fruit and Vegetable Market to the east and an approved Revo Fitness centre to the west which is currently under construction.

Beeliar Drive to the south provides an east-west connection through the Beeliar Regional Park connecting the Kwinana Freeway and Spearwood Avenue. The site is accessible to the Kwinana Freeway (northbound and southbound) via Beeliar Drive to the south and Hammond Road/North Lake Road to the north.

Refer to **Figure 2 – Local Context**

2.2 Cadastral Information

Cadastral information relating to the site is summarised in **Table 2** below.

Lot No.	Street Address	Plan/Diagram	Volume /Folio	Landowner
1	No. 142 Yangebup Road	DP 59832	2702 / 759	Antonio Anselmo Alessandrini Angelo Luciano Alessandrini Catina Christina Alessandrini John Alessandrini
300	No street address	DP 402552	2898 / 294	
4308	Lot 4308 Beeliar Drive	DP 193038	2151 / 262	
7	No. 86 Hammond Road	D 25994	1250 / 932	

Table 2: Cadastral Information

Lots 7 and 99 form part of the proposed development only insofar as a portion of the north-south vehicular connection relies on thoroughfare through these lots to connect the balance of the site to the Beeliar Drive roundabout. No development other than road construction and landscaping is proposed on Lots 7 and 99.

The development site itself (Lots 1, 300 and 4308) has a combined total land area of 2.93ha and maintains a frontage of 212m to Beeliar Drive along its southern boundary and 207m to Yangebup Road along its northern boundary. A 0.1m wide pedestrian accessway is located along Berrigan Drive which restricts direct vehicular connection between the site and Beeliar Drive. An existing constructed roundabout provides access into the site from Beeliar Drive.

Refer **Figure 3 – Site Plan**

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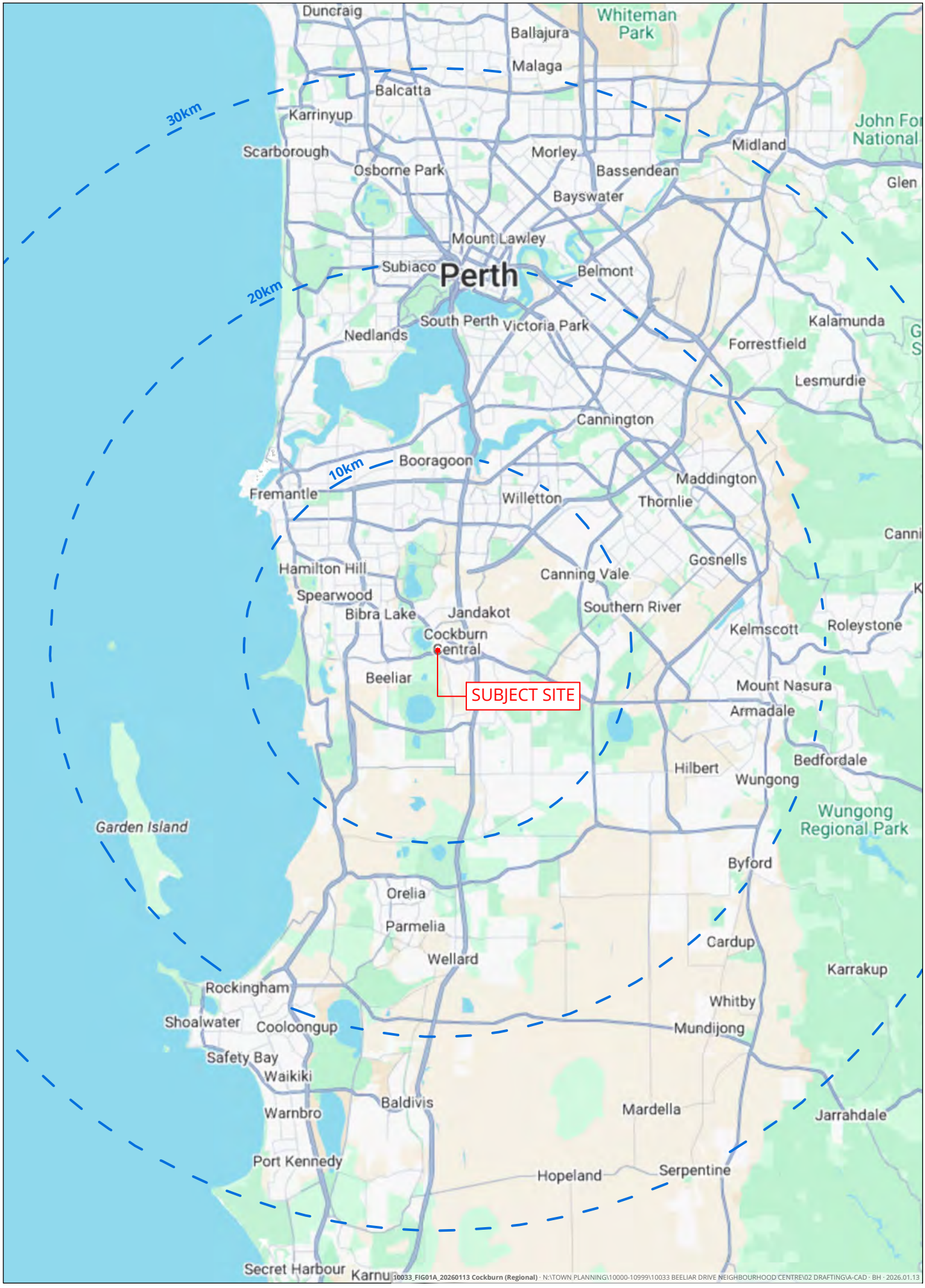

10033_FIG01A_20260113 Cockburn (Regional) · N:\TOWN PLANNING\10000-10999\10033 BEELIAR DRIVE NEIGHBOURHOOD CENTRE\02 DRAFTING\A-CAD · BH · 2026.01.13

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SCALE @ A4: 1:250,000

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FIGURE 1

REGIONAL LOCATION

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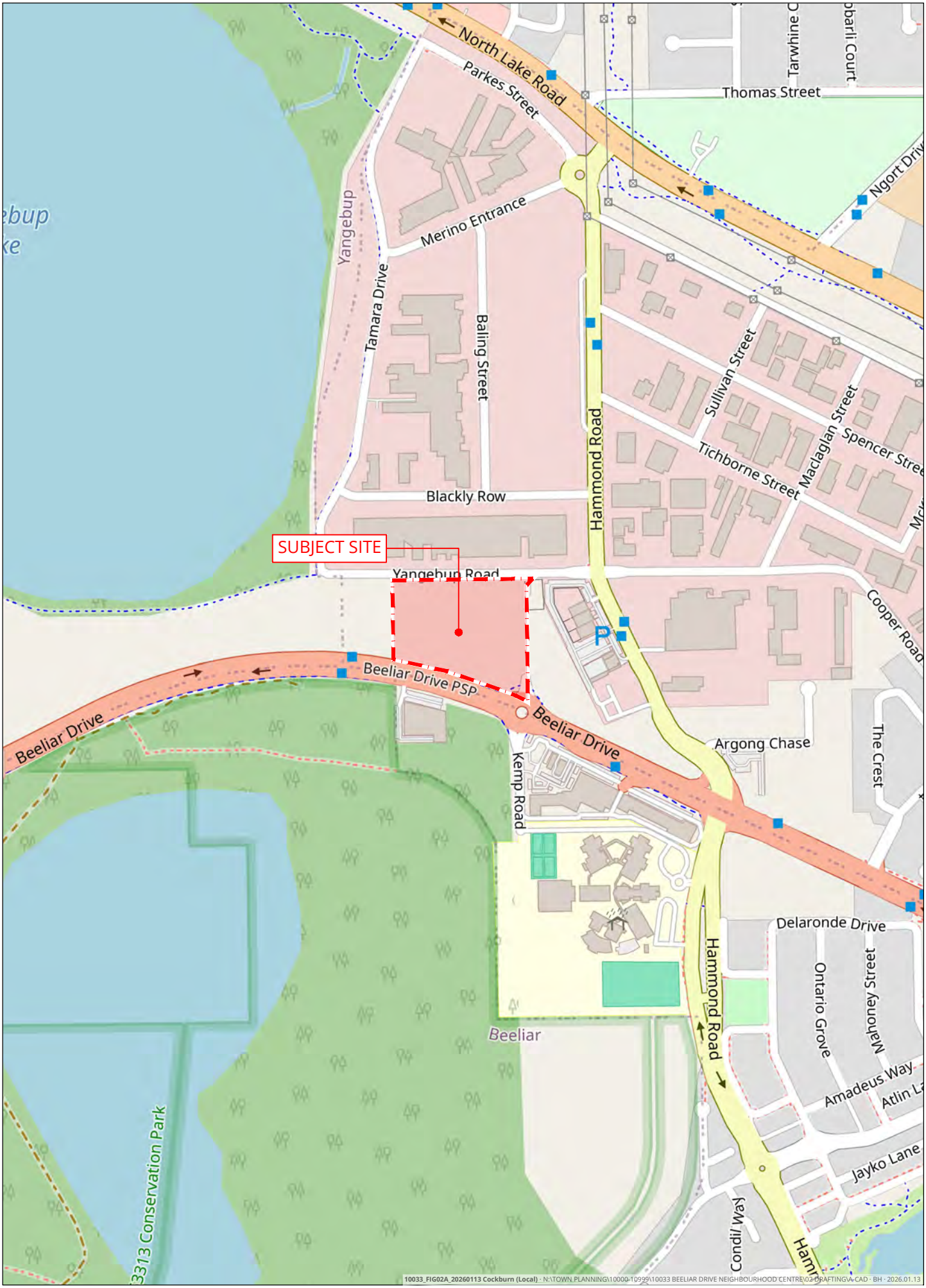

0 190 m

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FIGURE 2

LOCAL CONTEXT

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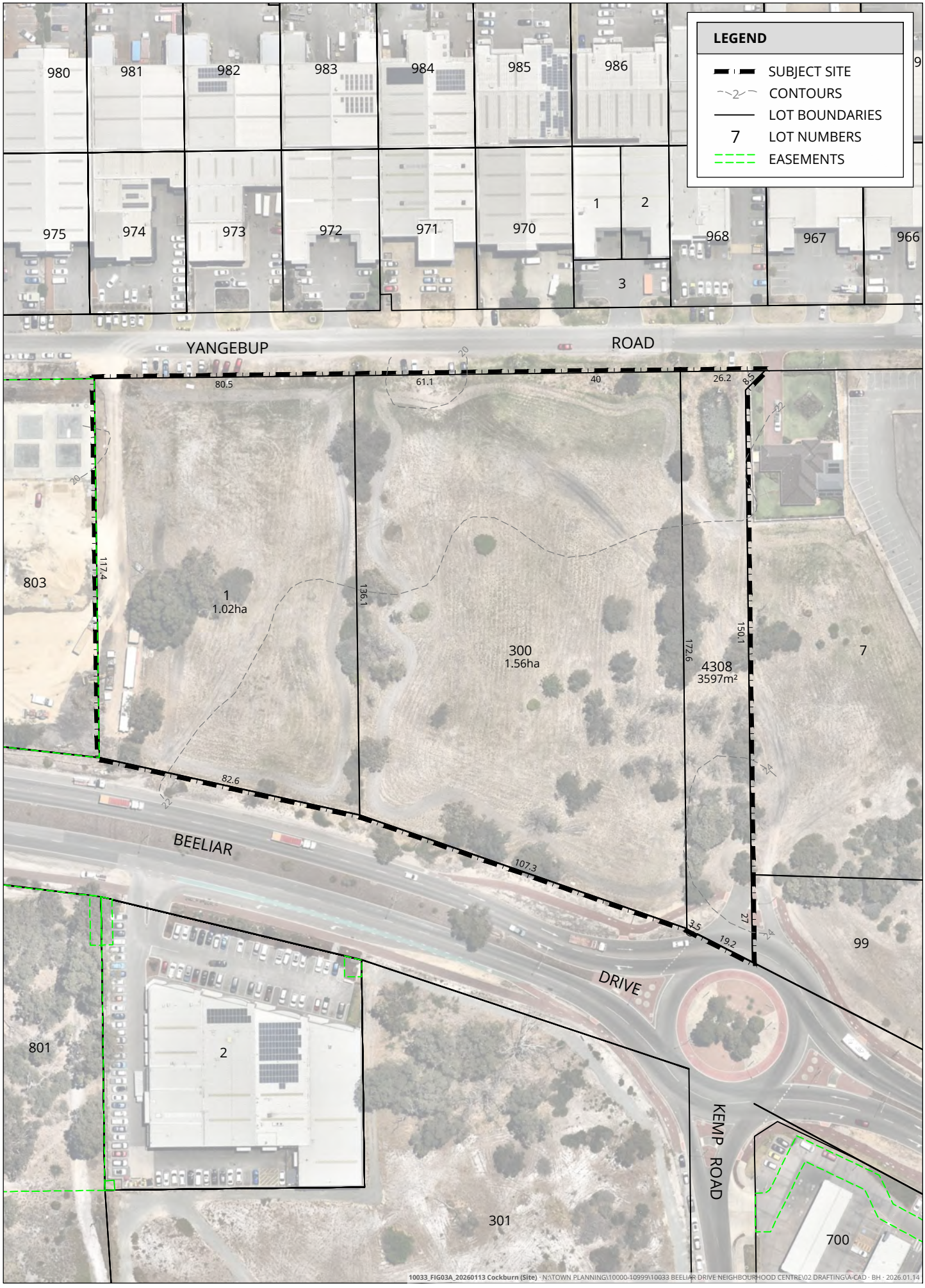

FIGURE 3
SITE PLAN

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A review of the Certificates of Title reveals that the site is affected by a number of encumbrances, details of which are provided in **Table 3** below.

Lot No.	Document No.	Type	Details
1	G451638	Easement (Benefit)	Right of Carriageway
1 and 4308	N439532	Memorial	Land Taxation
300	N373427	Notification	Water Corporation (wastewater servicing)

Table 3: Encumbrance Information

The landowner is aware of the above encumbrances and the proposed development has been designed to accommodate and/or address each as necessary.

Refer **Attachment 1 – Certificates of Title and Deposited Plans**

2.3 Existing Improvements and Surrounding Land Uses

The site is currently vacant of built form but does contain a number of existing trees which are scattered throughout the site. The balance of the site comprises managed grassland.

The land to the immediate east of the site comprises three (3) residential dwellings and a number of commercial tenancies which include Tony Ale's Fruit and Vegetable Market/café/butcher and a fish processing/market facility. The commercial tenancies are supported by extensive on-site parking with vehicular access provided via Hammond Road to the west.

The land directly north of the site comprises a light industrial / service commercial precinct which accommodates a range of land uses including manufacturing, storage, office and recreational activities. A commercial development is under construction to the immediate west of the site and will accommodate Revo Fitness once complete. The area further west of the site comprises conservation areas and open space associated with the Beeliar Regional Park.

The area to the south of the site, south of Beeliar Drive, accommodates a range of commercial and educational activities and includes Emmanuel Catholic College.

Beeliar Drive is a constructed dual-lane road separated by a landscaped median. An existing roundabout is located on Beeliar Drive immediately south of Lot 4308 and provides for future vehicular access into Lot 4308.

Refer to **Attachment 2 – Feature Survey**

2.4 Site Conditions and Environmental Considerations

A desk-top assessment of existing conditions and services relating to the site has been undertaken with key findings summarised below.

2.4.1 Geology

Aerial imagery illustrates that the site was historically utilised for rural-residential purposes.

A geotechnical investigation of the site has been undertaken and confirms that the site is suitable for the form of development proposed.

2.4.2 Topography

The site is relatively flat with a cross-fall of approximately 4m from the south-east corner to the north-west corner of the site. Site levels range from approximately 24m Australian Height Datum (AHD) in the south-east

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to 20m AHD in the north-west. The site's topography is conducive to the proposed development with minimal fill and retaining required.

2.4.3 Groundwater

Mapping produced by the Department of Water and Environmental Regulation (DWER) indicates that historical maximum groundwater is likely to be encountered at 17m AHD in the south-east corner of the site and 16m AHD in the north-east corner.

The existing site surface is located between 20m and 24m AHD with proposed finished floor levels likely to be constructed at an RL of approximately 21.75m, providing sufficient clearance to maximum groundwater levels.

2.4.4 Site Contamination

A search of the DWER's Contaminated Sites Database indicates that the site is not classified as a known or suspected contaminated site.

The land to the immediate north of the site, which comprises a light industrial / service commercial precinct, is registered on the Contaminated Sites Database as a known or suspected contaminated site and is classified as "remediated for restricted use". Land uses to the north are restricted to those of a commercial or industrial nature.

2.4.5 Acid Sulphate Soils

Acid Sulphate Soil (ASS) risk mapping by DWER indicates that the site has a moderate to low risk of disturbing ASS within 3m of the natural soil surface. Subject to the final development levels, the depth of excavation in proximity to the potential ASS shall be limited to minimise the risk associated with encountered acid sulphates.

Refer to **Figure 4 – Acid Sulphate Soils**

2.4.6 Wetlands

A search of the Department of Biodiversity, Conservation and Attractions (DBCA) Geomorphic Wetlands Mapping database confirm that the site does not contain any wetland features. The nearest wetlands are located to the north-west (Yangebup Lake) and the south-west (Kogolup Lake) of the site and are both classified as Conservation Category Wetlands.

2.4.7 Bushfire

Mapping produced by the Department of Fire and Emergency Services (DFES) indicates that the site is located within a Bushfire Prone Area. Further consideration of bushfire related matters is addressed in section 5.2.1 of this Report.

Refer to **Figure 5 – Bushfire Prone Areas**

2.4.8 Vegetation

A search of the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) Protected Matters Search Tool confirms that the site is not located within an area of National Environmental Significance and does not contain any known threatened or priority fauna or ecological communities.

The site contains a number of existing trees which are scattered through the site. A number of the larger trees have been identified by the proponent as desirable for retention as part of the proposed development and will be incorporated into the site's landscaping design.

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An arborist has been engaged to confirm that retention of these trees is viable and will advise on suitable measures to ensure the protection of these trees during construction works.

2.4.9 Heritage

A search of the Aboriginal Cultural Heritage Inquiry System (ACHIS) database reveals that the site is located within a large Registered Aboriginal Site (Place No. 18937) which encompasses Yangebup Lake and surrounds. Given the site has previously been developed and subsequently cleared, no formal investigation or survey of Aboriginal cultural heritage has been undertaken in relation to the site.

A search of the Heritage Council of Western Australia (HCWA) InHerit database and the City of Cockburn's Heritage List confirms that the site is not registered as a site of cultural heritage significance.

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FIGURE 4

ACID SULPHATE SOILS

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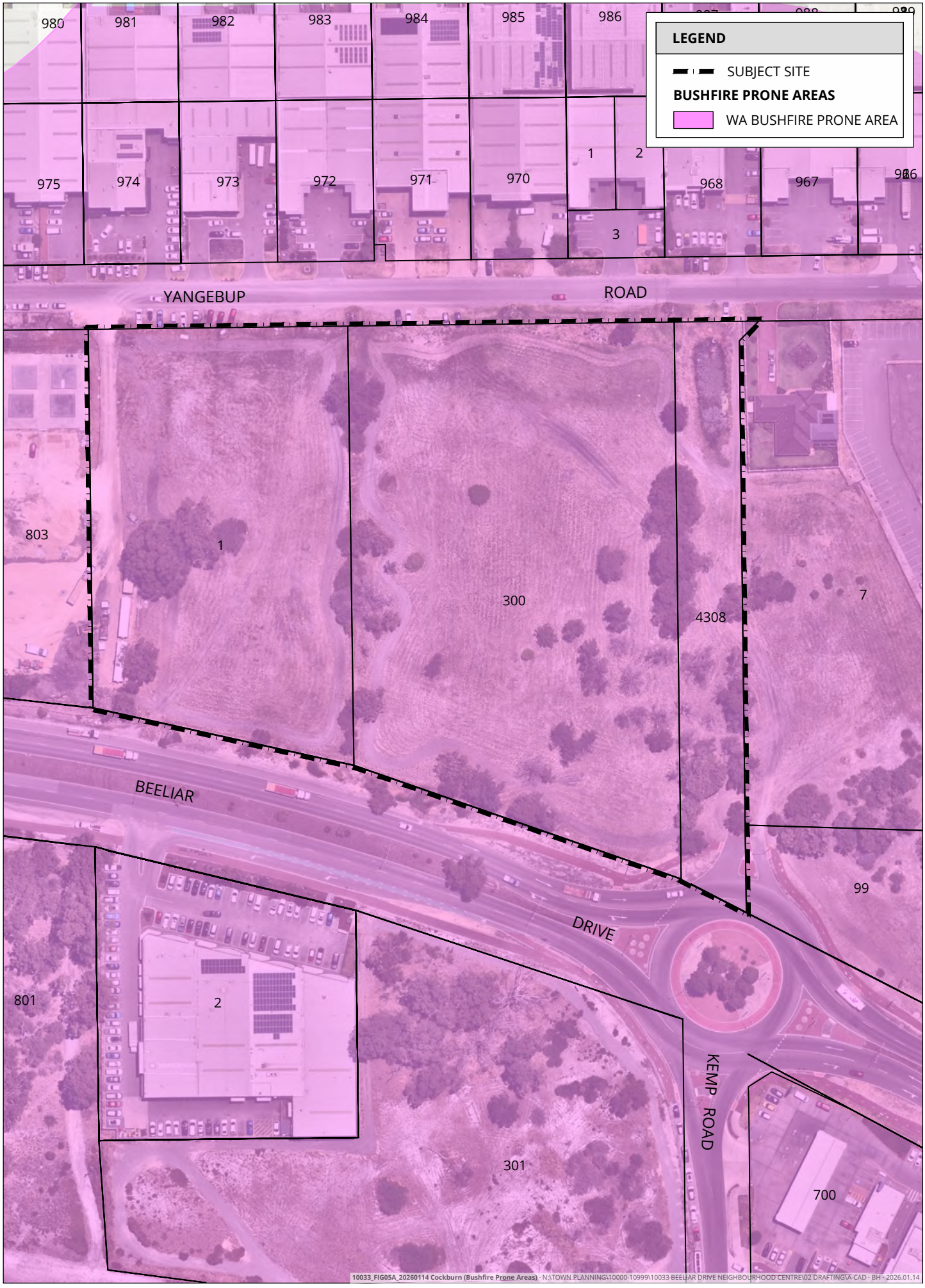

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FIGURE 5

BUSHFIRE PRONE AREAS

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3. Description of Proposed Development

3.1 Project Overview

This Application seeks Development Approval for the construction of a single storey commercial development (Neighbourhood Centre) on the site comprising:

- Two (2) 'major' retail outlets (one large and one small) with a combined NLA of 5,360m^2;
- A liquor store measuring 160m^2 NLA;
- One large speciality retail tenancy measuring 600m^2 NLA and five (5) smaller speciality retail tenancies, each measuring 100m^2 NLA;
- One (1) health and wellness tenancy measuring 100m^2 NLA;
- Four (4) café / restaurant tenancies, each measuring between 75m^2 and 100m^2 NLA;
- Two (2) drive-thru fast food outlets fronting Beeliar Drive; and
- A Service Station.

The proposed development comprises a combined total NLA of approximately 7,855m^2.

The major retail outlets are expected to operate 7 days a week between the hours of 7.00am and 9.00pm, and the liquor store is expected to operate 7 days a week between the hours of 9.00am and 9.00pm. The Service Station and Drive-Thru outlets are expected to operate 24 hours a day, seven days a week.

The site layout includes multiple building forms arranged around internal circulation areas and public spaces, with active frontages oriented toward internal pedestrian routes. A landscaped courtyard/piazza will be constructed along the southern entrance to the Centre adjoining the food and beverage tenancies, providing an informal meeting and public amenity space. Extensive landscaping will be provided throughout the site and within the adjoining road reserves and will include the retention of six (6) existing large trees. A total of 133 new trees are proposed to be planted within the site and a further 26 new trees are to be planted within the adjoining.

The proposed development will be serviced by 315 on-site parking bays including accessible bays, motorcycle parking and designated short-stay parking associated with retail and food uses. 71 of the proposed on-site parking bays will be covered with shade structures to provide weather protection. On-site parking will also include the provision of four (4) dedicated EV charging bays, conveniently located near the main (southern) entrance to the Centre.

68 bicycle bays (44 visitor and 24 staff) will be provided within the development along with end-of-trip facilities to support cycling as an alternative mode of access for customers and staff. These bays are located in convenient and visible areas close to key building entrances.

Vehicular access to the site is proposed from the existing roundabout on Beeliar Drive, 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.

Service and delivery activities are accommodated via dedicated loading areas, accessible via Yangebup Road to the north of the site, 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.

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Internal circulation roads will provide access to parking areas, drive-thru sites and service station, with vehicle speeds managed through geometry and layout to support safe operation. Internal connectivity will be provided to the adjoining properties to the east and west of the site, to promote cross-trade between existing and future integrated land uses.

Pedestrian access to the site will be provided via a network of existing and proposed footpaths to the north, south and east of the site, including two (2) new dedicated pedestrian connections into the site from Beeliar Drive. Internally, the parking area will be serviced by a series of designated pedestrian access points providing for the safe movement of pedestrians between the car park, shopping area and surrounding footpaths. A pedestrian friendly section of the access road in front of the tenancies will be created to slow cars down, using a different surface colour.

The proposed Centre will provide a high quality modern amenity for the local and wider community, offering a range of retail, health and ancillary services that will complement the surrounding mixed use area. The Centre has been designed to offer convenience and functionality with a high level of pedestrian amenity.

Refer **Attachment 3 – Development Proposal Plans**

3.2 Previous Development Approval

On 21 December 2020, the Metro Outer Joint Development Assessment Panel (JDAP) conditionally approved an Application for a Mixed Use / Commercial Development on land comprising the site and adjoining Lot 803 to the west. The approved development included approximately 13,467m^2 of commercial floor space across three (3) separate buildings and included some 491 on-site parking bays. A variety of land uses were approved as part of the development including Shop, Service Station, Restaurant, Tavern, Office, Health Studio and Warehouse/Showroom.

The 2020 Approval was not implemented and has subsequently lapsed.

The enclosed Application contains a number of similarities to the 2020 Approval. The range of land uses proposed is broadly consistent with those approved in 2020 however the size and scale of the proposed development is considerably smaller.

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4. Pre-Lodgement Consultation and Design Review

The proposed development has been informed by consultation with the City of Cockburn's Planning Department and Design Review Panel (DRP). Noting that the site is zoned 'Development' under the provisions of the *City of Cockburn Local Planning Scheme No. 3* (LPS3) and that an existing Structure Plan applies to the site, a key topic of discussion was the reconfiguration of the development and the proposed location of different uses relative to the allocation of zoning on the Structure Plan map.

It was resolved that a Structure Plan Amendment would be required to align the positioning of the zonings relative to the proposed location of land uses in the context on the new development proposal. It is important to note however that no change to the amount of retail floorspace allocated to the site would be required. A Structure Plan Amendment has been submitted to the City of Cockburn for assessment in parallel with this Development Application and is currently under consideration.

On 22 October 2025, the Applicant presented to the City of Cockburn DRP to assess and provide comments on the proposed development. A second DRP meeting was held on 26 November 2025 to present an updated development concept addressing matters raised during the first DRP. Using the 'traffic signal' approach, eight (8) of the design principles were provided with a 'green' (supported) score whist Principles 1 and 10 were provided with an 'orange' (pending further attention) score. The DRP was generally supportive of the proposal.

Key aspects of the second DRP meeting are summarised in **Table 4** below, together with the Applicant's response.

DRP 2 Comments and Recommendations

Introductory comments:

- The presentation directly addresses the Panel's previous comments.
- Olive trees proposed alongside the north south road (Allesandrini Drive) links to the history of the site.
- Moving the roundabout further south and increasing the size of the public space on the corner of the alfresco area is supported.
- The internal Main Street and alfresco areas are generous.
- The subtle curve in the east west internal road acts as a traffic calming device.
- A low height wall on the corner of the site softens the presentation of the fast food offering when viewed from the streetscape which previously appeared exposed and a little like a service area.
- Parklets or 'pause' areas on the perimeter as well as throughout the site along pedestrian pathways establish a series of community spaces and activates the site.
- The buffer to the loading docks at rear of the site in the form of screening and landscaping has been strengthened.
- ESD commitments including a 30kW PV solar system, all electric development and EV charging have been added.
- Bicycle parking is now shown on the drawings.
- Two set-down parking bays have been removed near main entry to the centre.
- The legibility of the north south pedestrian pathways through site have been strengthened and now connect to the Beeliar Drive streetscape as well as the main entries to the centre.
- A greater diversity of public art has been shown on the site including in the alfresco areas at the front of the site.

Principle 1: Context and Character		**Applicant Response**
1.	Consider positioning built form addressing the primary streetscape on the site and establish a greater buffer to the properties at the rear of the site	The built form arrangement offers legibility, functionality, activation (where its best located) and convenience, whilst separating off the primary service areas to the rear, ensuring no conflict with customers. The fast food (and fuel) pad sites are purposefully located close to Beeliar Drive as their functions are primarily car based. These

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DRP 2 Comments and Recommendations

		buildings have, however, been orientated and designed to ensure a safe, legible and high quality design outcome.
Principle 2: Landscape Quality		
2.	Consider all opportunities for larger trees on the site	The landscape quality is of a high standard and includes the retention and protection of six (6) existing mature trees which have been incorporated into the landscaping design. A number of additional large and very large endemic trees (10m and 15m canopies) will be planted at key locations throughout the site.
Principle 3: Built Form and Scale		
3.	None (supported)	Noted
Principle 4: Functionality and Build Quality		
4.	None (supported)	Noted
Principle 5: Sustainability		
5.	None (supported)	Noted
Principle 6: Amenity		
6.	None (supported)	Noted
Principle 7: Legibility		
7.	None (supported)	Noted
Principle 8: Safety		
8.	None (supported)	Noted
Principle 9: Community		
9.	Further integrate public art into the Parklets dispersed throughout the site and ensure artistic concepts are unique as well as engaging with ahigh level of artistic integrity to contribute to the site and surrounding local community in a meaningful way	The proponent has a demonstrated track record of imaginative and exemplary means of integrating public art into their projects. Public art will take various forms and will be distributed around the centre where it has beneficial and meaningful impact. An artist has been engaged to explore public art options for the site and these options will be presented to the City for discussion in due course.
Principle 10: Aesthetics		
10.	Provide a Signage Strategy clearly nominating the types and locations of signage that will be integrated into the development in a sensitive way whilst still achieving adequate commercial visibility.	A signage strategy will be prepared following the granting of Development Approval. The Applicant is agreeable to a suitably worded condition being imposed on any approval granted by the DAP.
Concluding Remarks:		
The applicant has responded strongly to the Panel's previous comments and recommendations. Whilst the organisation of built form on the site positioned at the rear of the site is not the Panel's preferred arrangement, the applicant has strengthened the buffer to the loading docks at the rear of the site, improved the network of pedestrian pathways through the site and introduced a series of small Parklet style public spaces on the perimeter as well as dispersed throughout the site which assists in activating the site. On balance the proposal is supported by the Panel pending the inclusion of an appropriate Signage Strategy being provided prior to the submission of a Development Approval application.		

Table 4: Design Review Panel Summary

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5. Town Planning Considerations

5.1 Strategic Planning Framework

5.1.1 South Metropolitan Peel Sub-Regional Planning Framework

The *South Metropolitan Peel Sub-Regional Planning Framework* (Framework) was adopted by the WAPC in 2018 and establishes a long-term planning framework for land use and infrastructure to guide future growth across the south metropolitan region. The Framework forms part of the *Perth and Peel @ 3.5 Million* suite of documents and is specific to the South Metropolitan and Peel regions.

The Framework identifies the site as 'Urban' with the short term (2015-2021) implementation timeframe. Beeliar Drive is identified under the Framework as a 'proposed high-priority transit corridor' connecting Armadale and Cockburn to Fremantle.

The form of development proposed is broadly consistent with the site's designation as an 'Urban' area under the Framework and its location adjoining a proposed high-priority transit corridor is conducive to land uses of a retail nature.

Refer **Figure 6 - South Metropolitan Peel Sub-Regional Planning Framework**

5.1.2 City of Cockburn Local Planning Strategy (2024)

The City of Cockburn *Local Planning Strategy* (Planning Strategy) was endorsed by the WAPC in October 2024. It sets out the long term planning direction for the City, covering a 10-15 year timeframe, and is intended to guide the ultimate land use pattern for the district, and a context for planning and development under both the MRS and LPS13.

The site is identified on the Planning Strategy Map as a 'Structure Planning Area for future rationalisation' and is shown on the Activity Centres Map as forming part of the 'Tony Ale's Local Centre / Hammond Road North Mixed Business Area'. These designations are broadly consistent with the site's zoning under TPS3 and its designation under the *Hammond Road North Structure Plan* (discussed below).

The Planning Strategy identifies the centre for a total expansion to approximately 17,650m^2 of commercial floorspace, with approximately 8,170m^2 identified as Shop floorspace.

Refer **Figure 7 – Local Planning Strategy Map**

5.1.3 City of Cockburn Local Commercial and Activity Centres Strategy (2012)

The City of Cockburn *Local Commercial and Activity Centres Strategy* (Commercial Strategy) was adopted by Council in 2012 and sets out the strategic vision and broad framework to guide the planning and development of the City's activity centres. Findings and recommendations from the Commercial Strategy have informed the City's Planning Strategy and *draft Local Planning Scheme No. 13* (draft LPS13).

The site is identified under the Commercial Strategy as forming part of the Beeliar Drive Mixed Business Area. Whilst no specific recommendations are provided within the Commercial Strategy for this Mixed Business Area, the proposed development is considered to be broadly consistent with its Mixed Business designation and will assist in meeting local retail needs and the delivering local employment opportunities.

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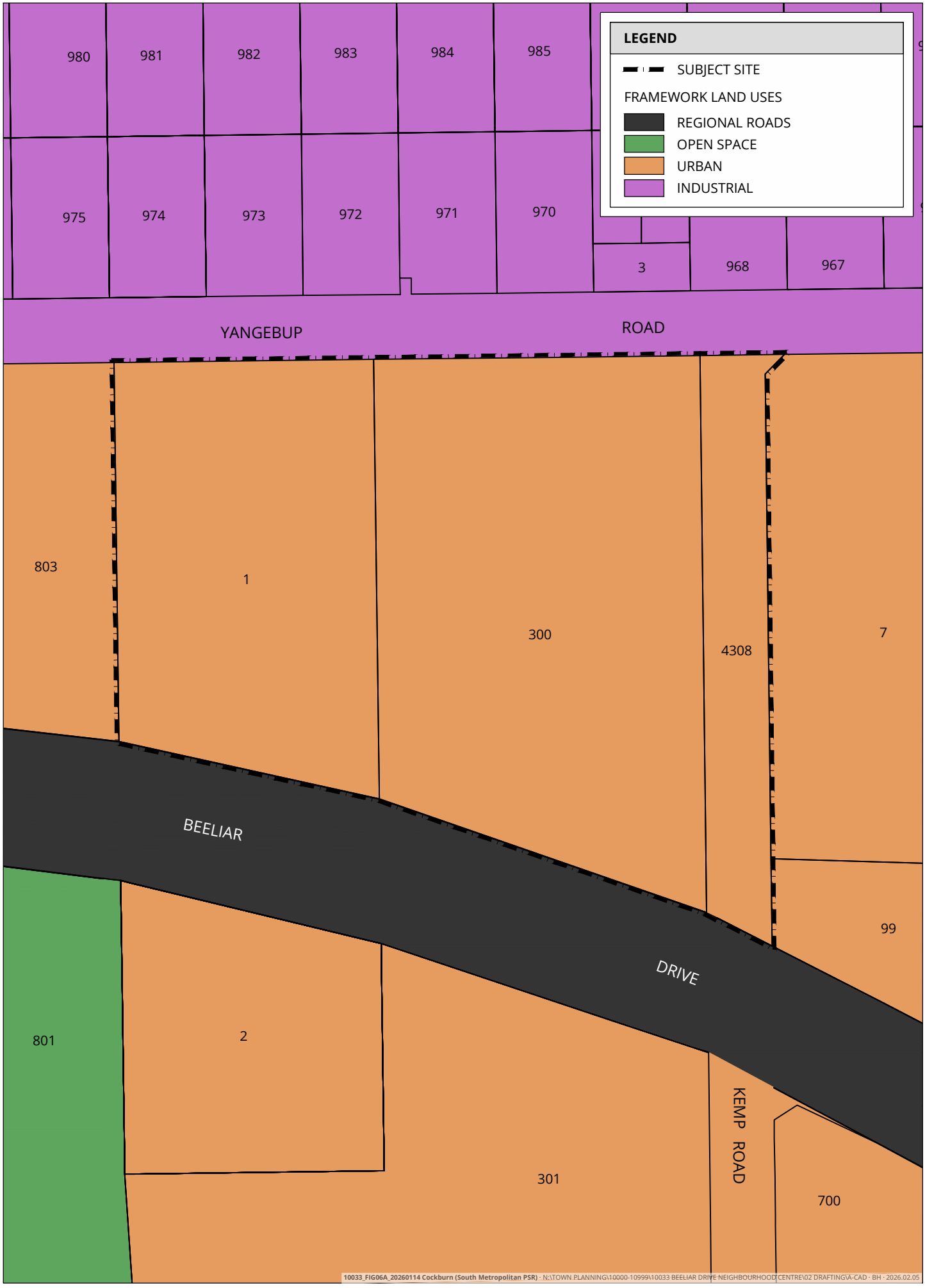

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FIGURE 6

SOUTH METROPOLITAN PEEL SUB-REGIONAL PLANNING FRAMEWORK

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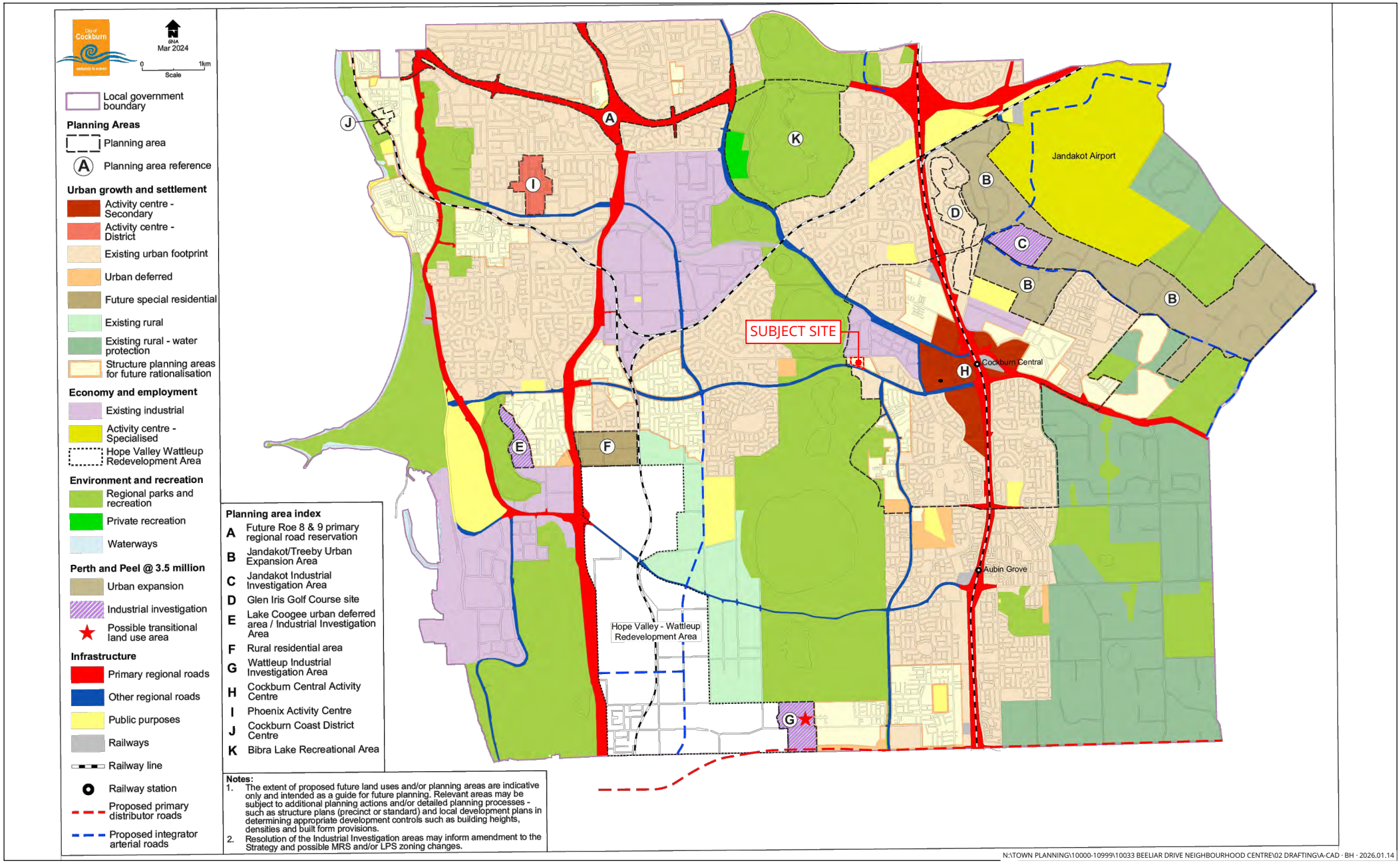

FIGURE 7

LOCAL PLANNING STRATEGY MAP

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5.1.4 Hammond Road North Structure Plan (2018)

The site forms part of the *Hammond Road North Structure Plan* (Structure Plan) which was endorsed by the WAPC on 18 November 2018 and acts as a guide for future subdivision and development. It identifies a mixture of 'Local Centre' and 'Mixed Business' zonings with an allocation of 8,100m^2 NLA of retail floorspace.

The Structure Plan designates a combination of 'Local Centre' zone and 'Mixed Business' zone over the site which broadly aligns with a preliminary development concept plan that was prepared at the time for the purposes of informing the Structure Plan. It depicts the majority of the 'Local Centre' zoning on the eastern side of the future north-south private access road (Kemp Road).

Refer **Figure 8 – Hammond Road North Structure Plan**

The current configuration of 'Local Centre' and 'Mixed Business' zoning unde the Structure Plan does not align with the proponent's preferred development configuration. On this basis, a request to amend the Structure Plan has been prepared and submitted to the City and is currently under assessment. The purpose of the Structure Plan amendment is to recognise the reconfigured future site layout and to reallocate the 'Local Centre' and the 'Mixed Business' zonings on the structure plan map. The Amendment does not propose any change to the retail floorspace allocation for the centre. It is however noted that the existing retail activities that adjoin Hammond Road will become 'non-conforming' uses upon adoption of the Structure Plan amendment.

Refer **Figure 9 – Hammond Road North Structure Plan Amendment Plan**

The Structure Plan requires that a Local Development Plan (LDP) is prepared for the Structure Plan Area to inform future subdivision and/or development stages. The enclosed Development Application covers a substantial component of the structure planning area and addresses those key matters such as building orientation, bulk and scale, setbacks, access points, pedestrian movement, street interface and the like that would otherwise be covered by a LDP. On this basis, the preparation and submission of an LDP as a precursor to the consideration of a formal Development Application is considered unnecessary in this instance.

5.2 State Planning Policies

5.2.1 State Planning Policy No. 3.7 – Planning in Bushfire Prone Areas

The site is mapped by the Department of Fire and Emergency Services (DFES) as being within a Bushfire Prone Area 2. Accordingly, the proposed development requires assessment against the objectives and requirements contained within the WAPC's *State Planning Policy No. 3.7 – Bushfire* (SPP 3.7) and accompanying *Planning for Bushfire Guidelines* (SPP 3.7 Guidelines). SPP 3.7 seeks to guide the implementation of effective risk-based land use planning and development to preserve life and reduce the impact of bushfire on property / infrastructure.

The Applicant has engaged WA Fire and Safety to undertake a Bushfire Attack Level (BAL) and prepare a Bushfire Management Plan (BMP) in relation to the site to advise on any bushfire management measures required to ensure compliance with SPP 3.7. The Assessment determined that the proposed configuration of buildings on the site will result in an appropriate balance between bushfire risk mitigation and vegetation retention, and that all applicable bushfire protection criteria can be satisfied, The Assessment also determined that post-development, all of the proposed commercial buildings can achieve a BAL rating of BAL-29 or less.

Refer to **Attachment 4 – Bushfire Management Plan**

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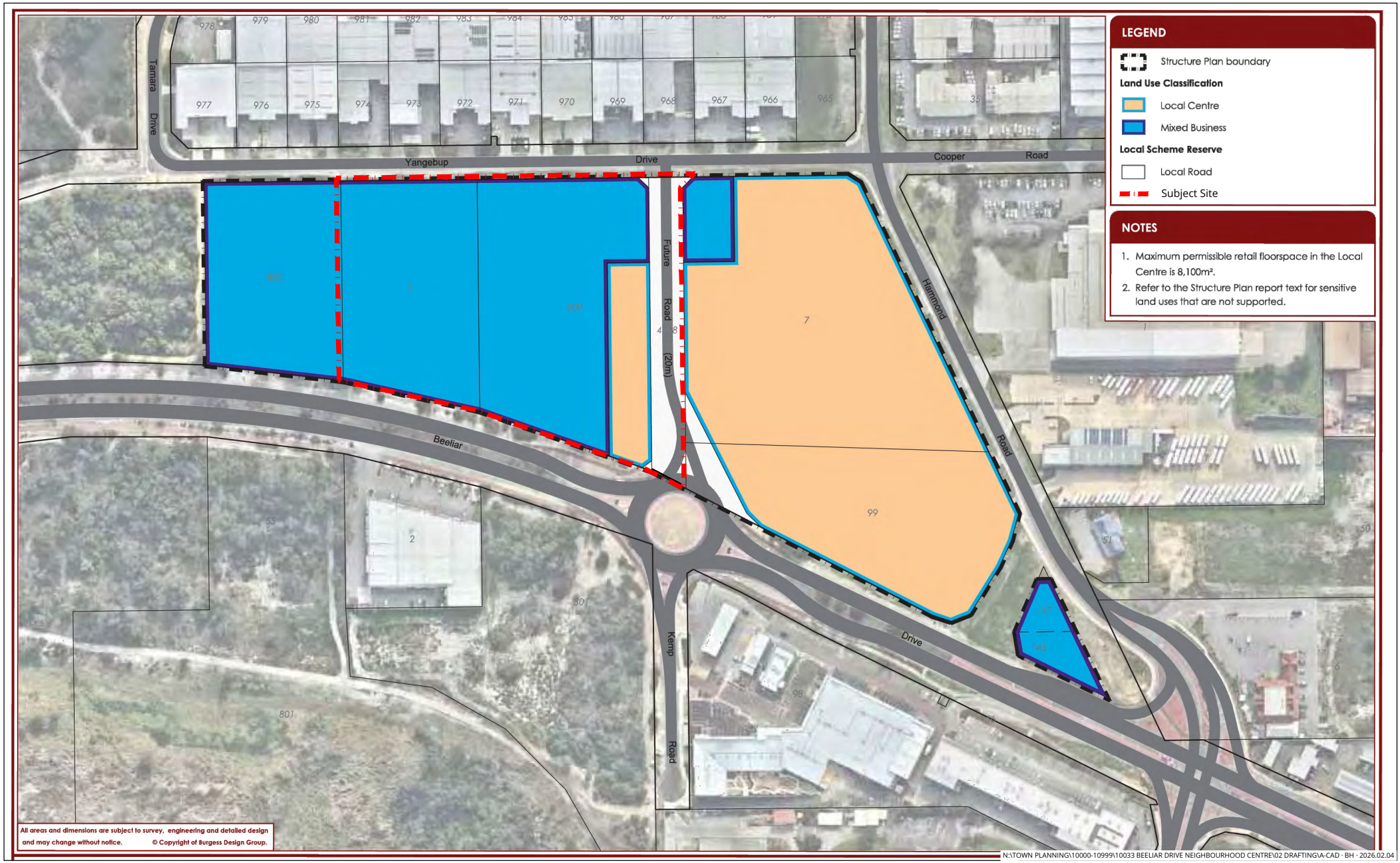

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FIGURE 8

HAMMOND ROAD NORTH STRUCTURE PLAN

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FIGURE 9

HAMMOND ROAD NORTH STRUCTURE PLAN AMENDMENT PLAN

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5.2.2 State Planning Policy No. 4.1 – Industrial Interface

State Planning Policy No. 4.1 – Industrial Interface (SPP 4.1) seeks to prevent conflict and encroachment between industrial and sensitive land uses by ensuring that planning decisions consider the locational constraints of land uses, the significant investments represented, and the current and future benefits and costs to communities when assessing proposals where land use conflict may exist or result.

The proposed development provides for a range of commercial (retail) and food and beverage offerings typically associated with a Neighbourhood Centre. These land uses provide a suitable land use interface for the adjoining industrial area to the north, and provides for an outcome which is consistent with the purpose and objectives of SPP 4.1.

5.2.3 State Planning Policy No. 4.2 – Activity Centres

The WAPC's *State Planning Policy No. 4.2 – Activity Centres for Perth and Peel* (SPP 4.2) and accompanying *Implementation Guidelines* set out the broad planning requirements for the planning and development of new activity centres and the redevelopment and renewal of existing centres in Perth and Peel. It particularly encourages development and employment growth to be focused within and around activity centres containing train stations in order to capitalise on the use of existing and planned infrastructure.

Economic consultants, Pracsys, have been engaged by the proponent to undertake a Retail Needs Assessment (RNA) and prepare a Net Benefit Test (NB Test) of the proposed development in accordance with SPP 4.2, updating the previous Retail Sustainability Assessment conducted by Taktics4 which was prepared to support the Hammond Road North Structure Plan (2018). The RNA and NB Test considered demand and supply dynamics within the trade area, identified the level of need for each land use, and considered the potential impact of the proposed development on the sustainability of the activity centres hierarchy. It also considered whether the proposed development will deliver net benefits to the community.

Key findings from the RNA and NB Test are summarised below:

- The Hammond Road North Structure Plan allows for a total floorspace of 8,100m^2 NLA for 'Shop' uses. The proposed development increases the total 'Shop' floorspace for the Centre to approximately 7,710m^2 (inclusive of the existing retail floorspace in the Tony Ale's development) with the NLA being less again hence being well within the Structure Plan allowance.
- The proposed uses align closely with the suggested mix of uses set out in the 2018 Taktics4 Assessment.
- The proposed development will provide easy access to a mainline major retailer that will enable residents and workers to conduct their daily and weekly shopping needs. There is currently a gap in the provision of retail uses in the catchment, and residents directly west of Yangebup Lake are separated from surrounding neighbourhood centres by dual-carriageway roads, a rail line and the Lake.
- The proposed development will contribute to employment by providing local job opportunities in retail and other activity centre industries. It is estimated that the proposed development will support approximately 104 full time jobs in the construction phase, comprising 29 direct and 75 indirect employment opportunities. Once operational, the proposed development is estimated to support approximately 255 full time lower-skilled jobs suited to younger adults.
- The total direct output from the retail component is estimated to be approximately $102 million annually in the local area, and the overall total output in the greater economy is estimated at $300 million.

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- The proposed development will reduce the number of vehicle trips and the distance travelled to access retail goods and services in the catchment. This will be achieved across different users, including residents and workers in the surrounding mixed business precincts.
- The proposed development is expected to deliver positive benefits to the surrounding community by addressing the under provision of access to retail goods and services within the catchment, providing employment, reducing travel time, increasing the quality of life for residents and workers and encouraging healthy competition in the area.
- Having a mix of retail uses at the Centre will support multi-purpose trips, which is an objective of SPP 4.2.
- The proposed development will not affect the viability of surrounding centres, both current and planned, or the vibrancy of the activity centre hierarchy.

The findings of the RNA and NB Test demonstrate that the proposed development is consistent with the objectives and provisions of SPP 4.2 and aligns with the Implementation Guidelines.

Refer **Attachment 5 – Retail Needs Assessment and Net Benefit Test**

5.2.4 State Planning Policy No. 7.0 – Design of the Built Environment

The WAPC's *State Planning Policy 7.0 – Design of the Built Environment* (SPP 7.0) provides the broad framework for the design of the built environment across Western Australia and establishes ten (10) key principles for good design. **Table 5** provides a summary of the proposed development's response to these design principles.

Design Principle	Design Statement
Context and Character Good design responds to and enhances the distinctive characteristics of the local area, contributing to a sense of place.	The site is located between Yangebup wetlands and the historic Tony Ale's fresh foods grocer. The proposed development aims to bridge these two distinguishable features through built form and landscaping. Research undertaken as part of initial design investigations revealed that the current owners' grandfather planted two Olive trees on the current home block when the Alessandrini family first arrived from Italy. These two trees are still surviving. The family have embraced the idea of an avenue of Olive trees alongside the new north-south private road and have endorsed the idea of naming this road "Alessandrini Drive" in recognition of the family's connection to the land. Master planning for the proposed development focused on creating functional, usable and friendly public spaces through the creation of pocket parks and integrating landscaping to soften and activate the edges. This is further emphasised in the efforts to retain six (6) large existing trees on site.
Landscape Quality Good design recognises that together landscape and buildings operate as an integrated and sustainable system, within a broader ecological context.	Building placement and landscaping within the proposed development have focused on the retention of the six (6) large existing trees. The Landscape Architect and Arborist have worked closely with the project Architects to ensure suitable clearances to these trees are provided to protect their continued health. An avenue of non-fruiting olive trees is proposed along the north-south road (Alessandrini Drive) in recognition of the site's Italian heritage whilst providing shade to the pedestrian paths.

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Design Principle	Design Statement
	The food and beverage precinct along Alessandrini Drive wraps around two of the existing trees, incorporating them into the alfresco zone. Pocket parks and shaded 'pause zones' throughout the site aim to give refuge for patrons as they move through the centre with some having a particular orientation towards the existing large trees. Low level landscape treatments respond to their environment, avoiding pedestrian and vehicular desired lines. The strategic location of walls, furniture and larger planters allow planted areas that can be easily maintained to ensure they remain in perpetuity.
Built Form and Scale Good design ensures that the massing and height of the development is appropriate to its setting and successfully negotiates between existing built form and the intended future character of the local area.	The proposed development is designed to be low scale, particularly in the areas where customers and users experience the places and spaces around its edges. Larger retail outlets are denoted by their higher parapets, glazing height and signage opportunities. The smaller convenience retailers are denoted with a lower parapet, differing façade treatment and lower awning height. The food and beverage zone is designed as a point of difference with a distinct façade treatment, and awning designed for year round comfort with consideration given to lighting, cooling and heating needs.
Functionality and Built Quality Good design meets the needs of users efficiently and effectively, balancing functional requirements to perform well and deliver optimum benefit over the full life cycle.	The proposed development is designed to feel 'uniquely crafted', whilst meeting all of its functional needs, both for business operators and for customers. Consideration is given to minimisation of recurrent maintenance through the use of pre-finished or 'natural' materials.
Sustainability Good design optimises the sustainability of the built environment, delivering positive environmental, social and economic outcomes.	The development embraces various means of delivering an environmentally sustainable suite of buildings. There is no air-conditioned mall and the heavily landscaped public realm is all 'open air', with access to sun and cooling breezes. An ESD Report has been prepared in support of the proposed development and is enclosed at **Attachment 6**. The following sustainability initiatives are proposed as part of the development: - Large scale on-site solar photovoltaic (PV) systems - Electrification – hot water, space heating and cooking - Water efficient fittings and fixtures - LED lighting - Waste Management Plan - Materials with low carbon emissions and recycled content will be considered - Finishes with low VOC and formaldehyde content will be considered - Roofing materials with a Solar Reflective Index of less than 64 - Glazing and sunshades to buildings

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Design Principle	Design Statement
	- Water efficient landscaping - End-of-trip facilities and bicycle parking to promote sustainable transport options
Amenity Good design provides successful places that offer a variety of uses and activities while optimising internal and external amenity for occupants, visitors and neighbours, providing environments that are comfortable, productive and healthy.	The proposed development has been designed to offer amenity in various forms. The suite of offerings create local amenity in themselves, with convenient and ample parking. Public parklets are distributed throughout the site enabling an urban space that is inviting, well activated and of a high quality.
Legibility Good design results in buildings and places that are legible, with clear connections and easily identifiable elements to help people find their way around.	There is clear legibility as regards to how to access and use the various retail and other offerings. Materiality, varied parapet heights, public art and clear signage zones assist in identifying uses and support wayfinding. There are sensible and obvious pedestrian connections that offer safe and direct access into and through the development.
Safety Good design optimises safety and security, minimising the risk of personal harm and supporting safe behaviour and use.	The proposed development provides many opportunities for passive surveillance through lining the edges of the built form with glazing and distributed public parklets throughout the site. There are also sensible and obvious pedestrian connections that offer safe and direct access into and through the development.
Community Good design responds to local community needs as well as the wider social context, providing environments that support a diverse range of people that facilitate social interaction.	The proposed uses are community-oriented and intended to be widely enjoyed, while also generating employment opportunities. The built form reinforces these community-focused uses by facilitating social interaction. Food and beverage tenancies are complemented by substantial surrounding alfresco areas, while the main development is edged with parklets that encourage informal gathering and provide places of refuge within the landscaped setting. Public art opportunities, including sculptural and mural elements, further contribute to a shared sense of community identity.
Aesthetics Good design is the product of a skilled, judicious design process that results in attractive and inviting buildings and places that engage the senses.	The design aesthetic of the development creates a backdrop to the landscaping and existing trees. Palettes have been chosen to tie into the materiality of the suburbs whilst adhering to the practicality of its uses. In this way, the proposed development creates an approachable and engaging built form that will contribute to the overall sense of place.

Table 5: Response to SPP 7.0 Design Principles

5.3 Operational Policies

5.3.1 Draft Operational Policy No. 4.3 – Planning for High Pressure Gas Pipelines

The site is located within 300m of a high-pressure gas pipeline which is positioned within Yangebup Road to the immediate north. The site is therefore within the 'trigger distance' for assessment under the WAPC's *Draft Development Control Policy No. 4.3 – Planning for High-Pressure Gas Pipeline* (Draft DC 4.3).

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Draft DC 4.3 provides guidance for planning near high-pressure gas pipelines across all levels of the planning system and seeks to ensure that people and development in the vicinity of a high-pressure gas pipelines are not subject to an unacceptable risk from that infrastructure. The Applicant will be required to consult with the pipeline operator (ATCO) prior to construction works commencing in order to identify whether any risk mitigation measures are required to ensure that the proposed development does not result in an increased risk to the integrity of the pipeline or the safety of people.

Refer to **Figure 10 - High Pressure Gas Pipeline**

5.3.2 Development Control Policy No. 5.1 – Vehicular Access

Development Control Policy No. 5.1 – Regional Roads (Vehicular Access) (DC 5.1) was adopted by the WAPC in 1998 and addresses matters relating to the control of development adjacent to regional roads. It seeks to minimise the creation of new driveways on regional roads and rationalise existing access arrangements. The objectives and provisions set out in DC 5.1 are relevant to the proposed development given the site adjoins a Regional Road (Beeliar Drive).

The proposed development directs vehicular access from Beeliar Drive into the site via an existing roundabout located north of the Beeliar Drive and Kemp Street intersection. In accordance with the provisions of DC 5.1, no direct vehicular access between Beeliar Drive and the site is proposed.

5.4 Local Planning Policies

5.4.1 Noise Attenuation

The City's *Local Planning Policy No. 1.12 – Noise Attenuation* (LPP 1.12) applies to commercial developments located in proximity to residential areas where potential noise and amenity impacts may be generated. LPP 1.12 requires that for commercial or industrial development, an Acoustic Report is required to demonstrate that the requirements of the *Environmental Protection (Noise) Regulations 1997* (Noise Regulations) can be achieved and that there will be no adverse amenity impact upon any nearby noise sensitive premises.

Whilst the proposed development is located within an area characterised by industrial, commercial and community uses, there are three (3) existing residential dwellings located in two areas to the east of the site at No. 450 Yangebup and No. 88 Hammond Road. Given the site's proximity to existing residential land uses, the Applicant engaged acoustic consultants E-Lab Consulting to undertake an acoustic assessment of the proposed development to identify any potential areas of non-compliance and recommend mitigation measures to be incorporated into the building design (where required).

Noise sources considered as part of this assessment include the following:

- Loading dock and truck movements;
- Car activities in the drive-through;
- Fuel station activities (fuel tanker, fuel bowers, car movements, car idling); and
- Mechanical plant.

Noise emissions from the proposed development were assessed to comply with the requirements of the Noise Regulations at all times (daytime, evening and night-time).

Refer to **Attachment 7 – Acoustic Assessment**

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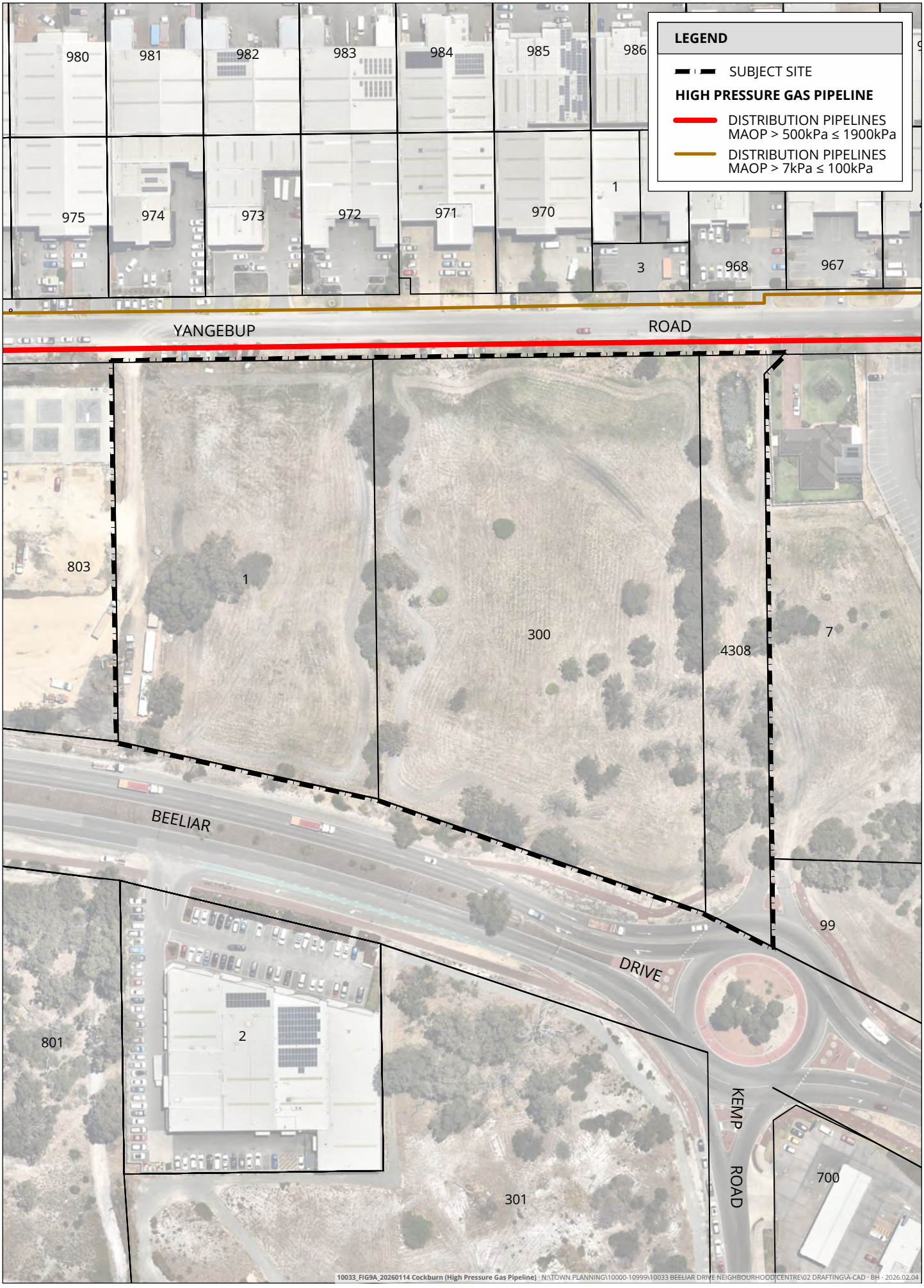

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FIGURE 10

HIGH PRESSURE GAS PIPELINE

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5.4.2 Waste Management

The City's *Local Planning Policy No. 1.14 – Waste Management* (LPP 1.14) applies to various types of development including those of a non-residential nature where waste is generated (eg. commercial, retail, and food and beverage establishments). LPP 1.14 requires a Waste Management Plan (WMP) to the submitted and approved by the City as part of the Development Application process.

A WMP has been prepared by Talis Consultants in relation to the proposed development and addresses matters including waste minimisation, the location and size of bin stores, the location and access arrangements for on-site collection, estimates of waste volumes, the method and timing of collection, communication with tenants and/or cleaning contractors, and implementation and review. Key findings and recommendations from the WMP are summarised below:

- Tenancy 1, Tenancy 2, Tenancy 3 and Tenancy 4 include their own back-of-house area and will manage their waste through their own internal processes governed by national contracts. Each of these operations will utilise their own independent private waste contractor.
- A private contractor will service the balance of the proposed development on-site, directly from the bin storage areas. The private contractor's waste collection vehicle will enter and exit the site in forward gear.
- Waste materials generated within the centre will be collected in the bins located in the four (4) designated Bin Storage Areas identified on the development proposal plans.
- Each Bin Storage Area has been cited and designed to accommodate the volume of waste expected to be generated by each individual tenancy within that building and will align with the requirements of the City's Health Laws and consider noise, odour, hygiene, vermin, security, health and safety and the environment.
- Adequate space may be allocated throughout the site for the placement of cabinets/containers for the collection and storage of bulk and specialty wastes that are unable to be disposed of within the bins located in the Bin Storage Areas. These may include items such as batteries and e-waste, white goods/appliances, used cooking oil, cleaning chemicals and commercial light globes.
- Bin numbers and storage space within the Bin Storage Areas will be monitored by centre management to ensure that the number of bins and collection frequency is sufficient.
- To promote positive recycling behaviour and maximise diversion from landfill, internal bins will be available to each tenancy for the source separation of refuse and recycling.
- These internal bins will be collected by the staff/cleaners and transferred to the respective Bin Storage Area for consolidation into the appropriate bins. All bins will be colour coded and labelled in accordance with Australian Standards (AS 4123.7) to assist staff/cleaners to dispose of their separate waste materials in the correct bins.
- The private contractor will collect refuse and recyclables twice weekly utilising a rear loader waste collection vehicle and will enter and exit the site in forward gear.
- Waste collection will be conducted outside of normal operating hours to mitigate impacts on visitors and local traffic movements during peak traffic hour.
- Noise from waste collections vehicles will be required to comply with the *Environmental Protection (Noise) Regulations 1997* and should not service the site before 7.00am or after 7.00pm Monday to Saturday, or before 9.00am or after 7.00pm on Sundays and Public Holidays.

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- The WMP will form part of the building management agreement and will continue to be applied in perpetuity across the life of the development.
- Centre management will oversee all relevant aspects of waste management at the site.

The WMP demonstrates that the proposed development has been designed to adequately cater for the anticipated volume of waste to be generated, provide adequately sized Bin Storage Areas and allow for the efficient collection of bins by appropriate waste collection vehicles.

Refer to **Attachment 8 – Waste Management Plan**

5.4.3 Commercial Development

The City's *Local Planning Policy No. 1.3 - Commercial Development* (LPP 3.1) applies to the planning and development of specific commercial land uses within the City including childcare premises, health studios, service stations and motor vehicle wash facilities. Given the proposed development includes provision for a Service Station, the provisions of LPP 3.1 have been taken into consideration. **Table 6** below provides a summary of the proposed development's compliance with the relevant provisions of LPP 3.1.

Policy Requirement	Compliant (Y/N)
Design Guidelines	
(a) The design and siting of development should consider the siting, setback, design and scale of adjacent development to ensure it does not dominate or detract from the character of the streetscape.	Y The proposed Service Station is suitably setback from Beeliar Drive
(b) Glazing should be designed to maximise passive surveillance opportunities of the street and/or public realm.	Y
(c) Blank walls fronting the street and/or the public realm should be minimised where possible, and where blank walls cannot be avoided, their design contribute to a safe and attractive street environment.	Y
(d) Opportunities for landscaping on site should be maximised, and should be designed to: (i) soften the appearance of the development; (ii) enhance the streetscape, and (iii) improve the pedestrian environment.	Y Landscaping is proposed in an around the proposed Service Station
(e) Where opportunities for street trees adjacent to the site are restricted, street trees should be identified as an alternative within the landscaping strip on the site to ensure that the current and future streetscape and pedestrian environment (both current and future) are not negatively impacted by the development.	Y Landscaping adjoining the proposed Service Station incorporates the retention of an existing tree
(f) Under the Government Sewerage Policy 2019, all motor vehicle wash facilities are expected to be connected to the reticulated sewerage network.	Noted
(g) Service station and/or motor vehicle wash facilities proposals should consider the guidance provided within the Department of Water and Environmental Regulation's Water Quality Protection Note 49: Service Stations.	Noted

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Policy Requirement	Compliant (Y/N)
Traffic Management	
(a) Service station and/or motor vehicle wash proposals are required to be accompanied with a Traffic Impact Assessment prepared by a suitably qualified traffic consultant,	Y (Refer to TIA at **Attachment 10**)
(b) Service station and/or motor vehicle wash proposals may be required to be accompanied by a parking management plan prepared by a suitably qualified consultant where car parking for the site and the surrounding area is considered to be problematic.	Noted
(c) Any service station and/or motor vehicle wash proposal located adjacent (or likely to have an impact on a) State Road, is to be referred to Main Roads WA for advice prior to determination	Noted No direct vehicle access is proposed between the Service Station and Beeliar Drive
Residential Amenity	
(a) Service station and/or motor vehicle wash proposals abutting residential development shall be designed to minimise impact on adjacent residents and shall address; noise, odour, light, traffic, visual amenity, safety and any other matter that may detract from the amenity of the residential area.	N/A The proposed Service Station does not adjoin any existing or proposed residential land uses
(b) Service station and/or motor vehicle wash proposals may require the inclusion of an acoustic assessment or noise management plan prepared by a suitably qualified acoustic consultant, a light management plan prepared by a suitably qualified consultant and/or a site management plan addressing odour control.	Y (Refer to Acoustic Assessment at **Attachment 7**)
(c) The location of service station and/or motor vehicle wash proposals shall generally be guided by the prescribed buffer distances set out under the *Environmental Protection Authority Separation Distances between Industrial and Sensitive Land Uses* (GS 3).	Y
(d) Self-service motor vehicle wash developments should generally not be supported where proposed on land which abuts residentially zoned land.	N/A
(e) Service station and/or motor vehicle wash proposals should be accompanied with an operational management plan (or similar).	Noted An Operational Management Plan has not been prepared but can be conditioned on approval if necessary
Service Stations and/or Motor Vehicle Wash Proposals in Activity Centres	
(a) Service station and/or motor vehicle wash proposals in activity centres will be deemed to be 'significant development applications' in accordance with the City's Local Commercial and Activity Centre Strategy due to their potential to have a significant impact on an activity centre's overall performance.	Noted
(b) Service station and/or motor vehicle wash proposals in activity centres should demonstrate that the development does not reduce the performance of the activity centre through detrimental impacts on any of the assessment areas (as relevant for the level in the activity centre hierarchy) in accordance with the City's Local Commercial and Activity Centre Strategy.	Y (Refer to Retail Needs Assessment and Net Benefit Test at **Attachment 5**)
(c) Service station and/or motor vehicle wash developments proposed to operate 24 hours per day, 7 days per week in the Local Centre Zone will generally not be supported.	N/A

Table 6: Summary of Compliance with LPP 3.1

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5.4.4 Signs and Advertising

The City's *Local Planning Policy No. 3.7 – Signs and Advertising* (LPP 3.7) aims to ensure that the display of signs and advertisements on properties does not adversely impact upon the amenity of the area while providing appropriate exposure of activities or services. The development proposal plans identify the general size, location and number of signs proposed, demonstrating that signage has been carefully integrated into the overall development.

Signage zones are shown on all elevation plans to indicate the location and type of signage expected. Specific tenant signage within each of these nominated zones will be facilitated through separate application by tenants to the City of Cockburn. All proposed signage within the site will need to be assessed against the provisions of LPP 3.7.

5.4.5 Vehicle Access

The City's *Local Planning Policy No. 5.6 – Vehicle Access* (LPP 5.6) applies to development adjacent to major, arterial, distributor or important roads. Given the site's location adjoining Beeliar Drive, the provisions of LPP 5.6 have been taken into consideration. The purpose of LPP 5.6 is to ensure a coordinated approach to vehicle access is provided in these situations in order to provide for the safe and efficient movement of vehicles, public transport users and pedestrians.

LPP 5.6 sets out the City's requirements in relation to a number of traffic related matters, including the location, design and number of crossovers. There is a general presumption under LPP 5.6 against the creation of new vehicle crossovers to the primary frontage of a lot where alternate access is, or could be made available from a secondary road. In accordance with the provisions of LPP 5.6, no new crossovers are proposed to the Beeliar Drive frontage of the site, with all vehicle access directed to the roundabout at Kemp Road or via Yangebup Road along the site's northern boundary.

The proposed development has also been designed in a manner that ensures all vehicle movements to and from the site are undertaken in a forward direction and comply with the City of Cockburn's car parking and on-site vehicle circulation requirements.

It is also relevant to note that the development site forms part of a larger commercial node within which there is a desire to maintain permeable access arrangements. Alessandrini Drive will be an accessway on private land linking Beeliar Drive with Yangebup Road but with an access easement allowing full and unencumbered access for the public, the City and the land to the east (Lots 7 and 99). This will ensure that any future redevelopment of the land to the east can be fully integrated with development on the subject site. The development proposal creates an internal roundabout for vehicular east-west movement however additional access to the eastern land would also be possible subject to appropriate traffic modelling and development approval.

5.4.6 Public Art

The City of Cockburn's *Local Planning Policy 5.13 – Percent for Art* (LPP 5.13) aims to develop a collection of distinct and diverse public artworks and increase awareness of public art as a significant cultural asset, by requiring the delivery of artworks through significant development proposals. It requires commercial development proposals with a value exceeding $1 million (exclusive of GST) to set aside a minimum 1% of the total project cost (up to a maximum value of $250,000) for the development of artworks.

Given the construction value of the proposed development, a 1% public art contribution will be required as a condition of development approval. The public art concept for the site will be developed following approval of the Application and in accordance with any conditional requirements.

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5.5 Zones and Reservations

5.5.1 Metropolitan Region Scheme

The site is zoned 'Urban' under the provisions of the *Metropolitan Region Scheme* (MRS) and abuts an 'Other Regional Road' reservation (Beeliar Drive). The purpose of the 'Urban' Zone is to:

> *To provide for residential development and associated local employment, recreation and open space, shopping, schools and other community facilities*

The land to the south, east and west of the site is zoned 'Urban' and the land to the immediate north is zoned 'Industrial'.

The proposed development is consistent with its zoning under the MRS and is appropriate having regard to the zoning/reservations on adjoining land.

Refer to **Figure 11 – MRS Zoning**

5.5.2 City of Cockburn Local Planning Scheme No. 3

The site is zoned 'Development' under the provisions of TPS 3. The Objective of the 'Development' Zone is:

> *To provide for future residential, industrial or commercial development to be guided by a comprehensive Structure Plan prepared under the Scheme*

The land to the immediate east and west of the site is similarly zoned 'Development' under TPS3 and the land to the north and south is zoned 'Mixed Business'.

Refer **Figure 12 – LPS3 Zoning**

The site forms part of a 'Development Area' under TPS3 known as *Development Area 35 – Hammond Road North* (DA35) which encompasses all of the land north of Beeliar Drive bound by Hamond Road, Yangebup Road and the Beeliar Regional Parkland. Development Areas are subject to specific provisions that apply in addition to the general provisions of TPS3 and any provision relating to the 'Development' Zone.

The following specific provisions apply to DA35:

- An approved Structure Plan together with all approved amendments shall be given due regard in the assessment of applications for subdivision, land use and development in accordance with clause 27(1) of the Deemed Provisions.
- The Structure Plan is to provide for future commercial, retail and mixed business development and compatible uses incidental thereto. The extent of such uses will be subject to the preparation and approval by Council of an economic/retail impact assessment prepared in accordance with SPP 4.2.
- Local Development Plans and/or Design Guidelines shall be prepared and approved by Council to guide and assess development.
- The adopted Local Structure Plan must be accompanied by a comprehensive traffic assessment, including a Vehicle Access and Parking Strategy.
- The adopted Local Structure Plan must address and resolve the implementation and land swap arrangements as contained in the legal agreement and contract of sale between the proponent and City of Cockburn, signed 22 January 2001.

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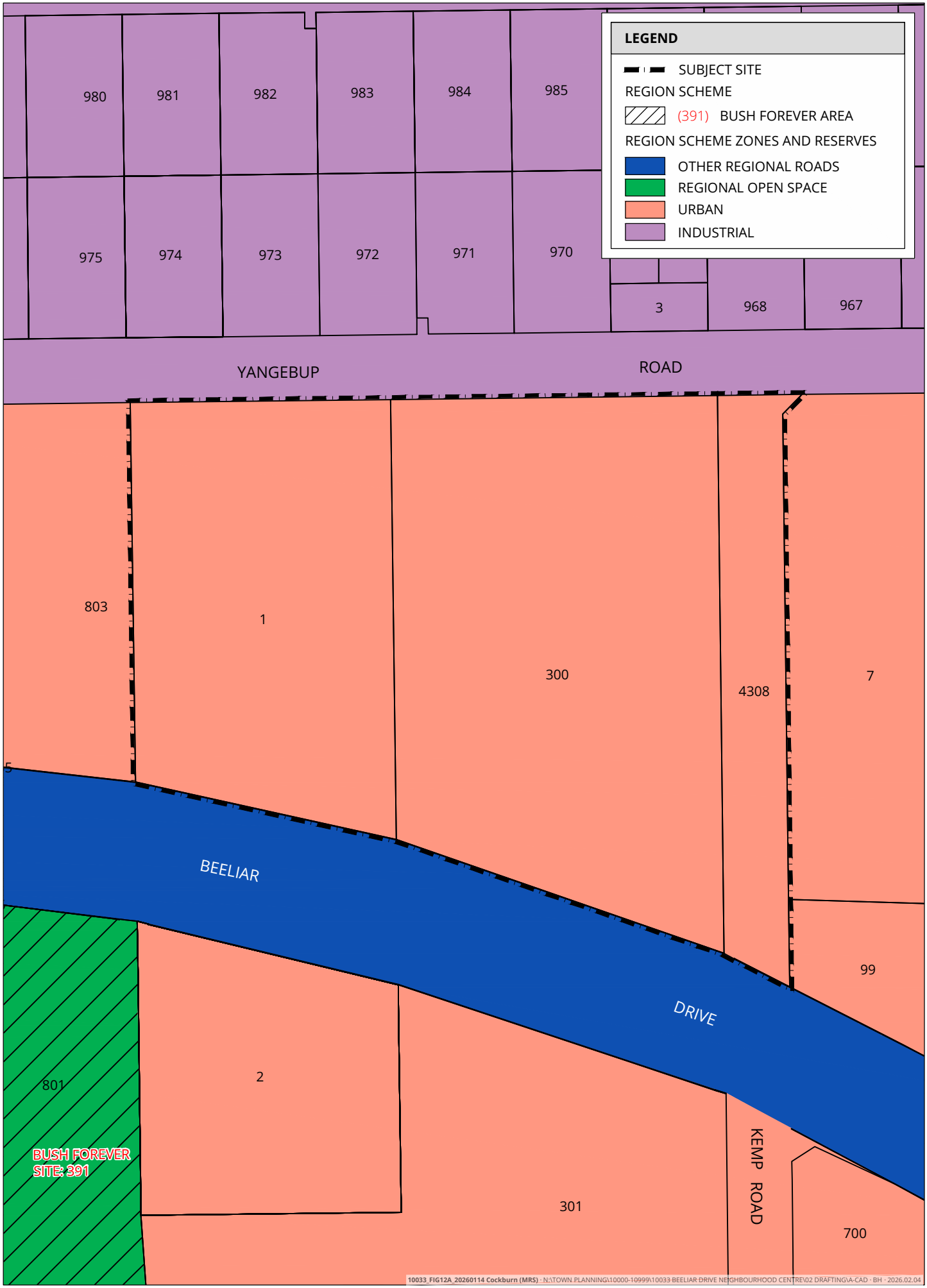

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FIGURE 11

METROPOLITAN REGION SCHEME ZONING

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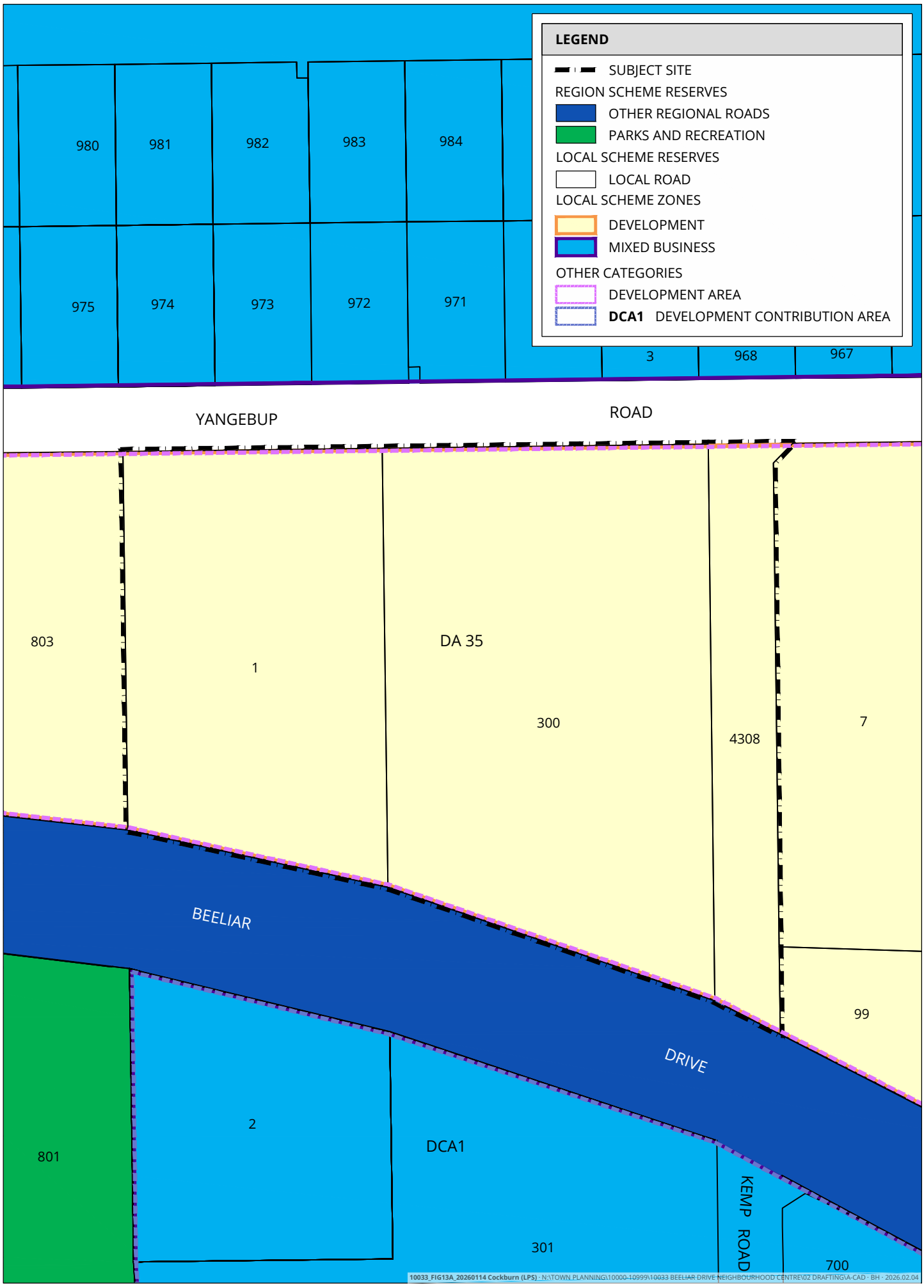

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FIGURE 12

CITY OF COCKBURN TOWN PLANNING SCHEME NO. 3 ZONING

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In relation to Item 1, it is noted that a Structure Plan (known as the Hammond Road North Structure Plan) has been prepared and adopted for DA 35. The proposed development is largely consistent with the Structure Plan except to the extent that the 'Local Centre' and 'Mixed Business' designations identified on the Structure Plan Map do not accurately reflect the form of development proposed. As discussed at section 5.1.4 of this report, an amendment to modify the Structure Plan has been submitted to the City and is currently under assessment.

In relation to Item 2, the proposed development is supported by a Retail Needs Assessment and a Net Benefit Test assessment which demonstrate that the development satisfies the objectives and provisions of SPP 4.2.

A Local Development Plan (LDP) has not been prepared in relation to the site and is considered unnecessary in this instance given the enclosed Development Application essentially covers the majority of the structure planning area in a clearly defined cell and addresses those key matters such as building orientation, bulk and scale, setbacks, access points, pedestrian movement, street interface and the like that would otherwise be covered by a LDP.

In relation to Item 4, it is noted that the Structure Plan was informed by a Traffic Assessment at the time. The proposed development is supported by a subsequent and further Traffic Impact Assessment (TIA) which demonstrates that the proposal can be accommodated within the existing and future transport network.

The matters set out in Item 5 are not relevant to the site or the proposed development. It is understood that these matters have been resolved and that adjustments to the land title areas to recognise the Beeliar Drive roundabout, are currently being progressed.

5.5.3 City of Cockburn Local Planning Scheme Review

The City of Cockburn has prepared a draft new local planning scheme (draft LPS13) to replace existing TPS3. Draft LPS13 is currently with the WAPC for examination and approval to advertise.

Draft LPS13 proposes an 'Urban Development' zoning over the site and designates the land as forming part of Special Control Area No. 15 (SCA 15). The provisions set out under draft LPS13 in relation to SCA15 are broadly consistent with those that currently apply under the DA35 provisions of existing TPS3 except that draft LPS13 describes the objectives of SCA15 as follows:

- A precinct that incorporates compatible retail, and service commercial land uses at a scale that is consistent with SPP 4.23.
- Safe and efficient vehicle movements, access and parking arrangements.

Refer **Figure 13 – Draft LPS13 Zoning**

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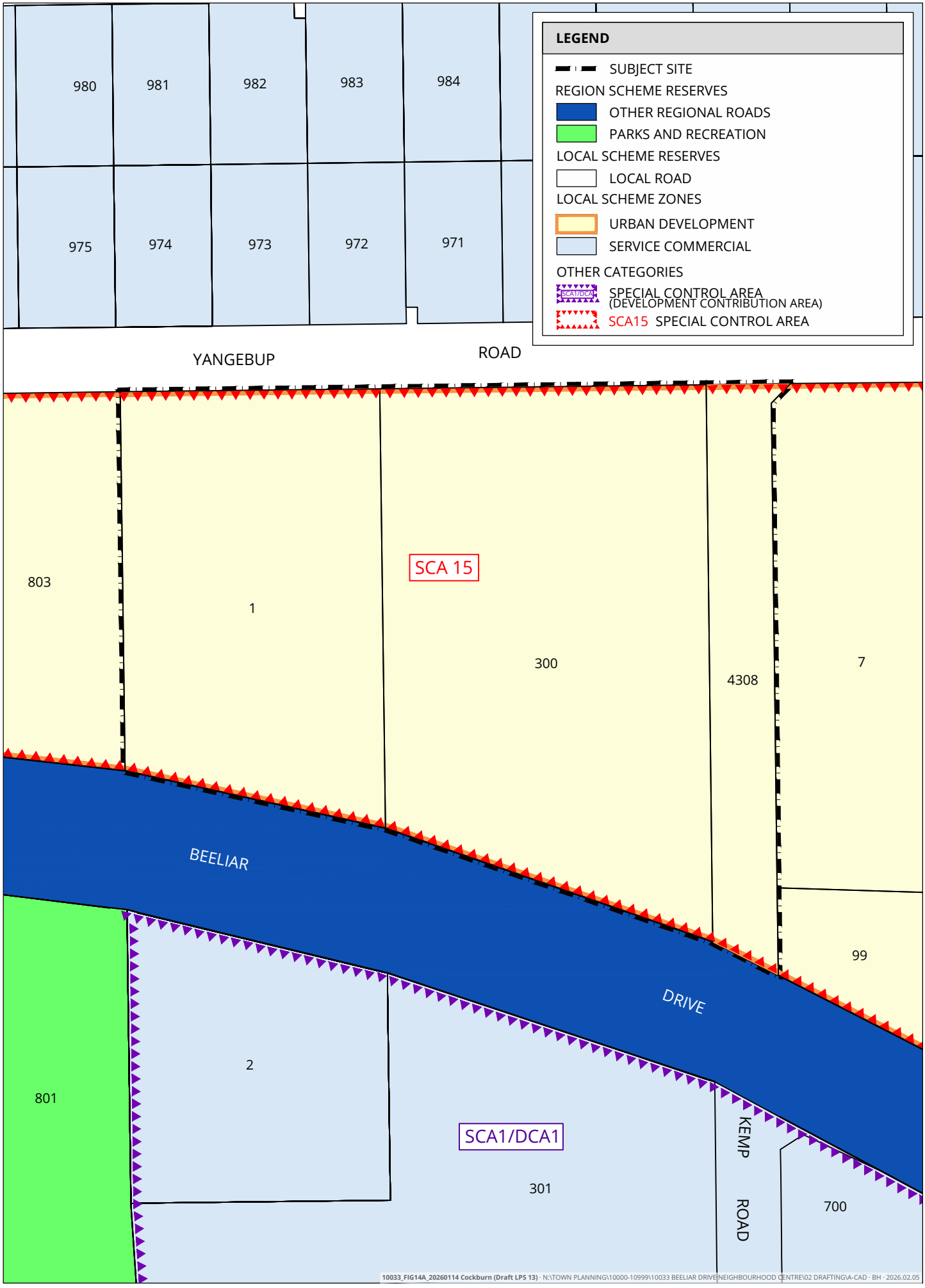

FIGURE 13

CITY OF COCKBURN DRAFT LOCAL PLANNING SCHEME NO. 13 ZONING

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5.6 Land Use Permissibility

In accordance with the provisions of TPS3, the use and development of land within the 'Development' Zone is to be guided by an approved Structure Plan. The zones and reserves designated under any approved Structure Plan apply to the land within it as if the zones and reserves were incorporated into TPS3.

As discussed at section 5.1.4 of this report, the site is located within the Hammond Road North Structure Plan Area. The site is predominantly designated as 'Mixed Business' on the Structure Plan Map and partially identified as 'Local Centre' (refer to Figure 8). An Amendment to reallocate the 'Local Centre' and the 'Mixed Business' zonings on the Structure Plan Map to align with the form of development proposed by the enclosed Application is currently under assessment by the City. The proposed Amendment, if supported, will result in the area containing the site that is the subject t of this application as being identified as 'Local Centre' on the Structure Plan Map (refer to Figure 9).

The provisions contained within TPS3 relating to the 'Local Centre' Zone have therefore been applied to the site for the purposes of determining land use permissibility. The objectives of Local Centre Zone are as follows:

> *Local Centre:* *To provide for convenience retailing, local offices, health, welfare and community facilities which serve the local community, consistent with the local - serving role of the centre*

The proposed development includes a total of 16 tenancies, 13 of which are located within the 'main' shopping centre in the northern part of the site and will provide a variety of retail, service and food and beverage offerings. The three remaining tenancies comprise the Service Station and Drive-Thru Fast Food Outlets which are positioned towards the Beeliar Drive frontage of the site. Subject to approval of the proposed Structure Plan Amendment, the uses will be located within the 'Local Centre' portion of the Structure Plan.

The permissibility of each proposed land use class under TPS3 is summarised in **Table 7** below:

Use Class	Permissibility under TPS3 (Local Centre Zone)
Fast Food Outlet	D
Restaurant	A
Consulting Rooms	D
Shop	P
Service Station	A
Liquor Store	Use Not Listed

Table 7: Land Use Permissibility (TPS3)

All of the abovementioned land uses sought by this Application are capable of approval under TPS3.

An assessment of land use permissibility under the provisions of draft LPS13 has also been undertaken and is summarised in **Table 8** below. This assessment has been undertaken on the basis of the 'unadvertised' version of draft LPS13 which is currently under assessment by the WAPC.

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Use Class	Permissibility under LPS13 (Local Centre Zone)
Consulting Rooms	D
Fast Food Outlet – Drive Thru	A
Liquor Store – Small	A
Motor Vehicle Wash	A
Restaurant / Cafe	D
Service Station	A
Shop	P

Table 8: Land Use Permissibility (draft LPS13)

All of the abovementioned land uses sought by this Application, are capable of approval under draft LPS13. Given draft LPS13 is yet to be advertised, or receive WAPC Approval to be advertised, it would not be considered a 'seriously entertained planning proposal' within the framework of planning documents relevant to the site.

5.7 Development Standards

Various development standards apply to the site specifically and/or to the form of development proposed. Some of these standards are contained within TPS3 whilst others are set out in the applicable Strutcure Plan or under the City's local planning policy framework. Each of the applicable development standards are addressed separately below.

5.7.1 Building Setbacks

There are no specific building setback standards under TPS3 that apply to the 'Local Centre' Zones and no specific setback requirements under the Hammond Road North Structure Plan. General guidance is provided at Clause 4.9.1 of TPS3 which requires:

- Commercial buildings to be setback from lot boundaries in accordance with the provisions of the Building Code of Australia (BCA); and
- Buildings to be setback from boundaries so that the impact on the use and amenity of the adjoining buildings is minimised and the scale and bulk of the building is compatible with the streetscape.

The proposed development has been carefully sited and designed to ensure appropriate building setbacks are provided to abutting roads and adjoining land uses in order to maintain a suitable streetscape interface whilst activating important entry points, particularly from the proposed north-south private road. The 'main' shopping centre component of the proposed development is located towards the north of the site with dedicated loading and service areas accessible from Yangebup Road, away from the primary streetscape interfaces at Beeliar Drive and the north-south private road. The area between the main shopping centre and Beeliar Drive will primarily accommodate car parking, access and pedestrian spaces.

The proposed Service Station and Drive-Thru through takeaway offerings are positioned on landmark corners of the site, visible from Beeliar Drive and accessible by the proposed north-south private road. These buildings are located closer to the street with setbacks ranging between nil and 5.0m.

A portion of the proposed development will maintain a nil setback to the Yangebup Road frontage of the site, with the balance of the building setback a distance of 10m. Architectural screening and landscaping will be

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provided along the Yangebup Road frontage of the site to establish a stronger buffer between the loading docks and adjoining context at the rear of the site.

A nil setback is also proposed to the east of the site adjoining the proposed north-south private road (currently Lot 4308) which is intended to be developed as a meandering tree-lined avenue intercepted by alfresco dining and pedestrian friendly spaces.

The proposed development provides for parking and access between the main shopping centre building and the adjoining Revo Fitness development which is currently under construction to the west of the site. This setback also enables the retention of several existing trees at this location. A nil side setback is proposed for the Service Station which is positioned in the south-west corner of the site.

Building placement and setbacks within the proposed development have been informed by the desire to retain and protect six (6) large existing trees on the site. The Landscape Architect and Arborist have worked closely with the project Architects to ensure suitable clearances to these trees are provided to protect their continued health.

The building setbacks proposed by the development are considered acceptable and appropriate for the site given they:

- Maintain a consistent streetscape along Yangebup Road;
- Provide an intimate but activated interface to the proposed north-south private road;
- Ensure the development is clearly visible from Beeliar Drive whilst providing clear legibility for pedestrians and motorists;
- Enable the retention and protection of large existing trees on the site;
- Will incorporate architectural screening (where necessary); and
- Will be sensitively landscaped.

5.7.2 Building Height

As with building setbacks, there are no specific building height provisions under TPS3 that apply to the 'Local Centre' Zone and no specific height requirements under the Hammond Road North Structure Plan. The following general guidance is provided at Clause 4.9.3 (b) in relation to 'Amenity':

> *Buildings shall be designed so that they are complementary with their surroundings and adjoining development in terms of their external appearance, design, height, scale and bulk*

Building heights of between 7.5m and 10m are proposed across the site with some minor variations above these heights to provide for an appropriate level of building articulation. The use of consistent building heights across the broader precinct is considered desirable.

It has been the design team's intention to avoid typical 'retail entry statements' (as there is no mall), by keeping the built form lower in scale and instead offering a 'meandering but activated edge', with varietal architectural treatments. It is purposeful that the major retail entries 'meld' into the centre's surrounding built form.

The proposed building heights are also considered acceptable having regard to the height of adjoining industrial and commercial premises to the north, east and west which similarly range between 1 and 2 storeys. The height of the proposed development is therefore considered appropriate in scale for its mixed use context.

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5.7.3 Landscaping

Clause 4.9.2 of TPS3 sets out standards for landscaping associated within commercial and industrial uses. The proposed development's compliance with these standards is summarised in **Table 9** below.

Required		Provided
(a)	A minimum on-site provision of 10% of the total area of the lot or a defined portion of the site shall be set aside, developed and maintained as a landscaped area	Less than 10% on-site landscaping is proposed – refer to (b) below
(b)	The local government may reduce the minimum on-site provision to not less than 5% of the total area of the lot to be set aside, developed and maintained as a landscaped area where the owner agrees in writing that all of the street verge abutting the lot shall be included in the landscape area	The proposed development incorporates a total of 2,490m^2 of landscaping within the site which equates to approximately 8.5% of the total site area. An additional 1,934m^2 of landscaping is proposed within the Yangebup Road and Beeliar Drive road reserves.
(c)	Where the street verge is included in the landscaped area it shall be developed and maintained by the owner	Noted and agreed
(d)	The landscaped area shall have a minimum width of not less than 1.5m and distributed in areas of not less than 4m^2	Compliant
(e)	No less than 1 shade tree shall be planted for every linear metre of verge frontage or for every 50m^2 of total landscaped area, whichever is greater	Compliant
(f)	No less than 1 shade tree shall be planted in the car parking area for every 3 side-by-side car parking bays	Compliant
(g)	Landscaping is to be confined to the area of the lot between the building or the use of the land and the boundaries of the lot adjoining the public road reserve, or other public reserve, unless varied by the local government	The majority of proposed landscaping will be located within the site boundary however a portion will be located within the Yangebup Road and Beeliar Drive road reserves. Landscaping within the adjoining road reserves is desirable given landscaping, particularly along the Yangebup Road frontage, is largely non-existent.

Table 9: Summary of Compliance with Landscaping Provisions (TPS3)

The proposed development incorporates a total of 2,490m^2 of landscaping within the site boundary which equates to approximately 8.5% of the total site area. An additional 1,934m^2 of landscaping is proposed within the Yangebup Road and Beeliar Drive road reserves, abutting the northern and southern boundaries of the site which brings the overall landscaping provision to approximately 4,424m^2.

The proposed landscaping is designed to enhance and complement the built form, with a strong focus on human scale and comfort. It aims to strengthen the development's identity, walkability, connectivity, and sense of place, responding to the broader context and drawing on existing landscape features to ensure integration with the surrounding area. Landscaping will consist of trees (various deciduous and evergreen species), groundcover and low level native planting to preserve sight lines and reduce the heat island effect. Feature planting mixes and single species will be provided within setback areas to accentuate buildings and development entry point.

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Landscaping within the site includes the retention of six (6) existing large trees. A total of 133 new trees are also proposed to be planted within the site and a further 26 new trees are to be planted within the adjoining road verges.

Refer to **Attachment 9 – Landscape Plan**

5.7.4 Convenience and Functionality

Clause 4.9.4 of TPS3 requires commercial developments to be designed to ensure that they are convenient and functional for those who will use it. The proposed development has been designed to offer convenience and functionality by:

- Delivering valuable amenity to the area by providing residents with convenient access to a diverse range of goods in a single, accessible location;
- Clearly defining land use offerings and building entrances;
- Providing clear sight lines and well-designed car parking and pedestrian connections;
- Prioritising internal pedestrian movement;
- Respecting the scale of surrounding development; and
- Providing extensive and well-positioned landscaping.

This proposed development will not only enhance the functionality of the suburb but also contribute to a more complete and connected local retail landscape, improving the overall liveability and appeal of the area.

5.7.5 Vehicle Parking

Clause 4.9.5 of TPS3 sets out the minimum requirements for the provision of on-site car parking bays, delivery spaces and bicycle parking depending on land use. The WAPC has also released the *WA Planning Manual - Non-Residential Car Parking Rates in Perth and Peel Guidelines*, which are intended provide consistent car parking requirements for non-residential land uses and support the review of car parking ratios under individual local planning frameworks.

A parking assessment of the proposed development has been undertaken in relation to the standards set out TPS3 and the standards set out within the WA Planning Manual. The findings of this assessment are summarised in **Tables 10** and **11** below. For the purposes of the parking assessment, the following breakdown of land uses and GFA have been applied:

- Shop use: 6,520m^2
- Consulting Room use: 100m^2
- Café/Restaurant use: 375m^2
- Service Station use: 240m^2
- Drive-Thru Fast Food: 620m^2

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Tenancy	Land Use	Land Use Class	Parking Ratio	Area (NLA)	Bays Required
T01	Major Retail	Shop	1 : 14m² NLA	3,860m²	275.71
T02	Liquor Store	Use Not Listed*	1 : 14m² NLA	160m²	11.42
T03	Major Retail	Shop	1 : 14m² NLA	1,500m²	107.14
T04	Mini Major	Shop	1 : 14m2 NLA	600m²	42.85
T05	Retail / Commercial	Shop	1 : 14m² NLA	100m²	7.14
T06	Retail / Commercial	Shop	1 : 14m² NLA	100m²	7.14
T07	Retail / Commercial	Shop	1 : 14m² NLA	100m²	7.14
T08	Consulting Rooms	Consulting Rooms	5 : 1 practitioner 1 : 15m² GLA	3 practitioners** 100m²	15.00 6.66
T09	Retail / Commercial	Shop	1 : 14m² NLA	100m²	7.14
T10	Food and Beverage	Lunch Bar	1 : 15m2 GLA	75m²	5.00
T11	Food and Beverage	Lunch Bar	1 : 15m2 NLA	100 ²	6.66
T12	Food and Beverage	Restaurant	1 : 4 seats or 1 : 4 people accommodated	100m² 30 seats***	7.50
T13	Food and Beverage	Restaurant	1 : 4 seats or 1 : 4 people accommodated	100m² 30 seats***	7.50
T14	Service Station	Service Station	1 : 1 employee 2 : 1 service bay	2 employees 6 service bays (240m²)	2.00 12.00
T15/T16	Fast Food	Fast Food Outlet	1 : 15m² NLA	620m²	41.33
**Parking requirement to be determined by the City ('Shop' parking ratio applied for the purposes of assessment)* ***The number of practitioners has been assumed as the maximum likely* ****The number of seats has been assumed as the maximum likely* *****The number of stacking bays provided for the Drive-Thru Outlet has been assumed as the average possible*					
				Total Bays Required	**569.33**
				Minus Drive-Thru Stacking Bays Provided****	**10**
				Total bays Required	**559.33 (559)**

Table 10: Car Parking Assessment (TPS3 standards)

Tenancy	Land Use	Land Use Class	Parking Ratio	Area (NLA)	Bays Required
T01	Major Retail	Shop	1 : 50m² FA	3,860m²	77.2
T02	Liquor Store	Use Not Listed*	1 : 50m² FA	160m²	3.2
T03	Major Retail	Shop	1 : 50m² FA	1,500m²	30.0
T04	Mini Major	Shop	1 : 50m² FA	600m²	12.0
T05	Retail / Commercial	Shop	1 : 50m² FA	100m²	2.0
T06	Retail / Commercial	Shop	1 : 50m² FA	100m²	2.0
T07	Retail / Commercial	Shop	1 : 50m² FA	100m²	2.0

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T08	Consulting Rooms	Consulting Rooms	2 : 1 practitioner	3 practitioners**	6.0
T09	Retail / Commercial	Shop	1 : 50m^2 FA	100m^2	2.0
T10	Food and Beverage	Restaurant / Cafe	1 : 10 people accommodated	20 people***	2.0
T11	Food and Beverage	Restaurant / Cafe	1 : 10 people accommodated	30 people***	3.0
T12	Food and Beverage	Restaurant / Cafe	1 : 10 people accommodated	30 people***	3.0
T13	Food and Beverage	Restaurant / Cafe	1 : 10 people accommodated	30 people***	3.0
T14	Service Station	Service Station	0.75 : 1 fuel bowser	6 fuel bowsers	4.5
T15/T16	Fast Food	Fast Food Outlet	1 : 50m^2 public floorspace	620m^2	8.26
**Parking requirement to be determined by the City ('Shop' parking ratio applied for the purposes of assessment)* ***The number of practitioners has been assumed as the maximum likely* ****The number of people accommodated has been assumed as the maximum likely* *****The number of stacking bays provided for the Drive-Thru Outlet has been assumed as the average possible*					
				Total Bays Required	**160.16**
				Minus Drive-Thru Stacking Bays Provided****	**10**
				Total bays Required	**150.16 (150)**

Table 11: Minimum Car Parking Assessment (WA Planning Manual) Standards

The above tables demonstrates that the proposed development provides:

- A parking shortfall of 244 bays when assessed under TPS3; and
- A parking surplus of 165 bays when assessed under the WA Planning Manual.

It is clear from the above that there is a significant variation in parking standards applicable to the site. For the purposes of our assessment, we have assumed a 'worst case' parking shortfall but would expect that 'actual' parking demand to sit somewhere in between the two calculations summarised the above.

Assuming a parking shortfall in the order indicated above, we offer the following as justification for the variation proposed:

- A number of the proposed land uses are not assigned a specific parking requirement under TPS3 or the WA Planning Manual or the parking requirements is based on the number of customers or practitioners. In these instances, a 'worst case' requirement has been applied for the purposes of assessment.
- Parking assessments based on NLA or GFA figures do not take into account 'back of house' areas, staff amenities and other areas not accessible by the public. For each NLA or GFA figure, actual 'public' floorspace can comprise as little as approximately 50%. This is not factored into parking ratios.
- The 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.

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These services provide connections to nearby activity centres, residential areas and the broader metropolitan public transport network.

- 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.
- Retail employees tend to be 'younger' people who do not drive or do not have a vehicle, and find other means of getting to work. The site's proximity to public transport (bus and train) is conducive to this form of travel, noting also that a significant amount of bicycle parking is proposed.
- The parking standards contained within TPS3 are generally excessive having regard to the parking standards set out in the WA Planning Manual which suggests significantly lower ratios, particularly for the 'Shop' use class.
- The parking standards are also considered excessive 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.
- The parking assessment does not take into account the significant cross-trade between the various tenancies as well as the potential for reciprocal parking arrangements among these uses.

In addition to the statutory parking rates described above, an engineering-based parking demand estimate has been undertaken as part of the TIA (refer to **Attachment 10**) with reference to previous shopping centre parking utilisation surveys 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 (7,855m² 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 from an industry perspective 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.

5.7.6 Bicycle Parking

An assessment of bicycle parking has been undertaken having regard to the provisions contained within TPS3. The findings of this assessment are summarised in **Table 12** below.

Tenancy	Land Use	Land Use Class	Parking Ratio	Area (NLA)	Bays Required
T01	Major Retail	Shop	1 : 200m² NLA	3,860m²	19.3
T02	Liquor Store	Use Not Listed*	1 : 200m² NLA	160m²	0.8
T03	Major Retail	Shop	1 : 200m² NLA	1,500m²	7.5
T04	Mini Major	Shop	1 : 200m² NLA	600m²	3.0
T05	Retail / Commercial	Shop	1 : 200m² NLA	100m²	0.5

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T06	Retail / Commercial	Shop	1 : 200m^2 NLA	100m^2	0.5
T07	Retail / Commercial	Shop	1 : 200m^2 NLA	100m^2	0.5
T08	Consulting Rooms	Consulting Rooms	1 : 50 people accommodated	15 people**	0.3
T09	Retail / Commercial	Shop	1 : 200m^2 NLA	100m^2	0.5
T10	Food and Beverage	Lunch Bar	1 : 20m^2 NLA	75m^2	3.75
T11	Food and Beverage	Lunch Bar	1 : 20m^2 NLA	100 ^{2}	5.0
T12	Food and Beverage	Restaurant	1 : 30 seats	30 seats***	1.0
T13	Food and Beverage	Restaurant	1 : 30 seats	30 seats***	1.0
T14	Service Station	Service Station	1 : 20m^2 NLA	240m^2	12.00
T15/T16	Fast Food	Fast Food Outlet	1 : 50m^2 NLA	620m^2	12.4
**Parking requirement to be determined by the City ('Shop' parking ratio applied for the purposes of assessment)* ***The number of people accommodated has been assumed as the maximum likely* ****The number of seats has been assumed as the maximum likely*					
				Total Bays Required	**68.05**
				Total Bays Provided	**68**

Table 12: Bicycle Parking

The development includes provision for 68 bicycle bays (44 visitor and 24 staff) along with end-of-trip facilities to support cycling as an alternative mode of access for customers and staff. These facilities will complement 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. There are ample opportunities to supplement the bicycle parking across the site should there be additional future demand.

5.7.7 Matters to be Considered

Clause 67 of the Deemed Provisions contained within Schedule 1 of the *Planning and Development (Local Planning Schemes) Regulations 2015* ('LPS Regulations') sets out 'matters to be considered' by a local government in considering a development application. Compliance with these matters is summarised in **Table 13** below:

Matter to be Considered	Response
(h) The aims and provisions of this Scheme (including any planning codes that are read, with or without modifications, into this Scheme) and any other local planning scheme operating within the Scheme area;	The proposed development satisfies the relevant provisions of, and is capable of approval under, TPS3.
(b) The requirements of orderly and proper planning including any proposed local planning scheme or amendment to this Scheme that has been advertised under the *Planning and Development (Local Planning Schemes) Regulations 2015* (Regulations) or any other proposed planning instrument that the local government is seriously considering adopting or approving;	The proposed development has been designed having close consideration for the applicable planning framework.
(c) Any approved State planning policy;	The proposed development has been designed in a manner cognisant of relevant WAPC's State Planning - refer to section 5.2 of this report. No other approved State Planning Policies apply to the site.

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Matter to be Considered	Response
(d) Any environmental protection policy approved under the *Environmental Protection Act 1986* section 31(d);	No environmental protection policies apply to the site.
(e) Any policy of the Commission;	The proposed development has been assessed for compliance with the WAPC's WA Planning Manual - Non-Residential Car Parking Rates in Perth and Peel Guidelines – refer to section 5.7.5 of this report.
(f) Any policy of the State;	N/A
(fa) Any local planning strategy for this Scheme endorsed by the Commission;	The proposed development is consistent with the directions set out in the City of Cockburn Local Planning Strategy and Local Commercial and Activity Centres Strategy - refer to sections 5.1.2 and 5.1.3 of this report.
(g) Any local planning policy for the Scheme area;	The proposed development is consistent with the objectives and provisions contained within all applicable local planning policies – refer to section 5.4 of this report.
(h) Any structure plan or local development plan that relates to the development;	The proposed development is generally consistent with the Hammond Road North Structure which applies to the site. An amendment to the Structure Plan to realign the 'Local Centre' and 'Mixed Business' zonings to reflect the form of development proposal is currently under assessment by the City - refer to 5.1.4 of this report.
(i) Any report of the review of the local planning scheme that has been published under the Regulations;	N/A
(j) In the case of land reserved under the Scheme, the objectives for the reserve and the additional and permitted uses identified in this Scheme for the reserve;	N/A
(k) The built heritage conservation of any place that is of cultural significance;	N/A
(l) The effect of the proposal on the cultural heritage significance of the area in which the development is located;	N/A
(m) The compatibility of the development with its setting;	The range of land uses proposed under the Application are capable of being approved under TPS3 and draft LPS13 and are complementary to the existing land uses currently provided within the broader precinct.
(n) The amenity of the locality;	The proposed development has been carefully sited and designed to ensure an appropriate level of amenity is maintained for adjoining and nearby land uses.
(o) The likely effect of the development on the natural environment or water resources and any means that are proposed to protect or to mitigate impacts on the natural environment or the water resource;	No environmental impacts identified
(p) Whether adequate provision has been made for the landscaping of the land to which the application relates and whether any trees or other vegetation on the land should be preserved;	The proposed development incorporates a total of 2,490m^2 of landscaping within the site boundary which equates to approximately 8.5% of the total site area. An additional 1,934m^2 of landscaping is proposed within the Yangebup Road and Beeliar Drive road reserves, abutting the northern and southern boundaries of the site

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Matter to be Considered	Response
	bringing the overall landscaping provision to approximately 4,424m^2.
(q) The suitability of the land for the development taking into account the possible risk of flooding, tidal inundation, subsidence, landslip, bush fire, soil erosion, land degradation or any other risk;	N/A
(r) The suitability of the land for the development taking into account the possible risk to human health or safety;	N/A
(s) The adequacy of (i) the proposed means of access to and egress from the site; and (ii) arrangements for the loading, unloading, manoeuvring and parking of vehicles;	Proposed access arrangements into, out of and throughout the site have been assessed and determined to be adequate.
(t) The amount of traffic likely to be generated by the development, particularly in relation to the capacity of the road system in the locality and the probable effect on traffic flow and safety;	The Application is supported by a TIA which considers the impact of traffic generated by the proposed development on the surrounding road network. The TIA has determined that the proposed development can operate within the capacity of the existing road system.
(u) The availability and adequacy for the development of the following — (i) public transport services; (ii) public utility services; (iii) storage, management and collection of waste; (iv) access for pedestrians and cyclists (including end of trip storage, toilet and shower facilities); (v) access by older people and people with disability;	Existing local public transport services are available in proximity to the site and include various bus routes providing convenient connectivity for commuters.
(v) The potential loss of any community service or benefit resulting from the development other than potential loss that may result from economic competition between new and existing businesses;	N/A
(w) The history of the site where the development is to be located;	Research undertaken as part of initial design investigations revealed that the current owners' grandfather planted two Olive trees on the current home block when the Alessandrini family first arrived from Italy. These two trees are still surviving. The family have embraced the idea of an avenue of Olive trees alongside the new north-south private road and have endorsed the idea of naming this road "Alessandrini Drive" in recognition of the family's connection to the land.
(x) The impact of the development on the community as a whole notwithstanding the impact of the development on particular individuals;	The proposed development is consistent with its designation under the Commercial Strategy and will assist in the delivery of local employment opportunities.
(y) Any submissions received on the application;	To be determined
(za) The comments or submissions received from any authority consulted under clause 66	To be determined
(zb) Any other planning consideration the local government considers appropriate	N/A

Table 13: Matters to be Considered by Local Government

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6. Traffic and Parking

A Transport Impact Assessment (TIA) has been prepared in support of the proposed development and is enclosed at **Attachment 10**. The TIA assesses the impacts of the proposed development on the adjacent road network, with a focus on capacity, access, safety, and car parking requirements and has been prepared in accordance with the WAPC's *Transport Impact Assessment Guidelines for Developments: Volume 4 – Individual Developments* (2016).

Key findings from the TIA are summarised below:

- The site benefits from direct access to the district and regional road network, including Beeliar Drive, Hammond Road and the Kwinana Freeway and is located in proximity to Cockburn Central Train Station and existing high-frequency bus services, providing opportunities for access by public transport, walking and cycling.
- 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 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 therefore estimated as 2,635vpd, plus 288vph (weekday) and 324vph (weekend).
- 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. 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.
- 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.
- 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.
- The proposed development is not expected to significantly impact road safety outcomes for the surrounding 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.
- 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. 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.
- 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.

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Heavy vehicle movements are accommodated fully within the site and do not require reversing onto public roads.

- The proposed development will provide a total of 315 on-site car parking bays, in addition to allowance for drive-through queuing/stacking. 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 100m² NLA.
- 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.
- 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.
- 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.
- 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.
- The development includes provision for 68 bicycle bays (44 visitor and 24 staff bays) along with end-of-trip facilities to support cycling as an alternative mode of access for customers and staff. These facilities will complement 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.

The TIA concludes that overall, the proposed development can be accommodated within the existing and future transport network. It also concludes that the proposed development's 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.

Refer **Attachment 10 – Traffic Impact Assessment**

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7. Conclusion

This Application seeks approval for the construction of a commercial development (Neighbourhood Centre) on land located at Lots 1, 300 and 4308 Yangebup Road/Beeliar Drive, Cockburn Central. The proposed development comprises two (2) 'major' retail outlets along with a number of speciality retail, food and beverage tenancies, consulting rooms, a service station and two (2) drive thru fast food outlets with a combined total Net Lettable Area (NLA) of approximately 7,855m^2 (inclusive of retail and non-retail floorspace)

The proposed development represents a sound and considered proposal for the site and should be supported for the following reasons:

- The range of land uses proposed by the Application are capable of being approved under TPS3 and draft LPS13 and are complementary to the existing land uses currently provided within the broader precinct.
- The proposed development satisfies the objectives and provisions of all relevant WAPC State Planning Policies including SPP 3.7 - Bushfire and accompanying Guidelines for Bushfire Protection, SPP 4.1 – Industrial Interface, SPP 4.2 – Activity Centres, and SPP 7.0 – Design of the Built Environment.
- The objectives and provisions of relevant current and draft WAPC Operational Policies are satisfied by the proposed development, including draft OP 4.3 – Planning for High Pressure Gas Pipelines and DC 5.1 – Vehicular Access.
- The proposed development is consistent with the objectives and provisions contained within the City of Cockburn's Local Planning Strategy (2024) and all applicable local planning policies.
- The proposed development is consistent with its designation under the City's Local Commercial and Activity Centres Strategy (2012) and will assist in the delivery of local employment opportunities.
- The proposed development will not affect the viability of surrounding centres, both current and planned, or the vibrancy of the activity centre hierarchy.
- The proposed development is expected to deliver positive benefits to the surrounding community by addressing the under provision of access to retail goods and services within the catchment, providing employment, reducing travel time, increasing the quality of life for residents and workers and encouraging healthy competition in the area.
- The use of the site for commercial purposes is consistent with the Hammond Road North Structure Plan (2018), noting that an amendment to the Structure Plan is currently under consideration by the City.
- The extent of additional 'shop' floorspace proposed by the development is within the maximum allowance recommended under the Structure Plan.
- The approval of a Development Application over the site in the absence of a Local Development Plan is considered appropriate in this instance given the Application covers a substantial component of the structure planning area and addresses those key matters such as building orientation, bulk and scale, setbacks, access points, pedestrian movement, street interface and the like that would otherwise be covered by a Local Development Plan.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

- The built form, amenity and landscaping treatments proposed are consistent with the requirements set out in TPS3 in relation to matters such as setbacks, building height and landscaping, and respond to feedback provided during the design review process.
- The proposed development satisfies the matters to be considered by a Local Government in assessing an Application for Development Approval as set out in Clause 67 of the Deemed Provisions contained within Schedule 1 of the *Planning and Development (Local Planning Schemes) Regulations 2015*.
- The proposed development will incorporate sufficient car parking, having regard to the likely multi-purpose trips, peak demand periods, proximity to public transport, walkable catchment and the WAPC's *WA Planning Manual - Non-Residential Car Parking Rates in Perth and Peel Guidelines*.
- A number of ESD initiatives are incorporated into the proposed development, including roof-top Solar PV panels and EV charging bays.
- The proposed development incorporates extensive and high quality landscaping which will be located both within the site and adjoining road reserves.
- The proposed development can be accommodated within the existing and future transport network and represents an appropriate and well-integrated outcome from a traffic engineering and transport planning perspective.
- The development can readily accommodate and manage waste and delivery vehicles in a manner that does not compromise safety or amenity in the area.

The development is consistent with the principles of orderly and proper planning and represents an important community service to be provided to the City. On this basis, the proposed development should be supported and approved.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

ATTACHMENT 1

Certificates of Title and Deposited Plans

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

WESTERN AUSTRALIA

TITLE NUMBER	
Volume	Folio
2702	**759**

RECORD OF CERTIFICATE OF TITLE

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts

REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

LAND DESCRIPTION:

LOT 1 ON DEPOSITED PLAN 59832

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

ANTONIO ANSELMO ALESSANDRINI
IN 1/4 SHARE
ANGELO LUCIANO ALESSANDRINI
IN 1/4 SHARE
CATINA CHRISTINA ALESSANDRINI
IN 1/4 SHARE
JOHN ALESSANDRINI
IN 1/4 SHARE
ALL OF LOT 7 HAMMOND ROAD, YANGEBUP
AS TENANTS IN COMMON

(T L293690) REGISTERED 21/4/2010

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. G451638 EASEMENT BENEFIT FOR RIGHT OF CARRIAGEWAY PURPOSES - SEE SKETCH ON VOL 2102 FOL 798. REGISTERED 21/5/1997.
2. M361884 MORTGAGE TO PLANTEN PTY LTD REGISTERED 5/8/2013.
3. N439532 MEMORIAL. TAXATION ADMINISTRATION ACT 2003, SECTION 76 (LAND TAX) REGISTERED 21/9/2016.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.

----------END OF CERTIFICATE OF TITLE----------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: DP59832
PREVIOUS TITLE: 2214-668

END OF PAGE 1 - CONTINUED OVER

LANDGATE COPY OF ORIGINAL NOT TO SCALE 20/10/2025 07:34 PM Request number: 68917311

Landgate
www.landgate.wa.gov.au

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

PROPERTY STREET ADDRESS: 142 YANGEBUP RD, COCKBURN CENTRAL.
LOCAL GOVERNMENT AUTHORITY: CITY OF COCKBURN

LANDGATE COPY OF ORIGINAL NOT TO SCALE 20/10/2025 07:34 PM Request number: 68917311

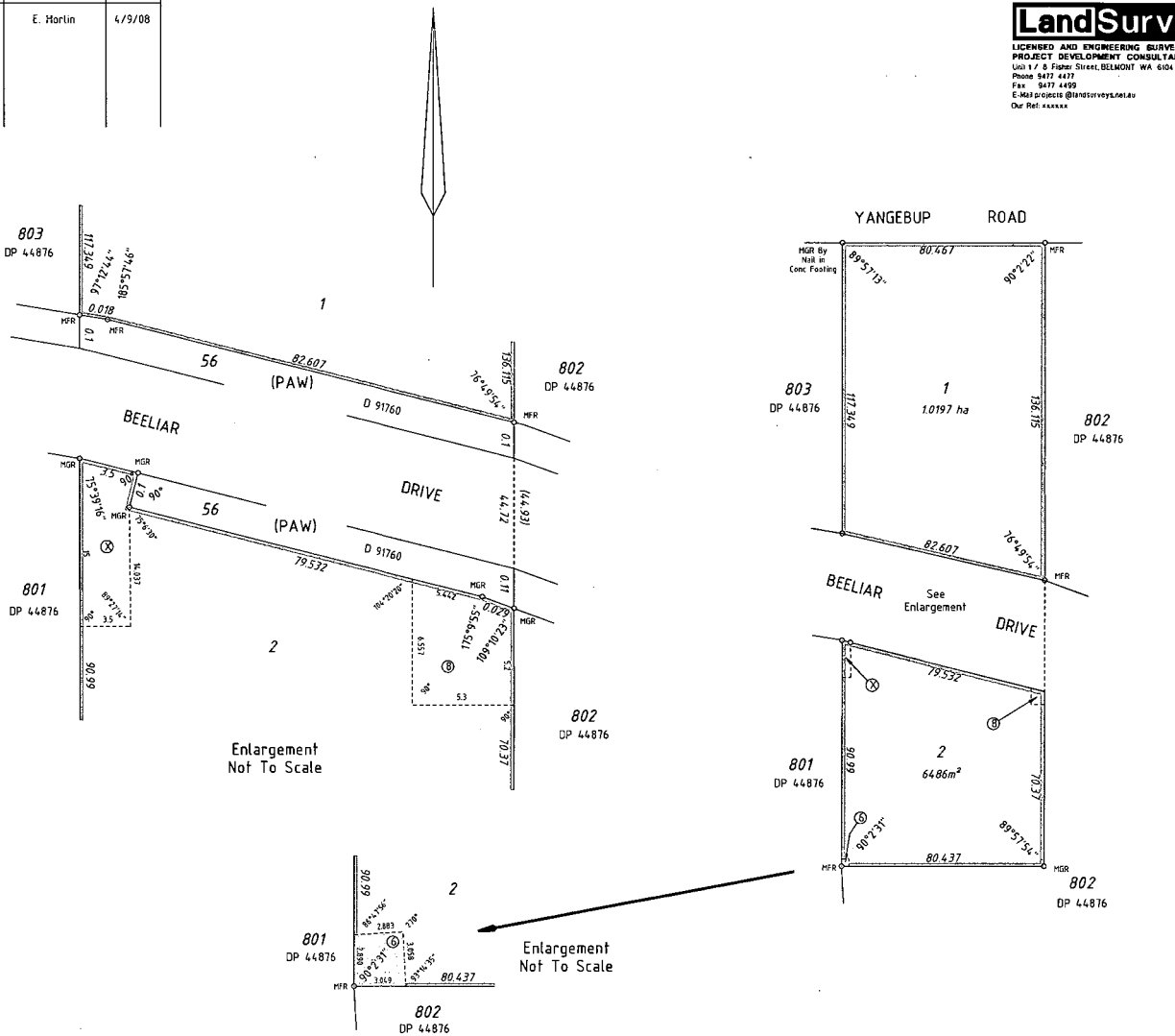
Landgate
www.landgate.wa.gov.au

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

LANDGATE COPY OF ORIGINAL NOT TO SCALE 09/12/2025 12:59 PM Request number: 69154774
Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026
www.landgate.wa.gov.au

VERSION	AMENDMENT	AUTHORISED BY	DATE
2	AUDIT REQUIREMENTS	E. Horlin	4/9/08

LandSurveys
LICENSED AND ENGINEERING SURVEYORS
PROJECT DEVELOPMENT CONSULTANTS
Unit 1 / 8 Fisher Street, BELMONT WA 6104
Phone 9477 4477
Fax 9477 4499
E-Mail projects @landsurveys.net.au
Our Ref: xxxxx



Drafted By:
Cadastral Cartographics
PO Box 467, North Perth, 6906
Ph 9228 1133 Fax 9228 1233

DP 59832

INTERESTS AND NOTIFICATIONS

SUBJECT	PURPOSE	STATUTORY REFERENCE	ORIGIN	LAND BURDENED	BENEFIT TO	COMMENTS
⊗	EASEMENT		DOC G451640	LOT 2	PT LOT 801 & LOT 803 ON DP 44876 (FORMERLEY LOT 9 ON D 21410)	SEE NOTE Z
⑥	EASEMENT (SEWERAGE)	SEC 167 P&D ACT REG 6	THIS PLAN	LOT 2	WATER CORPORATION	
⑧	EASEMENT (UNDERGROUND ELECTRIC)	SEC 167 P&D ACT REG 8	THIS PLAN	LOT 2	ELECTRICITY NETWORKS CORPORATION	

25 0 SCALE 1 : 1250 125
ALL DISTANCES ARE IN METRES

NOTE Z: THE DIMENSIONS AND POSITION OF THIS EASEMENT ARE BASED ON ACCURATE SURVEYED ALIGNMENTS

TYPE FREEHOLD
PURPOSE SUBDIVISION
PLAN OF
LOTS 1, 2,
AND EASEMENTS

DISTRICT COCKBURN SOUND
TOWNSITE
SSA - NO

FILE
LOCALITY COCKBURN CENTRAL/ SUCCESS
LOCAL AUTHORITY CITY OF COCKBURN
FORMER TENURE
LOT 142
DP 27926
CT 2214/668

ON
INDEX BG34 (2) 12.06
BG34 (2) 12.05
FIELD BOOK
106895

SCALE 1 : 1250 @ A2
ALL DISTANCES ARE IN METRES

SURVEYOR'S CERTIFICATE - Reg 54
I, Eric Horlin
hereby certify that this plan is accurate and is a correct representation of the -
(a) survey; and/or
(b) calculations from measurements,
(c) data is of sufficient
undertaken for the purposes of this plan and that it complies with the relevant written laws in relation to which it is lodged.
2008.09.10 17:01:10 +08'00'
LICENSED SURVEYOR DATE

SURVEY FIRM LandSurveys

LODGED
DATE 20-Aug-08
FEE PAID $305.00
ASSESS No. 4206133

TYPE OF VALIDATION
FULL AUDIT
LEGAL COMPONENT B.GILLIGAN
DOCKET PLAN/DIAGRAM 03117-07-V10
CERTIFIED CORRECT
LSC. 11 SEPTEMBER 08
F.S.C.

APPROVED BY WESTERN AUSTRALIAN PLANNING COMMISSION
FILE 132216
DELEGATED UNDER S.16 P. & D. Act 2005
DATE 26/9/2008

IN ORDER FOR DEALINGS
SUBJECT TO
SEC 167 P&D Act
29.9.08
INSPECTOR OF PLANS & SURVEYS / AUTHORIZED LAND OFFICER DATE

APPROVED
APPROVED 15.10.08
INSPECTOR OF PLANS & SURVEYS / AUTHORIZED LAND OFFICER DATE

Landgate
Western Australian Land Information Authority

DEPOSITED PLAN
59832
ORIGINAL
SHEET 1 OF 1 SHEETS
VERSION 2

A2 ORIGINAL

WESTERN AUSTRALIA

TITLE NUMBER	
Volume	Folio
2898	**294**

RECORD OF CERTIFICATE OF TITLE

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts

REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

LAND DESCRIPTION:

LOT 300 ON DEPOSITED PLAN 402552

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

ANTONIO ANSELMO ALESSANDRINI
ANGELO LUCIANO ALESSANDRINI
JOHN ALESSANDRINI
CATINA ALESSANDRINI
ALL OF LOT 7 HAMMOND ROAD, YANGEBUP
AS TENANTS IN COMMON IN EQUAL SHARES

(AF N373426) REGISTERED 16/8/2016

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. N373427 NOTIFICATION CONTAINS FACTORS AFFECTING THE WITHIN LAND. LODGED 16/8/2016.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.

----------END OF CERTIFICATE OF TITLE----------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	DP402552
PREVIOUS TITLE:	2624-441
PROPERTY STREET ADDRESS:	NO STREET ADDRESS INFORMATION AVAILABLE.
LOCAL GOVERNMENT AUTHORITY:	CITY OF COCKBURN

NOTE 1: N990343 DEPOSITED PLAN 415238 LODGED
NOTE 2: O419161 SECTION 138D TLA APPLIES TO CAVEAT O386304

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Landgate
www.landgate.wa.gov.au

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

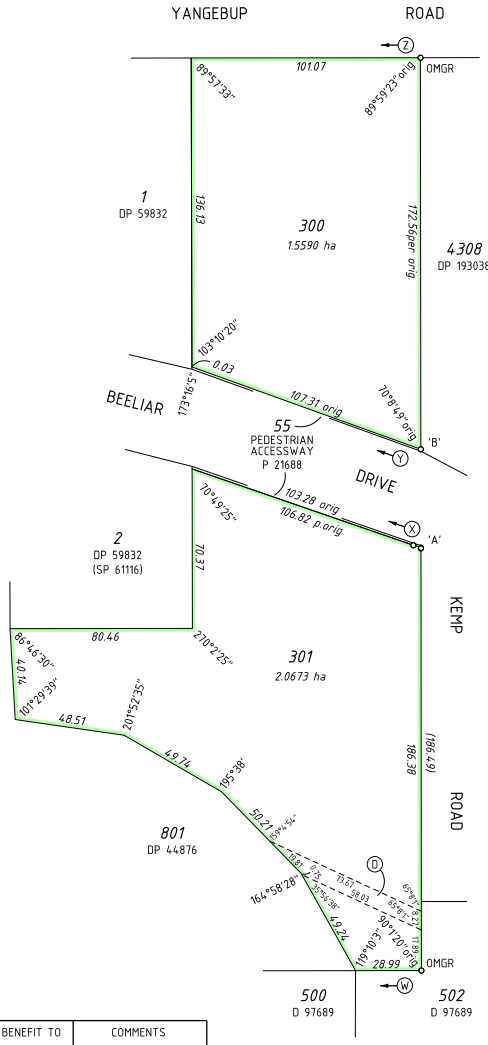
Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

LANDGATE COPY OF ORIGINAL NOT TO SCALE 09/12/2025 12:59 PM Request number: 69154774

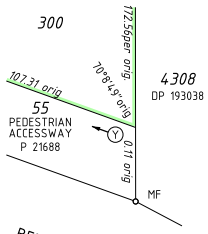
www.landgate.wa.gov.au

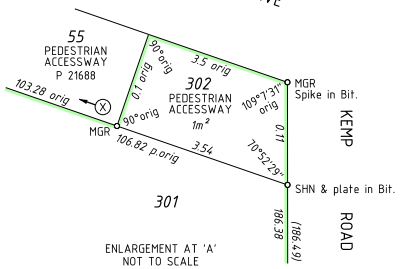
VER.	AMENDMENT	AUTHORISED BY	DATE

ALL DIMENSIONS FROM Ⓦ TO Ⓧ AND Ⓨ TO Ⓩ
IN A CLOCKWISE DIRECTION ARE ORIGINAL



ENLARGEMENT AT 'B'
NOT TO SCALE





ENLARGEMENT AT 'A'
NOT TO SCALE

NOTE 'Z' : THE EASEMENT DIMENSIONS AND POSITION ON THIS PLAN IS AN INTERPRETATION, SEE ORIGINAL DOCUMENT

INTERESTS AND NOTIFICATIONS

SUBJECT	PURPOSE	STATUTORY REFERENCE	ORIGIN	LAND BURDENED	BENEFIT TO	COMMENTS
Ⓓ	EASEMENT	SEC 195 OF THE LAA	DOC H922736	LOT 301	WATER CORPORATION	(DP 27222) SEE NOTE 'Z'
LOT 302	PEDESTRIAN ACCESSWAY	VESTS IN THE CROWN UNDER SEC 152 OF THE P & D ACT	THIS PLAN			
	NOTIFICATION	SEC 70A OF THE TLA	DOC N373427	LOT 300		WATER CORPORATION (RESTRICTED SEWERAGE SERVICE)

20 0 20 40 60 80 100
SCALE: 1:1500 AT A2 SIZE

WHELANS AUSTRALIA PTY LTD
(08) 6241 3333 www.whelans.com.au
s:/projects/11/11122/carto/staturory drafting/11122dp1.dgn
140428 ca.acs FP-11122-005-VER 1.0

HELD BY LANDGATE IN DIGITAL FORMAT ONLY

TYPE	FREEHOLD	S.S.A. ~~YES~~/NO
PURPOSE	SUBDIVISION	

PLAN OF

LOTS 300-302

FORMER TENURE D.O.L. FILE
LOT 802
DP 44876
C/T 2624/441

LOCAL AUTHORITY
CITY OF COCKBURN

LOCALITY
COCKBURN CENTRAL, SUCCESS

FIELD RECORD 127120 (SAM 4933)

SURVEYOR'S CERTIFICATE - REG 54
I, GREGORY JOHN IRELAND
hereby certify that this plan is accurate and is a correct representation of the -
(a) *survey; and/or
(b) *calculations from measurements recorded in the field records,
[* delete if inapplicable]
undertaken for the purposes of this plan and that it complies with the relevant written law(s) in relation to which it is lodged.

Gregory John Ireland
2015.12.17 10:36:20 +08'00'
LICENSED SURVEYOR DATE

LODGED

18-DEC-15	$408.00	18629486
DATE	FEE PAID	ASSESS No.

I.S.C.

EXAMINED
22-Dec-2015
DATE

WESTERN AUSTRALIAN PLANNING COMMISSION
FILE 146928
Delegated under S.16 P&D Act 2005 07-Apr-2016 DATE

IN ORDER FOR DEALINGS
SUBJECT TO
Sec 152 of P&D Act
Sec 70A of TLA
13-Apr-2016
FOR INSPECTOR OF PLANS AND SURVEYS DATE

APPROVED
16.8.2016
INSPECTOR OF PLANS AND SURVEYS DATE
(S. 18 Licensed Surveyors Act 1909)

GOVERNMENT OF WESTERN AUSTRALIA

Landgate

DEPOSITED PLAN
402552
SHEET 1 OF 1 SHEET - VERSION 1

WESTERN AUSTRALIA

TITLE NUMBER	
Volume	Folio
2151	**262**

RECORD OF CERTIFICATE OF TITLE

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts

REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

LAND DESCRIPTION:

LOT 4308 ON DEPOSITED PLAN 193038

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

ANTONIO ANSELMO ALESSANDRINI OF LOT 7 HAMMOND ROAD, YANGEBUP
ANGELO LUCIANO ALESSANDRINI OF LOT 7 HAMMOND ROAD, JANDAKOT
JOHN ALESSANDRINI OF LOT 7 HAMMOND ROAD, JANDAKOT
CATINA CHRISTINA ALESSANDRINI OF 86 HAMMOND ROAD COCKBURN CENTRAL WA 6164
AS TENANTS IN COMMON IN EQUAL SHARES

(AN O154260) REGISTERED 20/5/2019

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. N439532 MEMORIAL. TAXATION ADMINISTRATION ACT 2003, SECTION 76 (LAND TAX) REGISTERED 21/9/2016.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.

----------END OF CERTIFICATE OF TITLE----------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	2151-262 (4308/DP193038)
PREVIOUS TITLE:	LR3108-834
PROPERTY STREET ADDRESS:	LOT 4308 BEELIAR DR, COCKBURN CENTRAL.
LOCAL GOVERNMENT AUTHORITY:	CITY OF COCKBURN

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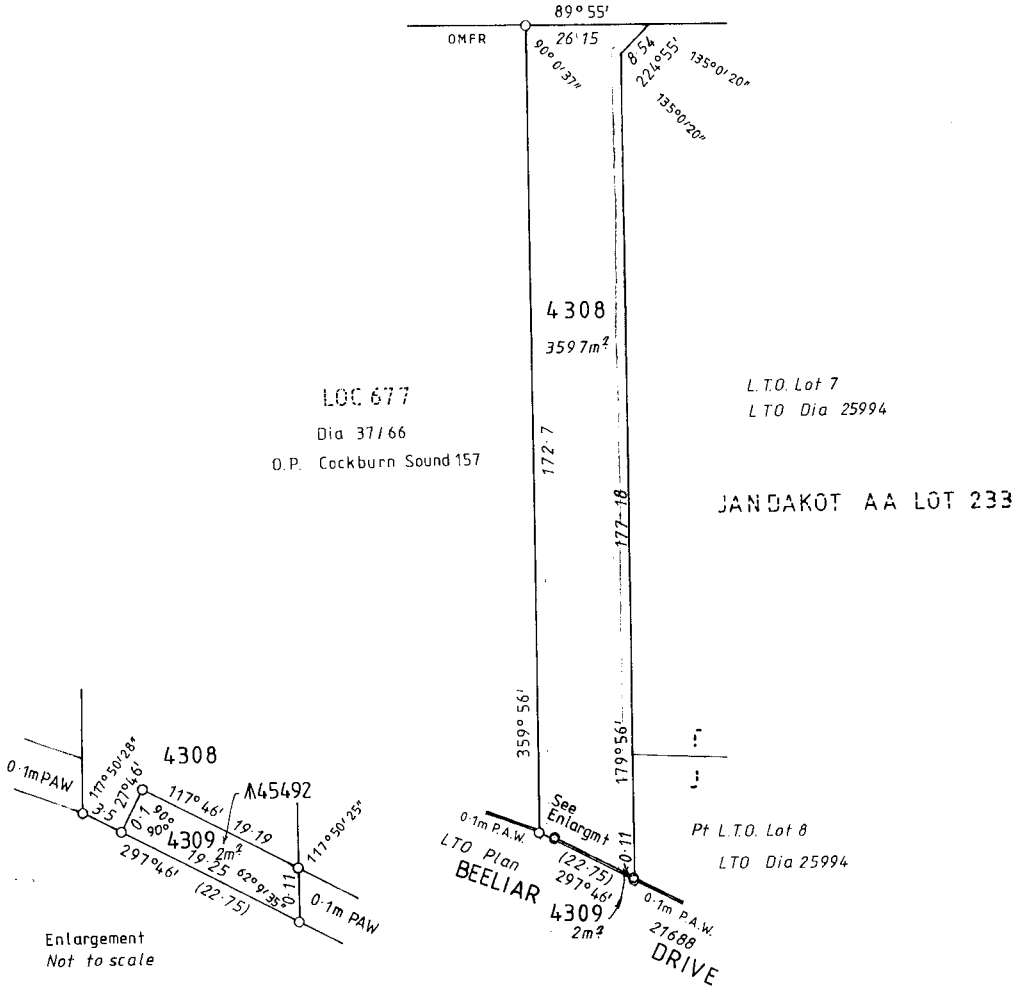
Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

Formerly Road

CLOSED ROAD Doc G 934977 Reg 26 Oct 1998

Road No. 10791

YANGEBUP ROAD



Enlargement
Not to scale

DP 193038

CD 93038

0 10 20 30 40 50

LAND DISTRICT	LOCATIONS 4308 & 4309	
COCKBURN SOUND		

SURVEYOR'S CERTIFICATE

I hereby certify that:-
(a) this plan of survey is a correct and accurate representation of the survey carried out by me personally / under my own personal supervision, inspection and field check and recorded in Fieldbooks lodged for the purpose of this plan of survey;
(b) the measurements are in strict accordance with the *Licensed Surveyors (Guidance of Surveyors) Regulations 1961* and in particular regulations 23 and 34 of those regulations; and
(c) this survey and this plan of survey are in strict accordance with the requirements of the *Licensed Surveyors (Guidance of surveyors) Regulations 1961* and the relevant law in relation to which it is lodged.

Licensed Surveyor _____ Date 7. 2. 1997
(* strike out which ever does not apply)

Prepared by: JOHN GIUDICE AND ASSOCIATES

In order for certification _____ Date 26.10.97

TYPE OF VALIDATION
Full Audit: ..... Date .....
Legal Component: ..... Date 30.4.97

In order for further action _____ Date 30.4.97

DIAGRAM CERTIFIED CORRECT
_____ Date 26.
Authorized Land Officer

SCALE 1 : 1000
measurements in metres

SURVEYOR DAVID W. BUSSELL

FIELD BOOK 72164 Page 14

Date of Marking 8·8·96

O.P. Cockburn
AZIMUTH FROM Sound 157

LOCAL AUTHORITY: CITY OF COCKBURN
LOCALITY: SUCCESS

LODGED JAG 17/2/97

FILE 2576 / 993

PUBLIC PLAN(S): BG 34 (2) 12·05 12·06
RECORDED: R.L. Date 30·10·98

SURVEY INDEX
PLAN(S): BG 34 (2) 12·05, 12·06
RECORDED: MJ Date 17/2/97

DEPARTMENT OF LAND ADMINISTRATION
DIAGRAM 93038

LANDGATE COPY OF ORIGINAL NOT TO SCALE 09/12/2025 12:59 PM Request number: 69154774

Landgate
www.landgate.wa.gov.au

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

WESTERN AUSTRALIA

TITLE NUMBER	
Volume	Folio
2688	**903**

RECORD OF CERTIFICATE OF TITLE

UNDER THE TRANSFER OF LAND ACT 1893

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BGRoberts

REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

LAND DESCRIPTION:

LOT 99 ON DEPOSITED PLAN 57197

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

ANTONIO ANSELMO ALESSANDRINI OF LOT 7 HAMMOND ROAD, JANDAKOT
ANGELO LUCIANO ALESSANDRINI OF LOT 7 HAMMOND ROAD, JANDAKOT
JOHN ALESSANDRINI OF LOT 7 HAMMOND ROAD, JANDAKOT
CATINA CHRISTINA ALESSANDRINI OF 86 HAMMOND ROAD COCKBURN CENTRAL WA 6164
AS TENANTS IN COMMON IN EQUAL SHARES

(AN O154260) REGISTERED 20/5/2019

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. K574857 NOTIFICATION SECTION 165 PLANNING & DEVELOPMENT ACT 2005 LODGED 23/4/2008.
2. O090759 CAVEAT BY CITY OF COCKBURN LODGED 14/2/2019.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.

----------END OF CERTIFICATE OF TITLE----------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	DP57197
PREVIOUS TITLE:	2214-749
PROPERTY STREET ADDRESS:	88 HAMMOND RD, COCKBURN CENTRAL.
LOCAL GOVERNMENT AUTHORITY:	CITY OF COCKBURN

NOTE 1: N990343 DEPOSITED PLAN 415238 LODGED
NOTE 2: O419162 SECTION 138D TLA APPLIES TO CAVEAT O386305

LANDGATE COPY OF ORIGINAL NOT TO SCALE 20/10/2025 07:35 PM Request number: 68917311

Landgate
www.landgate.wa.gov.au

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

WESTERN AUSTRALIA

TITLE NUMBER	
Volume	Folio
1250	**932**

RECORD OF CERTIFICATE OF TITLE

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts

REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

LAND DESCRIPTION:

LOT 7 ON DIAGRAM 25994

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

CATINA CHRISTINA ALESSANDRINI OF 86 HAMMOND ROAD COCKBURN CENTRAL WA 6164
(T T12056/1961) REGISTERED 16/8/1961

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. O817421 LEASE TO GURU BROTHERS PTY LTD OF 23 WOOLCOTT AVENUE WAHROONGA NSW 2076 EXPIRES: SEE LEASE. AS TO PORTION ONLY REGISTERED 27/7/2021.
   O817424 MORTGAGE TO JUDO BANK PTY LTD OF LEVEL 3 40 CITY ROAD SOUTHBANK VIC 3006 REGISTERED 27/7/2021.
2. O817422 LEASE TO GURU BROTHERS PTY LTD OF 23 WOOLCOTT AVENUE WAHROONGA NSW 2076 EXPIRES: SEE LEASE. AS TO PORTION ONLY REGISTERED 27/7/2021.
   O817423 MORTGAGE TO JUDO BANK PTY LTD OF LEVEL 3 40 CITY ROAD SOUTHBANK VIC 3006 REGISTERED 27/7/2021.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.

----------END OF CERTIFICATE OF TITLE----------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	1250-932 (7/D25994)
PREVIOUS TITLE:	1095-453
PROPERTY STREET ADDRESS:	86 HAMMOND RD, COCKBURN CENTRAL.
LOCAL GOVERNMENT AUTHORITY:	CITY OF COCKBURN

LANDGATE COPY OF ORIGINAL NOT TO SCALE 20/10/2025 07:35 PM Request number: 68917311

Landgate
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Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

ATTACHMENT 2

Feature Survey

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

TBM
RL : 20.44m
(Deck Spike)

TBM
RL : 21.09m
(Deck Spike)

Y A N G E B U P R O A D

2500H

2300H

2100H

2200H

SANDY LANDSCAPE

1
DP59832

4308
DP193038

704
DP415238
(EXPIRED)

803
DP44876

SANDY LANDSCAPE

7
D25994

1800H

0.1m wide P.A.W

1100H

B E E L I A R D R I V E

TBM
RL : 22.00m
(Deck Spike)

TBM
RL : 23.99m
(Deck Spike)

705
DP415238
(EXPIRED)

GRAVEL

SAND

GRAVEL

K E M P R O A D

LINE TYPES

- BRICK PAVING
- DRIVEWAY CENTRE
- FOOTPATH
- KERB TOP
- KERB BOTTOM
- PEDESTRIAN RAMP
- ROAD BITUMEN EDGE
- ROAD CENTRELINE
- ROAD SHOULDER
- LINE MARKING SINGLE SOLID
- LINE MARKING DASHED
- TACTILE
- TRACK
- SIGN MULTIPLE POLES
- CONCRETE EDGE
- FENCE LOG
- FENCE MESH
- FENCE METAL
- UNKNOWN STRUCTURE
- WALL
- BANK BOTTOM
- BANK TOP
- LAWN / GRASS
- BUSH LINE
- TREE CANOPY
- DRAIN GRATE EDGE
- POWER LINES - OVERHEAD
- WATER EDGE
- CONTOURS MAJOR
- CONTOURS MINOR
- CADASTRAL BOUNDARY
- ROAD WIDENING

LEGEND

- TEMPORARY BENCHMARK - TBM
- HYDRANT (GROUND)
- WATER METER
- WATER TAP
- LIGHT POLE
- POWER DOME
- POWER POLE
- STEEL WIRE ANCHOR
- FUEL VENT
- DRAINAGE GULLY SQUARE
- DRAINAGE SIDE ENTRY PIT
- DRAINAGE MANHOLE
- COMMS MANHOLE
- COMMS PIT
- SEWER MANHOLE
- SEWER PIT
- UNKNOWN PIT
- GATE CENTRE
- GUIDE POST
- MAIL BOX
- OTHER POLE OR POST
- FINGER SIGN
- ADVERTISING SIGN
- SIGN ONE POLE
- BUSH
- TREE STUMP
- TREE
- NATURAL SURFACE POINT

NOTE:
AHD DATUM BASED ON SSM JAND16A VIA TRIG OBSERVATION.

PLEASE REFER TO THE DIGITAL DATA FILE FOR ADDITIONAL SPATIAL INFORMATION.

NOTE:
THE BOUNDARIES SHOWN ON THIS PLAN WERE RE-ESTABLISHED AS PART OF THIS SURVEY.

RM SURVEYS
PHONE: 08 9457 7900
EMAIL: INFO@RMSURVEYS.COM.AU
WEBSITE: RMSURVEYS.COM.AU

Endorsed by ISO 45001 Certified, ISO 9001 Certified, ISO 14001 Certified

SCALE 1:1000
ALL DISTANCES IN METRES
PAPER SIZE A3

CLIENT:
WINDSOR KNIGHT PROPERTIES

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SURVEYOR	AF
SURVEY DATE	28/07/2025
VERTICAL DATUM	AHD
HORIZONTAL DATUM	PCG2020

REV	DESCRIPTION	DRN	CKD	APP	DATE
0	INITIAL ISSUE	AS	JX	DW	08/08/2025

FEATURE AND CONTOUR SURVEY

LOT 1, 300 AND 4308 YANGEBUP ROAD

CITY OF COCKBURN

JOB No.	DRAWING No.	REV
WIND-YANG	WIND-YANG-DW-001	0

Document Set ID: 12624668
Version: 1, Version Date: 23/02/2026

ATTACHMENT 3

Development Proposal Plans

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

Beeliar SC

Development Application

place fabric.

Rev A

02 2026

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

Broader Site Context

Pg 2 Rev A

Beeliar SC 2433 02 2026

place fabric

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

Legend

- Existing Site Boundary
- Proposed Site Boundary
- Vehicle Entry/Exit
- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

Note:

All NLA measured in accordance with PCA method of measurement.

This plan remains preliminary and subject to design evolution and authority approvals.

CAR PARKING	NUMBERS
On-Site Bays North-West	49
Online Pick Up Bays	6
Street Bays	12
On-Site Bays	216
Pad Site Bays	32
TOTAL BAYS PROVIDED	315
Motorcycle Bays	7

BIKE PARKING	NUMBERS
Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	68

Scale 1:1000 @ A3

0 10 20 30 40 50

Site Plan

Pg 3 Rev A

Beeliar SC 2433 02 2026

place fabric.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

Legend

- Existing Site Boundary
- Proposed Site Boundary
- Vehicle Entry/Exit
- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

Development Summary

Anticipated Use	Class in LSP3	Area
Major Retail	Shop	5,360m²
Consulting Room	Consulting Room	100m²
Mini Major	Shop	600m²
Liquor	Liquor Store	160m²
Retail/ Commercial	Shop	400m²
Food & Beverage	Restaurant/Fast Food	375m²
Fast Food	Fast Food	620m²
Fuel	Service Station	240m²
Amenities	-	
Services	-	
TOTAL NLA		**7,855m²**

Note:

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CAR PARKING	NUMBERS
On-Site Bays North-West	49
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On-Site Bays	216
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TOTAL BAYS PROVIDED	68

Scale 1:1000 @ A3

0 10 20 30 40 50

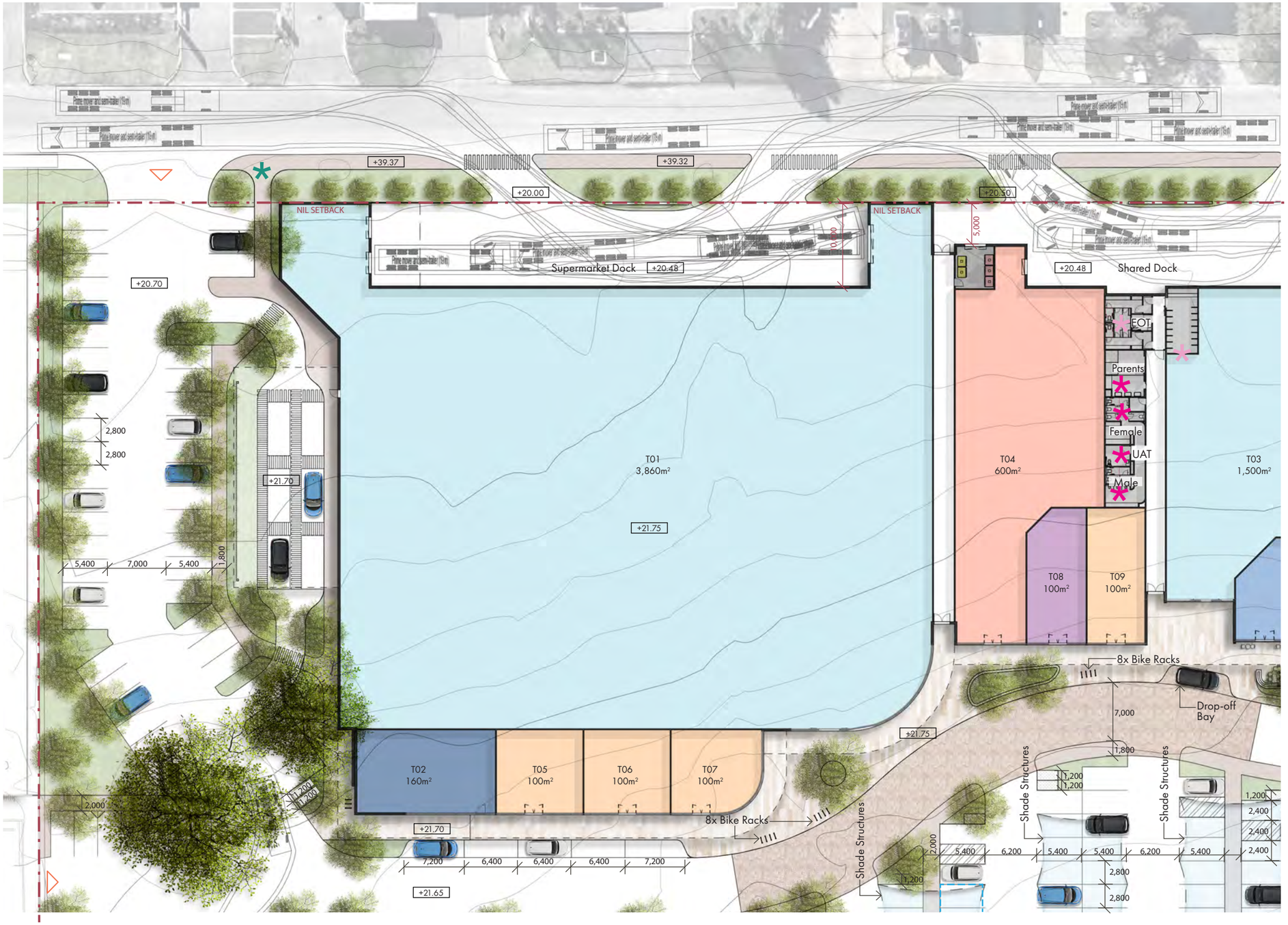
Ground Floor Plan

Pg 4 Rev A

Beeliar SC 2433 02 2026

place fabric.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026



Legend

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- Proposed Site Boundary
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- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

Development Summary

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Fast Food	Fast Food	620m²
Fuel	Service Station	240m²
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Services	-	
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Secure Staff Parking	24
TOTAL BAYS PROVIDED	68

Scale 1:500 @ A3

0 5 10 15 20 25

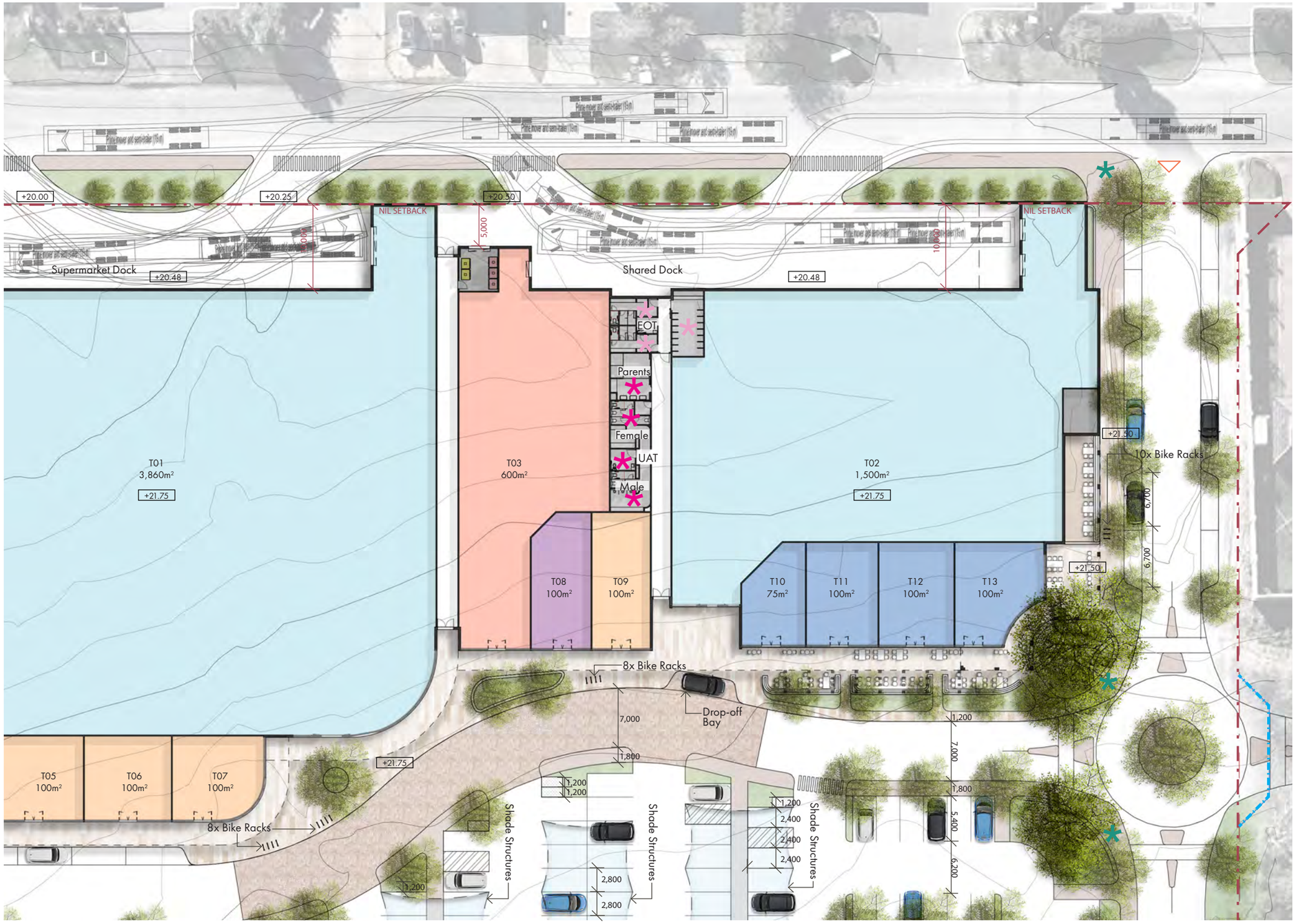
Floor Plan - North West

Pg 5 Rev A

Beeliar SC 2433 02 2026

place fabric.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026



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Scale 1:500 @ A3

0 5 10 15 20 25

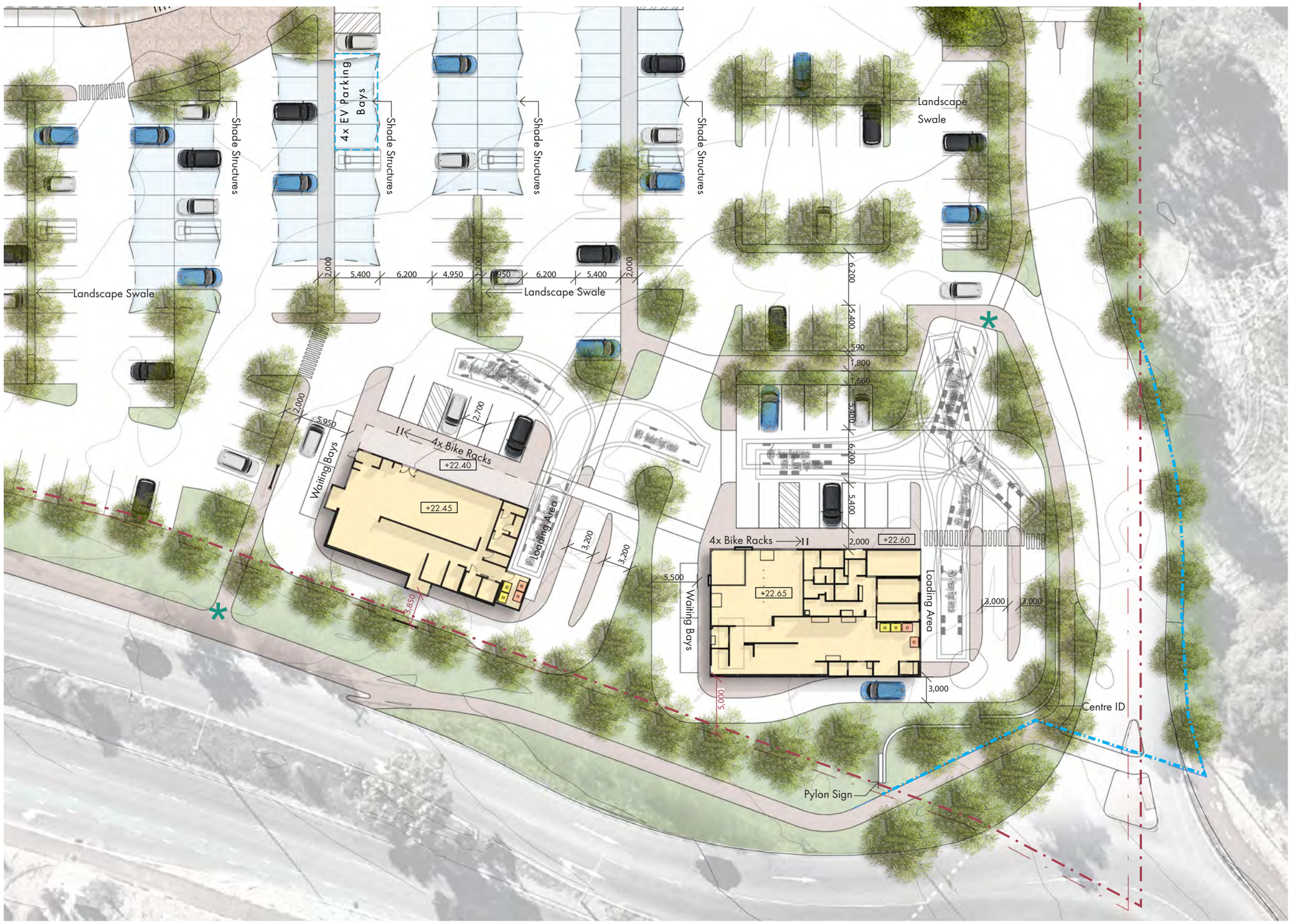
Floor Plan - North East

Pg 6 Rev A

Beeliar SC 2433 02 2026

place fabric.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026



Legend

- Existing Site Boundary
- Proposed Site Boundary
- Vehicle Entry/Exit
- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

Development Summary

Anticipated Use	Class in LSP3	Area
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Fuel	Service Station	240m²
Amenities	-	
Services	-	
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On-Site Bays	216
Pad Site Bays	32
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Motorcycle Bays	7

BIKE PARKING	NUMBERS
Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	68

Scale 1:500 @ A3

0 5 10 15 20 25

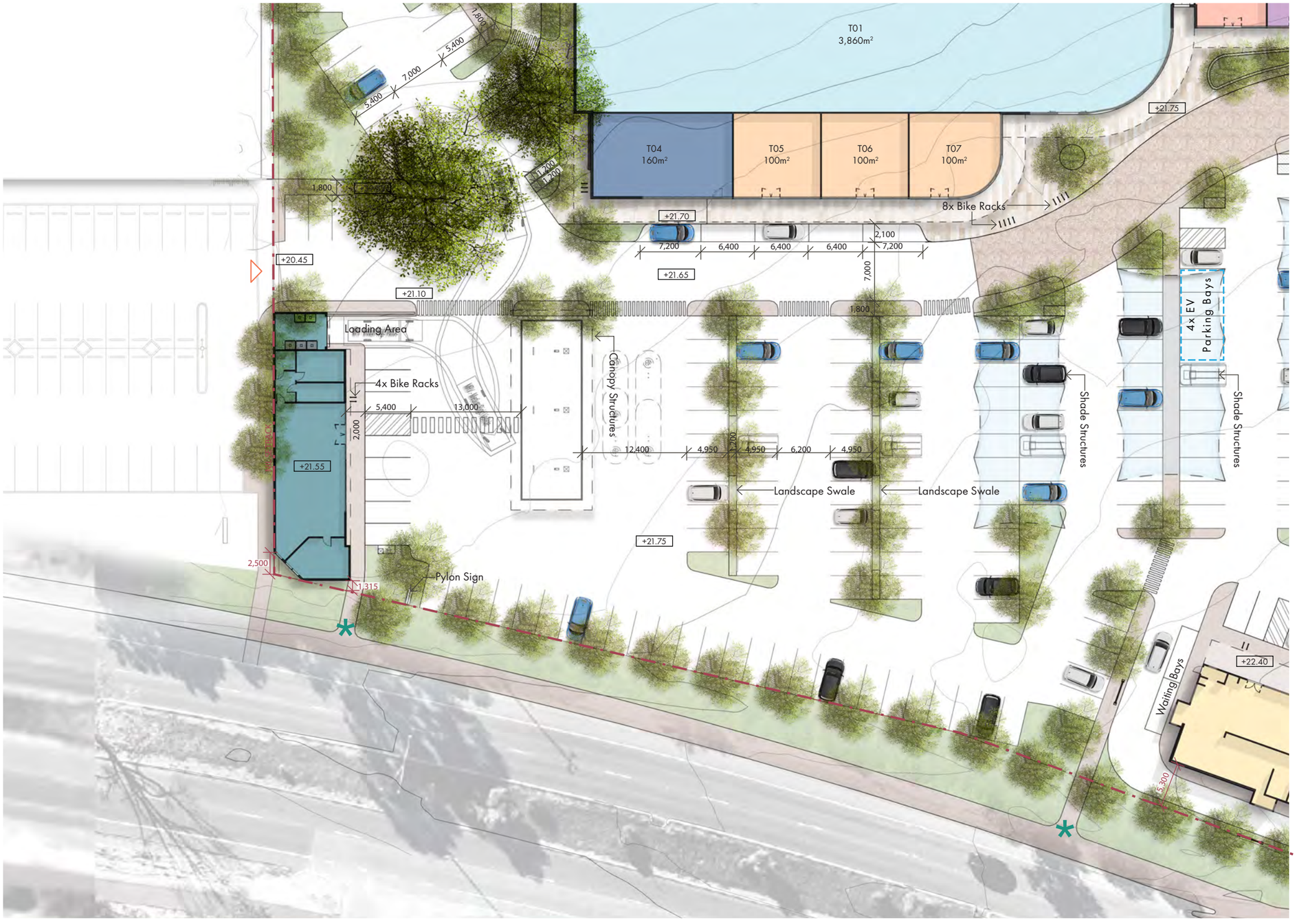
Floor Plan - South East

Pg 7 Rev A

Beeliar SC 2433 02 2026

place fabric.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026



Legend

- Existing Site Boundary
- Proposed Site Boundary
- Vehicle Entry/Exit
- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

Development Summary

Anticipated Use	Class in LSP3	Area
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Amenities	-	
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Secure Staff Parking	24
TOTAL BAYS PROVIDED	68

Scale 1:500 @ A3

0 5 10 15 20 25

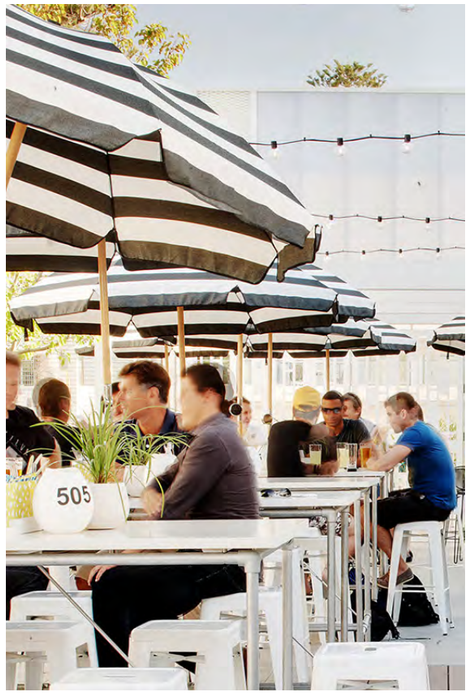
Floor Plan - South West

Pg 8 Rev A

Beeliar SC 2433 02 2026

place fabric.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026



Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

South Elevation

East Elevation

West Elevation

North Elevation

Scale 1:500 @ A3

0 5 10 15 20 25

Site Elevations

Pg 10 Rev A

Beeliar SC 2433 02 2026

place fabric.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

South Elevation A

South Elevation B

South Elevation A

South Elevation B

Scale 1:250 @ A3

0 5 10 15

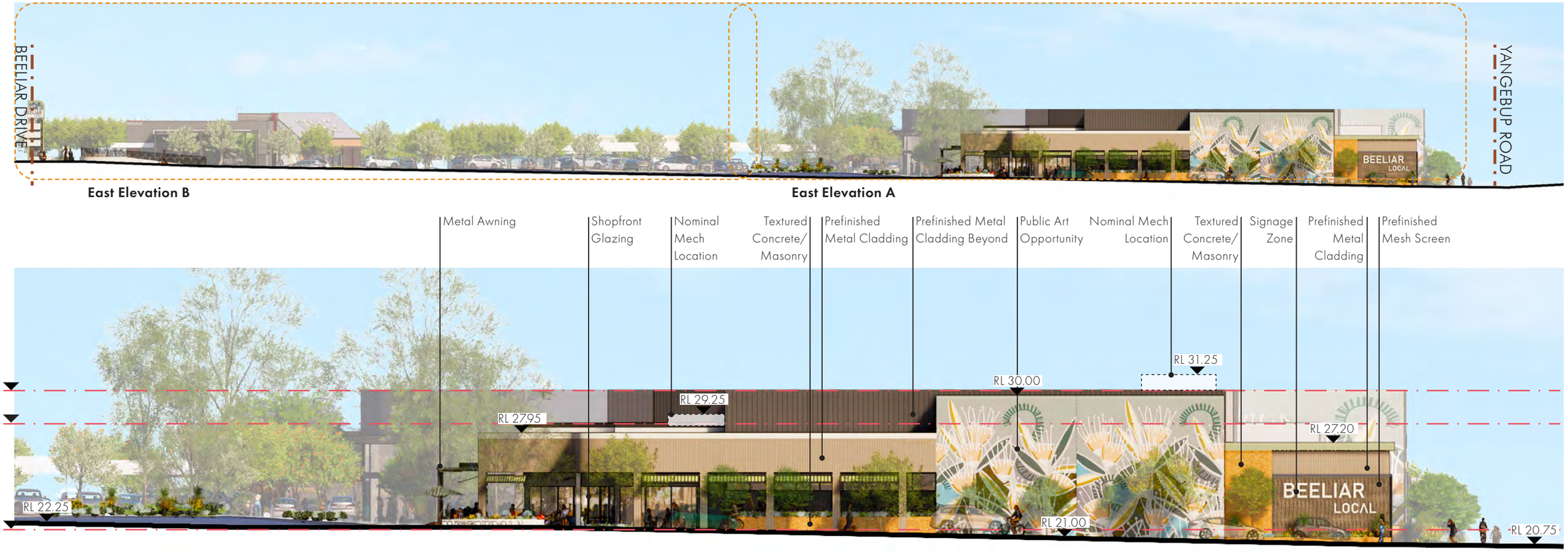
South Elevation

Pg 11 Rev A

Beeliar SC 2433 02 2026

place fabric.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026



East Elevation B

East Elevation A

East Elevation A

East Elevation B

Scale 1:250 @ A3

0 5 10 15

East Elevation

Pg 12 Rev A

Beeliar SC 2433 02 2026

place fabric.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

Scale 1:250 @ A3

0 5 10 15

West Elevations

Pg 13 Rev A

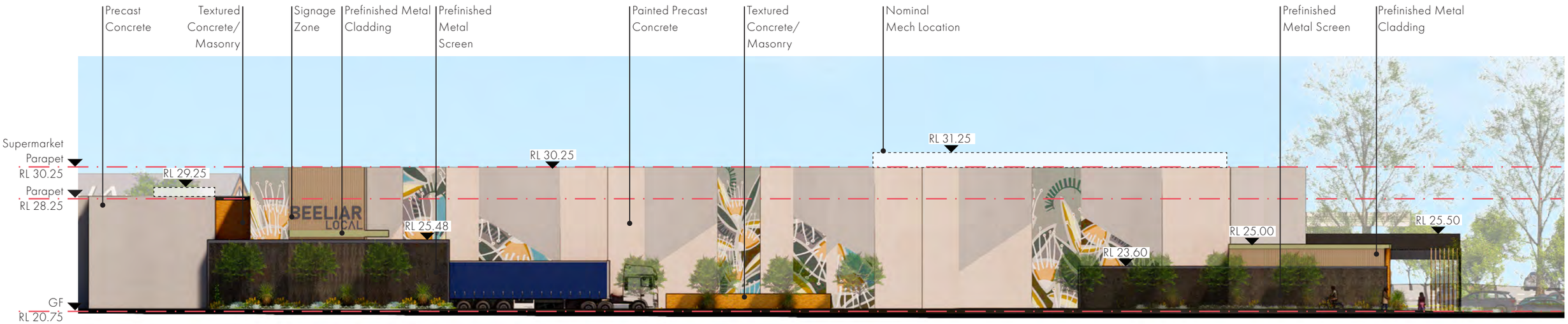
Beeliar SC 2433 02 2026

place fabric.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

North Elevation A **North Elevation B**

North Elevation A



North Elevation B

Scale 1:250 @ A3

0 5 10 15

North Elevations

Pg 14 Rev A

Beeliar SC 2433 02 2026

place fabric.

Document Set ID: 12624068
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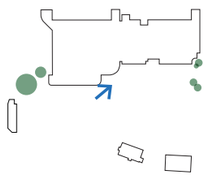

3D Render

Pg 15 Rev A

Beeliar SC 2433 02 2026

place fabric.

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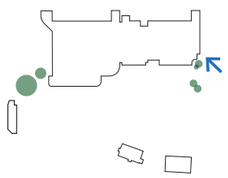

3D Render

Pg 16 Rev A

Beeliar SC 2433 02 2026

place fabric.

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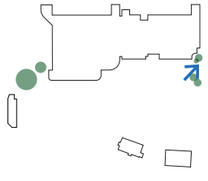


3D Render

Pg 17 Rev A

Beeliar SC 2433 02 2026

place fabric.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

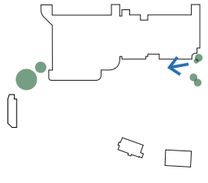
3D Render

Pg 18 Rev A

Beeliar SC 2433 02 2026

place fabric

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026



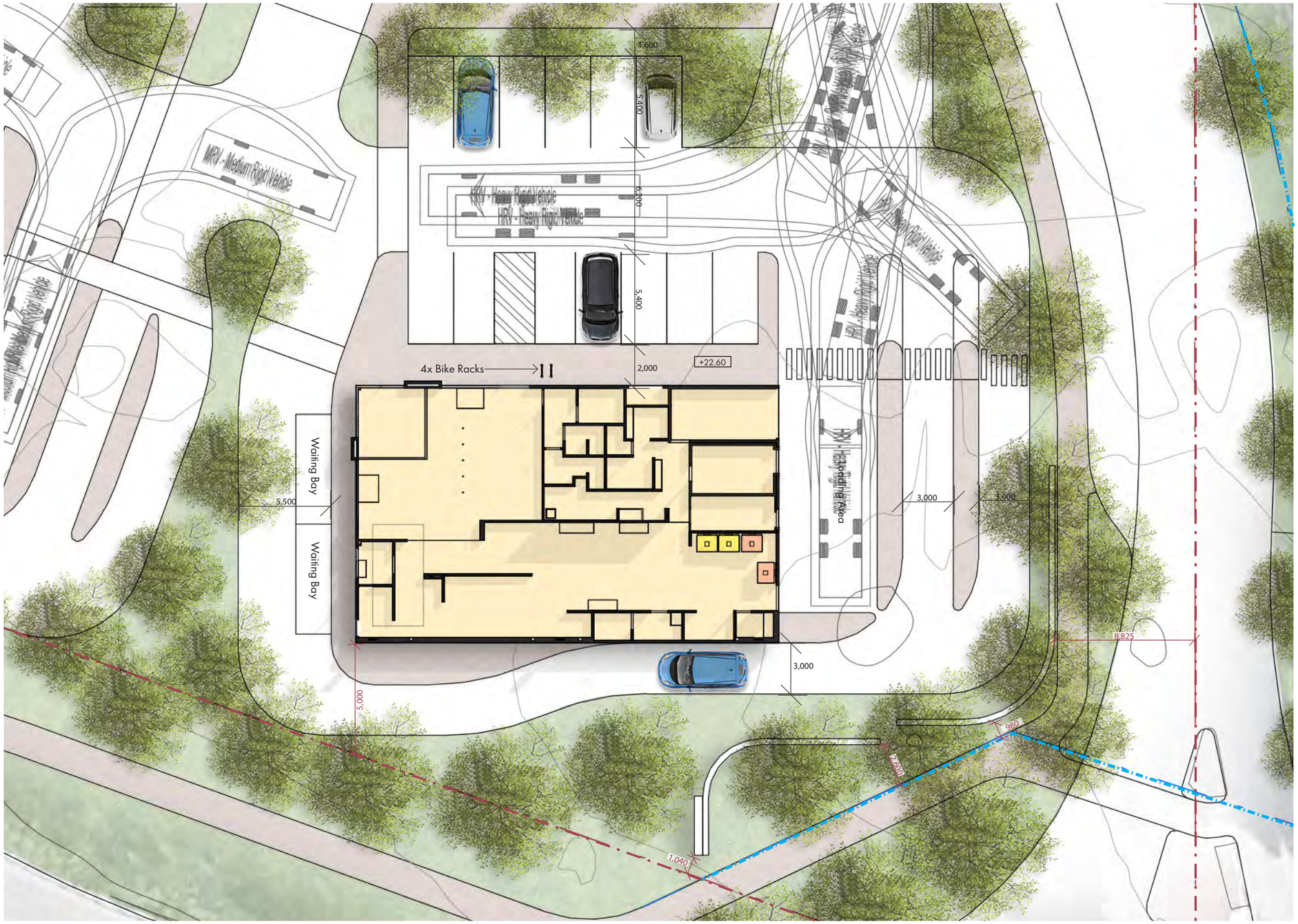
3D Render

Pg 19 Rev A

Beeliar SC 2433 02 2026

place fabric.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026



Legend

- Existing Site Boundary
- Proposed Site Boundary
- Vehicle Entry/Exit
- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

Development Summary

Anticipated Use	Class in LSP3	Area
Major Retail	Shop	5,360m²
Consulting Room	Consulting Room	100m²
Mini Major	Shop	600m²
Liquor	Liquor Store	160m²
Retail/ Commercial	Shop	400m²
Food & Beverage	Restaurant/Fast Food	375m²
Fast Food	Fast Food	620m²
Fuel	Service Station	240m²
Amenities	-	
Services	-	
TOTAL NLA		**7,855m²**

Note:

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Motorcycle Bays	7

BIKE PARKING	NUMBERS
Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	68

Scale 1:250 @ A3

0 5 10 15

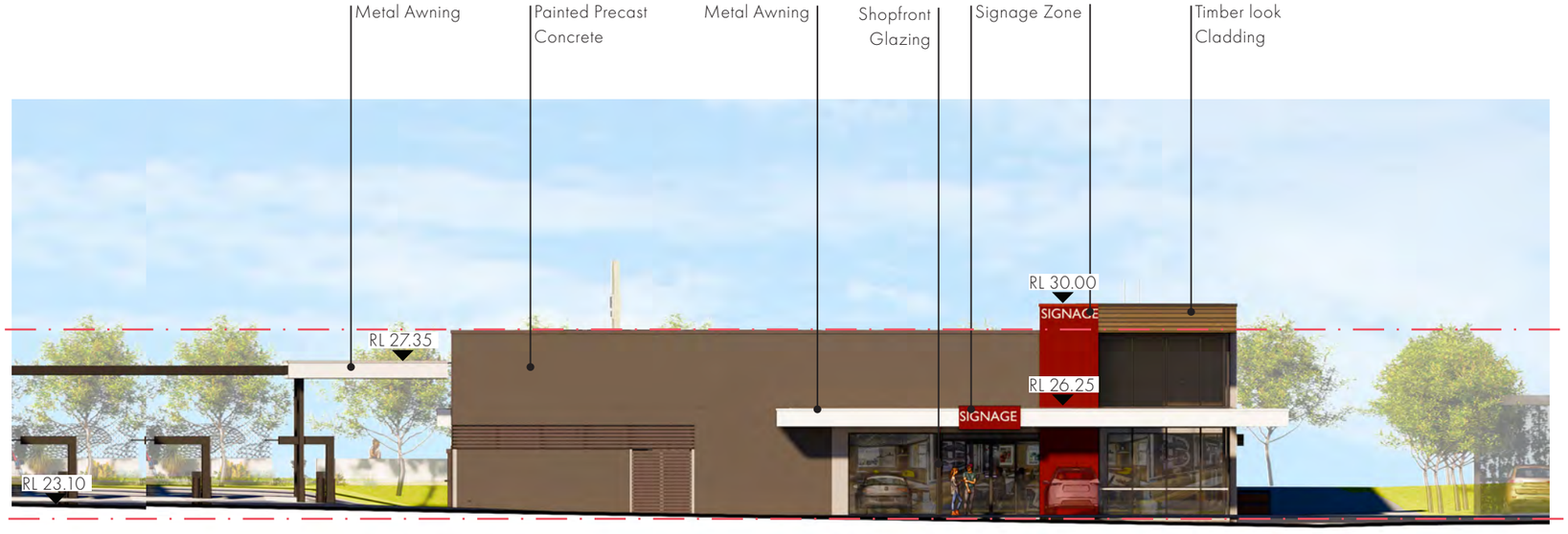
Pad Site 1 - Ground Floor

Pg 20 Rev A

Beeliar SC 2433 02 2026

place fabric.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026



North Elevation

South Elevation

Scale 1:200 @ A3

0 1 2 3 4 5 10

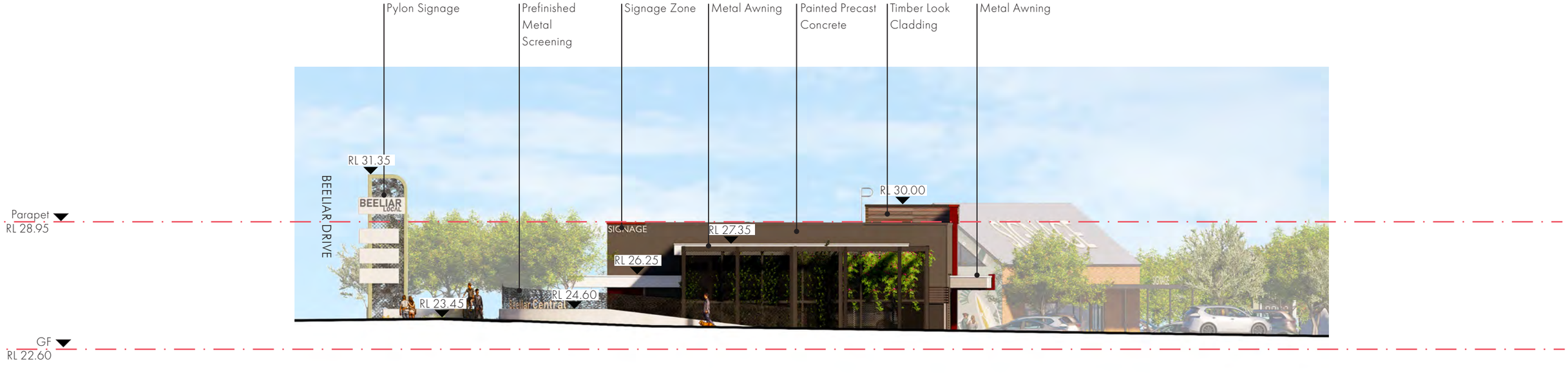
Pad Site 1 - North & South Elevations

Pg 21 Rev A

Beeliar SC 2433 02 2026

place fabric.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026



East Elevation

West Elevation

Scale 1:200 @ A3

0 1 2 3 4 5 10

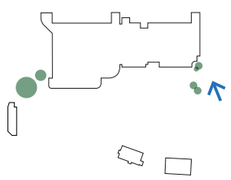
Pad Site 1 - East & West Elevations

Pg 22 Rev A

Beeliar SC 2433 02 2026

place fabric.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026



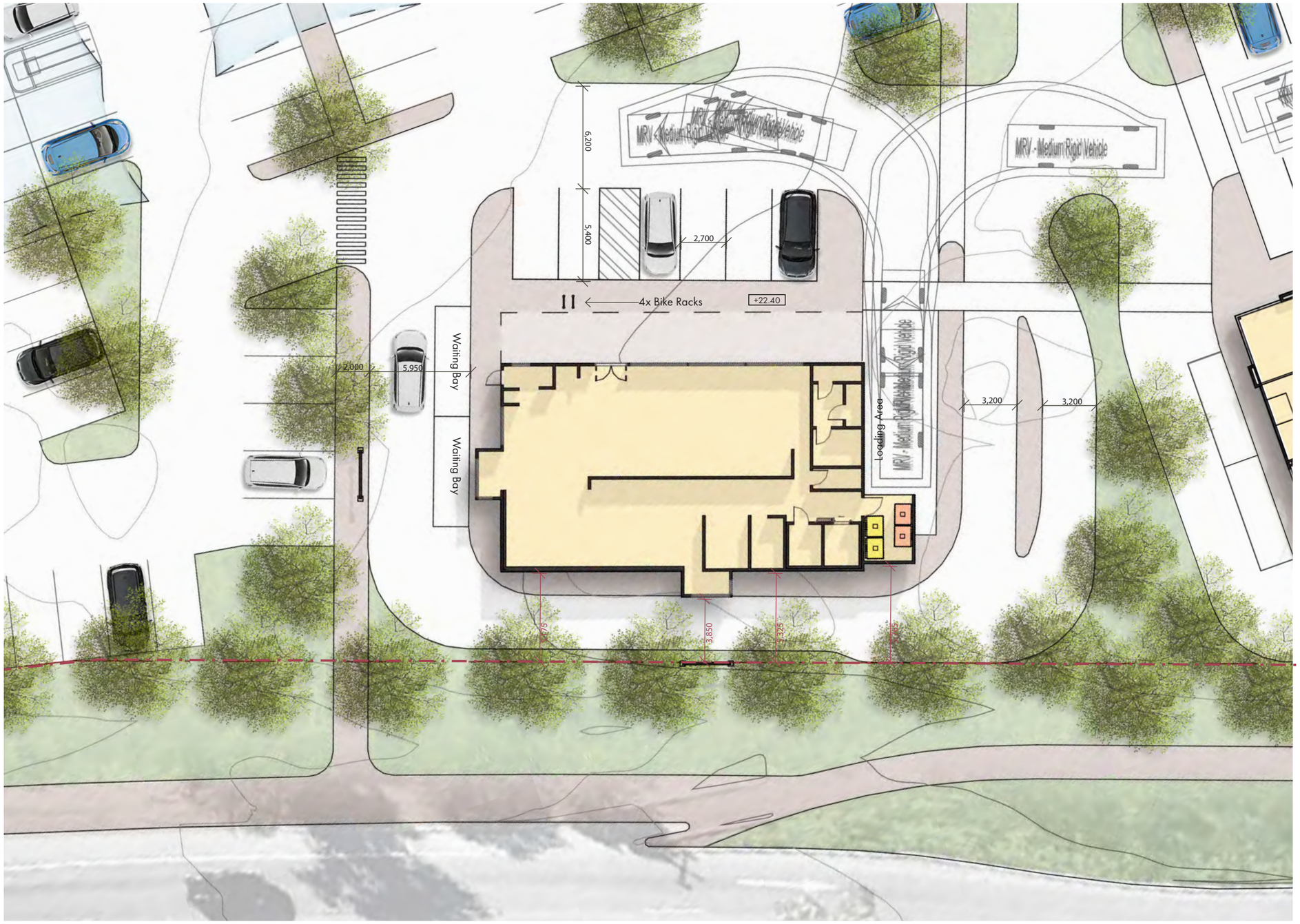
3D Render

Pg 23 Rev A

Beeliar SC 2433 02 2026

place fabric

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026



Legend

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Scale 1:250 @ A3

0 5 10 15

Pad Site 2 - Ground Floor

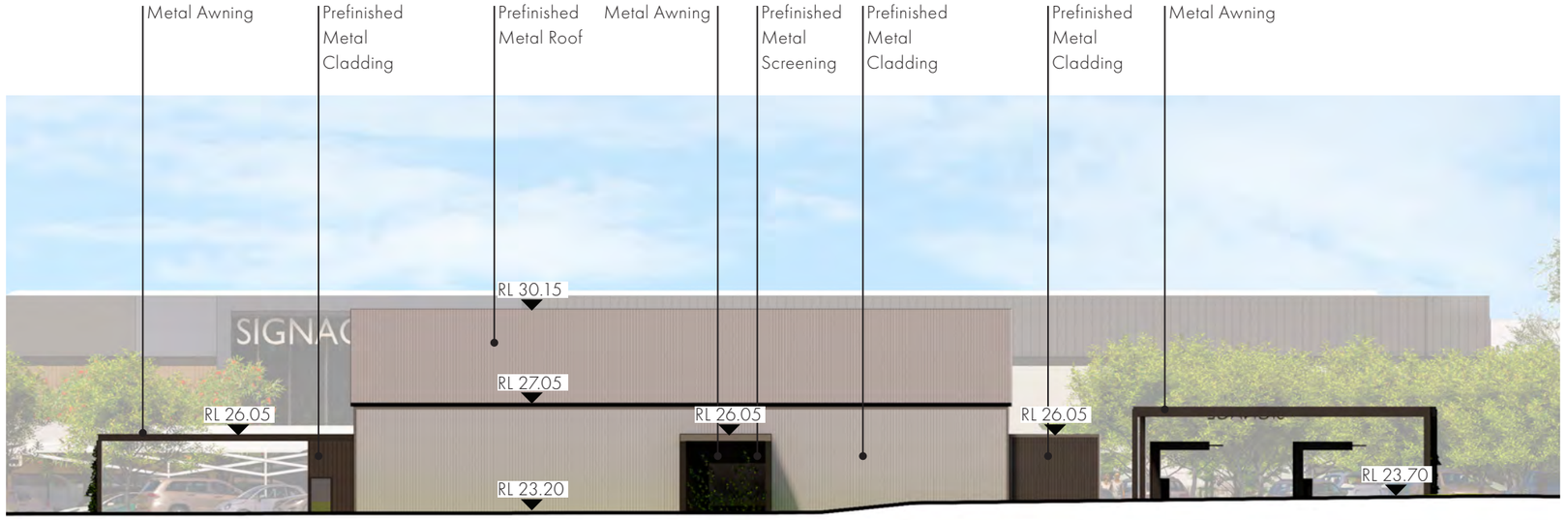
Pg 24 Rev A

Beeliar SC 2433 02 2026

place fabric.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

North Elevation



South Elevation

Scale 1:200 @ A3

0 1 2 3 4 5 10

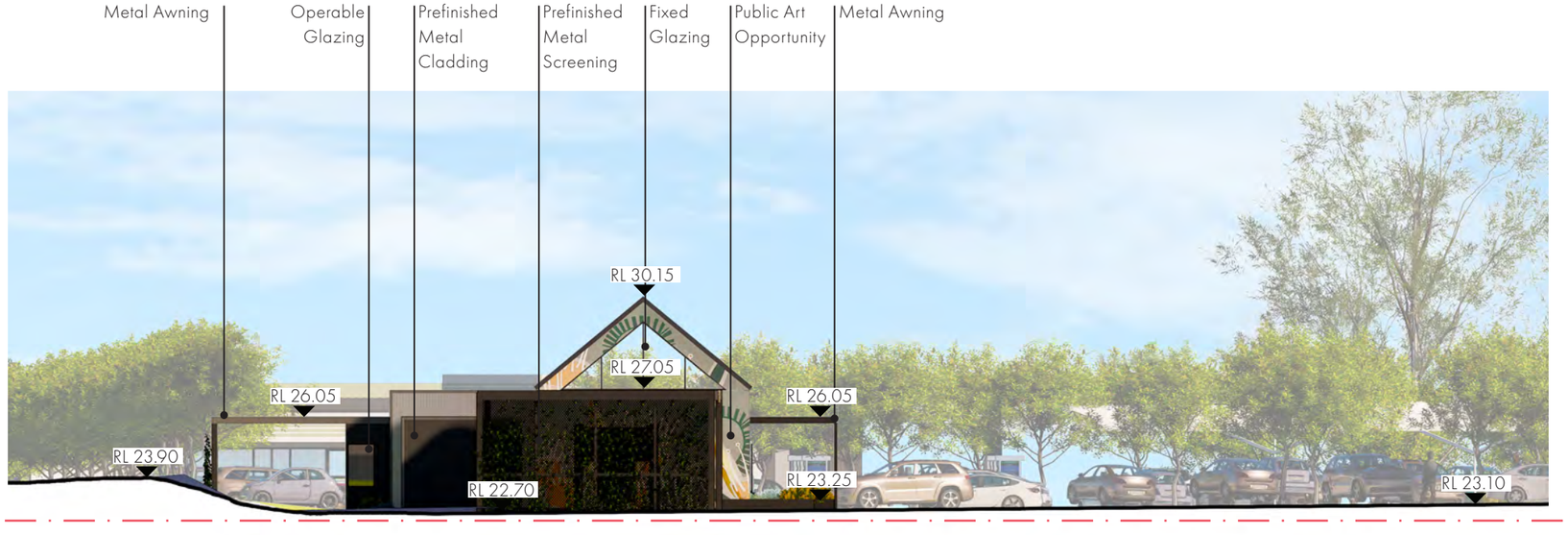
Pad Site 2 - North & South Elevations

Pg 25 Rev A

Beeliar SC 2433 02 2026

place fabric.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026



East Elevation

West Elevation

Scale 1:200 @ A3

0 1 2 3 4 5 10

Pad Site 2 - East & West Elevations

Pg 26 Rev A

Beeliar SC 2433 02 2026

place fabric.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

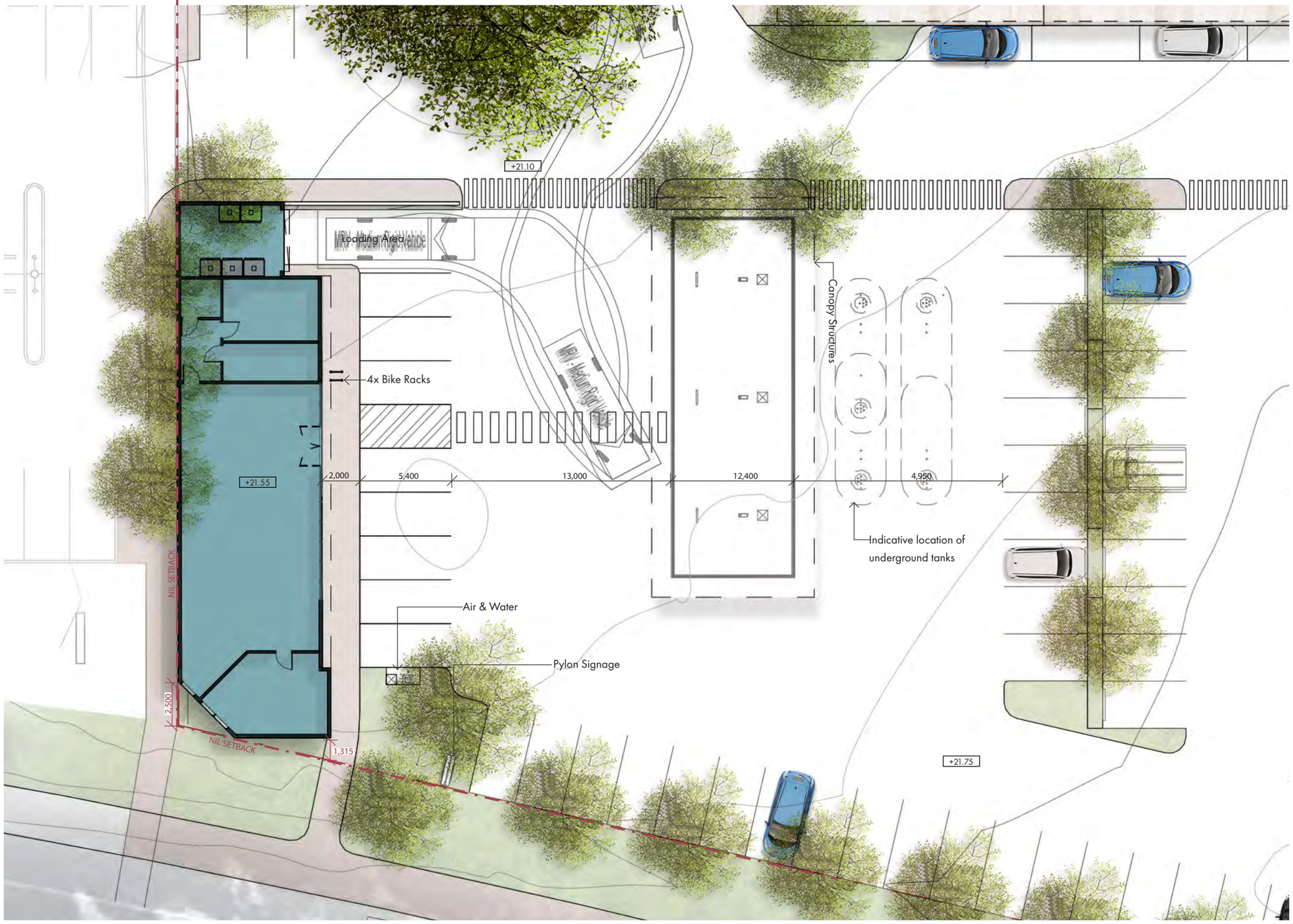
3D Render

Pg 27 Rev A

Beeliar SC 2433 02 2026

place fabric

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026



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Secure Staff Parking	24
TOTAL BAYS PROVIDED	68

Scale 1:250 @ A3

0 5 10 15

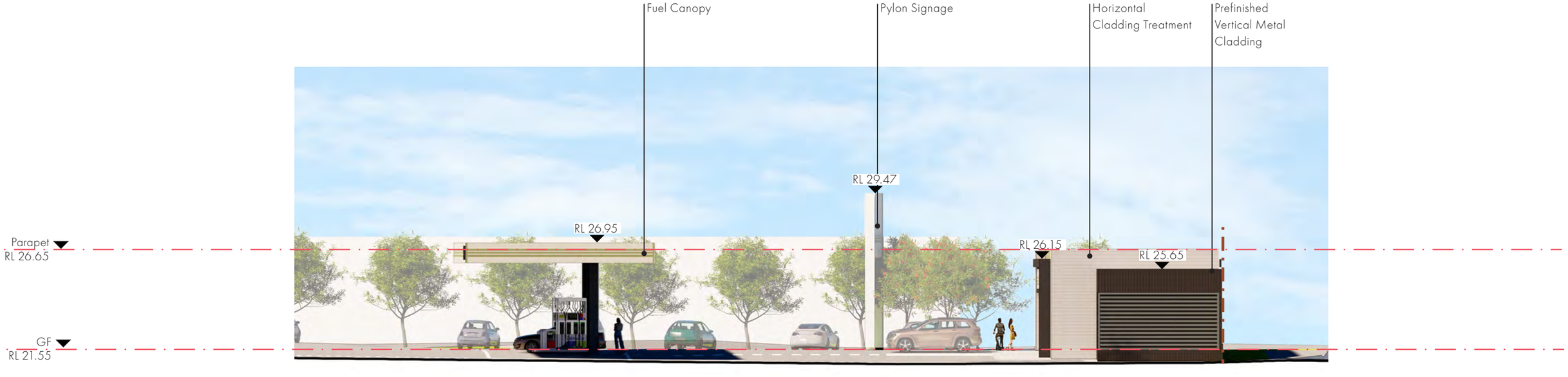
Fuel Site - Ground Floor

Pg 28 Rev A

Beeliar SC 2433 02 2026

place fabric.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026



North Elevation

South Elevation

Scale 1:200 @ A3

0 1 2 3 4 5 10

Fuel Site - North & South Elevations

Pg 29 Rev A

Beeliar SC 2433 02 2026

place fabric

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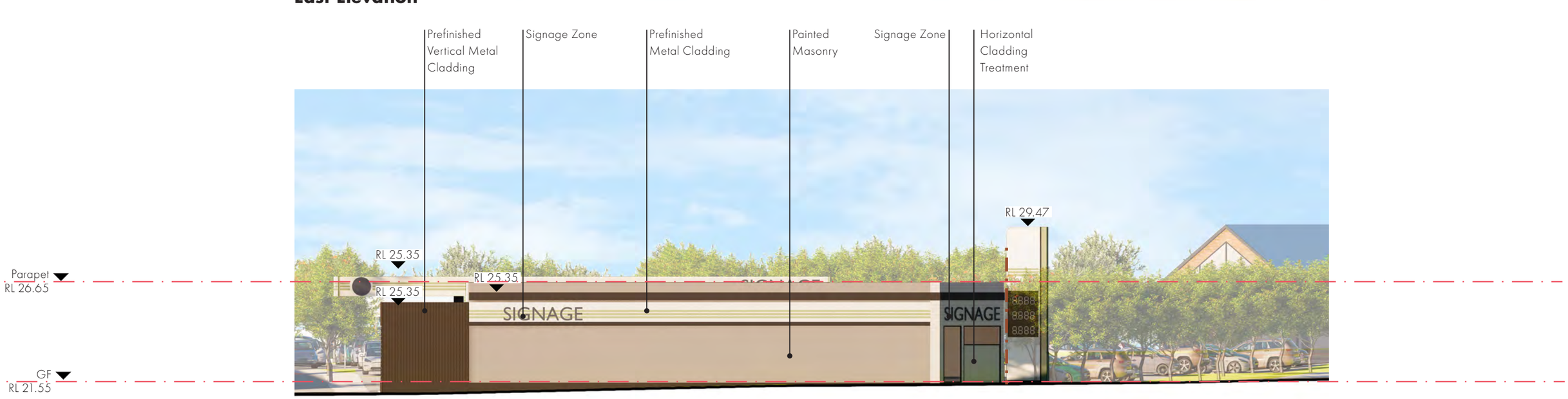
East Elevation



West Elevation

Scale 1:200 @ A3

0 1 2 3 4 5 10

Fuel Site - East & West Elevations

Pg 30 Rev A

Beeliar SC 2433 02 2026

place fabric.

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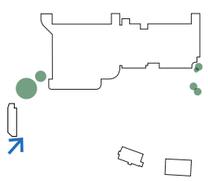

3D Render

Pg 31 Rev A

Beeliar SC 2433 02 2026

place fabric

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ATTACHMENT 4

Bushfire Management Plan

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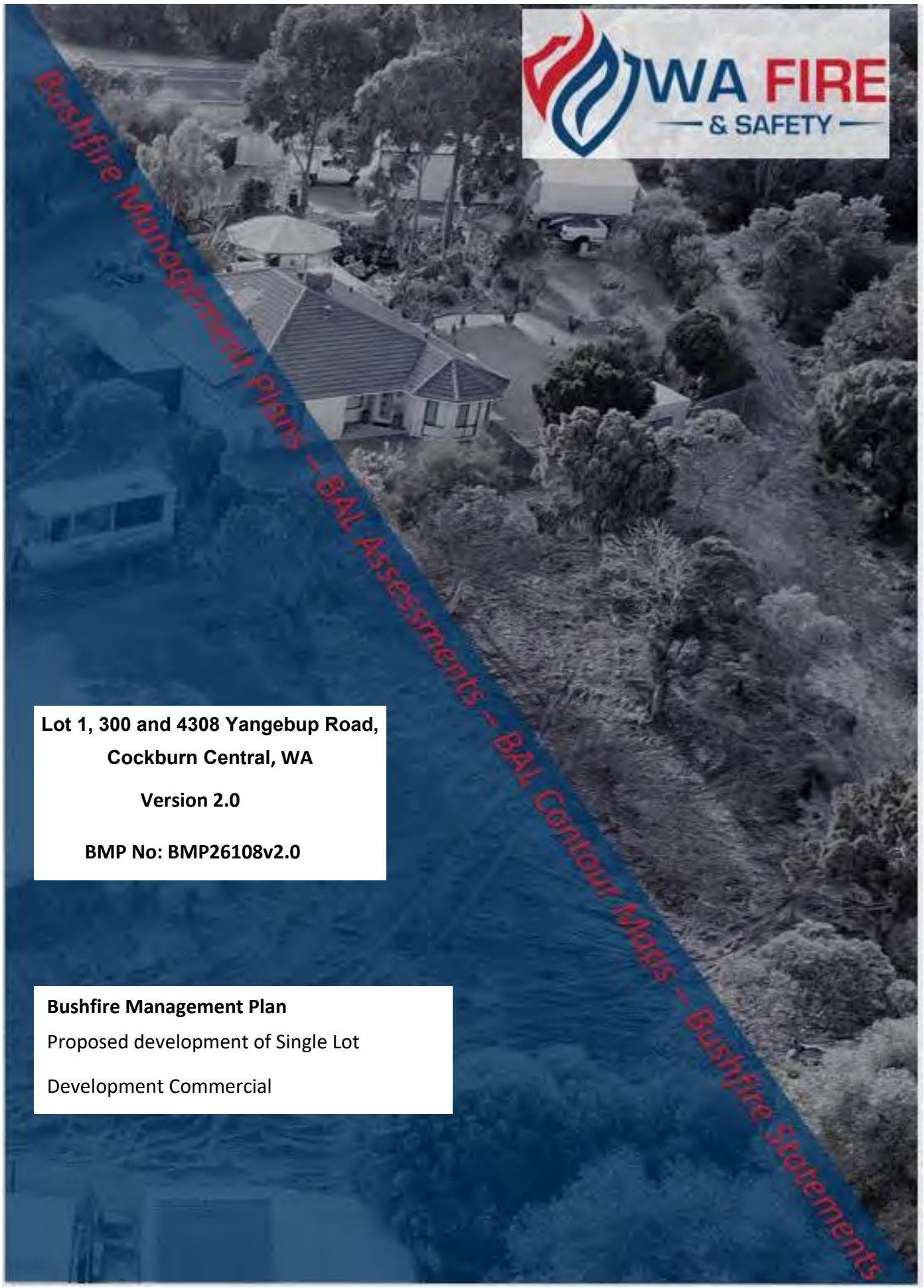

Lot 1, 300 and 4308 Yangebup Road, Cockburn Central, WA

Version 2.0

BMP No: BMP26108v2.0

Bushfire Management Plan

Proposed development of Single Lot

Development Commercial

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

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Bushfire Management Plan Coversheet

This Coversheet and accompanying Bushfire Management Plan has been prepared and issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme.

Bushfire management Plan and Site Details

Site Address: Lot 1, 300 and 4308 Yangebup Road, Cockburn Central, Western Australia,

Date of site visit: 3 September 2025

Report Author and/ or Reviewer: Dwayne Griggs, Level 2, BPAD 40466 - WA Fire & Safety

(BMP) Bushfire Management Plan Number: BMP 26108v2.0

BMP Date: 6 February 2026

If one or more of the following are marked **X / YES**, then this BMP should be referred to DFES for comment:

	Yes	No
Has the BAL been calculated by a method other than Method 1 as outlined in AS3959?		X
Have any of the bushfire protection criteria elements been addressed through the use of an outcomes-based approach?		X
Strategic planning proposal (including rezoning applications)		X
Local planning scheme amendment containing supplementary provisions, additional to the deemed provisions for bushfire risk management		X
Where a bushfire local planning policy, or variation to the acceptable solutions or the APZ is proposed		X
Where there is a conflict of opinion between the decision maker and proponent		X
Expert technical advice on bushfire behaviour, emergency management, or other occasions where bushfire technical advice is required to support planning decision-making		X
Expert technical advice on bushfire matters referred to State Administrative Tribunal (SAT) or Development Assessment Panel (DAP)		X
Comments on future buildings' compliance with FES Commissioner's operational requirement guidelines		X
Decision maker discretionary referral, (e.g. renewable energy, hazardous materials, vulnerable land use)		X

Note: The decision maker (e.g. local government or the WAPC) should only refer the proposal to DFES for comment if one (or more) of the above answers are ticked "Yes". Referral to DFES Checklist

The information provided within this bushfire management plan to the best of my knowledge is true and correct:

Dwayne Griggs, WA Fire & Safety, 6 February 2026

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Document control

Report version	Purpose	Author/reviewer and accreditation details	Date submitted
1.0	Approval of Commercial 4 x Class 6 Structures	Dwayne Griggs Level 2- BPAD40466 Claire Taylor Level 1 – BPAD62089	15 September 2025
2.0	Approval of Commercial 4 x Class 6 Structures & 4 x Class 10a Non-Associated Structures (Change of Site Plans)	Dwayne Griggs Level 2- BPAD40466 Claire Taylor Level 1 – BPAD62089	6 February 2026

Disclaimer

The Bushfire Management Plan prepared by WA Fire & Safety (Dwayne Griggs BPAD40466), is solely intended for the use of:

1. Current & future landowners
2. Developers & contractors engaged by the current landowners
3. Local Government Authority (LGA)

The enclosed strategies intended for the mitigation of the bushfire risk for this development are the minimum standard and the risk is assessed to the ability of the bushfire consultant and provided information from all stakeholders at the time of the accepted task.

This BMP considers the bushfire aspects of planning only and does not consider all the environmental aspects involved. A limited environmental survey has been completed and further consultation and/or approval for vegetation clearances is up to the Local Government Authority (LGA).

The setbacks and distances for the Asset Protection Zone(s) APZs should be confirmed at the time of vegetation modification for the proposed structures and after the vegetation clearance a final inspection may be required to provide a to confirm distance and issue a BAL certificate, thus ensuring the correct risk mitigation distances has been achieved, the decision for a final inspection is up to the LGA.

There is no guarantee that in the event of a bushfire that property loss will not occur, and the author has used the information provided, appropriate guidelines and due care to provide what they believe is the best possible solution to combat a relatively unpredictable fire threat.

WA Fire & Safety (Dwayne Griggs) excludes all liability for any damage, loss, injury or claim from any fire event, by the acceptance of this BMP the property owner is made aware and agrees to this exclusion of liability.

The ongoing responsibility falls on the landowner for the correct site maintenance to maintain the BAL Levels outlined inside this BMP and their continuance to mitigate the risks involved with extreme fire behaviour. The poor maintenance of vegetation, fuel loads, APZ requirements, Local government fire break notices and fire risk mitigation strategies provided within this BMP can severely impact the level of risk that a fire event can have. If the landowner believes that any factors have changed or modified the potential risk, then the bushfire consultant should be informed, and a new BMP may be required.

On submission of this BMP the landowner authorises direct contact from the LGA to the bushfire consultant for any issues, changes, or queries, contact details are below.

This Bushfire Management Plan is Valid for 3 years from the date completed.

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Compliance Statement

This document has been prepared in accordance to comply with the latest State Planning Policy 3.7 Bushfire April 2023 and the Planning for Bushfire Guidelines September 2024.

Bushfire Management Plan

Author:

Claire Taylor

Level 1 FPAA Accredited Practitioner

Accreditation Number: 62089

Reviewer:

WA Fire & Safety, Maida Vale, Western Australia

Dwayne Griggs

Level 2 FPAA Accredited Practitioner

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Webpage: https://www.wafiresafety.com.au/

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1.0 Introduction and Proposal Details

This BMP has been requested by the landowners for the proposed development of Lot 1, 300 and 4308 Yangebup Road, Cockburn Central, Western Australia, within the LGA of the City of Cockburn.

The zoned Mixed Business lot is currently identified as inside the Bushfire Prone area 2. Currently this lot is in an undeveloped state with only the firebreaks being established to an acceptable standard.

This proposed application is for a 4 x commercial structures:

1. Class 6 Main Shopping Centre located to the North.
2. Class 6 Service Station Located to the Southwest.
3. Class 6 Fast Food Building 1 located to the Southeast.
4. Class 6 Fast Food Building 2 located to the Southeast.
5. 4 x Class 10a Non-Associated Car park Shades located in the center of the lot

The assessed bushfire risk for the lot is moderate to extreme, BAL-29 or less is achievable for all proposed structures with vegetation separation and an APZ (Asset Protection Zone) established inside the lot.

Determined BAL rating is BAL-FZ on the day for all proposed structures on the day of the site visit and further vegetation modification is required to achieve BAL-29 or less.

1.1 Site Location

The proposed development is located 1km East of Cockburn centre on Yangebup Road having access from West and East.

1.2 Aims and Objectives

The aim of this Bushfire Management Plan is to identify issues, requirements and provide bushfire risk mitigation measures for the proposed development. Aims for this site include:

- avoid increasing the threat to people, property and infrastructure
- reduce the developments vulnerability from extreme bushfire behaviour
- allow ingress and egress for fire and emergency services
- consider and minimize environmental impacts by reducing vegetation modification.

The objectives of this Bushfire Management Plan are to:

- demonstrate suitability for development
- display bushfire risk levels, fuels, vegetation types and the impact before and after
- show Bushfire management strategies recommended for the site
- demonstrate compliance with the bushfire protection criteria and the use of acceptable solutions for the site.

1.3 Document Preparation

Dwayne Griggs from WA Fire & Safety a BPAD Level 2 accredited practitioner with the Fire Protection Association of Australia has conducted the site assessment and prepared this BMP.

FIGURE 1: Copy of Site Plans

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FIGURE 2: Proposed Location

FIGURE 3: **Map of Bushfire Prone Areas for the subject site**

Site is entirely inside the bushfire prone area 2.

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2.0 Environmental Considerations

Limited considerations below have been assessed with no issues:

Department of Biodiversity, Conservation and Attractions (DBCA)

Conservation category wetlands and buffer **DBCA-019,**
Augusta to Walpole **DBCA-017**)
RAMSAR wetlands (**DBCA-010**)
Threatened and priority flora (**DBCA-036**)-May require investigation.
Threatened Ecological Communities (**DBCA-038**)-May require investigation.

Department of Planning, Lands and Heritage

Bush Forever areas 2000 (**DPLH-019**)

Department of Water and Environmental Resources (DWER)

Clearing regulations – Environmentally Sensitive Areas (**DWER-046**)
Swan Bioplan Regionally Significant Natural Areas 2010 (**DWER-070**)

Department of Primary Industries and Regional Development (DPIRD)

Conservation Covenants Western Australia (**DPIRD-023**)-May require investigation.

2.1 Native vegetation – Modification and Clearing

Vegetation modification is required to achieve BAL-29 for all proposed structures within the proposed lot.

The area of 7025m2 of Class A Forest and 2.924 ha of Class G Grassland will be required to be modified to the Asset Protection Zone – Siting and Design (appendix 1) and the requirements of the Local Government Authority Firebreak Notice (Appendix 2) in order to establish and APZ of BAL-29.

There are no alternative bushfire management design solutions that will reduce the extent of vegetation clearing as the commercial structure location has been provided to minimise vegetation modification.

The proposed layout will result in an appropriate balance between bushfire risk mitigation and vegetation retention.

2.2 Revegetation/Landscape Plans

Revegetation inside the APZ will be designed and maintained as per the Asset Protection Zone – Siting and Design (Appendix 1) and the Local Government Authority Firebreak Notice (Appendix 2)

Landscape Plans provided below with layout of trees and plants to be used within the subject lot.

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Figure 4: Basic Landscape Plan (low threat grassed area)

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3.0 Bushfire Assessment Results

The site requires a BAL assessment in accordance with clause 6.5 of SPP 3.7. The assessment of this site or development was undertaken by Dwayne Griggs of WA Fire & Safety, a BPAD Accredited Level 2 Practitioner for the purpose of determining the Bushfire Attack Level in accordance with AS 3959 - 2018 Simplified Procedure (Method 1). All vegetation within 150m of the proposed site has been assessed and classified in accordance with AS3959.

3.1 BAL Assessment Inputs

Vegetation and land use within 150 m of the site has been classified as per descriptions included in *AS 3959 – 2018 Construction of Buildings within Bushfire Prone Areas*.

All vegetation inside the 150m Vegetation survey is either Class A Forest or Class G Grassland.

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Plot 1	
Vegetation Classification or Exclusion Clause:	Class G Grassland
Description / Justification for Classification	
Grassland of >100mm in Height Canopy Cover of Less than 10% Understorey of Grasses Minimal surface, Near surface and Intermediate Fuel loads	
Photo ID: 15	**Photo ID: 27**
Photo ID: 45	**Photo ID:**

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Plot 2	
Vegetation Classification or Exclusion Clause:	Class A Forest
Description / Justification for Classification	
Overstorey 10-30m in Height Canopy Cover of 30-70% Understorey of Low Trees, Shrubs, Scrub and Grasses High surface, Near surface and Intermediate Fuel loads	
Photo ID: 19	**Photo ID: 24**

Document Set ID: 12624068
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Plot 3	
Vegetation Classification or Exclusion Clause:	Class A Forest
Description / Justification for Classification	
Overstorey 10-30m in Height Canopy Cover of 30-70% Understorey of Low Trees, Shrubs, Scrub and Grasses High surface, Near surface and Intermediate Fuel loads	
Photo ID: 8	**Photo ID: 80**

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Plot 4	
Vegetation Classification or Exclusion Clause:	Class A Forest
Description / Justification for Classification	
Overstorey 10-30m in Height Canopy Cover of 30-70% Understorey of Low Trees, Shrubs, Scrub and Grasses High surface, Near surface and Intermediate Fuel loads	
Photo ID: 59	**Photo ID: 71**

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Plot 5	
Vegetation Classification or Exclusion Clause:	Excludable - 2.2.3.2 (e) (f) Low Threat Vegetation/Non Vegetated
Description / Justification for Classification	
Maintained Areas Canopy Cover of Less than 10% Industrial Areas and Roads Insufficient Fuels to increase the risk from bushfire Non-Vegetated Areas	
Photo ID: 5	**Photo ID: 13**
Photo ID: 38	**Photo ID: 49**

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This site is flat ground

Table 3A: Vegetation Classification and Slopes

Plot	Vegetation Classification	Effective Slope
1	Class G Grassland	0/Upslope
2	Class A - Forest	0/Upslope
3	Class A - Forest	0/Upslope
4	Class A - Forest	0/Upslope
5	Excludable – Clause 2.2.3.2 (e) & (f)	-

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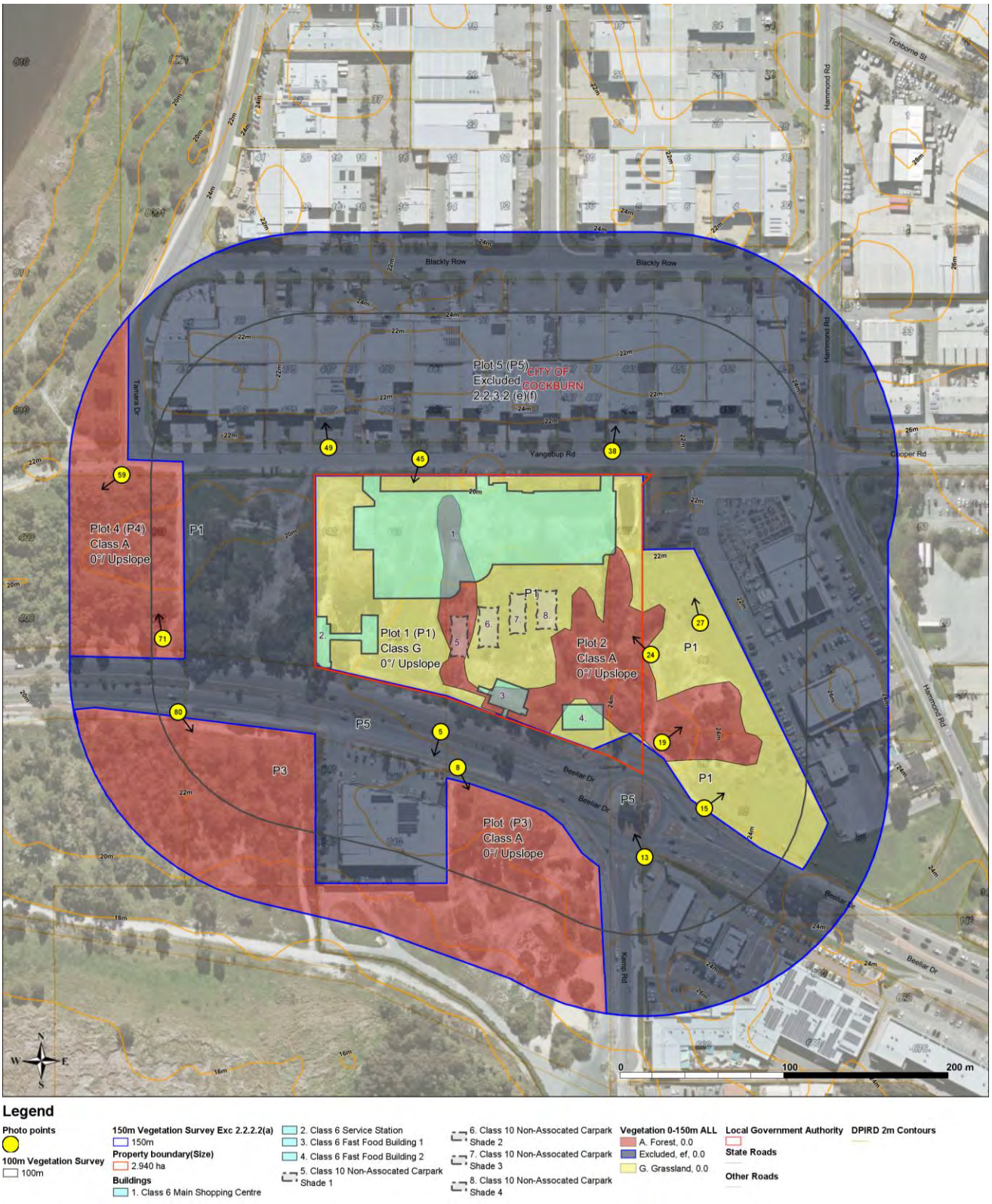
Figure 5: Vegetation Classification Map



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3.2 BAL-Assessment Outputs

Table 3B) 1. Class 6 Main Shopping Centre provides the distances and determined radiant heat impact in the form of a BAL rating before vegetation modification or the establishment of APZ.

Table 3B: Determined BAL Ratings

Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class G Grassland	0/Upslope	0	BAL – FZ
2	Class A - Forest	0/Upslope	0	BAL – FZ
3	Class A - Forest	0/Upslope	91	BAL – 12.5
4	Class A - Forest	0/Upslope	103	BAL – LOW
5	Excludable – Clause 2.2.3.2 (e) & (f)	-	-	BAL – LOW

Table 3C) 2. Class 6 Service Station provides the distances and determined radiant heat impact in the form of a BAL rating before vegetation modification or the establishment of APZ.

Table 3C: Determined BAL Ratings

Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class G Grassland	0/Upslope	0	BAL – FZ
2	Class A - Forest	0/Upslope	36	BAL – 19
3	Class A - Forest	0/Upslope	41	BAL – 19
4	Class A - Forest	0/Upslope	80	BAL – 12.5
5	Excludable – Clause 2.2.3.2 (e) & (f)	-	-	BAL – LOW

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Table 3D) 3. Class 6 Fast Food Building 1 provides the distances and determined radiant heat impact in the form of a BAL rating before vegetation modification or the establishment of APZ.

Table 3D: Determined BAL Ratings

Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class G Grassland	0/Upslope	0	BAL – FZ
2	Class A - Forest	0/Upslope	0	BAL – FZ
3	Class A - Forest	0/Upslope	45	BAL – 12.5
4	Class A - Forest	0/Upslope	179	BAL – LOW
5	Excludable – Clause 2.2.3.2 (e) & (f)	-	-	BAL – LOW

Table 3E) 4. Class 6 Fast Food Building 2 provides the distances and determined radiant heat impact in the form of a BAL rating before vegetation modification or the establishment of APZ.

Table 3E: Determined BAL Ratings

Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class G Grassland	0/Upslope	0	BAL – FZ
2	Class A - Forest	0/Upslope	0	BAL – FZ
3	Class A - Forest	0/Upslope	51	BAL – 12.5
4	Class A - Forest	0/Upslope	232	BAL – LOW
5	Excludable – Clause 2.2.3.2 (e) & (f)	-	-	BAL – LOW

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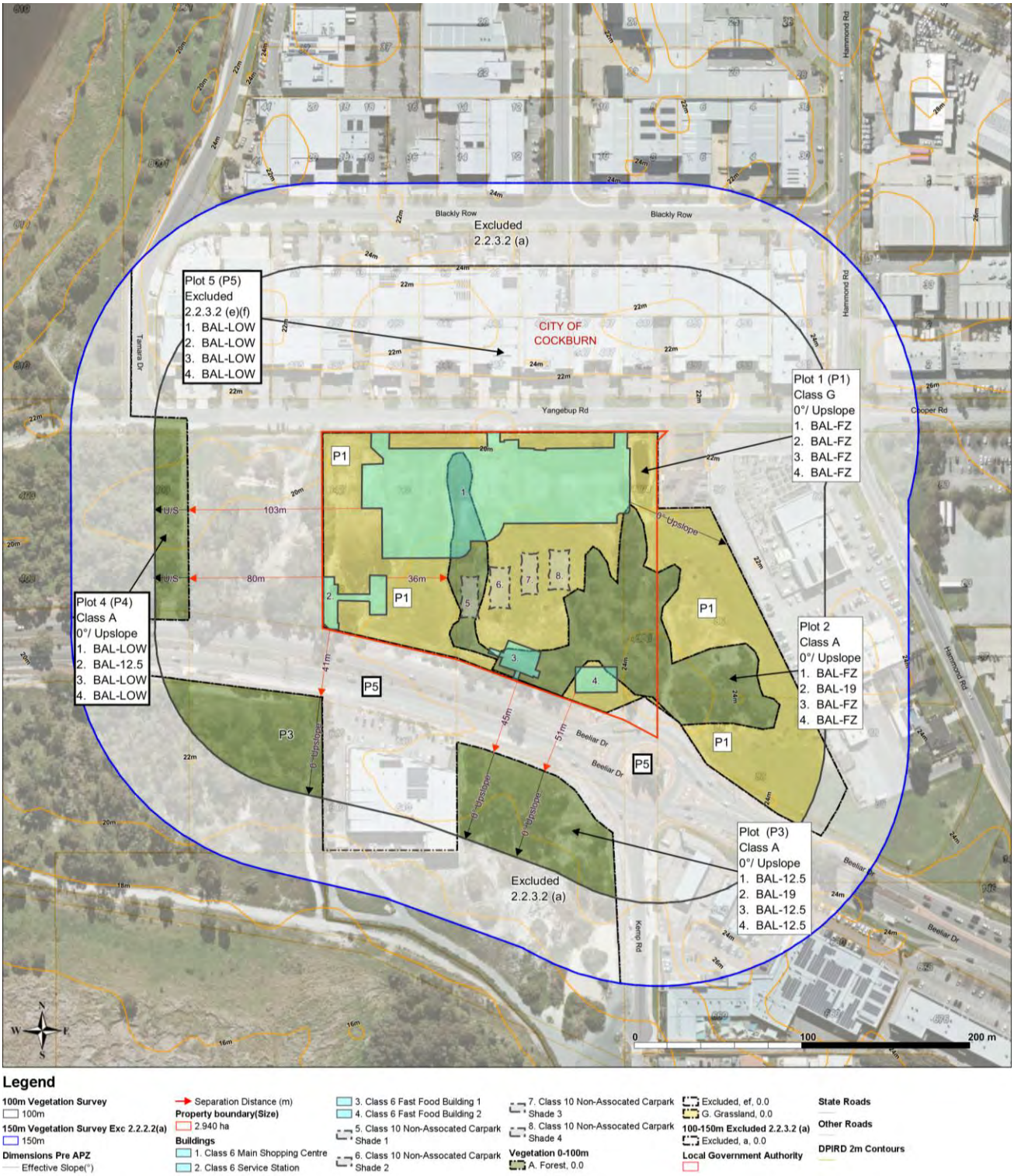
Figure 6: BAL Assessment Map



Legend

100m Vegetation Survey
100m
150m Vegetation Survey Exc 2.2.2.2(a)
150m
Dimensions Pre APZ
Effective Slope(°)
Separation Distance (m)
Property boundary(Size)
2.940 ha
Buildings
1. Class 6 Main Shopping Centre
2. Class 6 Service Station
3. Class 6 Fast Food Building 1
4. Class 6 Fast Food Building 2
5. Class 10 Non-Associated Carpark Shade 1
6. Class 10 Non-Associated Carpark Shade 2
7. Class 10 Non-Associated Carpark Shade 3
8. Class 10 Non-Associated Carpark Shade 4
Vegetation 0-100m
A. Forest, 0.0
Excluded, ef, 0.0
G. Grassland, 0.0
100-150m Excluded 2.2.3.2 (a)
Excluded, a, 0.0
Local Government Authority
State Roads
Other Roads
DPIRD 2m Contours

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Table 3F) 1. Class 6 Main Shopping Centre provides the indicative BAL rating after the proposed APZ has been established inside the lot boundary.

Table 3F: Prescribed BAL ratings and required separation distances

Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class G Grassland	0/Upslope	15	BAL – 19
2	Class A - Forest	0/Upslope	38	BAL – 19
3	Class A - Forest	0/Upslope	91	BAL – 12.5
4	Class A - Forest	0/Upslope	103	BAL – LOW
5	Excludable – Clause 2.2.3.2 (e) & (f)	-	-	BAL – LOW

Table 3G) 2. Class 6 Service Station provides the indicative BAL rating after the proposed APZ has been established inside the lot boundary.

Table 3G: Prescribed BAL ratings and required separation distances

Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class G Grassland	0/Upslope	161	BAL – LOW
2	Class A - Forest	0/Upslope	161	BAL – LOW
3	Class A - Forest	0/Upslope	41	BAL – 19
4	Class A - Forest	0/Upslope	80	BAL – 12.5
5	Excludable – Clause 2.2.3.2 (e) & (f)	-	-	BAL – LOW

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Table 3H) 1. Class 6 Fast Food Building 1 provides the indicative BAL rating after the proposed APZ has been established inside the lot boundary.

Table 3H: Prescribed BAL ratings and required separation distances

Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class G Grassland	0/Upslope	72	BAL – LOW
2	Class A - Forest	0/Upslope	69	BAL – 12.5
3	Class A - Forest	0/Upslope	45	BAL – 12.5
4	Class A - Forest	0/Upslope	179	BAL – LOW
5	Excludable – Clause 2.2.3.2 (e) & (f)	-	-	BAL – LOW

Table 3I) 1. Class 6 Fast Food Building 2 provides the indicative BAL rating after the proposed APZ has been established inside the lot boundary.

Table 3I: Prescribed BAL ratings and required separation distances

Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class G Grassland	0/Upslope	25	BAL – 12.5
2	Class A - Forest	0/Upslope	24	BAL – 29
3	Class A - Forest	0/Upslope	51	BAL – 12.5
4	Class A - Forest	0/Upslope	232	BAL – LOW
5	Excludable – Clause 2.2.3.2 (e) & (f)	-	-	BAL – LOW

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Figure 7: BAL Assessment Map (Prescribed with APZ)

Legend

100m Vegetation Survey
100m
150m Vegetation Survey Exc 2.2.2.2(a)
150m
Dimensions Post APZ
Effective Slope(°)
Separation Distance (m)

Property boundary(Size)
2.940 ha
Buildings
1. Class 6 Main Shopping Centre
2. Class 6 Service Station
3. Class 6 Fast Food Building 1
4. Class 6 Fast Food Building 2

5. Class 10 Non-Associated Carpark Shade 1
6. Class 10 Non-Associated Carpark Shade 2
7. Class 10 Non-Associated Carpark Shade 3
8. Class 10 Non-Associated Carpark Shade 4
Vegetation APZ-100m
A. Forest, 0.0
Excluded, ef, 0.0
G. Grassland, 0.0

100-150m Excluded 2.2.3.2 (a)
Excluded, a, 0.0
A2.2 Asset Protection Zone (APZ) 29or<
APZ Lot Boundary
Local Government Authority

State Roads
Other Roads
DPIRD 2m Contours

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4.0 Identification of Bushfire Hazard Issues

Below are the identified bushfire hazard issues relating to this site:

- The development has class A Forest within the subject lot and running down the Eastern boundary outside the subject lot
- Asset Protection Zones are to be established and maintained in perpetuity to ensure the commercial structures will maintain BAL-29.
- The indicative BAL ratings are to demonstrate compliance only and will need to be established during the building process with building permit being issued after BMP is approved by the local government authority, APZ has been established and the issue of a BAL-29 Report and certificate.
- Storage of hazardous, flammable or combustible materials are located in BAL-29 or less.
- As this development is above BAL-LOW the relevant bushfire protection criteria apply and will need to be addressed (section 4.0).

5.0 Assessment against the Bushfire Protection Criteria

5.1 Compliance Table

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Table 4: Compliance with bushfire protection criteria

Bushfire protection criteria Intent	Acceptable solutions	Proposed bushfire management strategies/solutions
Element 1: Location Avoid broader landscapes that present an unacceptable bushfire risk to life, property and infrastructure	**BPA Area 1**	**Not Applicable** for Commercial Development
	BPA Area 2	**Not Applicable** for Commercial Development
Element 2: Siting and design Ensure siting and design solutions: • manage or mitigate the bushfire risk to people, property and infrastructure; and • avoid, or where unavoidable, minimises the clearing of native vegetation	**A2.1a Siting and Design** Every proposed new habitable commercial building or associated structure achieves a radiant heat impact not exceeding 29 kW/m² (BAL-29).	All proposed habitable commercial building within the subject lot can achieve BAL-29 or less in the sited locations. Compliant – Y ☑ / N ☐
	A2.1b Siting in an area with a radiant heat impact exceeding 29 kW/m² (BAL-40 or BAL-FZ). The siting of a commercial habitable building, with a radiant heat impact exceeding 29 kW/m² (BAL-40 or BAL-FZ). **Should only be considered where:** • the lot was created prior to December 2015; and	N/A –BAL-29 or less can be achieved. Compliant – Y ☑ / N ☐

Bushfire protection criteria Intent	Acceptable solutions	Proposed bushfire management strategies/solutions
	• there are demonstrated site characteristics and/or biodiversity or conservation values that prevent the achievement of a radiant heat impact not exceeding 29 kW/m2 (BAL-29); and • it is demonstrated that the reduction of the building footprint or a redesign to manage or mitigate the risk, is not practical or appropriate. If the provision of an APZ in accordance with acceptable solution A2.2 cannot be achieved, then the vegetation immediately surrounding the building is to be managed as defendable space in accordance with Appendix 1, Table 9 – APZ technical requirements.	
	A2.2 Asset Protection Zone (APZ) Where a residential habitable building cannot be wholly within an area with a radiant heat impact not exceeding 29 kW/m2 (BAL-29) in its pre-development state, an APZ is to be provided and meet the following requirements: **Width:** the APZ is to be measured from any external wall or supporting post or column of the building, and of sufficient size to ensure the radiant heat impact of a bushfire does not exceed 29 kW/m² (BAL-29) in all circumstances. **Location:** the APZ is to be contained solely within the boundaries of the lot, except in instances where: – the vegetation on the adjoining lot(s) is, and will continue to be, low threat as per Clause 2.2.3.2 of AS 3959 or the requirements	APZ is to be established and maintained in perpetuity to: 1. Lot Boundary APZ has been designed to minimise environmental impact within the lot boundary. APZ's are to be maintained in perpetuity in accordance with: 1. APZ Siting and Design (Appendix 1 - Table 9) and 2. Local Government Authority Firebreak Notice (Appendix 2). Compliant – Y ☑ / N ☐

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Bushfire protection criteria Intent	Acceptable solutions	Proposed bushfire management strategies/solutions
	of Appendix B.2, Table 9 - APZ technical requirements, or an alternative standard in a local planning scheme, on an ongoing basis in perpetuity; or – the adjoining land is and will remain in perpetuity, non-vegetated. **Management:** the APZ is managed in accordance with the requirements of Appendix B.2, Table 9 – APZ technical requirements (Appendix 1), or an alternative standard in a gazetted local planning scheme.	
	A2.3 Clearing of native vegetation The development avoids, or where unavoidable, minimises the clearing of native vegetation	Proposed site is suitable and avoids excessive vegetation management or clearing. Compliant – Y ☑ / N ☐
	A2.4 Storage of hazardous, flammable and/or combustible materials Where a proposed land use will include the storage of hazardous, flammable and/or combustible materials as part of its ongoing day to day operations, the materials are to be stored in an area that: • is subject to a radiant heat impact not exceeding 29 kW/m2 (BAL-29); • is non-combustible and shields the materials to reduce their exposure to radiant heat from the bushfire to levels significantly lower than 29 kW/m2 and prevents the entry of debris and embers; and	Materials on site are stored in an area that: - is subject to a radiant heat impact not exceeding 29 kW/m2 (BAL-29) - is non-combustible and shields the materials to reduce their exposure to radiant heat from the bushfire to levels significantly lower than 29 kW/m2 and prevents the entry of debris and embers; and - limits to the degree necessary and practical, the escape of sources of ignition from the stored materials into bushfire prone vegetation

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Bushfire protection criteria Intent	Acceptable solutions	Proposed bushfire management strategies/solutions
	• limits to the degree necessary and practical, the escape of sources of ignition from the stored materials into bushfire prone vegetation	Class 6 Service Station to Comply and any other storage sites to comply Compliant – Y ☑ / N ☐
Element 3: Ensure the design and capacity of vehicular access and egress provide: • for efficient and effective evacuation to a suitable destination(s) and/or • as a contingency measure for vulnerable land uses, an on-site shelter, where demonstrated appropriate, as a last resort option	**A3.1 Private Driveways** There are no private driveway technical requirements (prescribed by these Guidelines) where the private driveway is within a lot: 1. serviced by reticulated water and 2. is no greater than 70 metres in length between the most distant external part of the habitable building and the public road (curb as a hose lay). In circumstances where the above conditions are not met, the private driveway is to meet all of the following requirements: • requirements of Appendix 3 - Table 10, column 5; and • passing bays every 200 metres with a minimum length of 20 metres and a minimum additional carriageway width of 2 metres (i.e. the combined carriageway width of the passing bay and constructed private driveway is to be a minimum 6 metres); and • turn-around area (Figure 30) and within 30 metres of the residential habitable building (Figure 38).	N/A - as structure is less than 70m to the curb as a hose lay and has a reticulated fire hydrant system on the road. Compliant – Y ☑ / N ☐
Element 4: Water Water is available to the subdivision, development or land use to enable people,	**A4.1 Water supply for residential / habitable commercial buildings** Where a reticulated water supply is existing or proposed, a hydrant connection(s) should be provided in accordance with the	Existing Fire Hydrants on Yangebup Road and Beeliar Drive hydrant connections provided in accordance with Water Corporation's No. 63 Water Reticulation Standard.

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Bushfire protection criteria Intent	Acceptable solutions	Proposed bushfire management strategies/solutions
property and infrastructure to be defended from bushfire	specifications of the relevant water supply authority. Where these specifications cannot be met, a water tank(s) should be provided in accordance with the requirements of Appendix 4, Table 11 – Water supply dedicated for bushfire firefighting.	Compliant – Y ☑ / N ☐

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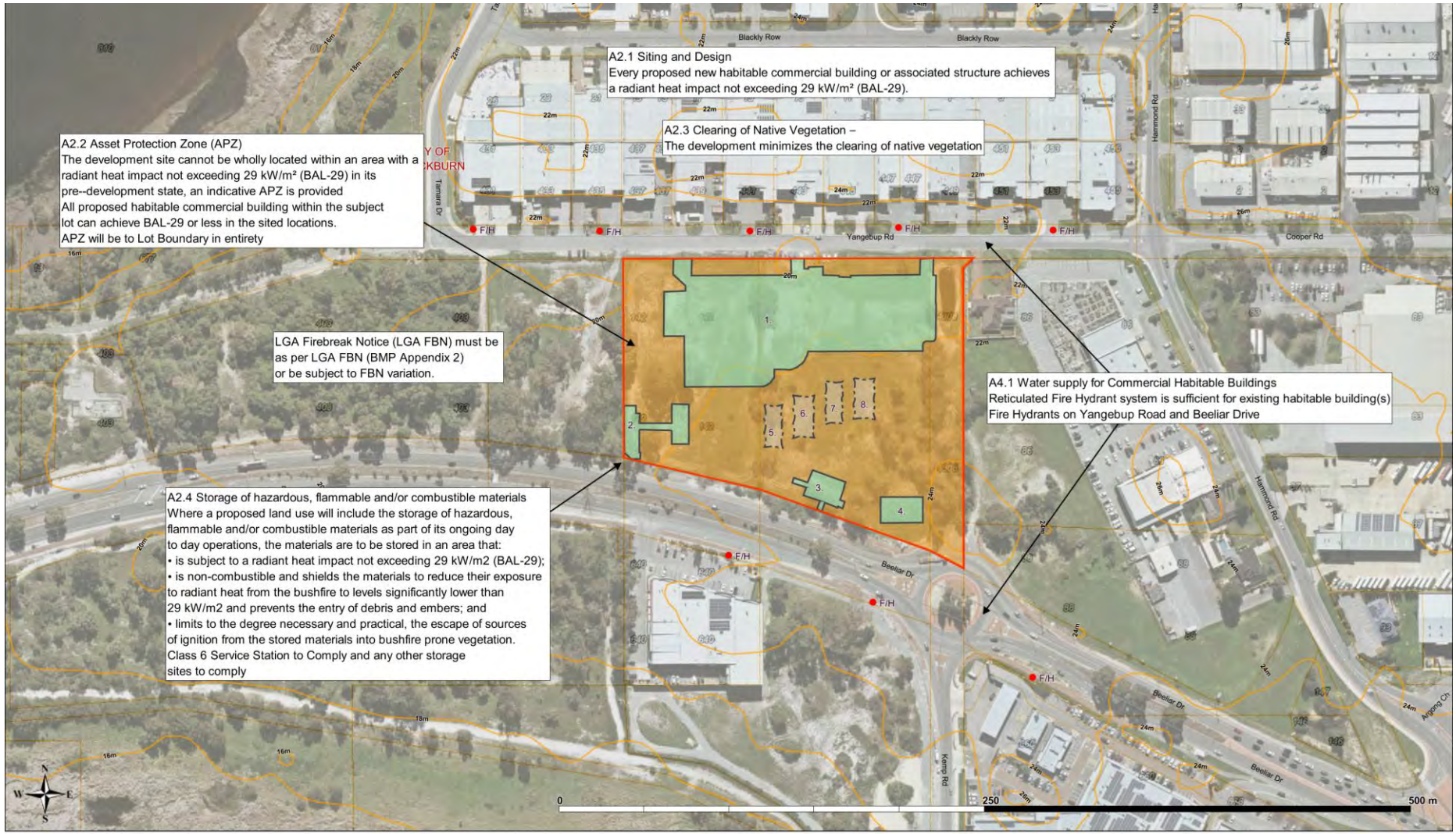
5.2 Bushfire Mitigation Measures

Figure 8: Spatial representation of the bushfire mitigation measures (BMS)



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6.0 Roles & Responsibilities

Responsibilities & implementation measure for the proposed development, these are shared by the Current and future landowners, project developer and the Local Government Authority (LGA).

Table 5: Roles & Responsibilities

DEVELOPER/LANDOWNER/CONSULTANT – PRIOR TO USE	
No.	Implementation action
1	A notification, pursuant to Section 165 of the Planning and Development Act 2005, is required to be placed on the certificate(s) of title of the proposed lot(s) with a Bushfire Attack Level (BAL) rating of 12.5 or above, advising of the existence of a hazard or other factor. Notice of this notification is to be included on the diagram or plan of survey (deposited plan). The notification is to state as follows "This land is within a bushfire prone area as designated by an Order made by the Fire and Emergency Services Commissioner and is/may be subject to a Bushfire Management Plan. Additional planning and building requirements may apply to development on this land." Notification placed on title ☐ *Certified* ☐ *dated the* ___ *of* _____ *20*____ *- Certified by* _____
2	Establish an Asset Protection Zone (APZ) to the - dimensions (Table 4 A2.2), and - standard stated in this BMP in APZ Siting and Design (Appendix 1) and - to the additional requirements outlined in the LGA Firebreak Notice (Appendix 2). *APZ Clearance Completed* *Certified* ☐ *dated the* ___ *of* _____ *20*____ *- Certified by* _____
3	Maintain the lot and firebreaks to comply with the relevant (LGA) annual firebreak notice issued under s33 of the Bush Fires Act 1954 to required standard in perpetuity as per Local Government Authority Firebreak Notice (Appendix 2) or per variation issued by LGA.
4	Hazardous, flammable or combustible materials on site must be stored as per the requirements in - BMP (table 4 A2.4) - Bushfire Management Strategies map
LANDOWNER – ONGOING	
No.	Management action
1	Maintain an Asset Protection Zone (APZ) to: - dimensions (Table 4 A2.2), and - standard stated in this BMP in APZ Siting and Design (Appendix 1) and - to the additional requirements outlined in the LGA Firebreak Notice (Appendix 2).
2	Maintain the lot and firebreaks to comply with the relevant (LGA) annual firebreak notice issued under s33 of the Bush Fires Act 1954 to required standard in perpetuity as per Local Government Authority Firebreak Notice (Appendix 2) or per variation issued by LGA.
3	Maintain Storage of Hazardous, flammable or combustible materials on site must be stored as per the requirements in - BMP (table 4 A2.4) Bushfire Management Strategies map

LOCAL GOVERNMENT AUTHORITY (LGA) – ONGOING MANAGEMENT	
No.	Management action
1	Inspection and issue of works orders or fines for non-compliance, this includes firebreaks, private driveway, Asset Protection Zone and water supply.

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Bushfire Management Plan Appendices

Appendix 1 – Asset Protection Zone (APZ) – Siting and Design

B.2: SITING AND DESIGN

State Planning Policy outcome for Element 2: Siting and design

Ensure siting and design solutions:

- **manage or mitigate the bushfire risk to people, property and infrastructure; and**
- **avoid, or where unavoidable, minimise clearing of native vegetation.**

B.2.1 IDENTIFYING AN ASSET PROTECTION ZONE

An Asset Protection Zone (APZ) is a low fuel area, maintained around a building to increase the likelihood a building will survive a bushfire, by reducing the potential for direct flame contact, radiant heat exposure and ember attack. The APZ allows emergency services access and provides an area for firefighters and home-owners to defend their property.

The width of an APZ should ensure the radiant heat impact does not exceed 29 kW/m² for a habitable building, or 10 kW/m² where a building is identified for use as an on-site shelter. Where a building or development site achieves a radiant heat impact of 29k W/m² or lower in its pre-development state (prior to any vegetation clearing or modification), an APZ is generally not required.

However, providing for the ongoing management of an APZ in perpetuity, as low threat vegetation, within the implementation section of the BMP and/or condition of development approval, will ensure the BAL rating of the building does not increase over time.

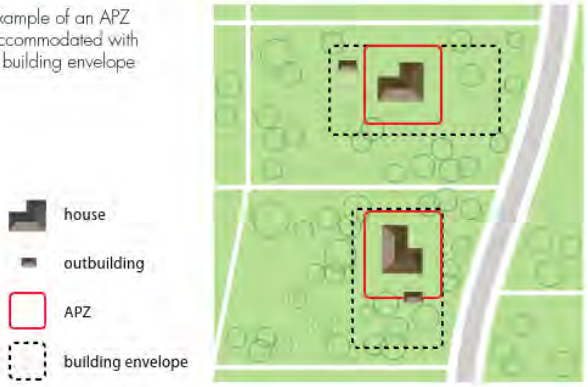
Clearing or modification of native vegetation to reduce the radiant heat impact below 29 kW/m² is generally not supported.

At the subdivision stage where a lot contains a building envelope, and the development site(s) is yet to be determined, the BMP should demonstrate the lot(s) can achieve an indicative development site(s) with a radiant heat impact not exceeding 29 kW/m², within the building envelope (**Figure 24**).

It may not be necessary for an entire building envelope to achieve 29 kW/m² or lower, where this results in unnecessary clearing or modification of native vegetation.

An APZ should be contained within the boundaries of the lot on which the building is situated, except in instances where it is demonstrated the vegetation on the adjoining land is, and will continue to be, low threat as per cl. 2.2.3.2 of AS 3959, or the vegetation on the adjoining lot is, and will remain in perpetuity, non-vegetated. However, it should be noted there is no requirement for a neighbouring landowner or land manager (public or private) to be party to a legal agreement to undertake ongoing management of vegetation as low threat, in perpetuity.

Figure 24: Example of an APZ accommodated with a building envelope



Exclusion of vegetation on adjoining land, which is covered by a local government firebreak notice, issued under section 33 of the *Bushfires Act 1954*, may occur in limited circumstances at the development application stage. Where it is evident the adjoining landowner is managing the vegetation in accordance with the firebreak notice, a copy of the firebreak notice and photographic evidence of the managed vegetation should be included in a BMP. It will also be necessary to seek written confirmation from the local government, to confirm support for the exclusion.

B.2.2 DESIGNING AN ASSET PROTECTION ZONE

An APZ should not be seen as an area entirely cleared of vegetation, but as a strategically designed space that considers how existing and future mature vegetation, and combustible and non-combustible features interact with and affect the building's resilience to bushfire.

An APZ should provide the greatest level of vegetation management within at least three metres of a habitable building, to ensure adequate unobstructed defendable space for emergency services to operate. This area should contain minimal vegetation and be free of combustible materials and obstructions. Within the remainder of the APZ, planting of vegetation can increase as you move farther away from the building.

The placement of plants within an APZ is a key design technique. Separation of garden beds with areas of low fuel or non-combustible material will break up fuel continuity and reduce the likelihood of vegetation within an APZ supporting a bushfire. It is important to consider the plant density and final structure and form of plants in their mature state.

Strategic landscaping measures can be applied, such as replacing weeds with low flammability vegetation to create horizontal and vertical separations between the retained vegetation.

Mulches used within the APZ should be non-combustible. The use of stone, gravel, shells, rock and crushed mineral earth is encouraged. Very fine or light mulch (such as shredded pine bark, pine needles, or poplar woodchips) less than five millimeters in diameter should be avoided. It is recommended that wood mulch is used in garden beds or areas where the moisture level is higher by regular irrigation, and these areas are separated with non-combustible elements, such as pathways and open spaces.

Incorporation of landscaping features, such as masonry feature walls, can provide habitable buildings with barriers to wind, radiant heat and embers. These features can include noise walls or wind breaks. Use of Appendix F of AS 3959 for bushfire resistant timber selection or the use of non-combustible fencing materials such as iron, brick, limestone, metal post and wire is encouraged within an APZ.

B.2.3 MANAGEMENT OF AN ASSET PROTECTION ZONE

Ongoing maintenance of an APZ is usually enforced through a condition of a development approval, which should refer to **Table 9** APZ technical requirements within this Appendix.

In addition to regular maintenance of an APZ, further bushfire protection can be provided by:

- ensuring gutters are free from vegetation
- installing gutter guards or plugs
- regular cleaning of underfloor spaces, or enclosing them to prevent gaps
- trimming and removing dead plants or leaf litter
- pruning climbing vegetation (such as vines) on a trellis, to ensure it does not connect to a building, particularly near windows and doors
- removing vegetation in close proximity to a water tank to ensure it is not touching the sides of a tank
- following the requirements of the relevant local government firebreak notice, which may include additional provisions such as locating wood piles more than 10 metres from a building.

Preparation of a property prior to the bushfire season and/or in anticipation of a bushfire is beneficial even if your plan is to evacuate. Embers can travel up to several kilometres from a bushfire and fall into small spaces and crevices or land against the external walls of a building. Best practice recommends objects within the APZ are moved away from the building prior to any bushfire event. Objects may include, but are not limited to:

- door mats
- outdoor furniture
- potted plants
- shade sails or umbrellas
- plastic garbage bins
- firewood stacks
- flammable sculptures
- playground equipment and children's toys.

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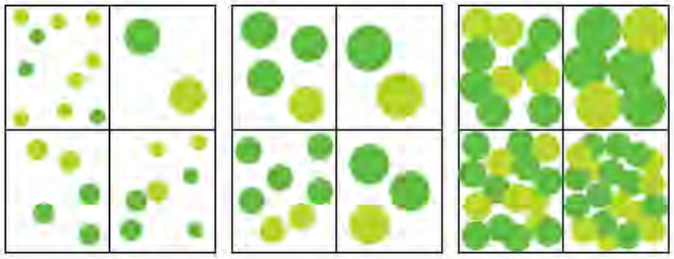
Table 9: Asset Protection Zone (APZ) technical requirements

OBJECT	REQUIREMENT
Fences within the APZ	Should be constructed from non-combustible materials (for example, iron, brick, limestone, metal post and wire, or bushfire-resisting timber referenced in Appendix F of AS 3959).
Fine fuel load (combustible, dead vegetation matter less than 6 mm in thickness)	• Should be managed and removed on a regular basis to be maintained as low threat vegetation • Should be maintained at less than two tonnes per hectare (on average) • Mulches should be non-combustible such as stone, gravel, shells, rock or crushed mineral earth or wood mulch more than five millimetres in thickness.
Trees* (more than 6 m in height)	• Trunks at maturity should be a minimum distance of six metres from all elevations of the building • Branches at maturity should not touch or overhang a building or powerline • Lower branches and loose bark should be removed to a height of two metres above the ground and/or surface vegetation. • Canopy cover within the APZ should be less than 15 per cent of the total APZ area • Tree canopies at maturity should be at least 5 m apart to avoid forming a continuous canopy. Stands of existing mature trees with interlocking canopies may be treated as an individual canopy provided the total canopy cover within the APZ does not exceed 15 per cent and is not connected to the tree canopy outside the APZ. **Tree canopy cover – ranging from 15 to 70 per cent at maturity**  15% 30% 70%
Shrub* and scrub* (0.5 m to 6 m in height). Shrub and scrub more than 6 m in height are to be treated as trees.	• Should not be located under trees or within three metres of buildings • Should not be planted in clumps more than five square metres in area • Clumps should be separated from each other and any exposed window or door by at least 10 metres.
Ground cover* (less than 0.5 m in height. Ground cover more than 0.5 m in height is to be treated as shrub)	• Can be planted under trees but must be maintained to remove dead plant material, as prescribed in 'Fine fuel load' above • Can be located within two metres of a structure but three metres from windows or doors if more than 100 mm in height.
Grass	• Grass should be maintained at a height of 100 mm or less, at all times • Wherever possible, perennial grasses should be used and well-hydrated with regular application of wetting agents and efficient irrigation.
Defendable space	Within three metres of each wall or supporting post of a habitable building; the area is kept free from vegetation but can include ground cover, grass and non- combustible mulches as prescribed above.
Liquid petroleum gas cylinders	• Should be located on the side of a building farthest from the likely direction of a bushfire or on the side of a building where surrounding classified vegetation is upslope, at least one metre from vulnerable parts of a building • The pressure relief valve should point away from the house • No flammable material within six metres from the front of the valve • Must sit on a firm, level and non-combustible base and be secured to a solid structure.

Notes:
** Plant flammability, landscaping design and maintenance should be considered – refer to following explanatory notes*

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Appendix 2 – Local Government Authority Firebreak Notice

City of Cockburn Fire Control Order - Effective from 10 May 2018

First and Final Notice

Pursuant to *Section 33* of the *Bush Fires Act 1954* owners or occupiers of land situated within the City of Cockburn are required by law to comply with the prescribed Fire Control Order here within.

Term	Definition
Authorised Officer	A person appointed by the City of Cockburn Chief Executive Officer as an authorised person/officer to exercise the powers and duties set out in the Local Government Act 1995, Bush Fires Act 1954 and Local Law(s).
Flammable Material	Any dead or dry grass, vegetation, substance, object, thing or material (except living flora including live and/ or habitat standing trees) that may or is likely to catch fire and burn or any other thing deemed by an Authorised Officer to be capable of combustion.
Maintained Grass	Soil covered land, planted with grasses or other durable plants, maintained green and less than 50mm in height.
Prohibited Burning Time	The time of each year where it is unlawful to set fire to the bush at any time. This time is normally from 1 December of each year until and including 31 March of the following year. This time may be amended, subject to prevailing seasonal conditions.
Restricted Burning Time	The time of each year where it is unlawful to set fire to the bush without a valid Permit to Set Fire To The Bush issued by an Authorised Officer. This period is normally from 1 April until and including 31 May and from 1 October until and including 30 November of any year. This time may be amended, subject to the prevailing seasonal conditions.
Unrestricted Burning Time	The time of each year where it is lawful to set fire to the bush at any time, in areas zoned rural under the Metropolitan Region Scheme. This time is normally from 1 June until and including 30 September. This time may be amended, subject to the prevailing seasonal conditions.
Firebreak Time	**The time of each year where fire hazard reduction works must be maintained as specified in this Fire Control Order. This time is 1 November of each year until and including 15 April of the following year.**
Structure	A building, as defined in the Building Codes of Australia (BCA) may be made up of a number of classes if it has a mixed use.

1. All Property (vacant or developed) - less than 4,047m2 Collapse

To reduce the fire hazard on your land and to comply with the requirements of this Fire Control Order you are required to:

1.1 Have all flammable materials such as dry grass and weeds slashed, mown or trimmed down by other means to a maximum height of 50mm across the entire property for the duration of this firebreak time; and

1.2 Remove all dead vegetation.

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2. All property (vacant or developed) - 4,047m2 or greater

Collapse

To reduce the fire hazard on your land and to comply with the requirements of this Fire Control Order you are required to:

2.1 Construct a firebreak (as defined within section 3 of this order) immediately inside all external property boundaries, this includes those adjacent to roads, drains, rail reserves and any public open space reserves

2.2 Remove all dead vegetation surrounding and over all habitable structures to a radius of 3 metres except living trees, shrubs, maintained grass and gardens under cultivation.

3. Firebreak Specifications

Collapse

A firebreak is an area of land cleared of flammable material, installed to minimise the spread or extension of a fire and to provide suitable access for fire fighting vehicles. The standards of a compliant firebreak are as follows:

3.1 A firebreak must be constructed of bare earth, stone, or sealed surfaces and be clear of all flammable materials to create a 3 metre wide trafficable surface

3.2 Maintained grass may occupy a firebreak

3.3 Overhanging branches must be pruned to provide a 4 metre vertical clearance above the full width of the 3 metre firebreak surface

3.4 A firebreak must be a continuous trafficable surface for a fire fighting vehicle, clear of any obstructions and must not terminate in a cul-de-sac (dead end).

4. Additional Works

Collapse

Regardless of land size and location, the City of Cockburn or its Authorised Officer(s) may require you to undertake additional work(s) on your property to improve access and/or undertake further works where in the opinion of that Authorised Officer(s), these works would be conducive to preventing the outbreak and/or the spread or extension of a fire.

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5. Fire Control Order Variations

Collapse

A variation will be considered where the owner and/or occupiers believe it is impractical to meet the compliance requirements of this Fire Control Order.

Approved structure's occupying a firebreak will not require a variation approval. However, a firebreak will be required to be installed as close as practical around the approved structure.

If approved, variations will be valid in perpetuity, unless a new variation has been approved or the property changes ownership.

The City of Cockburn reserves the right to review, amend or revoke an existing variation in writing at any time. Should a request to vary the Fire Control Order requirements on your property not be approved in writing, this Fire Control Order must be complied with as applicable in its entirety.

If you cannot comply with the above requirements you can complete the online firebreak variation application form.

Firebreak Variation Application Form

Approved: You must comply with the conditions of the approved variation.
Not approved: You must comply with the requirements of the Fire Control Order.

6. Burning

Collapse

During the declared prohibited burning time, owners and/or occupiers must not undertake any bush or garden refuse burning activities.

During the declared restricted burning time only, owners and/or occupiers may:

6.1 Apply for a permit to burn the bush for bush fire risk mitigation purposes, by following the conditions imposed on a permit to burn as issued by an Authorised Officer.

6.2 In areas zoned rural by the Metropolitan Region Scheme you may undertake burning of leaves, tree branches, and other dry vegetation in piles no larger than 1m³ in size, without a permit to burn, subject to the following conditions:

6.2.1 No flammable material (other than that being burned) is to be within 5 metres of the fire at any time while the fire is burning

6.2.2 The fire is lit between 6pm and 11pm and is completely extinguished before midnight on the same day

6.2.3 At least one person is present at the site of the fire at all times until it is completely extinguished

6.2.4 When the fire is no longer required, the person ensures that the fire is completely extinguished by the application of water or earth.

During the unrestricted burning time, owners and/or occupiers in areas zoned rural under the Metropolitan Region Scheme may burn garden refuse and set fire to bush on their land without a permit 'To Set Fire To The Bush'. Burning of the bush must be in accordance with all relevant State legislative requirements.

Burning of garden refuse in areas not zoned rural should not be undertaken within the City of Cockburn, unless approved by an Authorised Officer. Burning of household waste is prohibited in all areas of the City of Cockburn.

7. Penalties

Collapse

Failing to comply with this Fire Control Order will result in a penalty of up to $5,000. A person in default is also liable whether prosecuted or not to pay the costs of performing the work directed by a City's Authorised Officer.

Any owner and/or occupier who engages a contractor to undertake works on their behalf is responsible to ensure that the works completed meet the requirements of this Fire Control Order.

Any Fire Control Order previously published by the City of Cockburn in the Government Gazette or in any Western Australian newsprint is hereby revoked.

By Order of Council

More information and contact

Please contact the City's Fire and Emergency Services for more information on firebreaks and burning permits on 08 9411 3444 or at rangercustomerservice@cockburn.wa.gov.au

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ATTACHMENT 5

Retail Needs Assessment and Net Benefit Test

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pracsys.

Windsor Knight

Beeliar Drive Retail Needs Assessment and Net Benefits Test

February 2026

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1 INTRODUCTION

1.1 Background

This report provides a Retail Needs Assessment (RNA) and Net Benefits (NB) Test for the Hammond Road North Neighbourhood Centre at Beeliar Drive, Success (the Centre). This report aims to support a Structure Plan amendment and development application in line with the current City of Cockburn planning policy. It considers the balance of future demand and supply for retail floorspace and the impact of the planned Centre expansion on the local activity centre hierarchy. It also considers whether the Centre will deliver net benefits to the community.

The analysis is an update from the previous Retail Sustainability Assessment conducted by Taktics4, which supported the Hammond Road North Structure Plan of 2018[1]. The 2018 Structure Plan identified 1,900m^2 of existing retail at the site and stipulated that 8,100m^2 of retail floorspace would be supportable in the planning area. Shop uses for the purpose of the original assessment apply the definition used by the Town Planning Scheme and Local Government Act.

Windsor Knight has engaged Pracsys to undertake the RNA and NB Tests to demonstrate the need for the proposed retail uses at the Centre, with consideration of the potential impacts on surrounding activity centres, accounting for population growth.

1.2 Land Use Categories

The current structure plan allows for a total of 8,100m^2 of Shop uses as defined by the Town Planning Scheme No.3 (TPS3). The proposed expansion sits well within this allowance. SPP4.2 Implementation Guidelines require the RNA and NB Test to be undertaken using Planning Land Use Category 5 (PLUC 5) for Shop/Retail uses. PLUC 5 applies to a broader set of uses than TPS3 and has been aligned with the proposed uses at the site with a comparison to the State Planning and Development Regulations (2015) and TPS3 land use definitions (Figure 1).

Figure 1. Proposed Development Categories

Proposed Use	Planning and Development Regulations Land Use Terms	City of Cockburn TPS3 Land Use Definitions	SPP 4.2 PLUC Categories
Supermarket Major	Shop	Shop	Shop/Retail
Supermarket / Fresh	Shop	Shop	Shop/Retail
Mini Major	Shop	Shop	Shop/Retail
Liquor	Liquor Store - Small	Liquor Store	Shop/Retail

[1] Burgess Design Group, 2018, Structure Plan COCK/2016 Hammond Road North, City of Cockburn, https://www.wa.gov.au/system/files/2021-11/SPL-SPN2016-2-Cockburn-Hammond-Road-North-COCK.pdf

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Proposed Use	Planning and Development Regulations Land Use Terms	City of Cockburn TPS3 Land Use Definitions	SPP 4.2 PLUC Categories
Retail / F&B	Restaurant/Cafe	Restaurant	Shop/Retail
Fast Food	Fast Food	Fast Food	Shop/Retail
Fuel Station	Service Station	Service Station	Shop/Retail

Source: PDR 2015, City of Cockburn, SPP 4.2

1.3 Needs Assessment / Nets Benefits Test Purpose and Objectives

According to the State Planning Policy 4.2, an RNA provides the information base to support decision-making regarding activity centre development by including an assessment of relevant land-use needs for communities within a local government area. It assesses the demand for all activity centre uses, taking floor space into account. An NB Test is required when a Neighbourhood Centre is expanded by more than 3,000m^2 of Shop/Retail floorspace. The NB Test considers the impact of changes in floorspace on surrounding activity centres and the net community benefit derived from a new development or expansion.

The RNA informs the NB Test by measuring the demand within an area and assessing whether a proposed centre expansion is viable. The NB Test follows the requirements of SPP4.2 Implementation Guidelines to consider and evaluate the net impacts of a proposed centre expansion on the Centre hierarchy and economic and community benefits associated with the development. The assessment should be based on facts and unbiased evidence[2].

The key objectives of the report relating to the RNA are to:

- Define the catchment area of the Centre application request
- Review drivers of floorspace, including forecast population growth and socio-economic characteristics, and changing expenditure patterns
- Evaluate the competitive environment, including existing and planned floorspace supply (including expansions and new developments)
- Develop a net demand assessment
- Assess the level of Shop/Retail floorspace supportable at the Centre

An NB Test is to ensure that development applications and planning instruments align with the objectives of SPP4.2 by mitigating the adverse effects that new activity centres and expansions can have on a local community.

The NB Test in this report is to demonstrate that the proposal will:

[2] SPP4.2 Implementation Guidelines

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- Not have an unreasonable and detrimental impact on the activity centre hierarchy or the existing or planned functions of activity centres
- Not have an unreasonable and detrimental impact upon existing, committed and planned public and private investment in activity centres
- Deliver net benefit to the community and not reduce the level of access to services by the community

1.4 Gravity Model Methodology

Pracsys uses a retail gravity model to analyse the supply of and demand for retail floorspace within an estimated catchment and to estimate the potential impact of proposed retail developments. The retail gravity model (also known as Huff's Gravity Model) is a modified version of Sir Isaac Newton's Law of Gravitation and is widely used in international trade modelling, transport modelling and regional planning. Retail gravity modelling studies retail supply, and the probability of a customer (demand) visiting each centre in a network of centres. The model accounts for the distribution and attractiveness of competing centres, along with the distance customers will have to travel to each centre. Floorspace quantum (m^2) is used to represent the attractiveness of retail centres. Customers are willing to travel farther to shop at large centres, representing a higher level of attraction (they can generally satisfy multiple needs in one trip to a larger centre, which also contains a higher proportion of comparison goods).

The model provides an objective method of distributing expenditure among centres. To optimise the model's predictive accuracy, the calculated distribution is calibrated to match published turnover levels for each centre in the network. Having established a baseline distribution of expenditure, new floorspace can be introduced and changes in expenditure distribution across time can be examined, allowing for various retail centre transformations such as planned expansions and new developments. This comprehensive approach creates a distribution of expenditure that is fundamentally unbiased, as it is based on explicit mathematical rules. It is a widely used approach that has been accepted by the Department of Planning, Lands and Heritage and Western Australian Planning Commission (WAPC) through the review of a wide range of Structure Plans, Local Commercial Strategies and Retail Sustainability Assessments[3]. For more information on the gravity modelling methodology, please see Appendix 1: Gravity Modelling Methodology.

[3] For example, in April 2014, the West Australian Planning Commission approved the Melville City Centre Structure Plan, which proposed the expansion of the Garden City shopping Centre. The RSA prepared by Pracsys in support of the application was based on gravity modelling. Please see Melville City Structure Plan 2015.

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2 DEVELOPMENT CONTEXT

2.1 Site Location

The Centre is at the intersection of Kemp Road and Beeliar Drive and is serviced through Yangebup Road to the north and a private internal road to be developed from the Kemp Road and Beeliar Drive roundabout. The Centre is situated between two mixed business precincts with Yangebup Lake to the west, Beeliar Drive to the southeast, and North Lakes Road to the north.

Beeliar Drive is a key east-west road connecting residents with the Kwinana Freeway two kilometres east of the site. The following map identifies the approximate location of the Centre (Figure 2).

Figure 2. Centre Context

Source: Pracsys 2025

The Centre is located within an area that is zoned as 'Development Area' according to the Town Planning Scheme No. 3[4], and is planned to accommodate Shop/Retail uses.

[4] City of Cockburn, 2022, Town Planning Scheme No. 3 – Map 12 Yangebup Locality, Western Australian Government

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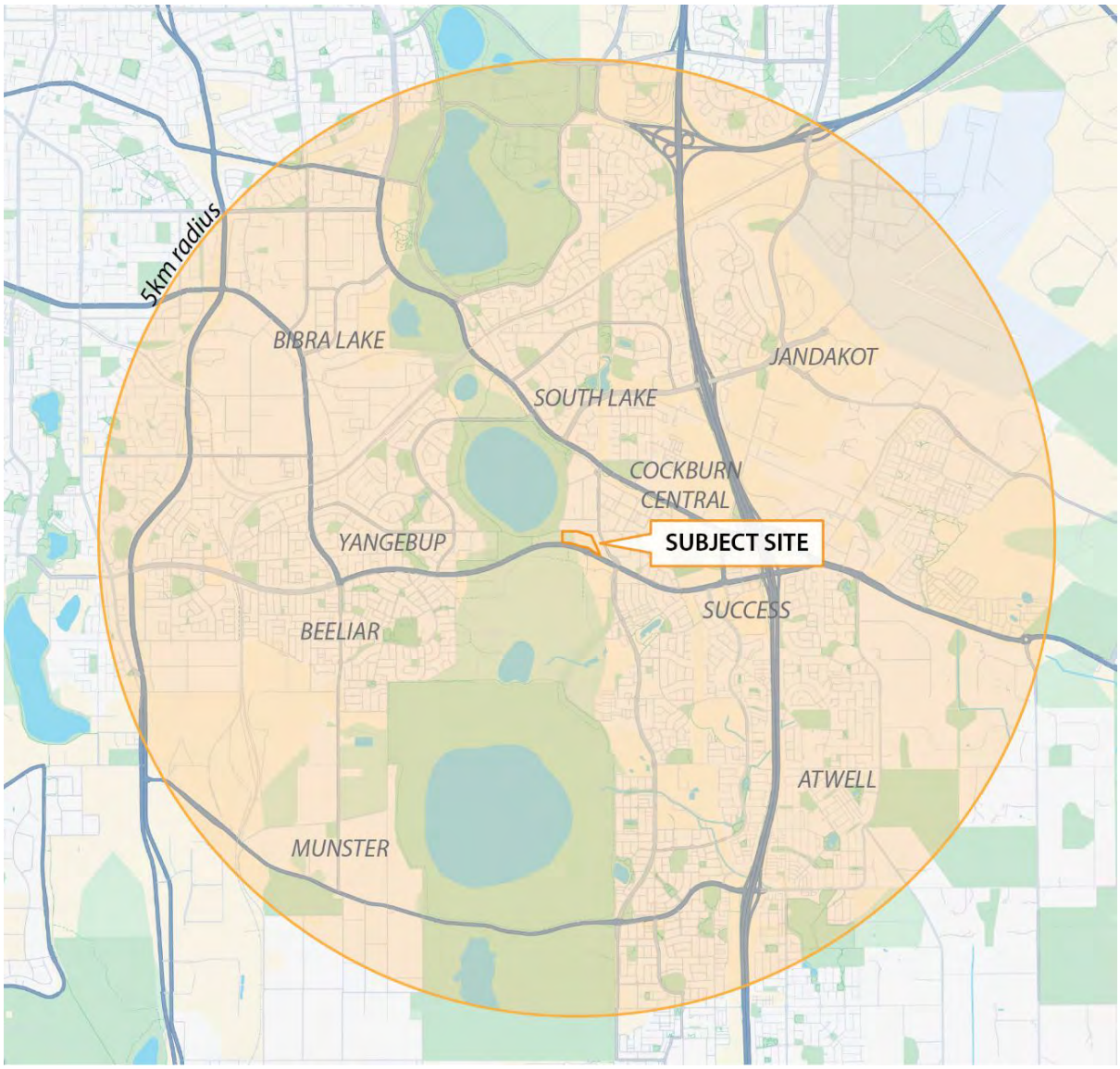
2.2 Trade Area Definition

A trade area is the spatial boundary from which commercial floorspace generates most of its customers. The trade area definition enables the measurement of the number of potential customers, their demographics, and expenditure potential, as well as an assessment of the competitive environment.

SPP4.2 states that Neighbourhood Centres like the Centre provide for the day-to-day needs of local communities, playing an important role in the activity centre hierarchy by providing walkable access to services and facilities for local communities. The modelled trade area of the Centre is of a five-kilometre catchment area. The five-kilometre catchment is used in the gravity model and ensures that all centres that could reasonably influence the viability of, and could be impacted by, the prospective centre are included in the RNA and NB Test (Figure 3).

Figure 3. Estimated Trade Area



Source: Pracsys 2025

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The modelled trade area encompasses Munster to the south-west, Beeliar and Yangebup to the west and Bibra Lake to the north-west. To the east, the trade area encompasses Cockburn, Success, Jandakot to the north-east and Atwell to the south-east.

The trade area includes shopping centres such as the Lakes Shopping Centre and Bibra Lake to the north, Beeliar Village and the Grange to the west, as well as Cockburn Gate to the east (see Figure 13 for an illustration of the trade area's competitive environment).

The proximity of Yangebup and Kogolup lakes to the west of the Centre acts as a barrier, limiting the total trade area of the Centre. The proximity of Yangebup and Kogolup lakes to the west of the Centre acts as a natural barrier, limiting the direct residential catchment of the development. The Centre's location along Beeliar Drive, however, provides high levels of passing traffic and close proximity to the workforce of surrounding mixed business precincts, both of which will increase the level of supportable floorspace.

The proposed uses are suited to the location and will capture passing traffic and workers' spending to supplement the expenditure of residents.

2.3 Project Overview

Current Uses

The Centre currently supports two uses that fit within the Shop definition in TPS3. The Taktics4 Retail Sustainability Assessment that informed the Structure Plan identified current Shop uses at the Centre, including a 1,400m^2 Tony Ales food market and a 500m^2 fresh fish seller to the north of Tony Ales. Recent floorspace analysis of the two sites has been undertaken:

- The Tony Ales floorspace has been adjusted to 1,300m^2
- The fresh fish seller is predominantly a wholesaler with a small shop front. The majority of the space is warehouse in nature; it has been assumed that there a retail shop front of approximately 50m^2

The updated floorspace analysis suggests that the precinct currently has approximately 1,350m^2 of retail floorspace.

The Hammond Road North Structure Plan identifies that 8,100m^2 Shop NLA is supportable at the Centre. This allows for an additional 6,750m^2 of Shop floorspace on top of the current uses. The Taktics4 Retail Sustainability Assessment indicates that the Centre can sustain a mixture of 3,300m^2 of supermarket floorspace and 4,800m^2 of other Shop floorspace (Figure 4).

Figure 4. Existing and Demand for Shop Floorspace

Land Use Category	Existing (m^2)	Demanded (m^2)	Difference (m^2)
Supermarket	1,300	3,300	2,000
Shop	50	4,800	4,750
Total Retail	**1,350**	**8,100**	**6,750**

Source: Taktics4 2018, Pracsys 2025

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Project Development Proposal

The Local Planning Strategy has earmarked the centre for a total expansion to approximately 17,650m^2 of commercial floorspace, with approximately 8,170m^2 identified as Shop floorspace[5]. This aligns with the 8,100m^2 of Shop floorspace outlined in the Structure Plan and Taktics4 Assessment.

Windsor Knight is seeking to develop approximately 6,360m^2 of Shop floorspace at the Centre, with 3,860m^2 allocated as Supermarket (including back of house) and approximately 2,500m^2 as other Shop uses. This is within the total quantum of Shop floorspace identified in the Structure Plan and Local Planning Strategy. The proposed uses also align closely with the suggested mix of uses in the Taktics4 Assessment. An additional 1,495m^2 of Centre uses are being proposed that have their own land use definition under TPS3 and are permissible land uses. These complementary uses will support multi-purpose trip and a complete range of services appropriate for a Neighbourhood Centre.

Windsor Knight has provided detailed floorspace estimates of the uses for the Centre. The supplied floorspace plans were analysed to identify the types of uses and the total size of those uses. The uses have been aligned with the City of Cockburn's TPS3 and its land use definitions (Figure 5)[6]. Gross Floor Area (GFA) has been recalculated to NLA to inform the RNA and NB Test[7].

[5] City of Cockburn, 2024, Local Planning Strategy, https://www.wa.gov.au/system/files/2024-10/city-of-cockburn-strategy_0.pdf
[6] Planning and Development Act 2005 and Planning and Development (Local Planning Scheme) Regulations 2015
[7] SPP4.2 states that NLA includes all floors in the internal finished surfaces of permanent walls; however, it excludes areas such as lobbies between lifts, service areas, public spaces/thoroughfares and spaces used for the provision of servicing the floor or building, amongst a range of others. NLA has been estimated as 90% of GFA.

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Figure 5. Proposed Development Uses

Land Uses	City of Cockburn Land Use Definition	Floor Area (m^2)	Net Lettable Area (m^2)
Supermarket Major	Shop	3,860	3,474
Supermarket / Fresh	Shop	1,500	1,350
Pharmacy	Shop	600	540
Liquor Store	Liquor Store	160	144
Hair Salon / Barber	Shop	100	90
Dry cleaners / Laundromat	Shop	100	90
Butcher Shop / Bakery	Shop	100	90
Nail Shop	Shop	100	90
Optometrist	Consulting Rooms	100	90
Café	Restaurant / Fast Food	75	68
Take away / dine-in	Restaurant / Fast Food	100	90
Restaurant	Restaurant	200	180
Fast Food	Fast Food Outlets	620	558
Service Station & Cash Wash	Service Station	240	216
Proposed Uses Sub-Total		**7,855**	**7,070**
Toni Ales / Fish Retail	Shop	1,350	1,215
Existing Uses Sub-Total		**1,350**	**1,215**
Grand Total		**9,205**	**8,285**

Source: Windsor Knight 2026

The proposed expansion brings total Shop floorspace to approximately 7,710m^2, well within the allocated 8,170m^2 in the Local Planning Strategy. Windsor Knight has provided a detailed site plan for the proposed uses (Figure 6).

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Figure 6. Proposed Site Plan

Source: Windsor Knight 2026

2.4 Strategic Alignment

The Centre at Beeliar Drive aligns with relevant strategic planning documents. These documents include:

- DPLH South Metropolitan Peel Sub-Regional Planning Framework 2017
- DPLH State Planning Policy 4.2 – Activity Centres 2023

Sub-Regional Framework

The South Metropolitan Peel Sub-Regional Planning Framework 2018 (the framework) reflects the goals of the State's planning framework: Perth and Peel at 3.5 Million by establishing an integrated planning framework for land use and infrastructure to facilitate future growth on a sub-region level. The framework utilises employment self-sufficiency (ESS) as a measure of local economic performance. ESS represents the degree to which an area can employ its population. The framework aims to increase ESS by:

- Delivering jobs within the sub-region that match the sub-region's labour force and demographic profile
- Focusing on sub-regional employment opportunities in industries such as manufacturing, construction, retail, healthcare and social assistance
- Protecting employment-generating land from the encroachment of competing and incompatible land uses
- Supporting district, neighbourhood and local centres that provide local employment opportunities

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For the south-eastern corridor, the framework sets a target of 61% ESS by 2050 from 45% in 2011. The Centre contributes to employment by providing local job opportunities in retail and other activity centre industries, at a planned neighbourhood centre.

State Planning Policy 4.2

SPP4.2 aims to ensure that planning, development and decision-making adequately consider the distribution, function, broad land use, access and urban form considerations for activity centres. The strategic document provides policy outcomes for commercial land uses, which include:

- Sufficient land use mix, ensuring employment opportunities
- Cohesiveness and functionality, providing for the needs of the community
- Efficient and equitable access to goods and services

The proposed centre is a planned centre already outlined in the City of Cockburn planning framework, which meets the following policy objectives for an activity centre:

- The location of the Centre provides local residents and workers in the surrounding mixed business area with additional employment opportunities and access to daily and weekly shopping needs.
- The location of the Centre leverages the popular route of Beeliar Drive to allow passing traffic and neighbouring areas greater access to daily and weekly shopping needs.
- The development of the Centre does not significantly undermine nearby existing centres (more information can be found in the following section, 5.3 Modelling Impacts)

The Centre is set to provide easy access to a mainline supermarket that will enable residents and workers to conduct their daily and weekly shopping needs. There is currently a gap in the provision of retail uses in the catchment, and residents directly west of Yangebup Lake are separated from surrounding neighbourhood centres by dual-carriageway roads, a rail line and the Lake. The planned centre will provide access to daily and weekly shopping needs, additional employment opportunities and reduce expenditure leakage from the catchment.

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3 RETAIL DEMAND ANALYSIS

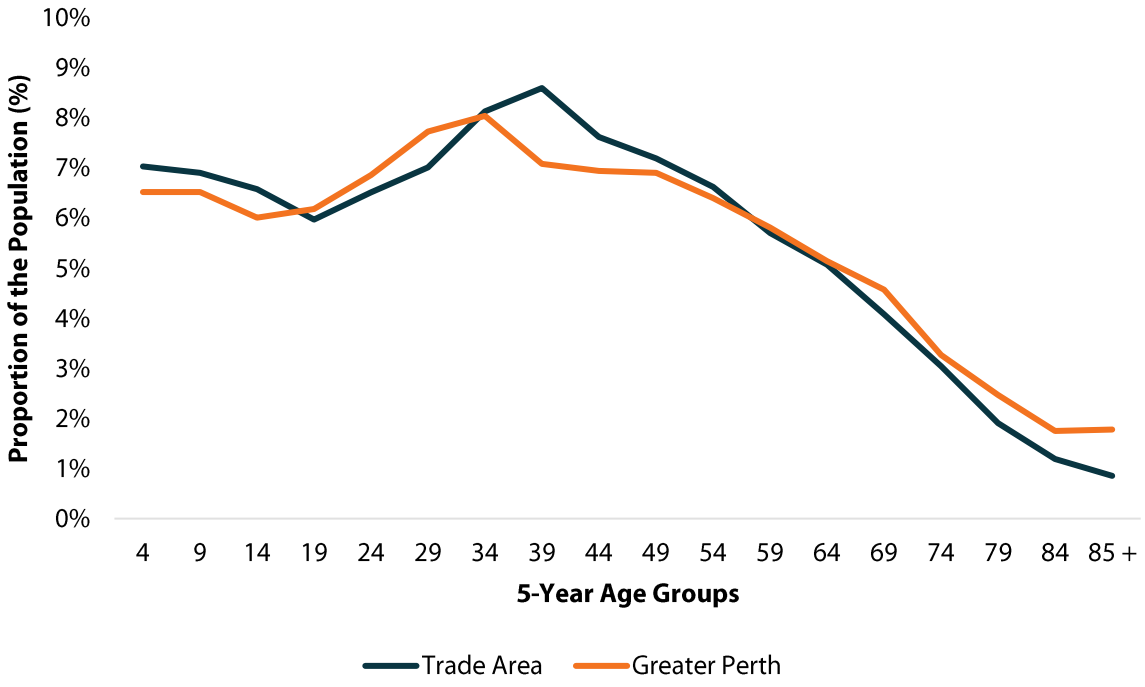
Understanding local demographics and expected market growth is vital for assessing the need for retail floorspace in the estimated trade area. This section provides an overview of demographics, current and future dwellings and the expenditure profile of the trade area.

3.1 Age Profile

The trade area exhibits a slightly younger age profile than the Greater Perth benchmark (Figure 7). The trade area has a slightly higher proportion of people aged under 20 years old, with 20.5% compared to 19.1%. This cohort will likely need low skill employment opportunities in industries such as retail and hospitality as they transition from being students to joining the workforce.

The catchment has a slightly lower proportion of 20- to 35-year-olds compared to Greater Perth (21.7% versus 22.6%); individuals 35 to 65 years old have a greater representation with 41% compared to 38%. The higher concentration of working-age persons over 35 suggests that the trade area has more individuals better established in their careers with families. These households are likely to have higher incomes, higher levels of disposable income, and a higher likelihood of expenditure on childcare and certain convenience retail goods and services.

Figure 7. Trade Area Demographic Profile



Source: ABS 2021, Pracsys 2025

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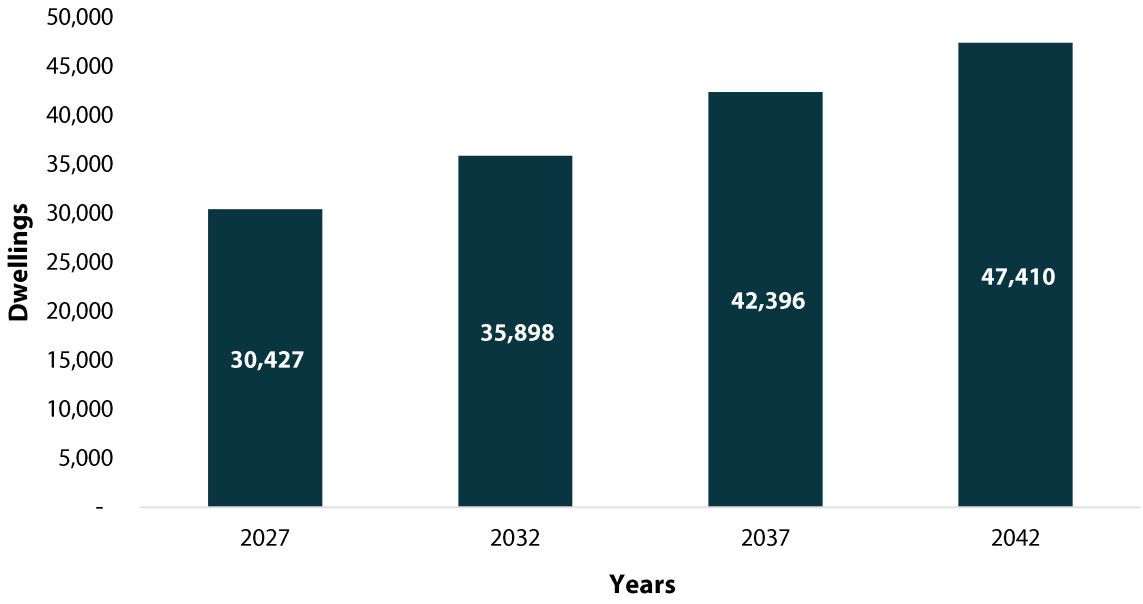
3.2 Dwelling Growth

The approximate trade area of the Centre is estimated to contain 30,427 dwellings by the time the Centre is set to be completed in 2027 (Figure 8)[8]. This reflects approximately 7% projected growth from the current number of dwellings in 2025. The number of dwellings in the trade area is expected to increase to 35,898 by 2032, reflecting a forecasted 18% increase in dwellings between 2027 and 2032. By 2042, the number of dwellings in the trade area is projected to reach 47,410, representing a 56% increase from 2027 and consistent increase in demand for commercial goods and services over time.

Figure 8. Trade Area Dwelling Growth Forecast



Source: ABS 2021, DPLH WA Tomorrow 2018, Pracsys 2025

[8] The ABS Census 2021 dwelling count by SA1 areas augmented by WA Tomorrow population projections (median band).

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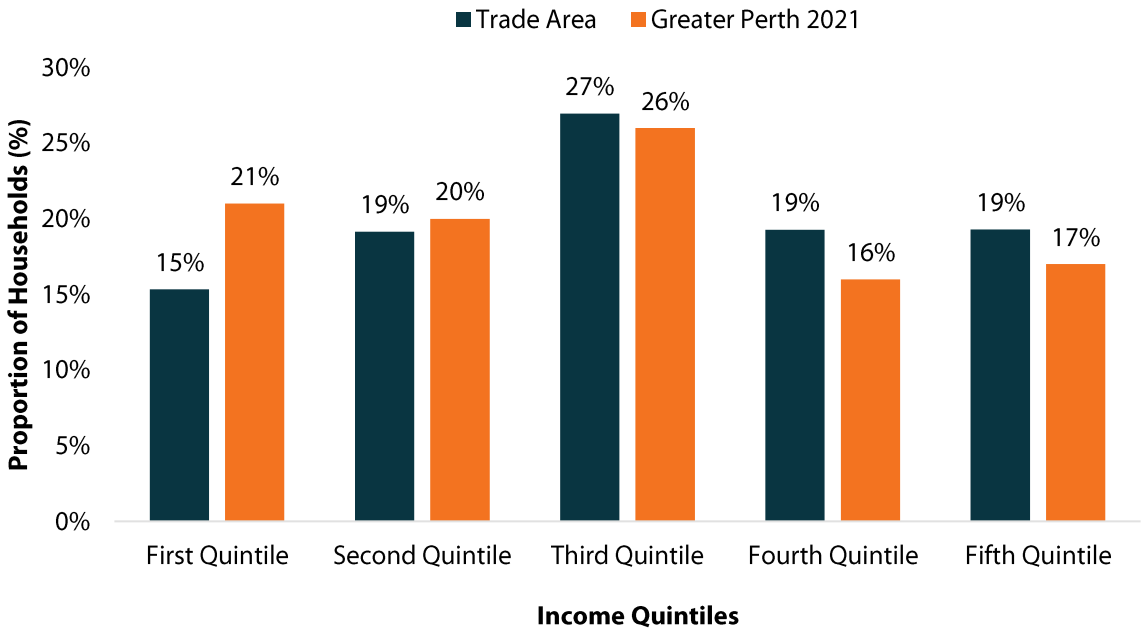
3.3 Household Income

Trade area household income levels contribute directly to the success of retail developments, as the level and composition of spending on retail goods and services are primarily determined by household income. Generally, lower-income quintiles spend a higher proportion of their income on basic goods and services; upper-income quintiles have more disposable income available to spend on comparison retail items.

2021 ABS Census data has been used to assess the distribution of household income within the trade area (Figure 9). Incomes in the trade area have a lower representation than the Greater Perth benchmark across the first and second quintiles (34% versus 41%). The two areas have a similar concentration of household in the third quintile; however, the trade area has a higher proportion of households in the fourth and fifth quintiles (39% versus 33%).

Figure 9. Trade Area 2021 and Greater Perth 2021 Income Composition by Quintile



Source: ABS Census 2021, ABS HHES Survey 2017/2018, Pracsys 2025

2016 ABS census data for Greater Perth and the trade area have been compared to account for the potential effect of COVID-19 on 2021 Census data (Figure 10). This comparison shows that the trade area has a lower-than-average distribution of income compared to Greater Perth, which was significantly impacted by COVID-19. The greater concentration of households in the first three quintiles suggests that households in the Trade Area will spend a higher proportion of their income on convenience retail uses. The proposed development will provide predominantly convenience uses, aligning with the anticipated local spending distribution.

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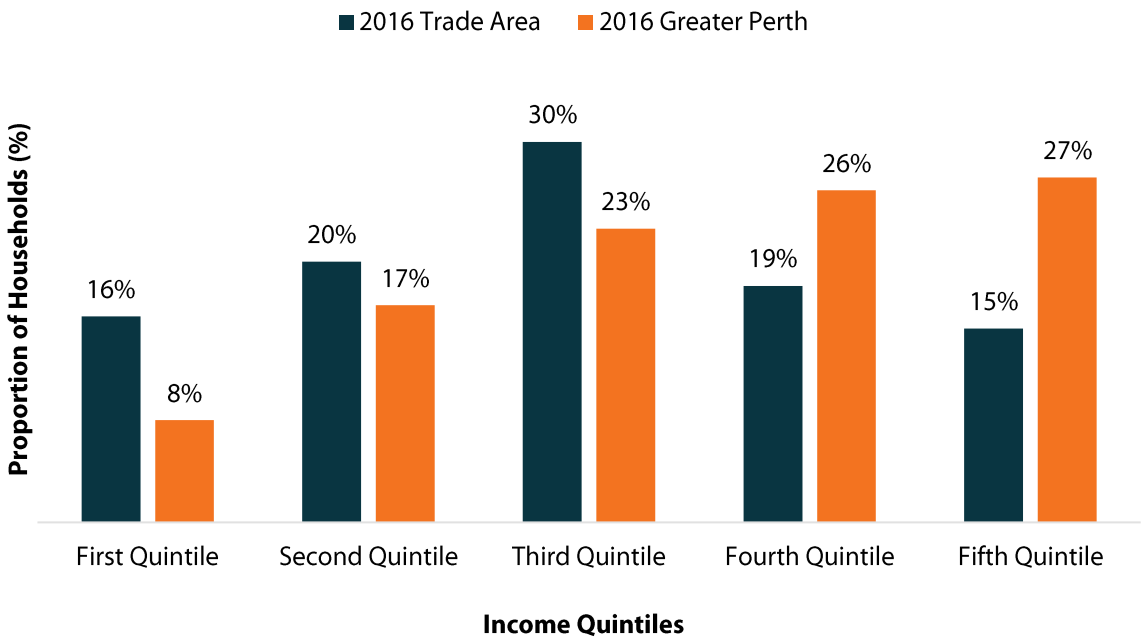
Figure 10. Trade Area 2016 and Greater Perth 2016 Income Composition by Quintile



Source: ABS Census 2016, ABS HHES Survey 2017/2018, Pracsys 2025

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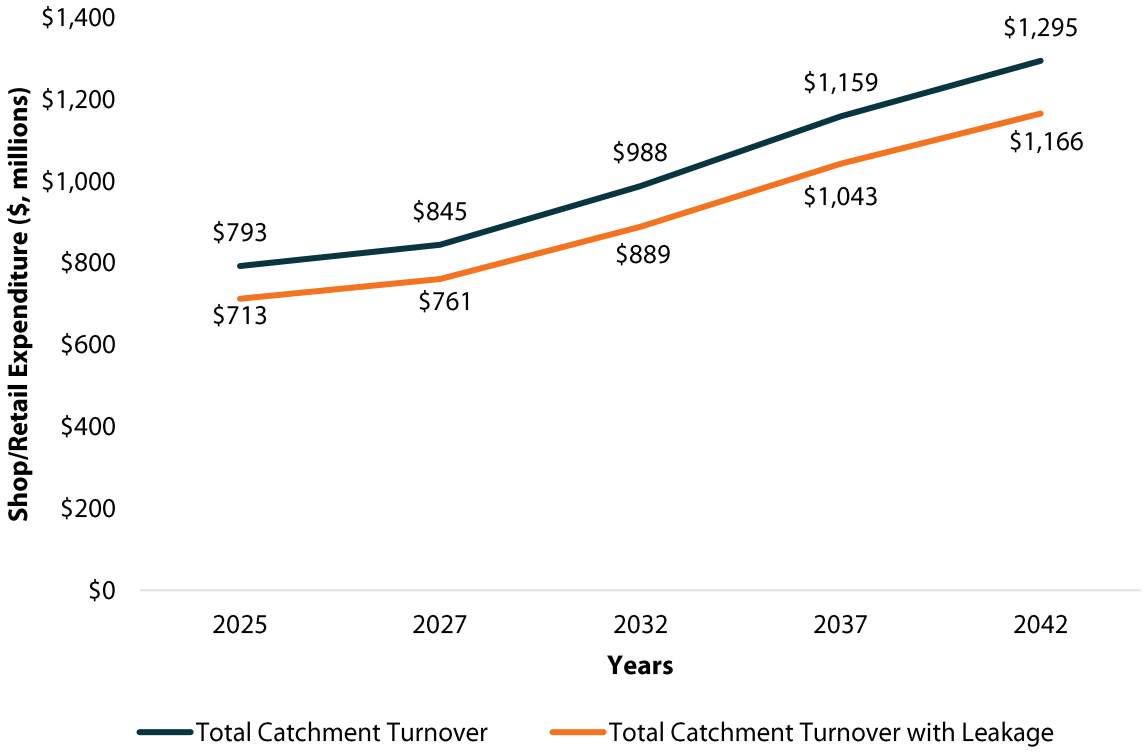
3.4 Estimated Retail Expenditure

ABS Household Expenditure Survey data was used to estimate the average spend per household by income quintile, from which the total expenditure pool of the catchment has been derived. The model combines the propensity to spend on commodities based on household income quintiles to derive the total Shop/Retail expenditure in the area[9].

Retail expenditure is projected to increase by 25% from 2025 to 2032 and by 63% from 2025 to 2042 (Figure 11). This large increase in catchment expenditure reflects the significant expansion in residential dwellings expected to occur within the trade area over the next 17 years. Some of this turnover is projected to be lost to online leakage; however, this is expected to be less prominent with respect to convenience retail than other types, such as comparison retailing. The effect of online leakage on the viability of the Centre is expected to be minimal.

Figure 11. Catchment Area Shop/Retail Expenditure Pool, 2025 to 2042



Source: ABS Census 2021, ABS HHES Survey 2017/2018, Pracsys 2025

The trade area likely has a higher-than-expected amount of leakage due to the trade area currently being underserved for its Shop/Retail needs (see section, Economic Leakage, for more information). The Centre will likely provide residents with additional options for Shop/Retail trade and reduce the amount of leakage in the trade area.

[9] Shop/Retail expenditure is aligned with the Shop/Retail use definition in the Department of Planning, Lands and Heritage, Planning Land Use Categories. This aligns with SPP4.2 requirements for assessing demand and impact.

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4 RETAIL SUPPLY ANALYSIS

4.1 Current and Planned Supply

This section provides an overview of the competitive environment facing the Centre at Beeliar Drive, Success. The Centre is classified as a Neighbourhood Centre and is likely to compete principally with those centres in closer proximity with similar uses.

Existing retail floorspace supply within the trade area has been derived through data from multiple sources, including:

- The Department of Planning Land Use Survey (2016)
- Property Council Shopping Centre Directory (2021)
- Urban Land Development Outlook 2023-2024 (2025)
- City of Cockburn Local Planning Strategy (2024)
- Secondary Research (various structure plans, property manager websites etc.)

The trade area has a current Shop/Retail offering of approximately 106,171m^2 (Figure 12).

Figure 12. Current Area Shop/Retail Floorspace Supply

Activity Centre	Shop/Retail Floorspace (m^2)
Harvest Lakes NC	3,628
Park Hive NC	2,913
Glen Iris LC	664
Beelier Village DC	9,223
Bibra Lake LC	975
Berrigan Drive LC	3,178
Yangebup South LC	528
Stargate Atwell LC	2,290
Cockburn Gateway SC	51,322
The Grange LC	2,064
Lakes Shopping Centre LC	6,926
Yangebup LC	2,620
Phoenix Park DC	19,377
St Pauls LC	244
Tony Ales / Hammond Park Local Centre	1,300
Total Floorspace	**106,171**

Source: DPLH Land Use and Employment Survey 2015/17, City of Cockburn Local Planning Strategy 2024

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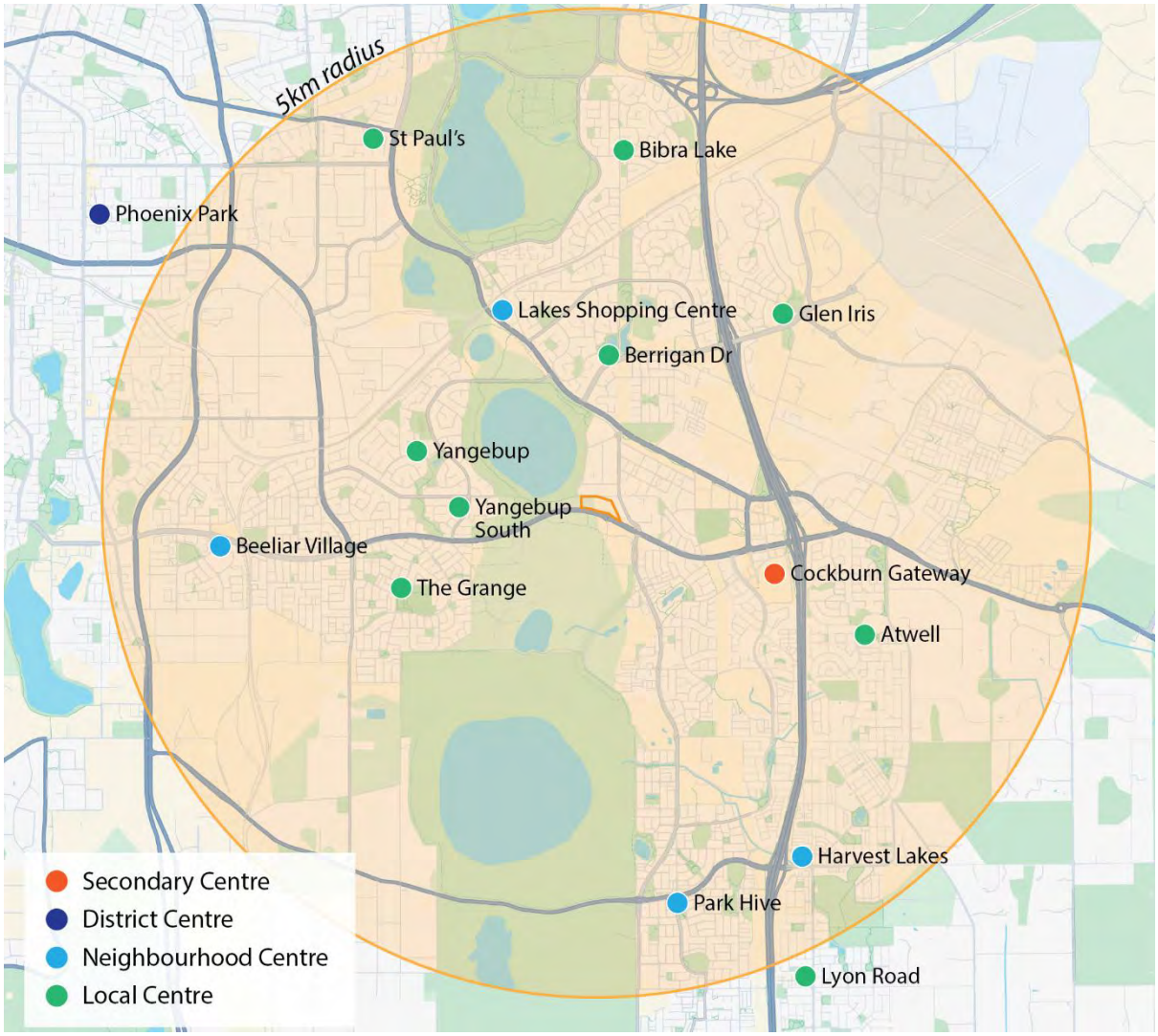
The trade area and surrounding areas include a wide range of retail offerings, including secondary and district centres, Cockburn Gateway and Phoenix Park, mixed-used industrial business areas, and various neighbourhood and local centres. Most centres within the trade area are neighbourhood and small local centres that provide for daily and weekly household shopping needs. Phoenix Park is located outside of the five-kilometre trade area but was included in the gravity modelling to ensure all factors affecting the retail uses at the subject site are accurately reflected. A selection of existing centres within the supply centre network has been illustrated in Figure 13.

Figure 13. Current Trade Area Retail Supply Network



Source: DPLH Land Use and Employment Survey 2015/17, WA Planning Commission 2025), City of Cockburn Local Planning Strategy 2024, Pracsys 2025

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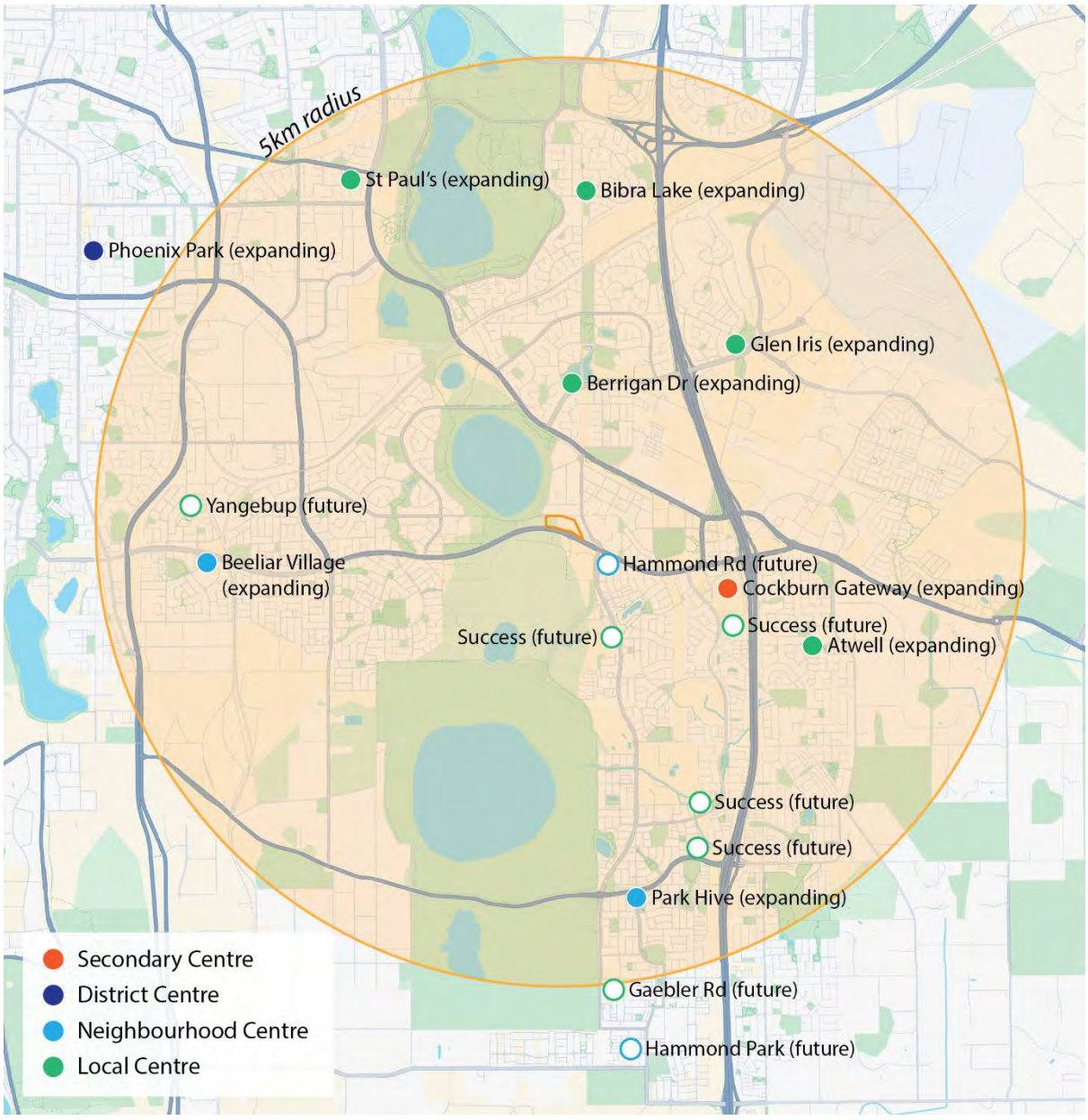
4.2 Expansions and Planned Developments

A desktop analysis and review of planning documentation within the City of Cockburn was undertaken to identify any planned future Shop/Retail floorspace developments within the trade area and its surrounds (Figure 14).

Figure 14. Future Trade Area Retail Supply Network



Source: DPLH Land Use and Employment Survey 2015/17, City of Cockburn Local Planning Strategy 2024, Pracsys 2025

This review, in conjunction with planned developments, identified four new future developments beyond the current supply network in 2025 (Figure 15). These new developments have been considered along with expansions of current centres to measure the long-term ability of the trade area to support the proposed Centre.

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Figure 15. New Activity Centres in the Trade Area

Activity Centre	Shop/Retail Floorspace (m^2)	Assumed Year of Build
Gaebler Road Local Centre	1,041	2026
50701116103 - Success Local Centre	500	2026
50701116135 - Success Local Centre	2,385	2026
50701116117 - Success Local Centre	200	2026
Total Floorspace	**4,326**	

Source: City of Cockburn Local Planning Strategy, DPLH Land Use and Employment Survey 2017/18

The desktop review identified 4,326m^2 of new development floorspace and 71,809m^2 of additional floorspace through expansions in the catchment by 2042 (Figure 16).

Figure 16. Trade Area Shop/Retail Floorspace Expansions

Centre	Previous NLA (m^2)	Expanded NLA (m^2)	Additional NLA (m^2)	Year of Expansion
Beeliar Village NC	9,223	16,310	7,087	2030
Atwell LC	2,290	4,001	1,711	2026
Cockburn Gateway SC	51,322	90,000	38,678	69,322 in 2026[10] 90,000 in 2036
Berrigan Drive LC	3,178	3,938	760	2026
Bibra Lake LC	975	1,501	526	2026
St. Paul's LC	244	424	180	2027
Park Hive NC	2,913	5768	2,855	4,774 in 2026 5,768 in 2031
Glen Iris LC	664	2,500	1,836	1,227 in 2026 2,500 in 2031
Phoenix Park DC	19,337	37,513	18,176	21,231 in 2026 37,513 in 2028
Total Floorspace	**90,146**	**161,955**	**71,809**	

Source: City of Cockburn 2024, Pracsys 2025

[10] This expansion has been delayed, as a result it is now being modelled for expansion to 69,322 in 2032 and 90,000 in 2042

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5 NEEDS ASSESSMENT

This section identifies the potential supportable retail floorspace at the Centre and estimates the potential impact of the Centre on the surrounding activity centre hierarchy.

5.1 Gravity Model Calibration

The gravity model estimates of centre turnover have been calibrated against known or modelled turnover data where possible. Cockburn Gateway and Phoenix Park were centres with published turnover (Figure 17). Where centres were near the border or outside of the trade area, the approximate proportion of their expenditure expected to be derived from the trade area was used to adjust their turnover.

Figure 17. Centres with Available Turnover or Productivity Data

Activity Centre	Turnover ($)	% Turnover from Catchment
Cockburn Gateway SC	$431,790,000	70%
Phoenix Park DC	$140,000,000	55%

Source: Urbis 2019, Cockburn Gateway 2019, City of Cockburn Local Planning Strategy 2024

Where published data was not available, a scan for outliers (centres where the gravity model may have distributed too much or too little expenditure) was undertaken. Turnover productivity levels were applied in these cases based on benchmarked productivity averages (see Figure 18 for more detail).

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5.2 Supportable Turnover / Floorspace

SPP4.2 uses Planning Land Use Categories (PLUCs) and defines Shop/Retail floorspace as including supermarkets, clothing stores, liquor stores, fast food outlets, restaurants, cafes and service stations. All relevant proposed uses at the Centre have been included based on this definition for the purposes of this RNA and NB Test.

The viability of Shop/Retail floorspace at the Centre was tested by assessing whether a benchmark level of productivity could be achieved within the allocated floorspace in its expected first year of operation in 2027 and every subsequent 5 years.

Industry standard turnover productivity estimates were used as benchmarks to assess the Centre's viability. A benchmark productivity for the Centre was determined by attributing the proposed land uses to retail categories. The proposed floorspace at the Centre can be considered supportable if its floorspace productivity is around $11,854 (Figure 18).

Figure 18. Retail Benchmark Productivity

Retail Category	Benchmark Productivity ($/m^2)	Centre's Composition of Uses (%)
Take Home Food	$13,078	71%
Take Home Liquor	$11,770	2%
Dine Out Food	$8,500	13%
Convenience Retail	$9,154	11%
Comparison Retail	$6,539	3%
Assessment Benchmark	**$11,854**	

Source: Colliers 2017 escalated to 2025 dollars, Pracsys 2025

The predicted floorspace productivity ($/m^2) for the Centre in its first year of operation is $11,631 in (Figure 19). This is slightly lower than the benchmarked floorspace productivity level of $11,827 for its proposed mix of uses but is sufficient for the Centre to be viable. The floorspace productivity drops slightly in 2032 due to expansions of other centres; however, it is within 2% of the benchmark measure and is seen to be viable. Turnover growth rapidly increases with the expansion of households and outpaces growth in supply to 2042, and the modelled productivity is far higher than the benchmark. The proposed development is seen as viable in the short and long term.

Figure 19. Floorspace Productivity Assessment

Year	2027	2032	2037	2042
Floorspace Productivity ($/m^2)	$11,631	$11,502	$13,802	$13,886

Source: Pracsys 2025

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5.3 Modelling Impacts

Market Share

The impact is calculated using the estimated floorspace productivity of the development in 2027. All centre expansions beyond 2027 were excluded to provide a comprehensive assessment of the impact. In 2027, the Shop/Retail components of the proposed Centre are expected to turn over approximately $96 million. Turnover from the Centre accounts for just 11% of total Shop/Retail expenditure in the trade area.

Impact Assessment

Turnover impact represents the reduction in a centre's turnover resulting from new competition. Two scenarios are modelled, one with the Centre and one without. The two levels of turnover across relevant centres are then compared to estimate the impact the developing the proposed Centre.

Impact Assessment Steps[11]

- Define the first year of the Centre's operation, estimated to be 2027
- Model Shop/Retail turnover for all centres, excluding expansions and new centres
- Calculate the change in turnover for all centres in 2027 and analyse the change by 2037 and 2042
- Estimate % change in turnover for each centre and compare to SPP4.2 impact levels and how they change over time

The impact on individual centres will depend on several factors, including current performance levels, the degree of dependence between stores, competitive responses, and the availability and variety of Shop/Retail. The impact assessment is therefore representative and an indication of likely turnover declines.

The sustainability of a centre is typically considered significantly impacted when its turnover is reduced by more than 10%[12] (Figure 20).

Figure 20. Turnover Impact Levels

Turnover Impact %	Level of Impact
0-5%	Low
5-10%	Medium
10% +	Significant

Source: DPLH 2023

[11] For more details on Gravity Modelling specifically, please see Section 9, Appendix 1: Gravity Modelling Methodology
[12] As defined by the SPP4.2 Implementation Guidelines

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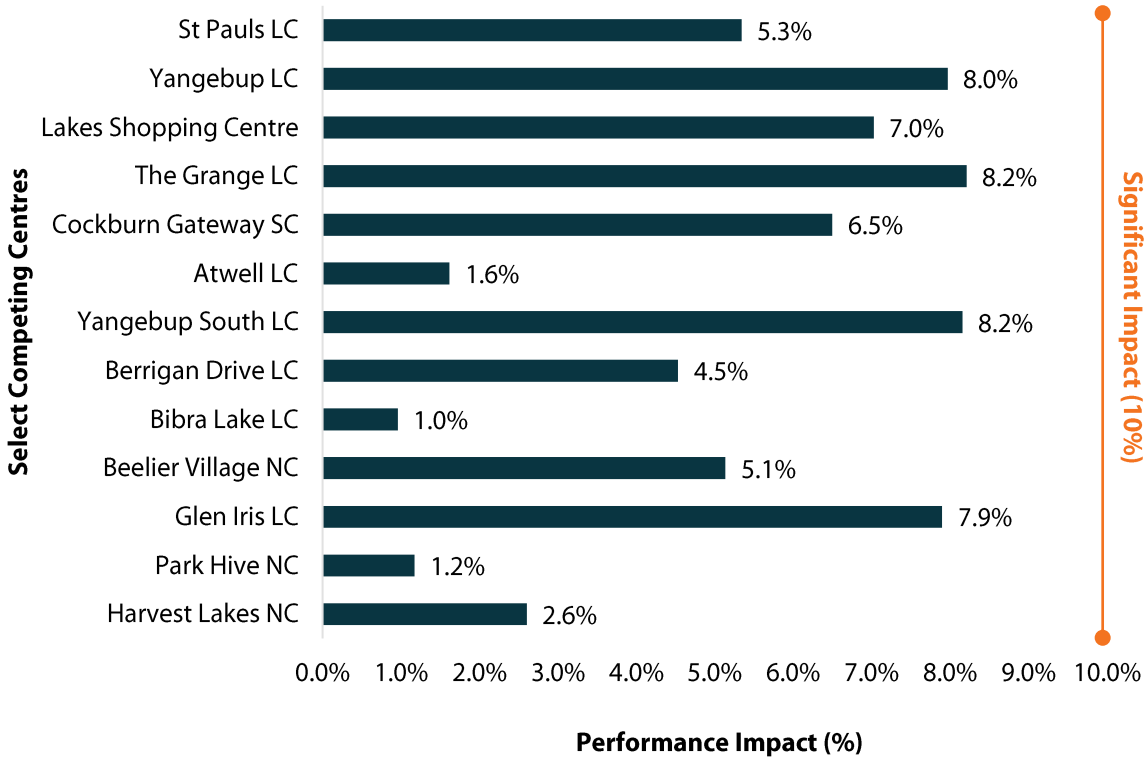
Figure 21 displays the results of the impact test for the Centre using a gravity model approach. The results reveal the difference in retail turnover owing to the development of the Centre.

Figure 21. Selected Centres – Impact Test 2027



Source: Pracsys 2025

The impacts should be interpreted as the change in turnover at a centre based on the turnover drawn from the identified study area. For instance, it is assumed that the Cockburn Gateway draws 70% of its turnover from the trade area; this is the impact of that 70% of turnover, not the total turnover of the Cockburn Gateway.

The impact on all centres is below the 10% significant impact threshold identified in the SPP4.2 (2023) Impact Guidelines, with half of the centres impacted at a moderate level, and half of the centres impacted at low level. The nearest competing centres to the Centre, Yangebup LC, Yangebup South LC and The Grange LC, are experiencing the highest impact however, their turnover remains above viable levels at all times[13].

Over time, the identified impacts are mitigated mainly by population growth and increased expenditure in the trade area, with all centres achieving a reduction in impact by 2032 and an increase in turnover to baseline by 2042. This demonstrates the significant increase in population expected, especially as there are increases in floorspace at competing centres over the period. It also reflects the small scale of the Centre and the extent

[13] These three centres are primarily made up of convenience retail, comparison retail, dine out food and take-home liquor. When compared with the Centre, the overlapping floorspace types make up only a small proportion of their total floorspace. The analysis accounted for the type of uses when measuring and distributing impact to centres.

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to which it will draw much of its turnover from the significant population growth in surrounding residential developments (Figure 22).

Figure 22. Turnover Impact in 2032, 2037 and 2042

Activity Centre	Change in Turnover from 2027 Baseline (%)		
	2032	2037	2042
Harvest Lakes NC	1%	5%	9%
Park Hive NC	0%	2%	4%
Glen Iris LC	-1%	8%	16%
Beelier Village NC	0%	5%	10%
Bibra Lake LC	0%	1%	1%
Berrigan Drive LC	2%	8%	13%
Yangebup South LC	13%	36%	55%
Atwell LC	1%	4%	7%
Cockburn Gateway SC	5%	20%	31%
The Grange LC	14%	36%	56%
Lakes Shopping Centre	2%	12%	21%
Yangebup LC	14%	36%	55%
St Pauls LC	2%	10%	17%

Source: Pracsys 2025

The impacts show that in the long term, the proposed uses will not affect the viability of surrounding centres, both current and planned, or the vibrancy of the activity centre hierarchy.

5.4 Competitive Response

Whether actual impacts on retail centres are similar to estimated impacts largely depends on the competitive response. The competitive response is usually targeted at improving foot traffic and, consequently, turnover of a centre, and can be affected at a centre level or an individual tenant level. At the Centre level, the response can include, but is not limited to, centre refurbishment and redevelopment, tenancy re-mixing, and marketing events. At the tenant level, the response may involve store refurbishment, improving the level of customer service, improving in-store management, advertising and pricing. How competitors respond will naturally affect the level of impact that is experienced as a result of the Centre. All these factors have the potential to significantly reduce the impact of the Centre.

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6 IMPACT ON COMMUNITY

The construction and operation impact of developing the Centre has been assessed using ABS National Input-Output tables at an Input-Output Industry Group (IOIG) level[14]. The methodology involves estimating the total direct and indirect employment and output arising from the site's development.

6.1 Input-Output Tables Methodology

Input-Output tables provide information about the supply and disposition of commodities in the Australian economy, as well as the structure and inter-relationships between industries[15]. The National Input-Output tables were used to derive total multipliers, which consider the total supply chain of goods and services for the activity in question. Impact multipliers were calculated for employment and output. The obtained multipliers were then combined with annual construction expenditure data to estimate the direct and indirect economic effects of the Centre on the economy.

Assumptions and Limitations

The following assumptions and limitations apply to the model:

- Results of the model represent the gross impacts in the absence of capacity constraints. This reflects a return to long-term market trends once COVID-19 impacts subside
- National Input-Output table approximates the actual patterns of linkages between industries in the regional economy
- Analysis assumes that the industrial structure of the economy is fixed. Considering the scale of the Centre, it is likely that this assumption stays true
- Employment impact is based on the average output per Full Time Equivalent (FTE) employee. It is likely that a significant component of the impact will result in an increase in the number of hours worked by existing employees, with some additional employment created

[14] Industry grouping used by the ABS for constructing National Input-Output Tables
[15] ABS, 1995, *Australian National Accounts: Introduction to Input-Output Multipliers, Information paper*

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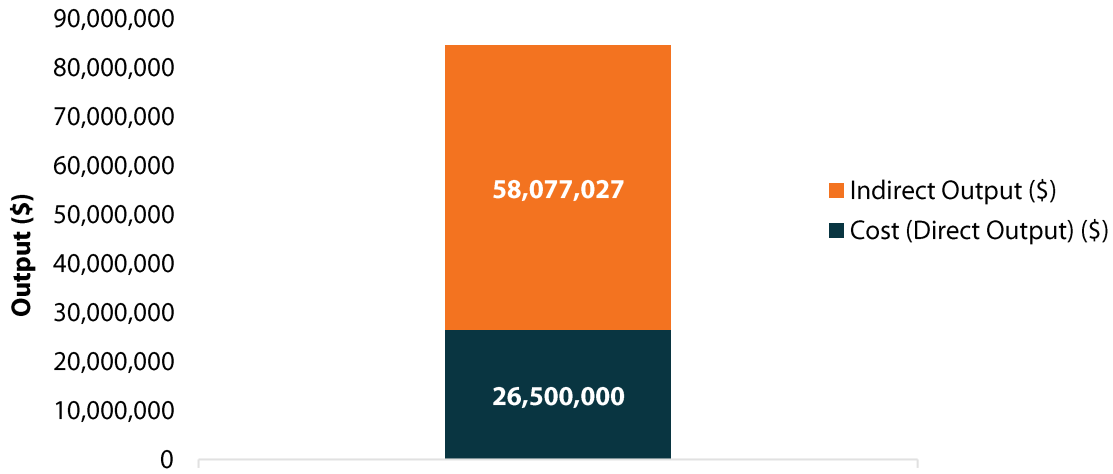
6.2 Economic Benefits

Construction Employment and Output

Input-output modelling has been used to estimate the construction impact of the Centre. With an estimated construction cost of $26.5 million, the development is expected to have a total output of $84.5 million in the surrounding economy, with approximately $58 million coming through indirect outputs.

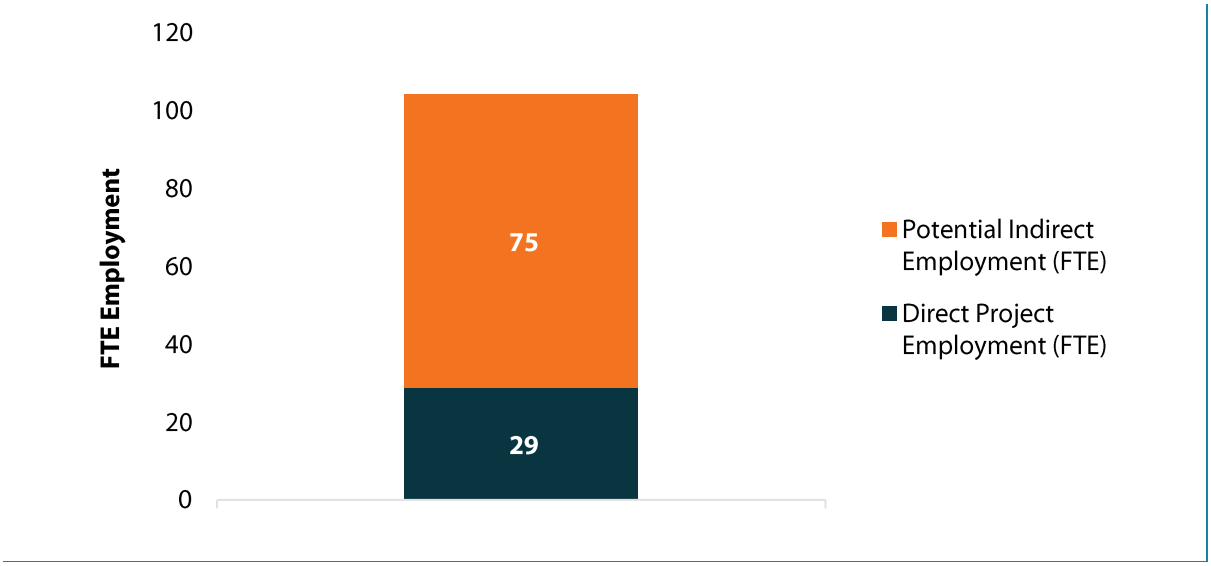
Figure 23. Construction Output



Source: Pracsys 2025

It is estimated that the development will support approximately 104 FTE jobs in the construction phase, comprising 29 direct and 75 indirect employment. Some of this employment will be a transfer from within the trade area, while some will reflect new employment opportunities for locals, contributing to sub-regional planning framework objectives such as improved employment self-sufficiency over the short term.

Figure 24. Employment Output



Source: Pracsys 2025

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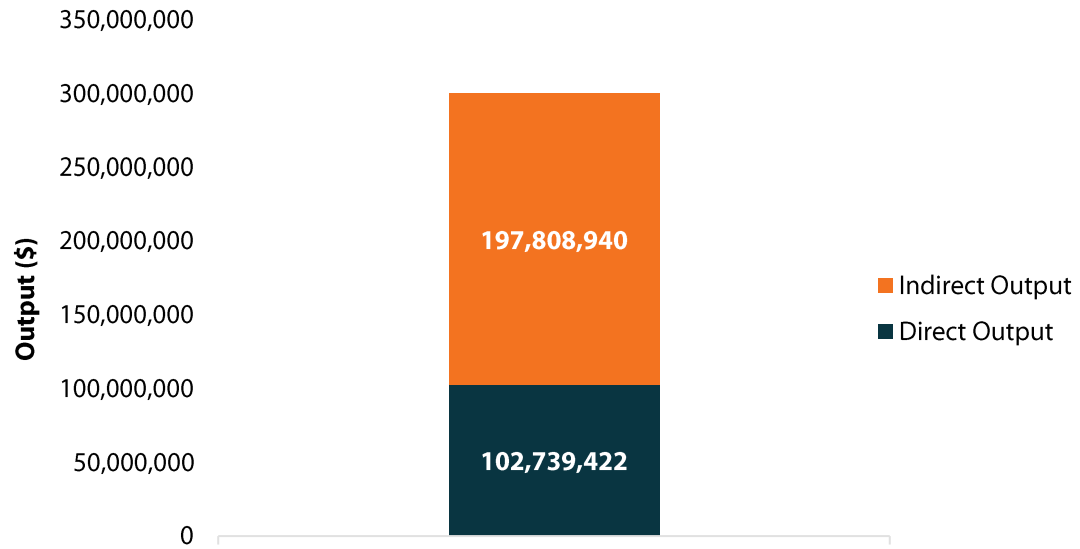
Operational Employment and Output

In the operation phase, the development will support a mix of services and retail jobs. The City of Cockburn has a floorspace to employment ratio of 26.29 for Shop/Retail and 83.86 for other forms of retail. It is estimated that the Centre will support approximately 255 FTE lower-skilled jobs suited to younger adults. These 255 employment opportunities will contribute to improving the ESS of the region, as the land is identified for employment uses, and needs to be developed for employment uses to meet targets.

The total direct output from the retail component is estimated to be approximately $102 million annually in the local area, and the overall total output in the greater economy is estimated at $300 million.

Figure 25. Operational Output



Source: Pracsys 2025

Vehicle trips

The proposed development will reduce the number of vehicle trips and the distance travelled to access Shop/Retail goods and services in the catchment. This will be achieved across different users, including residents and workers in the surrounding mixed business precincts.

Residents will be able to access the shopping centre due to its location along Beeliar Drive, which is a primary connector to the Kwinana Freeway and to Fremantle. This location will enable residents to undertake shopping trips on their commute to and from work and as part of other activities.

Workers will have reduced vehicle trips for work, retail and food/beverage related purchases. The site is surrounded by mixed business precincts that have limited access to retail goods and services. The site will alleviate the need for workers to travel via Beeliar Drive to surrounding centres and will enable walkable access for adjacent businesses.

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An additional user group benefiting from the proposed development's location will be parents dropping off and picking up their children from the adjacent high school. This multi-purpose functionality will enable reduced vehicle travel and improved access to retail goods and services.

Economic Leakage

The current provision of floorspace within the defined 5km catchment appears to be lower than the level of demand from residents in the catchment. This is evidenced by the retail floorspace per person of 1.35m^2 for the catchment. For comparison, the Greater Perth Shop/Retail floorspace per person is 1.96m^2 and the national benchmark is 2.2m^2.[16]

This is particularly low, given that the catchment includes Cockburn Gateway (a secondary centre) and a major component of the catchment is taken up by employment centres and public open space/lakes. There is likely a significant leakage rate (local expenditure leaving the catchment) associated with this under-provision of Shop/Retail goods and services. Where current local centres are supporting higher levels of shopping activity than they normally would, there would be financial gains for the specific centre; however, consumers may experience longer wait times, higher levels of congestion in and around centres, and overcrowding. The Centre will help reduce expenditure leakage from the local economy and contribute to an improved balance in the activity centre hierarchy.

The development will reduce leakage and improve the overall shopping experience for locals. Employment supported by the proposed development is also likely to be additional and not a transfer of economic activity from a neighbouring centre.

Road Safety and Strategic Location

The Centre is located at the intersection of Beeliar Drive and Kemp Road, with an additional access point through Yangebup Road and a private internal road opposite the Kemp Road roundabout. Yangebup Road will provide local access to households west of Yangebup Lake, which is bound by dual carriageways to the west (Spearwood Avenue) and south (Beeliar Drive), and railway lines to the north. This area has access to only two small local centres, which are insufficient to meet the full weekly shopping needs of a household.

Beeliar Drive is an arterial road that plays a key role in linking southwestern suburbs to the Kwinana Freeway and connecting Fremantle to the Armadale Area. The site's location on Beeliar Drive will provide high levels of access to residents within the catchment, as it is the primary connection to the Kwinana Freeway for many households.

[16] Australian Retail Association, MST Marquee – The Outlook for Retail Rents 2024, https://www.retail.org.au/news-and-insights/mst-marquee-the-outlook-for-retail-rents#:~:text=Demand%20and%20supply%20imbalance%20to%20impact%20retail,but%20cost%20has%20been%20a%20factor%20too. Accessed 30/09/2025

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Worker Expenditure

The Neighbourhood Centre will also provide greater daily retail and food/beverage shopping options for the surrounding mixed business precinct workers; it is estimated that workers will spend $139 per week on the types of retail uses that could be expected at the proposed development[17]. It is estimated that the 255 FTE employees at the proposed development would generate $1.8 million per annum in retail demand, much of which would likely accrue to the proposed development once complete.

6.3 Community Benefits

The Centre is expected to deliver positive benefits to the surrounding community. The Centre will benefit the residents by addressing the under provision of access to retail goods and services within the catchment. This creates balance and equity of access as larger numbers of people are able to access the goods and services they desire in a timelier fashion. The Centre will also encourage healthy competition in the area, benefiting the consumer regarding the price and quality of goods.

Equity and Social Inclusion

The proposed uses will support greater levels of liveability for persons in the surrounding area, particularly for those who can access the site via Yangebup Road from west of Yangebup Lake. The location of the Centre along Beeliar Drive will also support equitable access due to the high levels of passing traffic. The centre will also provide more equitable access for workers to retail and food/beverage options during the workday, reducing the need for these workers to drive to and from other centres such as Cockburn Gateway or Beeliar Village for daily shopping needs.

Infrastructure and Services

Having a mix of retail uses at the Centre will support multi-purpose trips, which is an objective of SPP4.2 (2023). The Centre is also strategically positioned on the corner of Beeliar Drive and Kemp Road, making it a convenient option for a wide range of potential users, including workers and parents taking part in pick-ups and drop-offs of their children from the Secondary School across from the site. The site will also reduce vehicle trips and distance travelled to access retail goods and services for several user groups.

Diversity of Products

The proposed development will include a full line supermarket and an expanded fresh grocer. Independent grocers offer a unique and differentiated variety of goods that complement mainstream supermarket offerings through products that may not be readily available in the area. The Centre has already earmarked 1,650 m^2 of floorspace for a Supermarket/Fresh option that will increase the product offering available to consumers in the catchment.

[17] Based on Office worker expenditure in a suburban area, adjusted to AUD $2025.
http://www.southfieldcitycentre.com/wp-content/uploads/2012/06/Office-Worker-Retail-Spending-in-a-Digital-Age.pdf

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7 ECONOMIC ACTIVATION ANALYSIS

Principles of economic activation have been applied to identify potential locations for supermarkets and other retail uses. Pracsys uses the Six Principles of Economic Activation to assess the relative performance of centres from an economic perspective. This includes how key anchors such as supermarkets drive pedestrian traffic (activation) and suitable locations for less high traffic uses such as other retail. The following table provides a summary of the six principles that can be applied by Windsor Knight for the proposed development.

Figure 26. Summary of Six Principles of Activation

Principle	Summary
1. Purpose of Place	**The role of the Centre based on its size and classification:** • Addresses the question – what does this place represent to its target user population (residents, workers, visitors)?
2. Access – Arrival Points	**This refers to the means by which centres are accessed and the arrival points:** • Decisions about access begin 5km from the place • Transport networks should be planned to travel through centres (not bypass them) – ensure the design funnels people and traffic into the core • Congestion and a mix of transport nodes is beneficial • It is better to arrive at the ''front door' of the place, not around the back
3. Origins – Car Parking and Transport Nodes	**Origins are areas from which pedestrian movements begin:** • Parking and transport nodes are the drivers of pedestrian movement • Strategic distribution of car parks and transport nodes will maximise pedestrian movement o Location is more important than numbers o Space the car parks around the periphery of the Centre o Street parking is important (for commercial areas) o Use fees to ensure turnover of parking but not so much that consumers do not park o Relax time limits in appropriate areas to ensure customers have time to undertake shopping trip relevant to proximate uses
4. Exposure – Pedestrian Movement	**Exposure indicates Active Frontages that are exposed to high levels of pedestrian traffic:** • Economic activation is driven by the frequency and concentration of transactions • Channel movements o Concentrate transactions by pushing people past as many shop windows as possible o Rents and sales are directly related to pedestrian traffic (e.g.: Butcher will pay higher rent to be at supermarket entry) • Minimise possible routes from origin to destination points (e.g. car park to main attraction) as architectural "permeability" is not always a good thing
5. Destinations – Major attractions	**Destinations are areas that attract high concentrations of customers/people:** • Identify main destination – what will bring users into the core? • Assess user behaviour

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Principle	Summary
	○ Number of visits ○ Timing of visits (time of day, seasonality) • Give major destinations special treatment ○ Understand what they need ○ Build a centre around them • Amplify the impact of attractions by creating support amenities and infrastructure to maximise frequency, length of stay and expenditure
6. Control – Strategic Sites 	**Key Sites are locations that could be considered as future destinations and/or suitable sites for anchor tenants (i.e. supermarkets). Tenure control is a significant advantage for overall development success** • Tenure control is vital for overall development success – determine which sites (supporting what uses) must stay in public ownership • Identify active frontages and take control of key sites or implement appropriate planning measures (i.e. a set of preferred uses for a site) • Corner sites drive uses on either side (more appropriate for high turnover uses such as a café where there is high pedestrian traffic) • Not all areas in a place need to be active – be selective

Source: Pracsys 2025

7.1 Location Implications

The location of the Centre, on the corner of Beeliar Drive and Hemp Road provides some advantages and barriers that need to be emphasised and mitigated to maximise economic activation and help the Centre reach its full economic potential.

Advantages

The Centre provides the Centre with high visibility and traffic exposure for increased passing trade. Peak traffic in the morning and evenings will be opportunities for attracting trade as motorists travel to and from work. Adjacent mixed business precincts will provide working hour activation through worker expenditure on retail and food/ beverage products and services. The secondary school just south of the Centre complements these user groups with pick-ups and drop-offs.

The site will support both vehicle access by residents and some pedestrian access by the adjacent workforce. Some level of public transport access is available with bus stops to the south and east of the site, providing access to three bus routes.

The design needs to ensure that there is a high level of visibility to passing traffic from the Centre and pedestrian access for the surrounding mixed business precincts.

Constraints and Mitigation

The centre is separated from residential areas by mixed business uses and public open space, including lakes. This being said, it provides access to an enclosed under provisioned catchment west of Yangebup Lake through Yangebup Road.

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Public transport options are also limited, with only three stops that are not central to the centre, unsheltered and without seating. This could be addressed through the development by working with DoT to provide new stops with improved amenities.

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8 CONCLUSION

This report assesses the Centre at Beeliar Drive, its trade area and competition to estimate the potential impacts on the retail network and consider whether there is sufficient demand for the proposed uses at the subject site.

The quantum of uses proposed by Windsor Knight are within the Local Planning Strategy and Structure Plan allocations for the Centre. The proposed expansion and current uses combined do not exceed the 8,100m^2 of Shop uses planned for the site. The mix of proposed uses aligns with the Retail Need Assessment undertaken for the Hammond Road North Structure Plan.

There is a clear need for the proposed uses in the catchment, with an apparent undersupply of retail uses. Over the 10 years following the construction of the Centre, the trade area population is expected to grow significantly through new residential developments around the Centre. Furthermore, the income distribution of the catchment population is likely to support increased disposable expenditure for retail items.

There are a number of proposed expansions and developments to be completed in the trade area, along with the Centre at Beeliar Drive. This retail floorspace supply expansion will occur alongside an increase in demand for retail floorspace from additional population growth surrounding the Centre, allowing current centres to maintain their viability and reducing expenditure leakage out of the catchment area. The Centre is predicted to achieve a productivity level that is considered viable in 2027 (the year of opening), further demonstrating the need for retail uses.

This report also provides a Net Benefits Test to assess the sustainability of the retail hierarchy with the introduction of the Centre in accordance with SPP4.2. The results have shown that the estimated impacts over time are not significant, and the sustainability of the Centre hierarchy will be preserved. A number of factors contribute to this finding, including:

- The Centre is located in an under provisioned catchment
- The development is central to a catchment with significant future residential development

The Centre is likely to bring both economic and community benefits by providing employment, reducing travel time, encouraging healthy competition and creating equitable access. It is estimated that the development will reduce the distance travelled to an activity centre for residents and workers in the catchment.

The retail component of the Centre aligns with SPP4.2 Implementation Guidelines objectives to provide for multi-purpose visits. Considering the potential turnover impacts with significant population growth and identified benefits, the Centre is expected to achieve a positive net benefit for the community.

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9 APPENDIX 1: GRAVITY MODELLING METHODOLOGY

Gravity models allow for the measurement of spatial interaction as a function of distance to determine the probability of a given customer shopping at a centre and provide an approximation of trade area and sales potential for a development. This modelling technique uses the distance between a household and each centre, along with a measure of 'attractiveness', to define the probability model. The 'attractiveness' of a centre has been defined by the total floorspace and the distance has been calculated by measuring straight-line distances between each centre and population. The gravity model probability formula is shown in Figure 27.

Figure 27. Gravity Model Probability Formula

$$P_{ij} = \frac{\frac{A_{jk}^{a}}{D_{ij}^{ß}}}{\sum_{j=1}^{m} \frac{A_{jk}^{a}}{D_{ij}^{ß}}}$$

P_{ij} = Probability of customer living/working in statistical area i shopping at complex j.

A_i = Area of floorspace in centre, j in square metres, according to the type of supply, k.

D_{ij} = Distance between statistical area of households, i and complex j.

a = Area exponent

ß = Distance exponent

k = Type of supply or expenditure, either Convenience or Comparison

i = Statistical area (i=1,...,n)

j = Complexes (j=1,...,m)

Source: Carter, C (1993) 'Assumptions Underlying the Retail Gravity Model', Appraisal Journal, Vol 61, No 4, pp510; Pracsys (2020)

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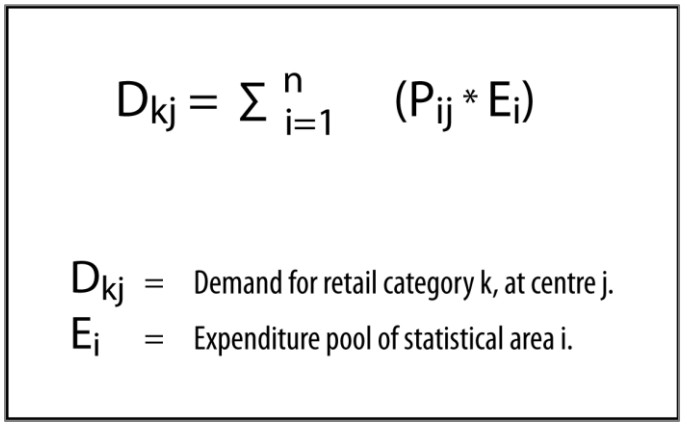
Figure 28. Gravity Model Demand Formula



Source: Carter, C (1993) 'Assumptions Underlying the Retail Gravity Model', *Appraisal Journal,* Vol 61, No 4, pp510; Pracsys (2020)

Figure 28 shows that the demand for retail category k[18], at centre j, is equal to the sum of the probabilities of customers living in statistical areas i to n, multiplied by the expenditure pool of statistical area i. In other words, the demand for retail is a function of the probability of customers from a particular statistical area attending the Centre multiplied by the expenditure pool of that statistical area. The expenditure is pool is derived through the population multiplied by its income distribution.

In its core form gravity modelling provides a clearer, reproducible outcome that can be easily assessed. However, it does not consider local factors, including:

- The comparative value proposition of centres (e.g. the presence of an 'anchor' attractor that draws significant market share);
- The brand preference of users; or
- The efficiency of transport networks, as well as geographical barriers (e.g. in some cases it may be easier for customers to access a centre that lies physically further away).

9.1 Drivers of Retail Floorspace Supply and Demand

Demand changes can result in increased or decreased expenditure. The potential causes of demand changes are shown in Figure 29. These largely show that an increasing population increases demand, and vice versa. There are significant amounts of commercial floorspace, especially office floorspace, flagged for the central sub-region of Perth and beyond. There will also be significant numbers of new dwellings provided across Perth. This increase in residents has the potential to boost demand for goods and services in the area.

Demand can also increase from rising incomes, or wealth because people have more disposable income to spend on retail. Demand can also be increased by reducing leakage. Leakage for retail is largely caused by online retail, as well as travelling.

[18] Retail categories are determined by their PLUC code and whether they are convenience or comparison goods. Convenience goods are day-to-day items such as groceries, pharmaceuticals and fast food. Comparison goods are items where consumers are willing to travel further distances, and are bought less frequently such as clothing, furniture, electronics, or other household items.

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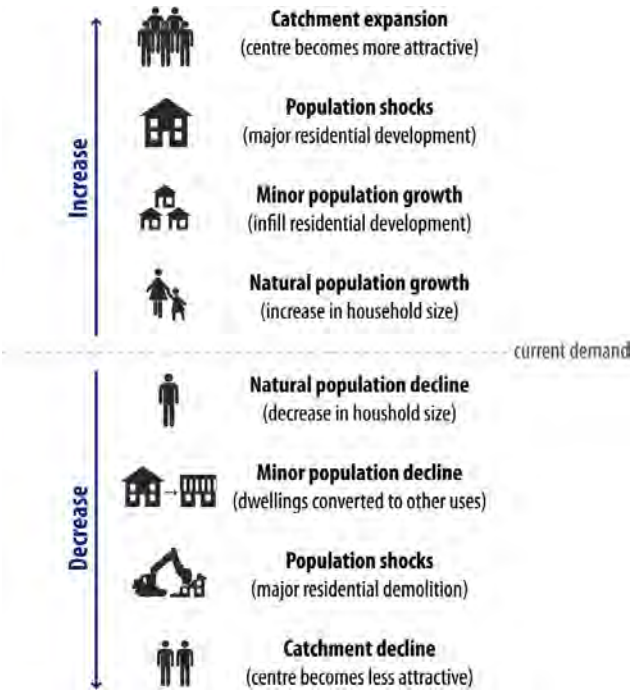
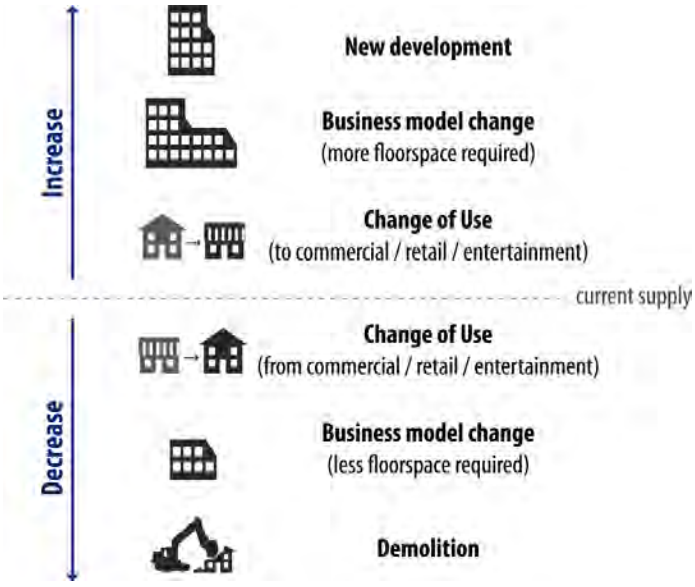
Figure 29. Drivers of Retail Floorspace Demand



Source: Pracsys 2025

Supply changes can result in increased or decreased retail floorspace. The potential causes of supply changes are shown in Figure 30.

Figure 30. Drivers of Retail Floorspace Supply



Source: Pracsys 2025

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ATTACHMENT 6

ESD Report

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SUMMATION

Beeliar Shopping Centre

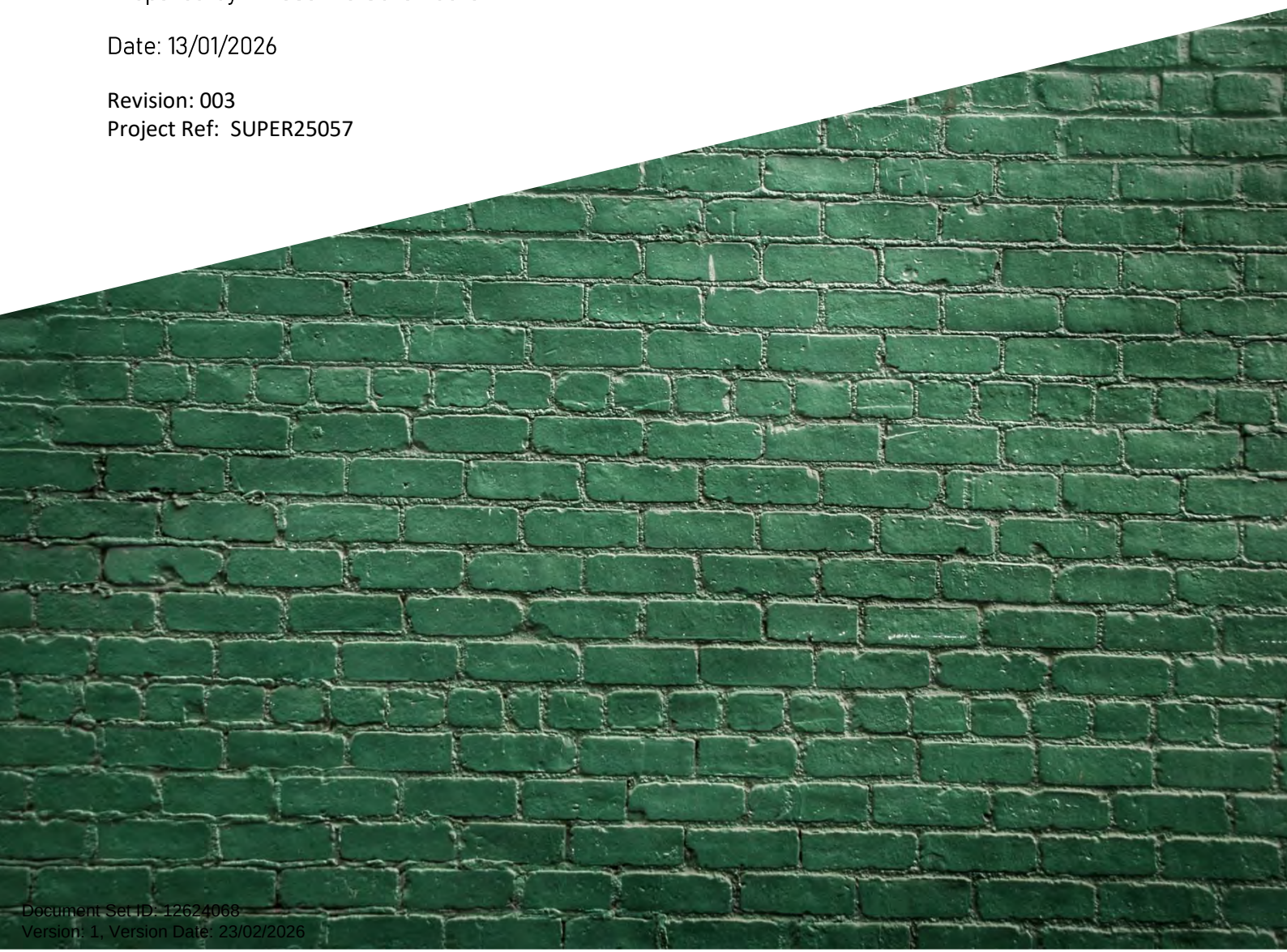
Sustainable Design Assessment Report

Prepared for: Place Fabric

Prepared by: Prasanna Suraweera

Date: 13/01/2026

Revision: 003
Project Ref: SUPER25057



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Executive Summary

This document has been prepared to outline the sustainability initiatives that are being considered for inclusion in the Beeliar Shopping Centre project located in Cockburn Central.

The following guidelines are acknowledged as applicable to the site:

- WA State Planning Policy 7.0 – Design of the Built Environment

"Good design optimises the sustainability of the built environment, delivering positive environmental, social and economic outcomes."

It is acknowledged there are no other sustainability specific requirements applicable for this site.

Summation Pty Ltd has been engaged as the sustainability consultants for the project and will be responsible for the delivery of the sustainability objectives. The sustainability team for this project will be led by Prasanna Suraweera, who is a Director with Summation and a Green Star Accredited Professional with over 21 years of experience in delivery of sustainable developments. It is confirmed that Summation has been engaged to provide a wholistic review of the sustainability opportunities with the aim of adopting robust and appropriate initiatives accordingly.

The project has made a commitment to the following sustainability initiatives as outlined below:

- Energy Efficiency
- Water Sensitive Design
- Large Scale Solar PV
- Electrification – Hot Water, Space Heating and Cooking
- Heat Island and Heat Stress Mitigation
- Construction Waste Recycling
- Waste Minimisation
- Promoting EV Transition
- Low Embodied Emission Materials
- Vehicle Use Modal Shift -Bike and Scooter Parking
- Energy and Water Metering and Monitoring

Refer to Section 2 for further discussion of the proposed initiatives.

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Abbreviations/Glossary

Abbreviation	Description
ESD	Environmentally Sustainable Design
GBCA	Green Building Council of Australia
GSAP	Green Star Accredited Professional
KPI	Key Performance Indicators
EOT	End of Trip
NCC	National Construction Code
BMS	Building Management System

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1 Introduction

1.1 Project Background

The proposed Beeliar project is located at 86-88 Lot 7 & 99 Hammond Rd, Cockburn Central, WA. The site location is shown in Figure 1 below.

Figure 1 – Site Location and Context

The project consists of a neighbourhood Shopping Centre with two Major tenants, a Mini Major, several smaller tenancies and pad sites for two fast-food tenancies and a service station. Associated carparking provided on site to service the centre.

1.2 Disclaimer

This report provides high level guidance regarding the sustainability commitments targeted for this project and the preliminary strategies and initiatives to be adopted therein.

The purpose of this report is to articulate the sustainability initiatives being committed by the project. Due care has been taken to ensure the initiatives are coordinated and achievable for the project, however, note that the specific strategies mentioned in this report are indicative and may evolve throughout the futures stages of design.

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2 Proposed Initiatives

2.1 Summary of Initiatives

A summary and discussion of the key initiatives proposed are outlined below:

- Energy Efficiency
- Water Sensitive Design
- Large Scale Solar PV
- Electrification – Hot Water, Space Heating and Cooking
- Heat Island and Heat Stress Mitigation
- Construction Waste Recycling
- Waste Minimisation
- Promoting EV Transition
- Low Embodied Emission Materials
- Vehicle Use Modal Shift -Bike and Scooter Parking
- Energy and Water Metering and Monitoring

2.2 Energy Efficiency

Energy efficiency requires combination of high-performance building envelope together with efficient servicing strategy. The following fundamental concepts will be considered in the design of Beeliar Shopping Centre Project:

- High performance envelope including high-performance low ‘e’ single -glazing systems – suitable for retail glazing.
- All glazing to be provided with continuous awning shading to minimise direct solar gain.
- LED lighting throughout for light quality and efficiency
- Optimised roofing design withal insulation located at roof level:
    - Kingspan composite construction for the Major roof area
    - Metal deck with roof spacer and insulation for Mini major and other remaining smaller tenancies
    - No allowance for ceiling in the base build
    - Light-coloured roofing (e.g. Surfmist or equivalent) to reduce heat gain and support compliance / sustainability.

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2.3 Water Sensitive Design

Water efficiency will be targeted through the selection of suitable fittings and fixtures. The following initiatives will be targeted:

- Waterwise landscaping to minimise dependence on potable water.
- High efficiency fittings and fixtures – High Water Efficiency Labelling and Standards (WELS) rated fittings:
    - Taps – 5 Star
    - Toilets – 4 Star rated dual flush toilets
    - Showers – 3 Star (7.5 l/min)

2.4 Large Scale Solar PV

Provision of renewables is critical to the sustainability performance of buildings. It is a key initiative for reducing carbon emissions and will also provide operating cost benefits to the residents.

The proposed commitment includes for the following:

- Commitment for 30kW Solar PV system to serve the minor tenancies and common areas via an embedded network arrangement. This represents an approximate total of 210sqm of roof area which has been allocated for Solar PV. The commitment is expected to yield ~45,000kWh/annum with an expected carbon savings are 22,000 kgCO2e/annum.
- Further roof allocation for the Major and Mini-Major tenancies to install respective large scale renewable systems. Whilst finalised negotiations are ongoing with these tenants, there is an intention from them to have large Solar PV systems directly connected to their demands.

Refer below Figure 2 for details of the proposed Solar PV systems.

Figure 2 – Allocated Roof Area for Solar PV

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2.5 Electrification – Hot Water, Space Heating and Cooking

Electrification is a key strategy for ongoing emissions improvement as the electricity grid continues to improve its carbon intensity. This is due to the ongoing 'greening' of the grid as the additional renewable's capacity is realised. As an example, over the past 15 years, the grid emissions have improved by approximately 40% to 50% on the South-West Interconnected System (SWIS). This trend is expected to continue with further investment into renewable projects planned for the SWIS.

The project commits to all services (i.e. hot water, cooking and space heating) being provided by electricity-based systems.

By having all services and energy demands electrified, this project is well placed to achieve ongoing savings in carbon emissions alongside the grid.

2.6 Heat Island and Heat Stress Mitigation

The external colour of roof elements can have significant impact on the local microclimate, specifically temperature. Dark surfaces will absorb heat and can increase ambient temperatures by 5+ degrees. Light coloured roofs and surfaces will assist in minimising this impact, along with landscaped areas. The following strategies have been adopted to provide respite for shoppers in peak summer conditions.

- The Beeliar Shopping Centre project will adopt light coloured roofing materials to minimise its impact on the local microclimate.
- Provision of strong tree cover over parking areas to provide shade and amenity with introduction of 119 trees across the site.
- As well as having shade structures for the car park areas which typically are fully exposed.
- Extensive awnings over retail frontages (continuous awnings over glazing) to provide a degree of weather protection and amenity.

Figure 3 – Shade structures and tree canopy for carpark

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2.7 Construction Waste Recycling

A minimum 80% of all construction waste will be diverted from landfill including ongoing monthly reporting. This will be specified in the Head Contractor obligations and in line with current industry best practice.

2.8 Waste Minimisation

The major tenancies will manage respective waste streams and associated recycling. For the minor tenancies and common areas appropriate waste sorting area has been determined based on the expected throughput of each waste streams, these have been located on the ground floor with safe efficient access by occupants and waste vehicles. Specific waste streams targeted include the following:

- General
- Comingled Recycling

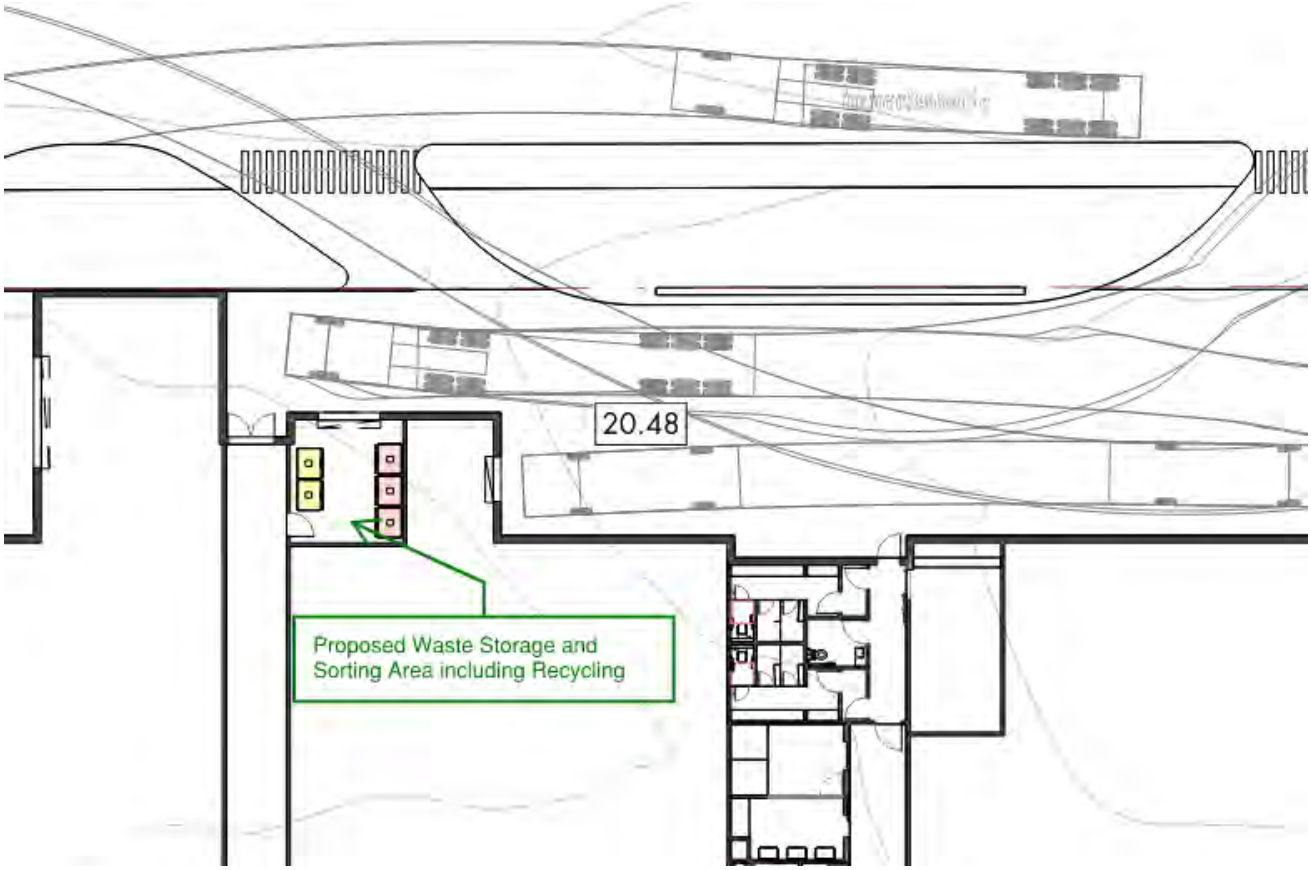

Figure 4 – Waste Storage Area including Recycling

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2.9 Promoting EV Transition

The Electric Vehicle transition is a key strategy for reducing global emissions. Facilitating the EV transition for projects such as the Smith Street project involve provision of nominated charging bays to ensure residents have easy access to charging infrastructure should they wish to adopt EV.

The project commitment includes for the following:

- 4 off EV charging bays to be installed with priority parking allocation to entry.
- Future provision for additional bays to be converted in future (i.e. switchboard spatial allowance) base don demand from customers.

Figure 5 – Provision for Future EV Charging Bays

2.10 Low Embodied Emission Materials

Upfront carbon impacts from construction materials will be minimised through consideration of low embodied emissions materials. Key commitments include:

- Cement substitutions for footings, foundations, and ground slabs and landscape – target 10% reduction in conventional cement
- Exploration of recycled road base for any cut and fill
- Exclusion of ceiling in base build design to avoid wastage and demotion during fit out.

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2.11 Vehicle Use Modal Shift -Bike and Scooter Parking

Reducing reliance on vehicle use is a key strategy for a low emission future. Provision of bike and scooter parking facilities will also promote healthy activities for occupants. The Beeliar project will include provisions for these facilities to promote this modal shift.

- Long term bike store
- EOT facilities for staff

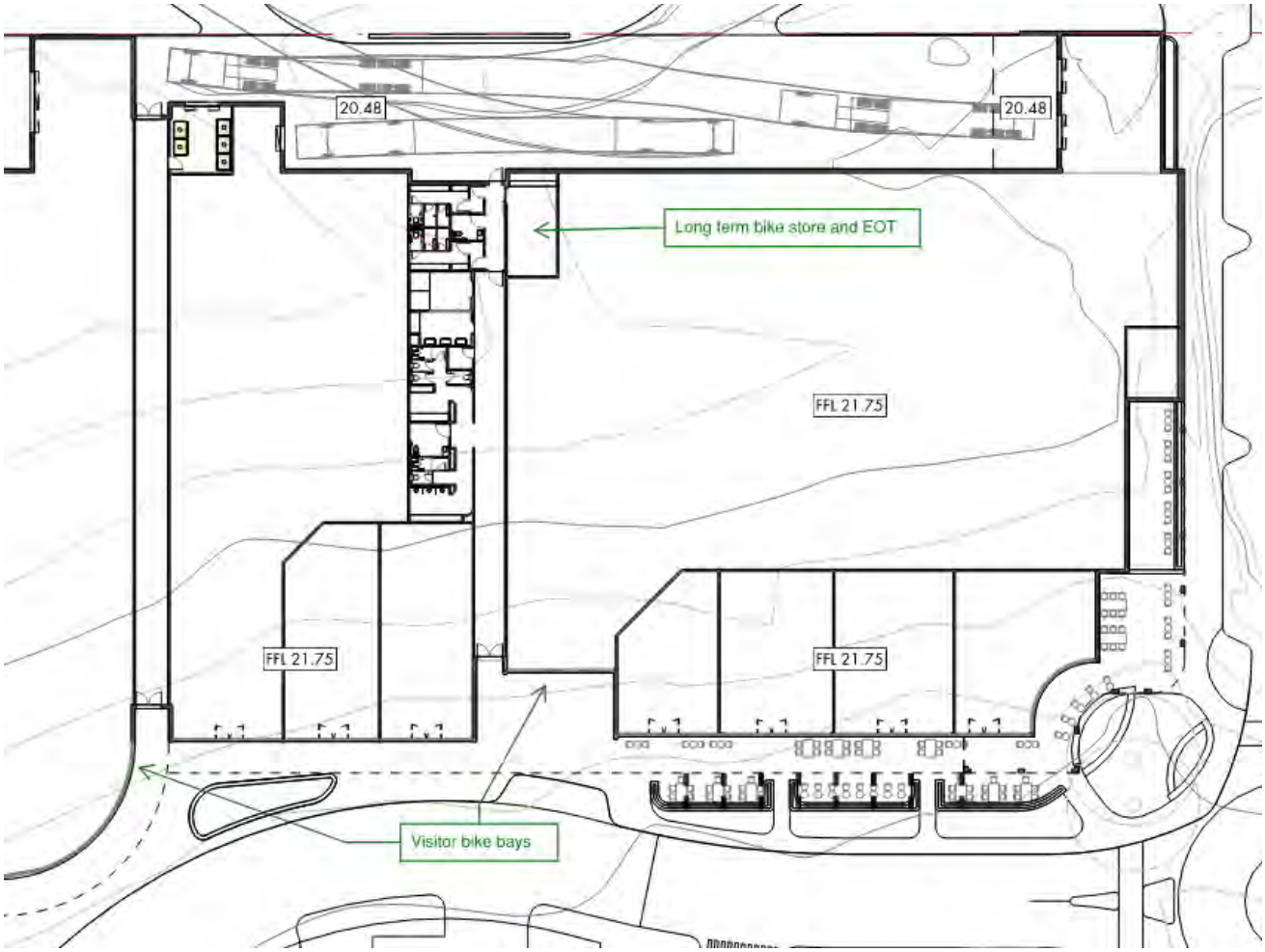

Figure 6 – Bike and Scooter Parking Facilities

2.12 Energy and Water Metering and Monitoring

Effective metering and monitoring are essential criteria to ensure the facility performance is optimised during the operations phase. To enable this, extensive metering and monitoring systems will be provided for all major end uses of energy and water consumption. This data collected from the metering system will be made available for the residents. This will facilitate tracking of performance, identification of anomalies as well as assist in fault finding and tuning.

This is in keeping with the requirements of the NCC Section J requirements.

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ATTACHMENT 7

Acoustic Assessment

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Beeliar Shopping Centre

Acoustic Report – Development Application

Project No.	P03284
Revision	002
Issued	4 February 2026
Client	Windsor Knight

E-LAB Consulting

Where science and engineering inspire design.

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Document QA and Revisions

ISSUE	DATE	COMMENTS	ENGINEER	REVIEWER
1	02/02/2026	Draft Issue	Imran Khan	Teresa D Ngyuen
2	04/02/2026	Issued for DA Submission	Imran Khan	Teresa D Ngyuen

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Authorised by:

Engineering Lab NSW Pty Ltd

Imran Khan | National Technical Director

Acoustics & Vibration

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1 INTRODUCTION

1.1 DOCUMENT PURPOSE

E-Lab Consulting was commissioned by Windsor Knight to undertake an acoustic assessment for the proposed shopping centre located on Beeliar Drive, Cockburn Central WA 6164. The development comprises two major supermarkets, a mini-major retail tenancy, a fuel station, two fast-food outlets, and several specialty stores. The proposal also includes two supermarket loading docks and two drive-through facilities associated with the fast-food outlets.

This Acoustic report has been prepared as part of Development Application for the proposed development at Beeliar Drive, Cockburn WA 6164. The following acoustic assessment has been undertaken, and recommendations are made to achieve compliance with:

- Noise emissions from the development impacting noise sensitive receivers in accordance with WA Environmental Protection (Noise) Regulations 1997

The noise emissions from the following sources were considered in the assessment:

- Loading dock and truck movements
- Car activities in the drive-through
- Fuel station activities (fuel tanker, fuel browsers, car movements, car idling)
- Mechanical Plant

1.2 RELEVANT DOCUMENTS

The following standards, regulations and guidelines have been used to establish the project specific acoustic design requirements for the development.

- Western Australian Environmental Protection (Noise) Regulations 1997 (WA EPNR)
- Place Fabric architectural documentation dated 15th December 2025

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1.3 PROJECT DESCRIPTION

1.3.1 Site Location

The proposed project site is located on Lot 1, 704, and 4308 Yangebup Rd, Cockburn Central WA 6184. The site currently comprises a large undeveloped parcel of land, bounded by Yangebup Road to the north and Beeliar Drive to the south.

The surrounding area is characterised by a mix of commercial and industrial land uses. To the north, along Yangebup Road, is an established light industrial and commercial precinct comprising warehouses, workshops, and trade-based businesses. To the east, across Hammond Road, are additional industrial and logistics facilities, with associated car parking and service areas. In terms of noise-sensitive receivers, a standalone residential dwelling is located to the east of the site. Figure 1 presents the project location and the nearest noise-sensitive receivers.

Figure 1: Project Location and the nearest noise-sensitive receivers

Source: Google maps

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2 ACOUSTIC CRITERIA

2.1 WA ENVIRONMENTAL PROTECTION(NOISE) REGULATIONS 1997

Environmental noise emissions resulting from the development are addressed through the *Environmental Protection Act 1986* with the prescribed standards detailed in the *Environmental Protection (Noise) Regulations 1997* (WA EPNR). The regulations are based on maximum allowable noise levels termed the 'assigned noise level".

According to the EPNR, noise emissions from any premises are deemed not to significantly impact the receiver if the emissions are 5 dB or less below the assigned levels. In summary, assigned noise levels are set by evaluating the presence of commercial and industrial zones, major transport routes, and sporting venues around noise-sensitive premises.

The assigned levels apply at premises receiving the noise (noise sensitive receiver) and not to areas within the project site or lot. In addition, the Environmental Protection (Noise) Regulations 1997 identify the following in Schedule 3, clause 2A.

- *"If the land within either of the circles is categorised on the land use map as land in respect of which mixed uses are permitted, the use of that land that results in the highest influencing factor is to be used in the determination of the influencing factor."*

City of Cockburn online mapping system has been used to ascertain land use. Based on these maps the influencing factor at the nearest noise sensitive receivers has been calculated,

The nearest noise sensitive receivers have been identified as detailed below and shown in Figure 1.

- 450 Yangebup Rd, Cockburn Central WA 6164
- 88 Hammond Road, Cockburn Central WA 6164

Traffic data for roads surrounding the nearest noise sensitive receiver were obtained from Main Roads Western Australia (MRWA). Table 1 presents the traffic data of the nearby roads.

Table 1: Traffic Data (Main Roads WA)

ROAD	WA EPNR CLASSIFICATION	ANNUAL AVERAGE DAILY TRAFFIC VOLUMES / YEAR
Beeliar Drive (East of Hammond Rd)	Major Road	29,687 (2023 -24)

The corresponding influencing factor for results from identifying major/secondary roads, commercial and industrial areas for the nearest noise sensitive receivers is detailed in Table 2. The zoning maps used for the calculation of influencing factor showing the land use types has been presented in Figure 2 and Figure 3.

Table 2: Influencing factor (IF) at noise sensitive receiver

NOISE SENSITIVE RECIEVERS	COMMERCIAL	INDUSTRIAL	Roads	INFLUENCING FACTOR
450 Yangebup Rd, Cockburn Central WA 6164	63 % within 100m radius 30 % within 450m radius	0 % within 100m radius 23 % within 450m radius	Beeliar Drive within 450m radius	9 dB
88 Hammond Rd, Cockburn Central WA 6164	20 % within 100m radius 19 % within 450m radius	25 % within 100m radius 28 % within 450m radius	Beeliar Drive within 100m radius	13 dB

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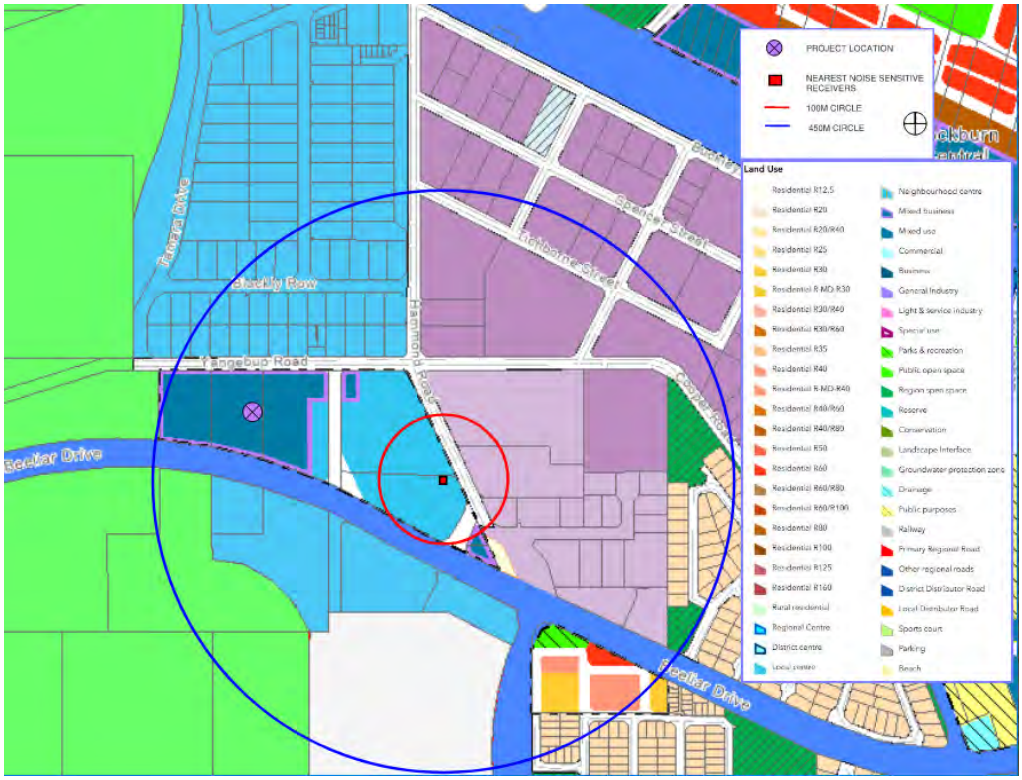
Figure 2: Zoning map for the project and surrounding areas - 450 Yangebup Rd

Source: City of Cockburn online mapping

Figure 3: Zoning map for the project and surrounding areas - 88 Hammond Rd



Source: City of Cockburn online mapping

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2.1.1 Assigned Noise Levels – Noise Sensitive Receivers

Table 3 and Table 4 and summarises the assigned levels at the nearest noise sensitive receivers. All noise emissions from the development are below the assigned level criteria for all defined periods of the day and at the lot boundary of the receiver or 15m from any associated building.

Table 3: Assigned levels - 450 Yangebup Rd

TYPE OF PREMISES RECEIVING NOISE	TIME OF DAY	ASSIGNED LEVEL (DB)		
		L_{A10}	L_{A1}	L_{Amax}
Noise sensitive premises: Highly sensitive area	0700 to 1900 hours Monday to Saturday	54	64	74
	0900 to 1900 hours Sunday & public holidays	49	59	74
	1900 to 2200 hours all days	49	59	64
	2200 hours on any day to 0700 hours Monday to Saturday, and 0900 hours Sunday & public holidays	44	54	64

Table 4: Assigned levels – 88 Hammond Road

TYPE OF PREMISES RECEIVING NOISE	TIME OF DAY	ASSIGNED LEVEL (DB)		
		L_{A10}	L_{A1}	L_{Amax}
Noise sensitive premises: Highly sensitive area	0700 to 1900 hours Monday to Saturday	58	68	78
	0900 to 1900 hours Sunday & public holidays	53	63	78
	1900 to 2200 hours all days	53	63	68
	2200 hours on any day to 0700 hours Monday to Saturday, and 0900 hours Sunday & public holidays	48	58	68

The assigned noise levels for the commercial receivers are presented in Table 7.

Table 5: Assigned levels – Commercial receivers

TYPE OF PREMISES RECEIVING NOISE	TIME OF DAY	ASSIGNED LEVEL (DB)		
		L_{A10}	L_{A1}	L_{Amax}
Noise sensitive premises: any area other than highly sensitive areas	All Hours	60	75	80
Commercial premises	All Hours	60	75	80
Industrial and utility premises	All Hours	65	80	90

2.1.1 Noise Character Adjustments

Regulation 7 of WA EPNR 1997, states that the noise character must be “free” of annoying characteristics, namely

- Tonality, e.g. whining, droning;
- Modulation, e.g. like a siren; and
- Impulsiveness, e.g. banging, thumping.

Regulation 9 (1) establishes the methodology for determining noise characteristics. If these characteristics cannot be reasonably and practicably removed, a series of adjustments to the measured levels are required, indicated in Table 6.

Table 6: Noise character adjustment

ADJUSTMENT WHERE NOISE EMISSION IS NOT MUSIC THESE ADJUSTMENTS ARE CUMULATIVE TO A MAXIMUM OF 15 DB			ADJUSTMENT WHERE NOISE EMISSION IS MUSIC	
Where tonality is present	Where modulation is present	Where impulsiveness is present	Where impulsiveness is not present	Where impulsiveness is present
+ 5 dB	+ 5 dB	+ 10 dB	+ 10 dB	+ 15 dB

Should music noise from the project become audible at the receiving locations, a +10/15 dB adjustment will be required, likely resulting in non-compliance to the EPNR.

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2.1.2 Mechanical Services Noise Emissions

Mechanical equipment serving the project is required to meet the assigned levels of the EPNR at the nearest sensitive receivers. It is important that noise emissions from the site do not present any form of tonality, modulation or impulsiveness (as defined by the EPNR).

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3 NOISE EMISSIONS

The noise emitting areas and operation of these areas generate noise, which are required to be assessed for compliance to WA EPNR. These sources / areas are listed below:

- Supermarket Loading docks
- Fast-food / Convenience Store Loading bays
- Drive through
- Fuel station
- Mechanical Plant

3.1 Modelling Parameters

Sound Plan9.0 has been used to develop a 3D model of the project site and the surrounding receivers to predict noise emissions from the project. Latest architectural drawings provided by Place Fabric Architects were used to ascertain the layout and built form of the project in developing the acoustic model.

3.1.1 Algorithm and Meteorological Conditions

The CONCAWE algorithm was adopted to model the meteorological conditions outlined below in Table 7. The selected parameters represent conservative, worst-case scenarios that favour sound propagation, in line with the *Draft Guideline: Environmental Noise for Prescribed Premises, WA Department of Environment Regulation, 2016.*

Table 7: CONCAWE model input parameters for meteorological conditions

METEOROLOGICAL CONDITIONS	DAYTIME (0700-2200)	NIGHTTIME (2200-0700)
Wind Speed	4 m/s	3 m/s
Wind Direction	Source to Receiver	Source to Receiver
Temperature	20°C	15°C
Relative Humidity	50	50
Pasquill Stability Class	E	F

3.1.2 Topography

Terrain contours were sourced from *Geoscience Australia, Digital Elevation Model (DEM) 1 Metre Grid of Australia derived from LiDAR, 2015.*

A ground absorption condition of 0.6 has been applied in the modelling to represent typical suburban conditions. This value reflects a mix of ground surfaces, positioned between soft, absorptive ground (represented by 1.0) and hard, reflective ground (represented by 0.0).

3.1.3 Receivers

All noise receivers were located at 1.2m above ground level at each floor and 1m away from buildings associated with highly sensitive uses.

3.1.4 Assessment Criteria

Assessment of each noise source against the WA EPNR criteria (L_{A10}, L_{A1}, or L_{Amax}) is proportional to the period of the day, and the combined frequency and duration of each noise event. L_{A10} represents the assessment criteria for noise emissions which lasts for 10% or greater of the representative assessment period.

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Noise levels referred to in this assessment are statistical in nature, meaning the time period used to determine them is an important factor.

The WA EPNR defines the Representative Assessment Period as a 15-minute to 4-hour interval selected by an authorised officer, based on the type and nature of the noise. Such officers, appointed under the Environmental Protection Act 1986 (Sections 87-88), include Environmental Health Officers and Department of Environment Regulation staff. For the purposes of this assessment a 4-hour representative assessment period has been considered as the operations associated to this development due to intermittent nature of noise emissions.

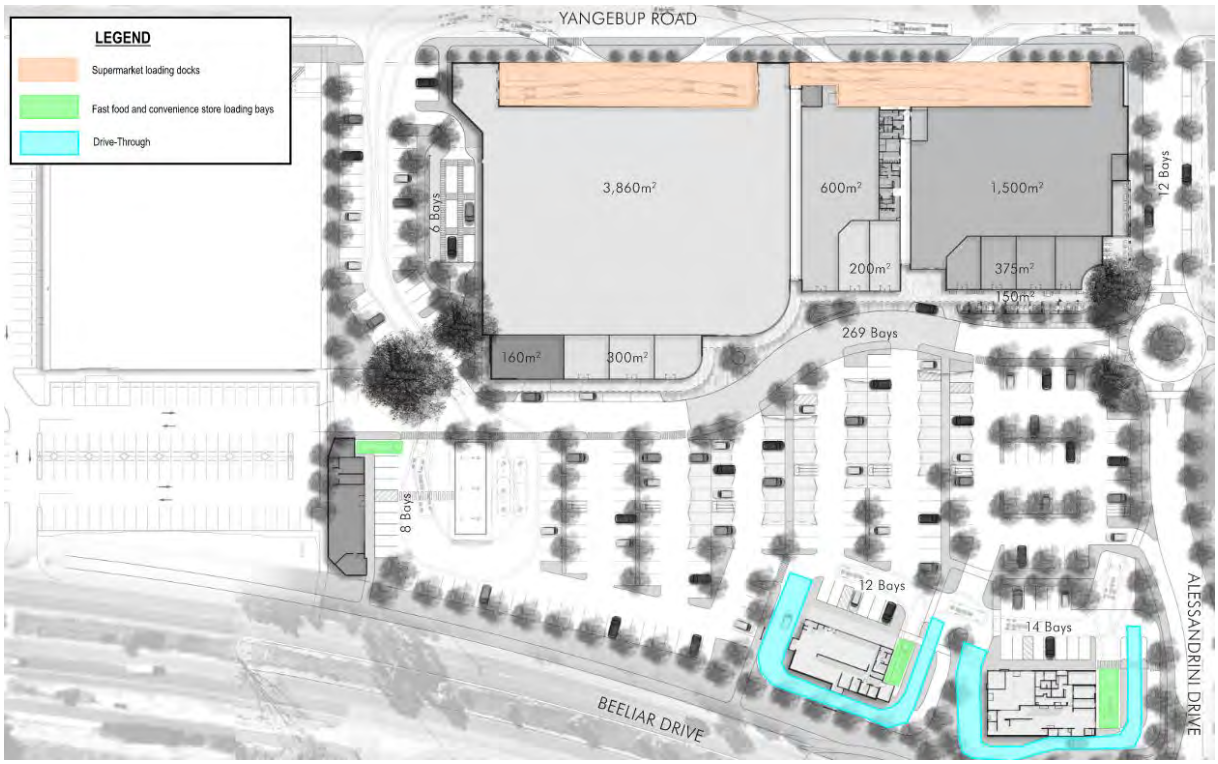
3.1.5 Loading Dock

Noise emissions from the loading dock are required to be compliant to the assigned levels outlined in the EPNR. The project features two loading docks for the supermarkets and three dedicated loading bays for the fast-food outlets and fuel station's convenience store. The locations of loading docks and bays on the architectural plan are presented in

Figure 4.

Noise emissions associated with the loading dock primarily arise from truck manoeuvring, loading and unloading activities, door slams, and braking. Given the cumulative number of loading docks and bays associated with the project, a conservative assessment approach has been adopted, with loading dock noise emissions assessed against the L_{A10} criterion to represent typical operational conditions.

Figure 4: Architectural plan showing loading docks/bays for the project site



Source – Place Fabric

3.1.6 Drive-Through

The project features two Drive-Through facilities, located at the southeastern boundary facing Beeliar Drive, as shown in Figure 4. For the Drive-Through, vehicle noise such as car movements and car idling is expected to occur more frequently, representing approximately 10% of the representative period. Therefore, emissions from this activity have been assessed using the L_{A10} criterion.

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Car door closing is a single noise event and expected from the cars parked in the designated waiting bays of the Drive-Through. Considering the low probability of occurrence and nature of this noise event, car door closing has been assessed to L_{Amax} criteria.

3.1.7 Fuel Station

The project includes a fuel station and an associated convenience store located along the western boundary of the site. Noise emissions from the fuel station primarily arise from fuel tanker operations and refuelling activities, vehicle movements, fuel bowser use, and delivery truck activity.

Noise associated with fuel bowser use, fuel tanker operations, and general vehicle movements has been assessed against the L_{A10} criterion. Noise events related to tanker door slams, braking, and engine start-up have been assessed against the L_{Amax} criterion, as these represent low-probability, impulsive, and short-duration events.

3.1.8 Mechanical Plant

At this stage, the selection of mechanical equipment has not yet been finalised. However, roof-top mechanical equipment has been assumed for each tenancy in the assessment. The noise emissions from the mechanical plant in this project primarily include contributions from outdoor air conditioning units and refrigeration condensers. These sources are expected to operate on a frequent basis, representing approximately 10% of the representative assessment period. Accordingly, noise emissions from these activities have been assessed against the L_{A10} criterion.

3.1.9 Operational Schedule

The working hours and delivery schedules of the trucks for the loading docks, Drive-Through and Fuel Station are yet to be confirmed. The following operating schedule listed below have been assumed for the assessment.

- Loading Dock – Monday to Sunday, 24/7
- Drive-Through – Monday to Sunday, 24/7
- Fuel Station – Monday to Sunday, 24/7

3.1.10 Sound Level Data

Sound power level data of the selected noise sources used in the model are presented in Table 8. It should be noted that the sound power levels for the mechanical equipment are based on preliminary equipment selections and information sourced from the E-LAB's technical library.

Noise generated by truck movements and related operations in loading docks typically consists of a mix of continuous and intermittent noise events, including:

- Engine noise (such as ignition, idling, acceleration, and deceleration), reversing alarms, brake squeals, and compression release noises.
- Unloading activities involving forklifts and pallet trucks.
- Noise from hydraulic lifts.

Table 8: Sound power levels

NOISE SOURCE	ASSESSMENT CRITERIA	SOUND POWER LEVEL, DB(A)
Large trucks (19m) – Arrival or departure movements	L_{A10}	102
Large trucks (19m) – Unloading activities	L_{A10}	95
Large trucks (19m) – Door slam	L_{Amax}	90
Large trucks (19m) – Brake	L_{Amax}	101

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Small trucks (<9m) – Arrival or departure movements	L_{A10}	96
Small trucks (<9m) – Unloading activities	L_{A10}	85
Small trucks (<9m) – Door slam	L_{Amax}	93
Small trucks (<9m) – Brake	L_{Amax}	74
Small trucks (<9m) – Reverse beeper	L_{Amax}	95
Fuel Tanker – Arrival or departure movements	L_{A10}	102
Fuel Tanker – Door slam	L_{Amax}	95
Fuel Tanker – Engine start	L_{Amax}	100
Fuel Tanker – Brake	L_{Amax}	101
Fuel browsers	L_{A10}	71
Tyre refill beeper	L_{Amax}	93
Car idling	L_{A10}	79
Car movements	L_{A10}	90
Car door slam	L_{A10}	85
Outdoor AC condenser units[1] (Supermarkets)	L_{A10}	75
Refrigeration condenser units[1](Supermarkets)	L_{A10}	82
Mechanical Plant[1] (Conv store, fast-food, retail tenancies)	L_{A10}	75

1. Assumed data as mechanical equipment details unavailable at DA stage

3.2 Predicted Noise Emissions

The predicted noise levels from the L_{A10} assessment are presented in Table 9. Appendix A presents the coloured noise contours for the L_{A10} assessment.

Table 9: Predicted noise emissions – L_{A10} assessment

NOISE SENSITIVE RECEIVER	HIGHEST PREDICTED NOISE EMISSION L_{A10} dB(A)	CRITERIA L_{A10} dB(A)			COMPLIANCE
		DAY	EVENING	NIGHT	
450 Yangebup Rd, Cockburn Central WA 6164	42	54	49	44	YES
88 Hammond Rd, Cockburn Central WA 6164	37	58	53	48	YES

1. Inclusive of 5 dB penalty for tonality associated with mechanical equipment.

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Table 10 presents the predicted noise levels for L_{Amax} assessment.

Table 10: Predicted noise emissions – L_{Amax} assessment

NOISE SENSITIVE RECEIVER	HIGHEST PREDICTED NOISE EMISSION L_{Amax} dB(A)	CRITERIA L_{Amax} dB(A)			COMPLIANCE
		DAY	EVENING	NIGHT	
88 Hammond Rd, Cockburn Central WA 6164	58	74	64	64	YES
88 Hammond Rd, Cockburn Central WA 6164	53	78	68	68	YES

1. Inclusive of 10 dB penalty for impulsiveness.

3.2.1 Discussion

The predicted noise emissions from all assessed sources, evaluated against their respective criteria, are expected to comply with the requirements of WA EPNR during all assessment periods, i.e. daytime, evening, and night-time.

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4 CONCLUSION

E-Lab Consulting was commissioned by Windsor Knight to undertake an acoustic assessment for the proposed shopping centre located on Beeliar Drive, Cockburn Central WA 6164. The development comprises two major supermarkets, a mini-major retail tenancy, a fuel station, two fast-food outlets, and several specialty stores. The proposal also includes two supermarket loading docks and two drive-through facilities associated with the fast-food outlets.

This Acoustic report has been prepared as part of Development Application for the proposed development at Beeliar Drive, Cockburn WA 6164. The following acoustic assessment has been undertaken, and recommendations are made to achieve compliance with:

- Noise emissions from the development impacting noise sensitive receivers in accordance with WA Environmental Protection (Noise) Regulations 1997

The noise emissions from the following sources were considered in the assessment:

- Loading dock and truck movements
- Car activities in the drive-through
- Fuel station activities (fuel tanker, fuel browsers, car movements, car idling)
- Mechanical Plant

Sound Plan9.0 along with CONCAWE algorithm has been used to develop a 3D model of the project site and the surrounding receivers to predict noise emissions from the project.

Noise emissions from the above-mentioned noise sources of the project are predicted to comply with their respective assessment criteria.

In summary, in view of the available information and assumptions adopted in the report, it is considered that the development will be able to comply with the WA Environmental Protection (Noise) Regulations 1997.

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Appendix A **Noise Contours**

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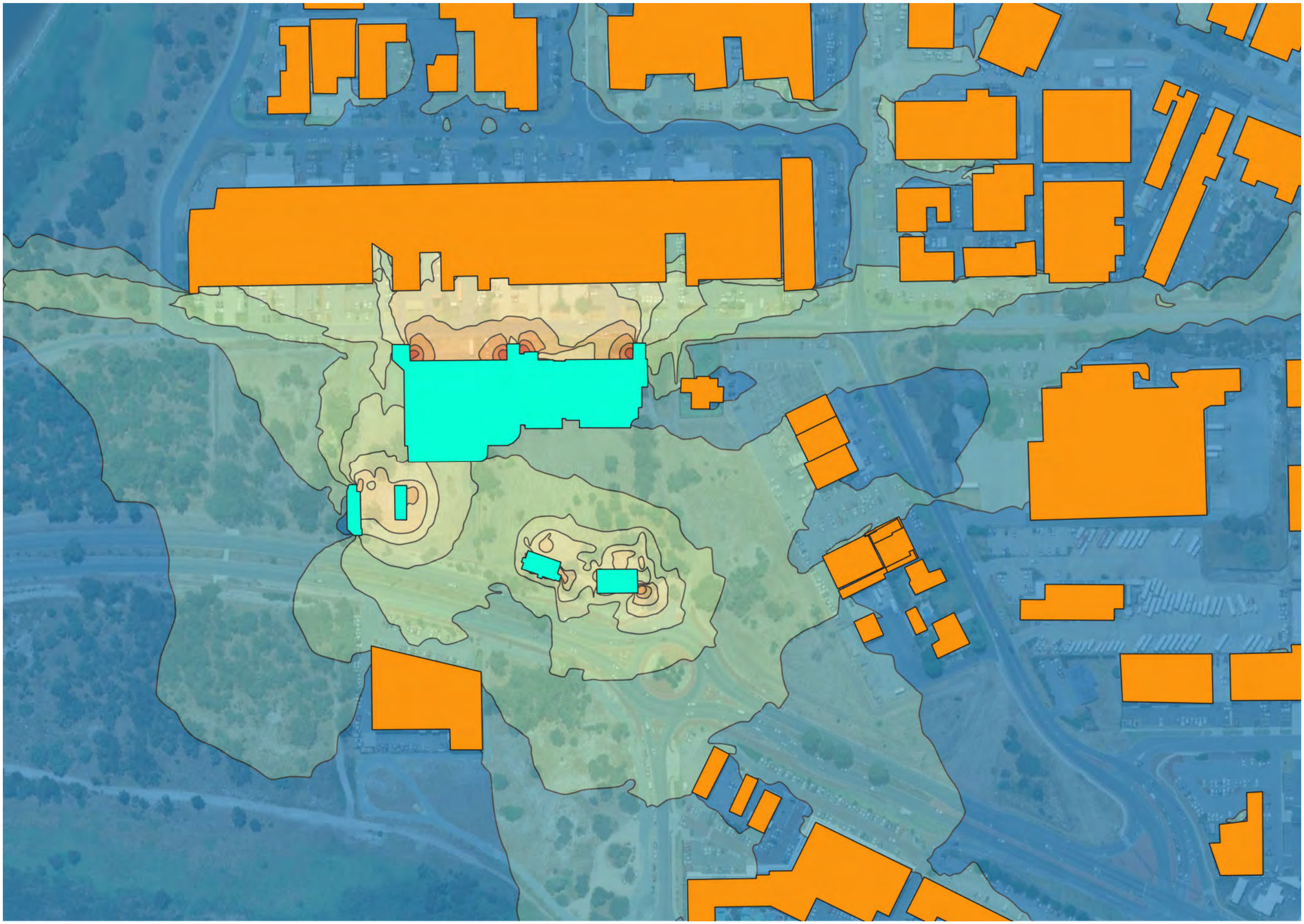

E-LAB CONSULTING

ISSUE	DATE	STATUS
1	30/01/2025	For Information

LEGEND

Noise Level - L_{A10} dB(A)

- 34
- 39
- 44
- 49
- 54
- 59
- 64
- 69
- 74
- 79
- 84

Surrounding Buildings

Project Building

PROJECT
BEELIAR SHOPING CENTRE

PROJECT NO.
P03284

ARCHITECT
PLACE FABRIC

CLIENT
WINDSOR KNIGHT

SCALE
NTS

STATUS
ISSUE FOR INFORMATION

DRAWING
GRID NOISE MAP - LA10 ASSESSMENT

DISCIPLINE
ACOUSTICS

DRAWING NUMBER
AC-DWG-100-01-01

REVISION
001

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ATTACHMENT 8

Waste Management Plan

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

Waste Management Plan

Beeliar Drive Shopping Centre

Prepared for Beeliar Drive Project Pty Ltd

9 January 2026

Project Number: WMP25089

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

DOCUMENT CONTROL

Version	Description	Date	Author	Reviewer	Approver
1.0	First Approved Release	9/01/2026	JL	AB	AB

Approval for Release

Name	Position	File Reference
Ann Brouwer	Project Manager – Waste Management Plan Lead (WA)	WMP25089-02_Waste Management Plan_1.0
Signature		

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Executive Summary

Beeliar Drive Project Pty Ltd is seeking development approval for the commercial development located at Lot 1, 704 and 4308 Yangebup Road, Cockburn Central (the Proposal).

To satisfy the conditions of the development application the City of Cockburn (the City) requires the submission of a Waste Management Plan (WMP) that will identify how waste is to be stored and collected from the Proposal. Talis Consultants has been engaged to prepare this WMP to satisfy the City's requirements.

A summary of the bin size, numbers, collection frequency and collection method is provided in the below table.

Proposed Waste Collection Summary

Waste Type	Generation (L/week)	Bin Size (L)	Number of Bins	Collection Frequency	Collection
Bin Storage Area 1					
Refuse	13,315	1,100	Three	Five times each week	Private Contractor
Recycling	6,350	1,100	Two	Five times each week	Private Contractor
Bin Storage Area 2					
Refuse	3,780	1,100	Two	Twice each week	Private Contractor
Recycling	3,780	1,100	Two	Twice each week	Private Contractor
Bin Storage Area 3					
Refuse	2,730	1,100	Two	Twice each week	Private Contractor
Recycling	2,730	1,100	Two	Twice each week	Private Contractor
Bin Storage Area 4					
Refuse	5,040	1,100	Three	Twice each week	Private Contractor
Recycling	2,520	1,100	Two	Twice each week	Private Contractor

A private contractor will service the Proposal onsite, directly from the Bin Storage Areas. The private contractor's waste collection vehicle will enter and exit the Proposal in forward gear via Yangebup Road or Beeliar Drive.

Centre management will oversee the relevant aspects of waste management at the Proposal.

This WMP will form part of the building management agreement and will continue to be applied in perpetuity across the life of the Proposal. Should the approved Waste Management Plan fail to deliver a safe, effective and efficient waste management service, the City will liaise with the owner to review, update and approve the Waste Management Plan.

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1 Introduction

Beeliar Drive Project Pty Ltd is seeking development approval for the proposed Beeliar Drive Shopping Centre located at Lot 1, 704 and 4308 Yangebup Road, Cockburn Central (the Proposal).

To satisfy the conditions of the development application the City of Cockburn (the City) requires the submission of a Waste Management Plan (WMP) that will identify how waste is to be stored and collected from the Proposal. Talis Consultants has been engaged to prepare this WMP to satisfy the City's requirements.

The Proposal is bordered by Yangebup Road to the north, reserve to the east and west, and Beeliar Drive to the south, as shown in Figure 1.

1.1 Objectives and Scope

The objective of this WMP is to outline the equipment and procedures that will be adopted to manage waste (refuse and recyclables) at the Proposal. Specifically, the WMP demonstrates that the Proposal is designed to:

- Adequately cater for the anticipated volume of waste to be generated;
- Provide adequately sized Bin Storage Areas, including appropriate bins; and
- Allow for efficient collection of bins by appropriate waste collection vehicles.

To achieve the objective, the scope of the WMP comprises:

- Section 2: Construction and Demolition Waste;
- Section 3: Waste Generation;
- Section 4: Waste Storage;
- Section 5: Waste Collection;
- Section 6: Waste Management; and
- Section 7: Conclusion.

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2 Construction and Demolition Waste

The below section presents the required communication and waste disposal considerations for Construction and Demolition waste generated during the Proposals development.

2.1 Demolition

The Proposal is currently free of buildings and structures; therefore any demolition works are unlikely to occur ensuring demolition waste is not generated at the Proposal.

2.2 Construction

Appropriate waste management procedures that aim to reduce waste and encourage recycling of excess materials should be considered as part of the construction phase of the Proposal. The tendering of the construction of the building and the tender assessment scoring should consider applicants that have effective waste minimisation strategies.

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3 Waste Generation

The following section shows the waste generation rates used and the estimated waste volumes to be generated at the Proposal.

3.1 Proposed Tenancies

The anticipated volume of refuse and recyclables is based on the floor area (m^2) of the commercial tenancies at the Proposal. The Proposal consists of the following:

Bin Storage Area 1:

- T5 (Hair Salon) – 100m^2;
- T6 (Laundromat) – 100m^2;
- T7 (Butcher/Bakery) – 100m^2;
- T8 (Optometrist) – 100m^2;
- T9 (Nail Salon) – 100m^2;
- T10 (Café) – 75m^2;
- T11 (Takeaway/Dine-in) – 100m^2;
- T12 (Restaurant) – 100m^2; and
- T12 (Restaurant) – 100m^2.

Bin Storage Area 2:

- T14 (Fast-Food) – 360m^2.

Bin Storage Area 3:

- T15 (Fast-Food) – 260m^2.

Bin Storage Area 4:

- T16 (Service Station) – 240m^2.

Tenancy 1, Tenancy 2, Tenancy 3 and Tenancy 4 (Major Supermarkets and associated liquor stores and Pharmacy) will include their own back of house and manage their waste through their own internal processes governed by national contracts. Each operation will utilise their own independent private waste contractor and therefore has been excluded from this report.

3.2 Waste Generation Rates

In order to achieve an accurate projection of waste volumes for the Proposal, consideration was given to the City of Melbourne's *Guidelines for Preparing a Waste Management Plan* (2014).

It should also be noted that a conservative approach has been taken with regards to waste generation across the Proposal by overestimating the potential waste volumes for the commercial tenancies. This includes assuming seven days of operation for all tenancies. This is considered to be an over estimation as it is not uncommon for food and beverage tenancies to close operations post weekend trading therefore resulting in an over estimation of waste volumes generated.

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Table 3-1 shows the waste generation rates which have been applied to the Proposal.

Table 3-1: Waste Generation Rates

Tenancy Use Type	Melbourne Guideline Reference	Refuse Generation Rate	Recycling Generation Rate	Floor Area Required
Tenancy 5,6,7,9 & 10	Shops (non-food)	50L/100m^2/day	50L/100m^2/day	1m^2/200m^2 GFA
Tenancy 8	Office	10L/100m^2/day	10L/100m^2/day	
Tenancy 10	Café	300L/100m^2/day	200L/100m^2/day	1m^2/20 seats or 1m^2/100 meals served
Tenancy 12 & 13	Restaurant	660L/100m^2/day	200L/100m^2/day	
Tenancy 11, 14 & 15	Takeaway/Café	150L/100m^2/day	150L/100m^2/day	
Tenancy 16	Convenience Store	300L/100m^2/day	150L/100m^2/day	1m^2/200m^2 GFA
			Total Floor Area Required	**26.58m^2**

**It can be assumed that there are approximately 50 seats per 100m^2 in the F&B tenancies.*

3.3 Waste Generation Volumes

Waste generation is estimated by volume in litres (L) as this is generally the influencing factor when considering bin size, numbers and storage space required.

3.3.1 Bin Storage Area 1 Waste Generation

Bin Storage Area 1 waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown in Table 3-2. It is estimated that the commercial tenancies utilising Bin Storage Area 1 will generate 13,315L of refuse and 6,350L of recyclables each week.

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Table 3-2: Estimated Waste Generation – Bin Storage Area 1

Commercial Tenancy	Area (m^2)	Waste Generation Rate (L/100m^2/day)	Waste Generation (L/week)
Refuse			
Tenancy 5	100	50	350
Tenancy 6	100	50	350
Tenancy 7	100	50	350
Tenancy 8	100	10	50
Tenancy 9	100	50	350
Tenancy 10	75	300	1,575
Tenancy 11	100	150	1,050
Tenancy 12	100	660	4,620
Tenancy 13	100	660	4,620
		Total	**13,315**
Recyclables			
Tenancy 5	100	50	350
Tenancy 6	100	50	350
Tenancy 7	100	50	350
Tenancy 8	100	10	50
Tenancy 9	100	50	350
Tenancy 10	75	200	1,050
Tenancy 11	100	150	1,050
Tenancy 12	100	200	1,400
Tenancy 13	100	200	1,400
		Total	**6,350**

3.3.2 Bin Storage Area 2 Waste Generation

Waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown in Table 3-3. It is estimated that Tenancy 14 utilising Bin Storage Area 2 will generate 3,780L of refuse and 3,780L of recyclables each week.

Table 3-3: Estimated Waste Generation – Bin Storage Area 2

Tenancy 14	Area (m^2)	Waste Generation Rate (L/100m^2/day)	Waste Generation (L/week)
Refuse	360	150	3,780
Recyclables	360	150	3,780
		Total	**7,560**

3.3.3 Bin Storage Area 3 Waste Generation

Waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown in Table 3-4. It is estimated that Tenancy 15 utilising Bin Storage Area 3 will generate 2,730L of refuse and 2,730L of recyclables each week.

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Table 3-4: Estimated Waste Generation – Bin Storage Area 3

Tenancy 15	Area (m^2)	Waste Generation Rate (L/100m^2/day)	Waste Generation (L/week)
Refuse	260	150	2,730
Recyclables	260	150	2,730
		Total	**5,460**

3.3.4 Bin Storage Area 4 Waste Generation

Waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown in Table 3-5. It is estimated that Tenancy 16 utilising Bin Storage Area 4 will generate 5,040L of refuse and 2,520L of recyclables each week.

Table 3-5: Estimated Waste Generation – Bin Storage Area 4

Tenancy 16	Area (m^2)	Waste Generation Rate (L/100m^2/day)	Waste Generation (L/week)
Refuse	240	300	5,040
Recyclables	240	150	2,520
		Total	**8,505**

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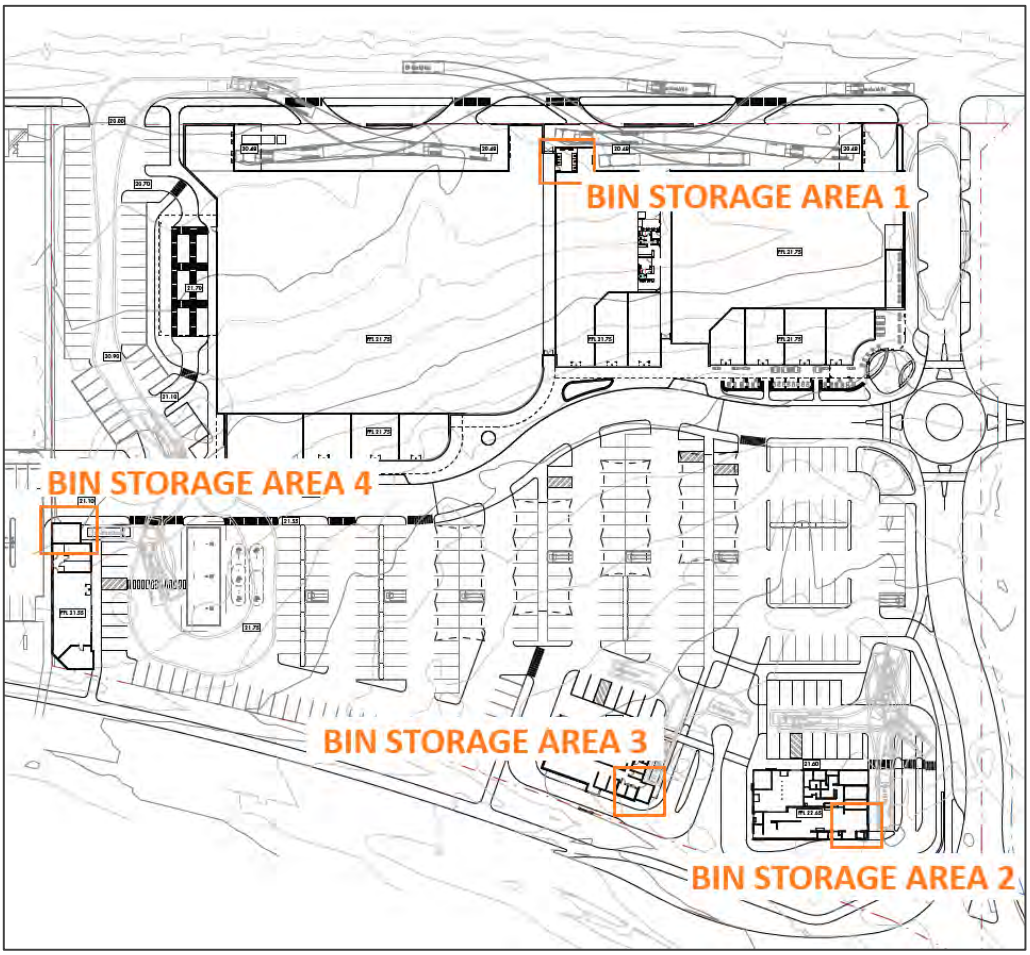
4 Waste Storage

Waste materials generated within the Proposal will be collected in the bins located in the Bin Storage Areas, as shown in Diagram 1, and discussed in the following sub-sections.

Diagram 1: Bin Storage Area Locations



4.1 Internal Transfer of Waste

To promote positive recycling behaviour and maximise diversion from landfill, internal bins will be available throughout the tenancies at the Proposal for the source separation of refuse and recycling.

These internal bins will be collected by the staff/cleaners and transferred to the respective Bin Storage Area for consolidation into the appropriate bins. This internal servicing method may be conducted outside of main operational hours to mitigate disturbances to staff/visitors.

All bins will be colour coded and labelled in accordance with Australian Standards (AS 4123.7) to assist staff and cleaners to dispose of their separate waste materials in the correct bins.

4.2 Bin Sizes

Table 4-1 gives the typical dimensions of standard bins sizes that may be utilised at the Proposal. It should be noted that these bin dimensions are approximate and can vary slightly between suppliers.

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Table 4-1: Typical Bin Dimensions

Dimensions (m)	Bin Sizes		
	240L	660L	1,100L
Depth	0.730	0.780	1.070
Width	0.585	1.260	1.240
Height	1.060	1.200	1.330

Reference: SULO Bin Specification Data Sheets

4.3 Bin Storage Area 1 Size

To ensure sufficient area is available for storage of the Bin Storage Area 1, the amount of bins required for the Bin Storage Area was modelled utilising the estimated waste generation in Table 3-2, bin sizes in Table 4-1 and based on collection of refuse and recyclables five times each week.

Based on the results shown in Table 4-2 Bin Storage Area 1 has been sized to accommodate:

- Three 1,100L refuse bins; and
- Two 1,100L recycling bins.

Table 4-2: Bin Requirements for Bin Storage Area 1

Waste Stream	Waste Generation (L/week)	Number of Bins Required			Floor Area Provided (m^2)
		240L	660L	1,100L	
Refuse	13,315	12	5	3	$23m^2 + 40m^2$ overflow
Recycling	6,350	6	2	2	

The configuration of these bins within the Bin Storage Area, as well as overflow waste storage, is shown in Diagram 2. It is worth noting that the number of bins and corresponding placement of bins shown in Diagram 2 represents the maximum requirements assuming five collections each week of refuse and recyclables.

Diagram 2: Bin Storage Area 1

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4.4 Bin Storage Area 2 Size

To ensure sufficient area is available for storage of the Bin Storage Area 2, the amount of bins required for the Bin Storage Area was modelled utilising the estimated waste generation in Table 3-3, bin sizes in Table 4-1 and based on collection of refuse and recyclables twice each week.

Based on the results shown in Table 4-3 Bin Storage Area 2 has been sized to accommodate:

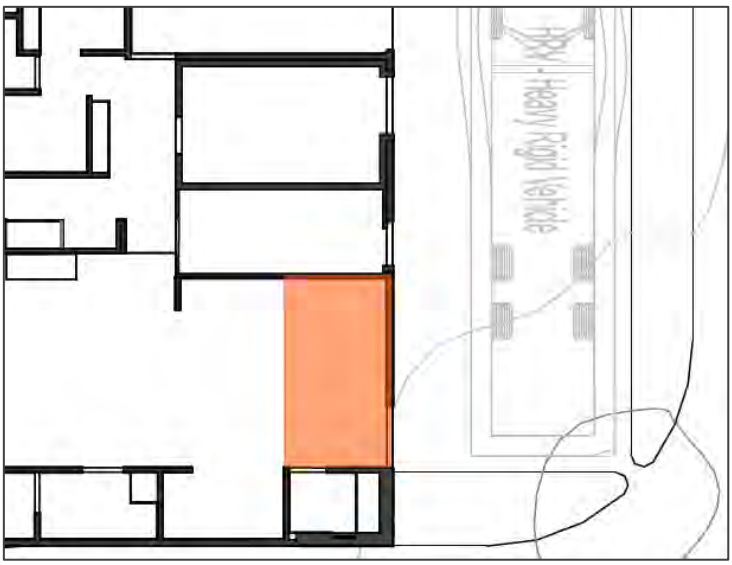
- Two 1,100L refuse bins; and
- Two 1,100L recycling bins.

Table 4-3: Bin Requirements for Bin Storage Area 2

Waste Stream	Waste Generation (L/week)	Number of Bins Required			Floor Area Provided (m^2)
		240L	660L	1,100L	
Refuse	3,780	8	3	2	12m^2
Recycling	3,780	8	3	2	

The configuration of these bins within the Bin Storage Area is shown in Diagram 3. It is worth noting that the number of bins and corresponding placement of bins shown in Diagram 3 represents the maximum requirements assuming two collections each week of refuse and recyclables.

Diagram 3: Bin Storage Area 2



4.5 Bin Storage Area 3 Size

To ensure sufficient area is available for storage of the Bin Storage Area 3, the amount of bins required for the Bin Storage Area was modelled utilising the estimated waste generation in Table 3-4, bin sizes in Table 4-1 and based on collection of refuse and recyclables twice each week.

Based on the results shown in Table 4-4 Bin Storage Area 3 has been sized to accommodate:

- Two 1,100L refuse bins; and
- Two 1,100L recycling bins.

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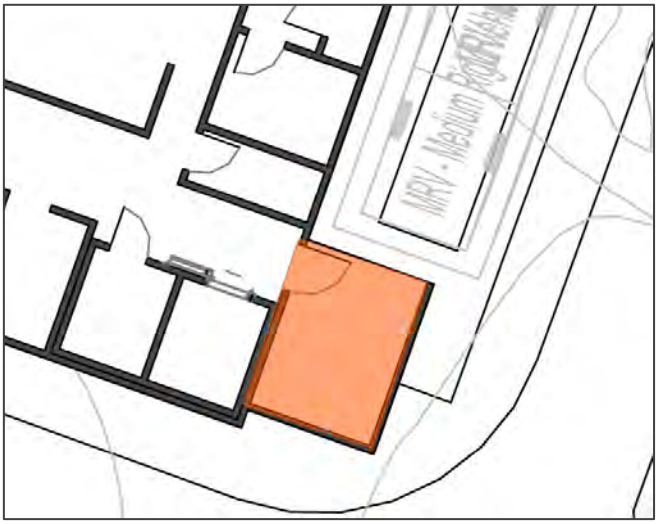
Table 4-4: Bin Requirements for Bin Storage Area 3

Waste Stream	Waste Generation (L/week)	Number of Bins Required			Floor Area Provided (m^2)
		240L	660L	1,100L	
Refuse	2,730	6	3	2	11m^2
Recycling	2,730	6	3	2	

The configuration of these bins within the Bin Storage Area is shown in Diagram 4. It is worth noting that the number of bins and corresponding placement of bins shown in Diagram 4 represents the maximum requirements assuming two collections each week of refuse and recyclables.

Diagram 4: Bin Storage Area 3



4.6 Bin Storage Area 4 Size

To ensure sufficient area is available for storage of the Bin Storage Area 3, the amount of bins required for the Bin Storage Area was modelled utilising the estimated waste generation in Table 3-5, bin sizes in Table 4-1 and based on collection of refuse and recyclables twice each week.

Based on the results shown in Table 4-5 Bin Storage Area 4 has been sized to accommodate:

- Three 1,100L refuse bins; and
- Two 1,100L recycling bins.

Table 4-5: Bin Requirements for Bin Storage Area 3

Waste Stream	Waste Generation (L/week)	Number of Bins Required			Floor Area Provided (m^2)
		240L	660L	1,100L	
Refuse	5,040	11	4	3	22m^2
Recycling	2,520	6	2	2	

The configuration of these bins within the Bin Storage Area is shown in Diagram 5. It is worth noting that the number of bins and corresponding placement of bins shown in Diagram 5represents the maximum requirements assuming two collections each week of refuse and recyclables.

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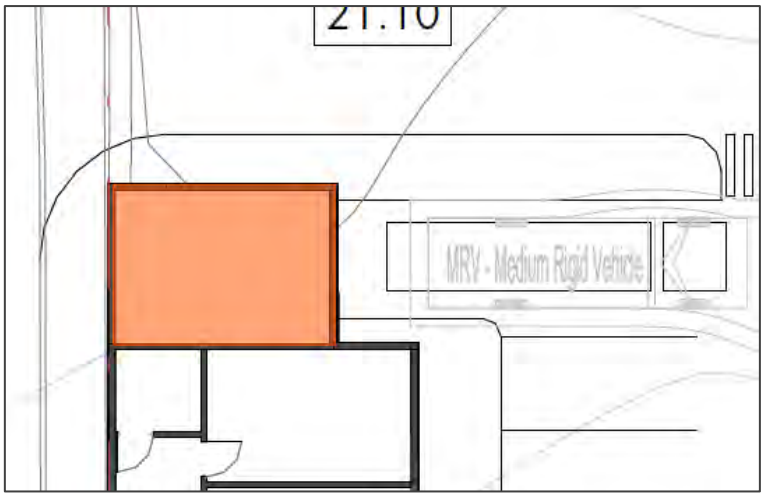
Diagram 5: Bin Storage Area 4



4.7 Bin Storage Area Design

The Bin Storage Areas will align with the requirements of the City's Health Laws and consider noise, odour, hygiene, vermin, security, health and safety and the environment.

The design of the Bin Storage Areas will take into consideration:

- The bin presentation area or collection point will be flat, with the travel path between the bin store and collection point/vehicle clear of steps or kerbs;
- External bin stores will be surrounded by 1.8-metre-high walls or fencing with a self-closing gate;
- Bin stores will be designed and erected in a manner that has regard for the design and appearance of the development of which they are a part;
- Bin stores will have 75mm concrete floors grading to a 100mm industrial floor waste (including a charged 'water-trap' connected to sewer or an approved septic system), with a hose cock to enable bins and/or the enclosure to be washed out;
- Bin store internal walls will be cement rendered (solid and impervious) to enable easy cleaning. Ceilings in bin stores shall be finished with a smooth faced, non-absorbent material capable of being easily cleaned;
- Bin store walls and ceilings will be finished or painted in a light colour;
- Bin stores will be constructed in a manner that prevents the entry of vermin;
- Bin stores will be provided with artificial lighting, sensor or switch controlled both internal/external to the room or area. All lighting in open areas is to comply with AS4282-1997 (Control of Obtrusive Outdoor Lighting);
- Bin stores will have the following signs and/or information displayed:
  - A sign stating "NO STANDING" at the entrance to the room/area; and
  - A clearly visible "DANGER" sign in the vicinity of the entrance to the room/area.
- Any external bin store greater than 20m^2 is required to be covered with a roof.

Bin numbers and storage space within the Bin Storage Areas will be monitored by centre management during the operation of the Proposal to ensure that the number of bins and collection frequency is sufficient.

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5 Waste Collection

A private contractor will collect waste from the Proposal utilising a rear loader waste collection vehicle and provide the required bin numbers and collection frequencies as outlined in Section 4.3 to Section 4.6.

The private contractor's rear loader waste collection vehicle will service the bins onsite, directly from the Bin Storage Areas. The private contractor's rear loader waste collection vehicle will travel with left hand lane traffic flow on Yangebup Road or Beeliar Drive, turn into the Proposal in forward gear, and pull up directly opposite the respective Bin Storage Areas for servicing, as shown in Diagram 6.

It is proposed that servicing will be conducted outside of normal operating hours to allow the waste collection vehicle to mitigate impacts on visitors and local traffic movements during peak traffic hours.

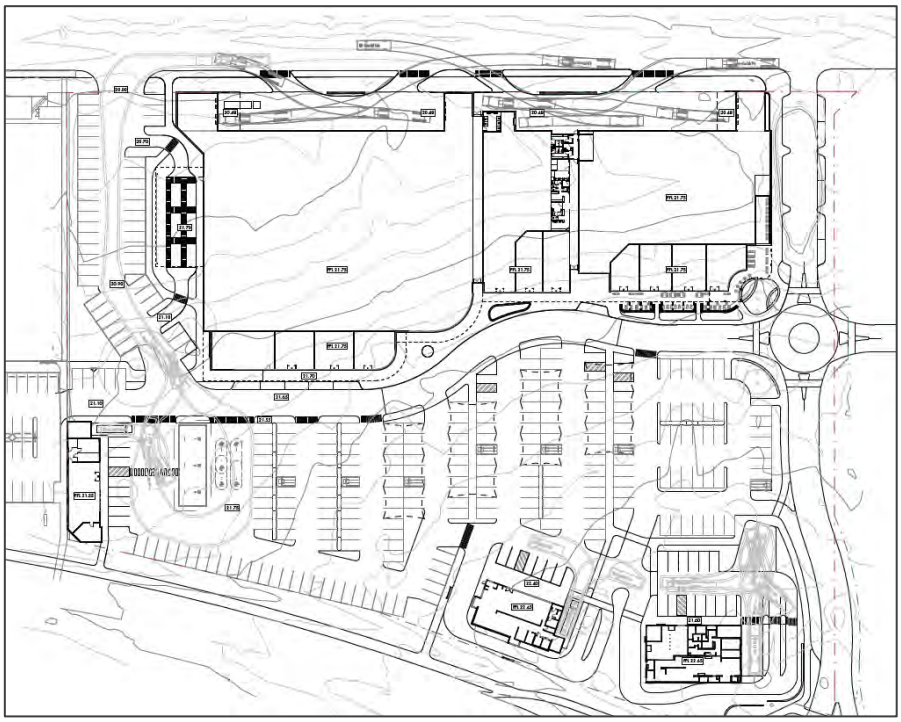
Private contractor's staff will ferry bins to and from the rear loader waste collection vehicle and the Bin Storage Areas during servicing. The private contractor will be provided with key/PIN code access to the Bin Storage Area and security access gates to facilitate servicing, if required.

Once servicing is complete the private contractor's rear loader waste collection vehicle will exit in a forward motion, turning back onto Yangebup Road or Beeliar Drive moving with traffic flow.

The above servicing method will preserve the amenity of the area by removing the requirement for bins to be presented to the street on collection days. In addition, servicing of bins onsite will reduce the noise generated in the area during collection. Noise from waste vehicles must comply with the Environmental Protection (Noise) Regulations and such vehicles should not service the site before 7.00am or after 7.00pm Monday to Saturday, or before 9.00am or after 7.00pm on Sundays and Public Holidays.

The ability for the private contractor's rear loader waste collection vehicle to access the Proposal in a safe manner has been assessed by qualified traffic engineers and will be included within their traffic impact statement.

Diagram 6: Waste Collection Vehicle Swept Paths



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5.1 Bulk and Speciality Waste

Adequate space may be allocated throughout the Proposal for placement of cabinets/containers for the collection and storage of bulk and specialty wastes that are unable to be disposed of within the bins in the Bin Storage Areas. These may include items such as:

- Batteries and E-wastes;
- White goods/appliances;
- Used Cooking Oil;
- Cleaning chemicals; and
- Commercial Light globes.

These materials will be removed from the Proposal once sufficient volumes have been accumulated to warrant disposal. Collection will be monitored by centre management who will assist to organise their transport to the appropriate waste facility, as required.

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6 Waste Management

Centre management will be engaged to complete the following tasks:

- Monitoring and maintenance of bins and the Bin Storage Areas;
- Cleaning of bins and Bin Storage Areas, when required;
- Ensure all tenants at the Proposal are made aware of this WMP and their responsibilities thereunder;
- Monitor tenant behaviour and identify requirements for further education and/or signage;
- Monitor bulk and speciality waste accumulation and assist with its removal, as required;
- Regularly engage with tenants to develop opportunities to reduce waste volumes and increase resource recovery; and
- Regularly engage with the private contractors to ensure efficient and effective waste service is maintained.

This WMP will form part of the building management agreement and will continue to be applied in perpetuity across the life of the Proposal.

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7 Conclusion

As demonstrated within this WMP, the Proposal provides sufficiently sized Bin Storage Areas for storage of refuse and recyclables, based on the estimated waste generation volumes and suitable configuration of bins. This indicates that adequately designed Bin Storage Areas have been provided, and collection of refuse and recyclables can be completed from the Proposal.

A private contractor will service the Proposal onsite, directly from the Bin Storage Areas. The private contractor's waste collection vehicle will enter and exit the Proposal in forward gear via Yangebup Road or Beeliar Drive.

Centre management will oversee the relevant aspects of waste management at the Proposal.

This WMP will form part of the building management agreement and will continue to be applied in perpetuity across the life of the Proposal. Should the approved Waste Management Plan fail to deliver a safe, effective and efficient waste management service, the City will liaise with the owner to review, update and approve the Waste Management Plan.

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Figures

Figure 1: Locality Plan

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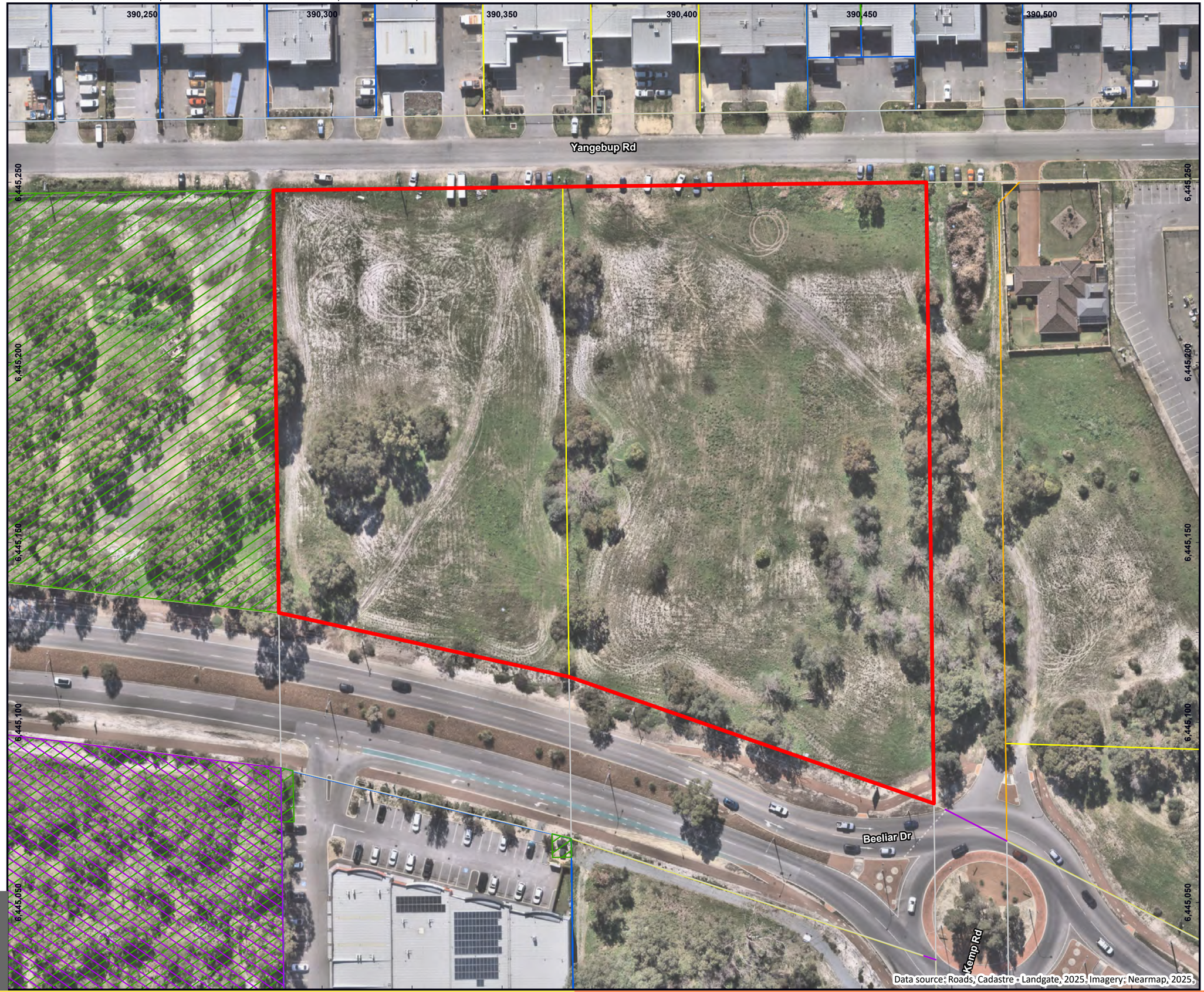

LEGEND

- Site Boundary

Cadastre

- Crown Allotment
- Freehold
- Road
- Strata Plan or Lot
- Easement
- Reserve

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LOCALITY

Yangebup Rd & Beeliar Dr
Cockburn Central WA 6164

Beeliar Drive Project Pty Ltd

N
0 10 20 30 40 m

Coordinate System: GDA2020 MGA Zone 50
Scale @ A3: 1:1,000

Prepared:	E Jackson	Date:	16/09/2025
Reviewed:	J Logothetis	Revision:	A
Project:	WMP25089		

talis consultants

Figure 01

Document Path: \\server\talis\SECTIONS\Waste\PROJECTS\WMP2025\WMP25089 - Lot 1, 704 and 4308 Yangebup Rd, Cockburn Central\GIS\Maps\WMP25089 - Lot 1, 704 & 4308 Yangebup Rd Cockburn Central\WMP25089 - Lot 1, 704 & 4308 Yangebup Rd Cockburn Central.aprx

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ATTACHMENT 9

Landscape Plan

Document Set ID: 12624068
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REV	DATE	DWN	APP	DESCRIPTION
A	22.01.26	GM	KD	DA SUBMISSION

LEGEND

TREES

- EXISTING TREES TO BE RETAINED AND PROTECTED
- VERY LARGE ENDEMIC TREES EG. TUART OR JARRAH CANOPY: 15m
- LARGE ENDEMIC TREES EG. ROSEA RED IRON BARK CANOPY: 10m
- SELECTED MEDIUM TREES EG. AGONIS OR RED FLOWERING GUM CANOPY: 6m
- SELECTED SMALL CAR PARK TREES EG. CORAL GUM OR FUCHSIA GUM CANOPY: 4-5m
- SELECTED SMALL CARPARK TREES EG. VIMINALIS BOTTLEBRUSH OR BROADLEAVED PAPERBARK CANOPY: 4m
- SELECTED SMALL AVENUE TREES EG. NON-FRUITING OLIVE TREES CANOPY: 4m
- SELECTED SMALL TREES EG. KINGS PARK SPECIAL, CANDLESTICK BANKSIA OR PIN CUSHION HAKEA CANOPY: 3-4m

FEATURE PLANTS

- GRASS TREES

PLANTING

- PLANTING TYPE 01 GROUNDCOVERS
- PLANTING TYPE 02 SHRUBS
- PLANTING TYPE 03 STRAPPY/MIXED
- PLANTING TYPE 04 STRAPPY/CASCADING MIXES TO RAISED PLANTERS

SURFACE TREATEMENT

- TYPE 01 - PEDESTRIAN PATHWAY INSITU CONCRETE - COLOUR TBC
- TYPE 02 - EXTERNAL COMMERCIAL PAVING EXPOSED AGGREGATE - MIX 01 TBC
- TYPE 03 - PEDESTRIAN PATHWAY EXPOSED AGGREGATE OR GREY - MIX/COLOUR 02 TBC
- TYPE 04 - FEATURE PAVING LARGE FORMAT PAVERS - TYPE 01 TBC
- TYPE 05 - FEATURE PAVING LARGE FORMAT PAVERS - TYPE 02 TBC
- TYPE 06 - PERMEABLE SURFACE COMPACTED GRAVEL FINES
- TYPE 07 - SHARED SPACE INSITU CONCRETE - COLOUR TBC
- TYPE 08 - CROSSING UNIT PAVERS / LINE MARKING TBC

MISC

- SHADE STRUCTURE OR SHADE SAILS REFER ARCHITECTURAL PLANS FOR FINAL LAYOUT

NOTES

1. GENERAL

1.1 DRAINAGE FROM THE RAISED PLANTER AREAS AND POTS TO BE PROVIDED BY BUILDER
1.2 ALL SCALES ARE AS NOTED AND TO SUIT A1 PAPER SIZE
1.3 THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION UNLESS REVISED '0' ISSUED FOR CONSTRUCTION AND SIGNED AND APPROVED BY PROJECT MANAGER/SUPERINTENDENT
1.4 PLANTING SETOUT SHOULD BE CHECKED BY SUPERINTENDENT BEFORE INSTALLATION BEGINS.

2. SOIL PREPARATION

2.1 ALL AREAS ARE TO BE FINE GRADED EVENLY TO CONFORM TO KERB LEVELS AND SURROUNDING FINISHES.
2.2 SURFACES SHALL BE FREE FROM DEPRESSIONS, IRREGULARITIES AND NOTICEABLE CHANGES IN GRADE. GENERALLY, GRADES SHALL DEVIATE IN LEVEL NO GREATER THAN 20mm IN ONE LINEAR METRE.
2.3 PLANTED AREAS SHALL BE SPREAD WITH MIN. 50mm OF APPROVED STANDARD SOIL CONDITIONER THAT SHALL BE RIPPED INTO EXISTING SOIL TO A MIN. DEPTH OF 200mm.
2.4 RAISED PLANTER AREAS AND POTS SHALL BE INSTALLED WITH APPROPRIATE DRAINAGE CELL, AGGREGATE AND GEOTEXTILE MEMBRANE BELOW SOIL.
2.5 FILL SOIL TO RAISED PLANTER AREAS AND POTS TO BE APPROVED LIGHTWEIGHT LANDSCAPE MIX.
2.6 ALL SITE AND IMPORTED SOILS, POTTING MIX, SOIL CONDITIONERS AND MULCHES TO BE IN ACCORDANCE TO RELEVANT AUSTRALIAN STANDARDS.

3. PLANTING

3.1 PLANTED AREAS SHALL BE MULCHED WITH AN ORGANIC (WOODCHIP) MULCH UNLESS OTHERWISE STATED TO A MINIMUM DEPTH OF 75mm.
3.2 ADVANCED TREES SHALL BE STAKED W/ 50x50mm DIA HARDWOOD POSTS. POSTS SHALL BE PAINTED BLACK AND INSTALLED TO A MIN DEPTH OF 500mm. TREES SHALL BE SECURED TO POLES W/ RUBBER TIES IN FIGURE 8.
3.3 TREES PLANTED WITH IN 1000mm OF BOUNDARY WALLS AND/OR PARKING AREAS SHALL BE INSTALLED WITHIN 600mm DEPTH NYLEX ROOT BARRIER MEMBRANE. MEMBRANE SHALL BE INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS.
3.4 FINAL PLANTING SHALL BE SELECTED FROM PLANTING PALETTE SCHEDULE.
3.5 PLANTS TO BE SET OUT IN EVEN SPACING TO FILL THE DESIGNATED AREAS.
3.6 IN AREAS OF MIXED PLANTING, SPECIES TO BE SPREAD OUT AT RANDOM, IN GROUPINGS OF 2 OR 3.
3.7 PLANTS SHALL BE SUPPLIED FROM AN INDUSTRY ACCREDITED WHOLESALE NURSERY. PLANTS SHALL BE IN APPROPRIATE SIZE FOR THE LISTED POT SIZE AND IN GOOD HEALTH.

4. IRRIGATION

4.1 PLANTING TO GROUND LEVEL TO BE IRRIGATED VIA A FULLY AUTOMATIC SYSTEM FROM MAINS.
4.2 WATER PRESSURE TO HAVE A MINIMUM FLOW RATE OF 30L/pm AT 300KPA FROM THE WATER CONNECTION POINT (OR AS STIPULATED).
4.3 CONTROLLER TO BE LOCATED IN SERVICE ROOM (OR AS SHOWN ON IRRIGATION DETAILS TO FUTURE DETAIL).
4.4 SLEEVES BENEATH PAVED SURFACES AND TO RAISED PLANTING AREAS TO BE PROVIDED BY OTHERS.
4.5 IRRIGATION TO GARDEN BEDS TO BE NETAFIM TECHLINE, SUB SURFACE IRRIGATION. INSTALLED TO MANUFACTURERS SPECIFICATION. IRRIGATION TO TURF TO BE POP UP SPRINKLERS; MP ROTATORS OR SIMILAR. IRRIGATION TO TREES TO BE BE BUBBLERS; TORO FLOOD BUBBLERS OR SIMILAR.
4.6 ASCON DRAWINGS, MANUALS AND 12 MONTH WARRANTY SHALL BE SUPPLIED BY THE IRRIGATION CONTRACTOR TO THE CLIENT UPON PRACTICAL COMPLETION.
4.7 PLEASE REFER TO IRRIGATION DRAWING SET FOR FINAL LAYOUT AND SCHEDULE (TO FUTURE DETAIL).

REFER TO PAGE 102 PLANTING PLAN

LANDSCAPE CALCULATIONS:

- 8.5% LANDSCAPE AREA ACHIEVED WITHIN THE SITE
- 6 x EXISTING LARGE CANOPY TREES TO BE RETAINED AND PROTECTED
- 133 NEW TREES PROPOSED WITHIN THE PROPERTY
- 26 NEW VERGE TREES PROPOSED

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DEVELOPMENT APPROVAL

JOB No. 0614 PAGE 101 REV A

0 10 20 50m
SCALE 1:500 @A1

BEELIAR DRIVE VILLAGE
LANDSCAPE CONCEPT PLAN

WINDSOR KNIGHT
LOT 1 704 + 4308 YANGEBUP RD, COCKBURN CENTRAL

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REV	DATE	DWN	APP	DESCRIPTION
A	21.01.25	KD	KD	PLANTING PLAN

PLANTING IMAGES

TREES

EUCtod

EUCgom

EUCtor

AGOfle

BANgra

EUCfor

CALvim

MELqui

XANpre

SHRUB PLANTING

PITmis

RHAori

WESaus

WESgre

LEUbro

PIMfer

TEMret

HARvio

BANmen

BANatt

STRAPPY PLANTING

CONcan

DIAeme

DIArev

FICnod

HYProb

LOMtan

ORTlax

ISOcer

ANIfla

ANIfla

GROUNDCOVER PLANTING

MYOpar

ACAsal

ADEcun

CARvir

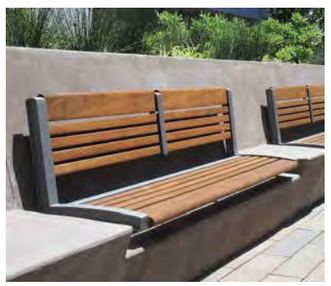
EREblu

GREcri

HEMpun

KENpro

PRECEDENT IMAGES



PLANTING PALETTE

Symbol	Species	Common Name	Quantities	Size
Trees:				
AGOfle	Agonis flexuosa	WA Peppermint Tree	As Shown	100L
BANatt	Banksia attenuata	Candlestick Banksia	As Shown	100L
BANgra	Banksia grandis	Bull Banksia	As Shown	100L
BANmen	Banksia menziesii	Menzies Banksia	As Shown	100L
CALkin	Callistemon 'Kings Park Special'	Kings Park Special	As Shown	100L
CALvim	Callistemon viminalis	Viminalis bottlebrush	As Shown	100L
EUCfor	Eucalyptus forrestiana	Fushia Gum	As Shown	100L
EUCtod	Eucalyptus todtiana	Coastal Blackbutt	As Shown	100L
EUCgom	Eucalyptus gomphocephala	Tuart	As Shown	100L
EUCleu	Eucalyptus leucoxylon 'rosea'		As Shown	100L
EUCmar	Eucalyptus marginata	Jarrah	As Shown	100L
EUCsid	Eucalyptus sideroxylon 'rosea'	Rosea Red Ironbark	As Shown	100L
EUCtor	Eucalyptus torquata	Coral Gum	As Shown	100L
HAKlau	Hakea laurina	Pin Cushin Hakea	As Shown	100L
MELqui	Melaleuca quinquenervia	Broad-leaved Paperbark	As Shown	100L
MELvir	Melaleuca viridiflora	Weeping Paperbark	As Shown	100L
SAPseb	Sapium sebifera	Chinese Tallow	As Shown	100L
Groundcovers and Cascading:				
ACAsal	Acacia saligna prostrate	Springtime Cascade Wattle	2/m2	140mm
ADEcun	Adenanthos cuneatus	Coral Carpet	2/m2	140mm
CARvir	Carobrotus virescens	Coastal Pigface	2/m2	140mm
DICsil	Dichondra 'Silver Falls'	Silver Falls	2/m2	140mm
EREblu	Eremophila 'Blue Horizon'	Blue Horizon	2/m2	140mm
GREcri	Grevillea crithmifolia	Grevillea	2/m2	140mm
GREgin	Grevillea 'Gin Gin Gem'	Gin Gin Gem	2/m2	140mm
HEMpun	Hemiandra pungens	Snake Bush	2/m2	140mm
KENpro	Kennedia prostrata	Running Postman	2/m2	140mm
HIBsca	Hibbertia scandens	Snake Vine	2/m2	140mm
MYOpar	Myoporum parvifolium 'Yareena'	Yareena	2/m2	140mm
SCAhum	Scaevola humilis 'Purple Fusion'	Fan Flower	2/m2	140mm
Grasses, Herbs, Rushes & Sedges:				
ANIhum	Anigozanthos humilis	Catspaw	3/m2	140mm
CONcan	Conostylis candicans	Grey Cottonheads	3/m2	140mm
DIAeme	Dianella tasmanica 'Emerald Arch'	Emerald Arch	3/m2	140mm
DIArev	Dianella revoluta	Blue flax lilly	3/m2	140mm
FICnod	Ficinia nodosa	Knobby Club Rush	3/m2	140mm
ISOcer	Isolepis cernua	Nodding Club-rush	3/m2	140mm
HYProb	Hypocalymma robustum	White Myrtle	3/m2	140mm
LIRjus	Liriope 'Just Right'	Just Right	3/m2	140mm
LOMtan	Lomandra 'Tanika'	Tanika	3/m2	140mm
ORTlax	Orthrosanthus laxus	Morning Iris	3/m2	
Shrubs:				
LEUbro	Leucophyta brownii	Silver Cushion Bush	3/m2	200mm
OLEaxi	Olearia axillaris	Coastal Daisy	3/m2	200mm
PIMfer	Pimelea ferruginea	Rice Flower	3/m2	200mm
PITmis	Pittosporum tobira 'Miss Muffet'	Miss Muffet	3/m2	200mm
RHAori	Rhapiolepsis 'Oriental Pearl'	Dwarf Indian Hawthorn	2/m2	200mm
TEMret	Templetonia Retusa	Cockies Tounge	2/m2	200mm
WESaus	Westringia 'Aussie Box'	Aussie Box	3/m2	200mm
WESgre	Westringia 'Grey Box'	Grey Box	3/m2	200mm
Shade Planting:				
AJUrep	Ajuga reptans	Bungle weed	3/m2	140mm
CHOcor	Chorizema cordata	Egg and Bacon Plant	3/m2	140mm
CORdus	Correa 'Dusky Bells'	Dusky Bells	3/m2	140mm
DARrot	Darwinia citriodora	Darwinia	2/m2	140mm
DICrep	Dicondra repens	kidney plant	3/m2	140mm
LIRjus	Liriope 'Just Right'	Just Right	3/m2	140mm
MYOpor	Myoporum parvifolium 'Yareena'	Yareena	2/m2	140mm
OPHjap	Ophiopogon japonicus	Mondo Grass	3/m2	140mm
PHIxan	Philodendron Xanadu	Xanadu	3/m2	200mm
SANtri	Sansevieria trifasciata laurentii	Mother-in-law's Tongue	3/m2	200mm
VIOhed	Viola hederacea	Native Violet	3/m2	200mm
Feature Plants:				
ANIfla	Anigozanthos flavidus	Kangaroo Paw	As Shown	12L
BANmen	Banksia menziesii 'dwarf'	Menzies Banksia Dwarf	As Shown	12L
HARvio	Hardenbergia violaceae	Native Wisteria	As Shown	12L
XANpre	Xanthorrhoea preissii	Grass Tree	As Shown	MTP
ZAMfur	Zamia furfuracea	Cardboard Palm	As Shown	12L
Climbing Plants:				
HARwhi	Hardenbergia violaceae 'White Out'	White Native Wisteria	As Shown	200mm
TRAjas	Trachelospermum jasminoides	Star Jasmine	As Shown	200mm

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DEVELOPMENT APPROVAL

JOB No. 0614 PAGE 102 REV A

BEELIAR DRIVE VILLAGE
LANDSCAPE PLANTING PALETTE
WINDSOR KNIGHT
LOT 1 704 + 4308 YANGEBUP RD, COCKBURN CENTRAL

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ATTACHMENT 10

Transport Impact Assessment

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

urbii

Sustainable Transport. Safe Solutions

Beeliar Shopping Centre

Proposed Development Application

TRANSPORT IMPACT ASSESSMENT

Prepared for:

Albion Park Project Pty Ltd

February 2026

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

Beeliar Shopping Centre

Prepared for: Albion Park Project Pty Ltd
Prepared by: Paul Ghantous
Date: 10 February 2026
Project number: U25.105

Version control

Version No.	Date	Prepared by	Revision description	Issued to
U25.105.r01	10/02/26	Paul Ghantous	FINAL	Rowe Group

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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.

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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.

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Figure 1: Subject site

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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

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Figure 3: Location context plan

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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).

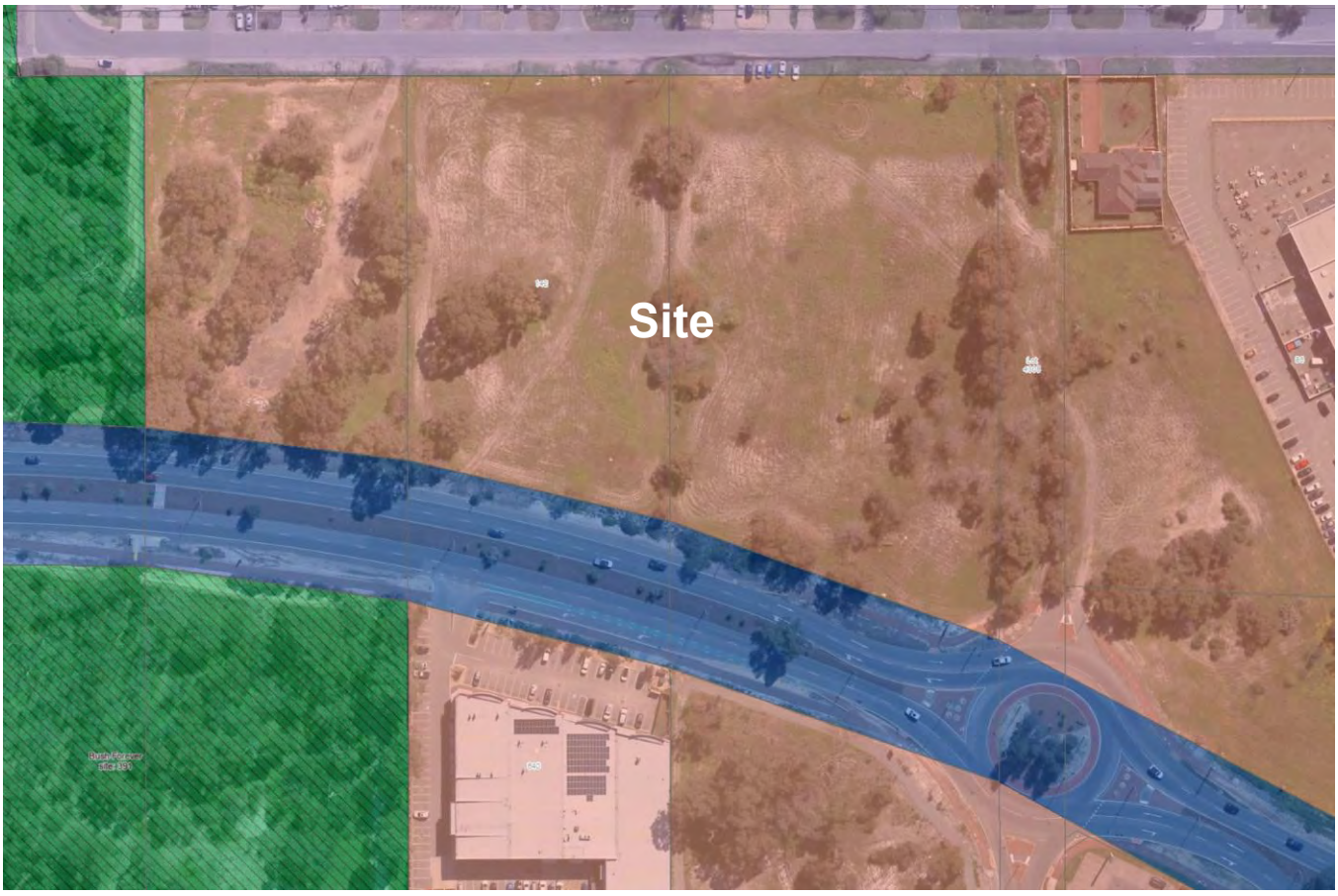

Figure 4: Metropolitan Region Scheme (MRS) – Other Regional Road ORR reservation

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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).

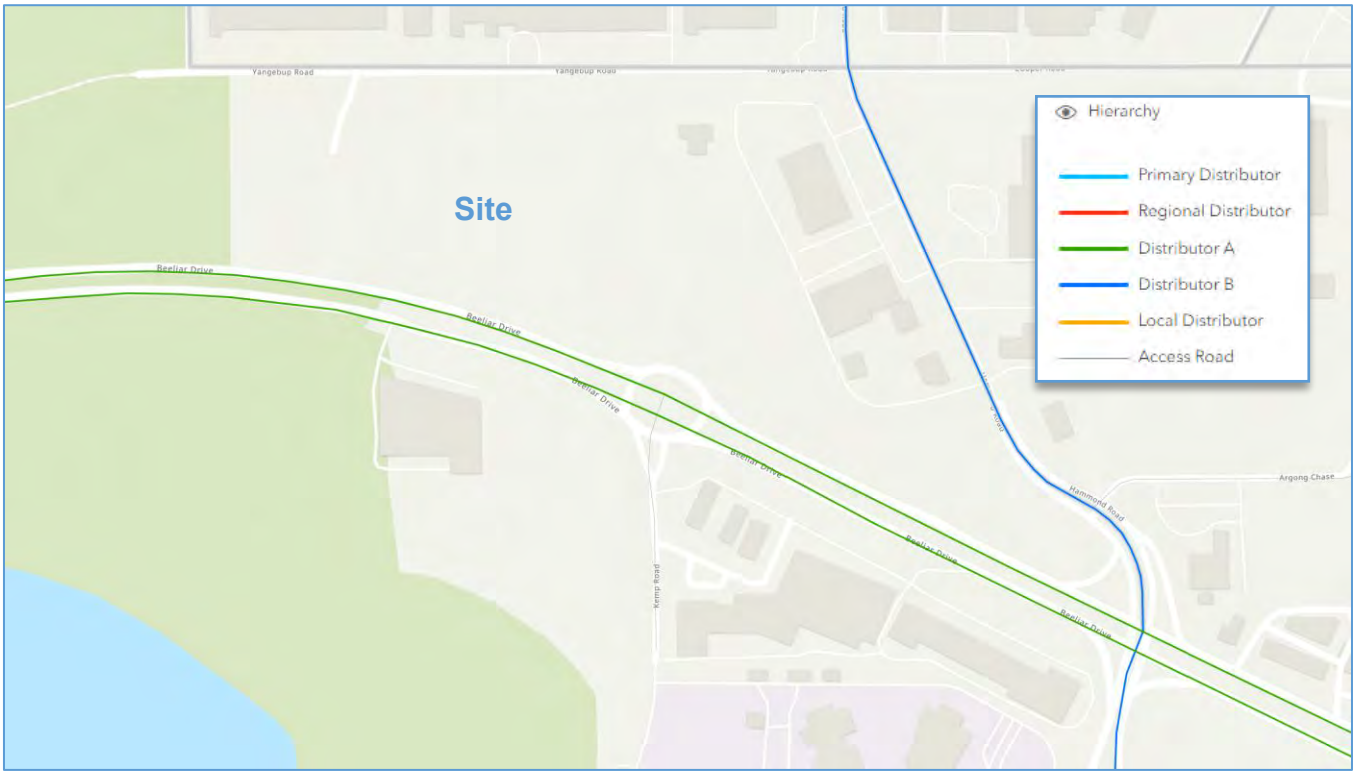

Figure 5: Main Roads WA road hierarchy plan

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

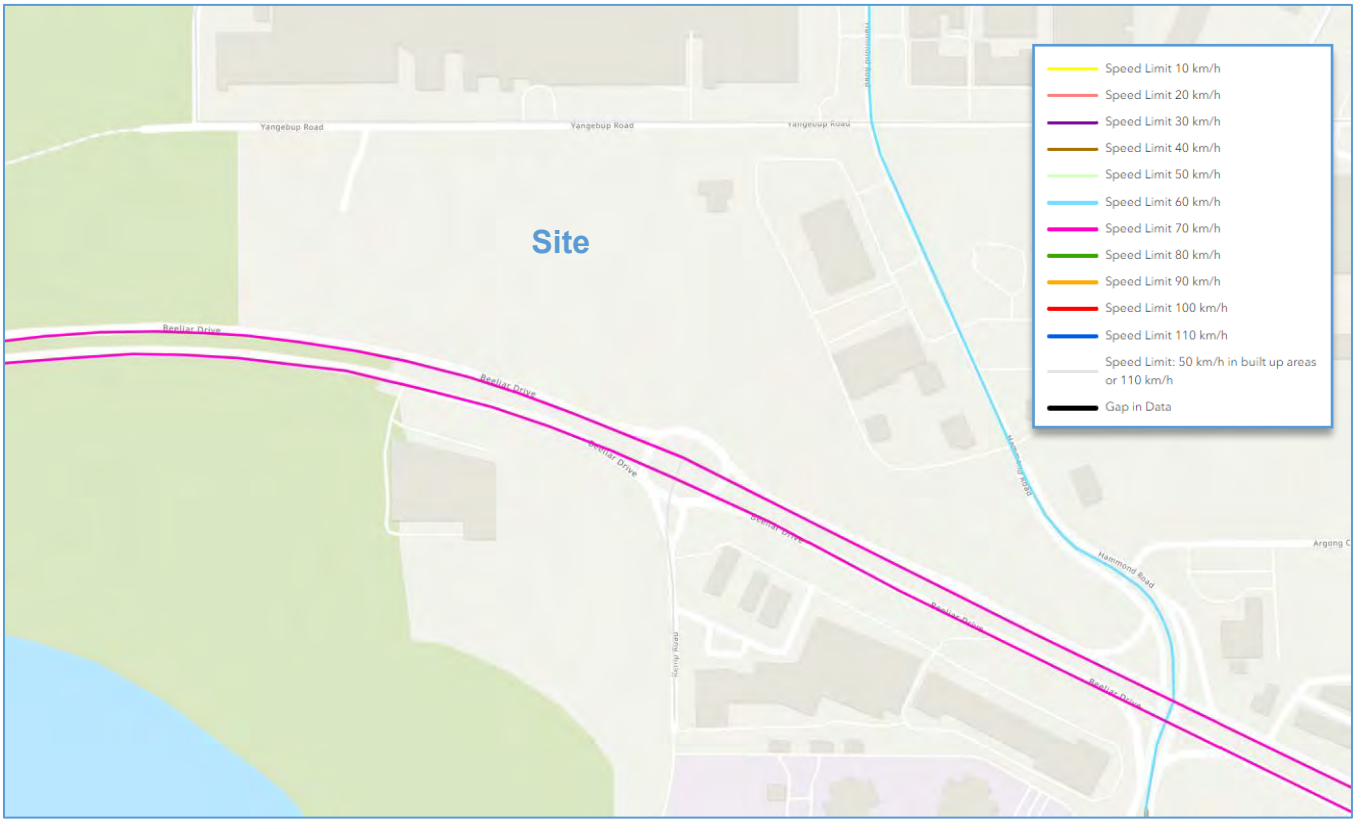

Figure 6: Main Roads WA road speed zoning plan

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

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

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

Figure 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.

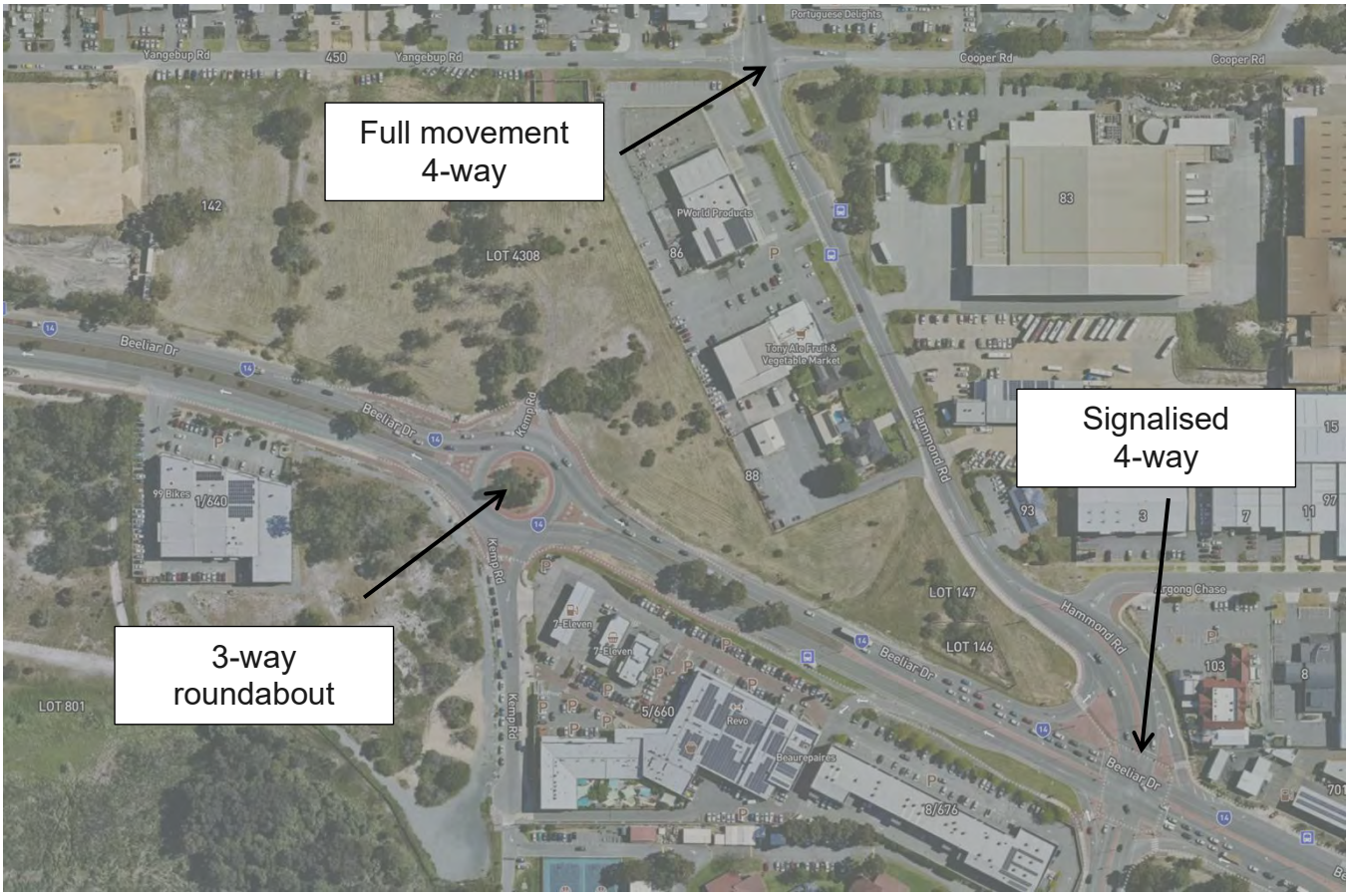

Figure 8: Key local intersections

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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.

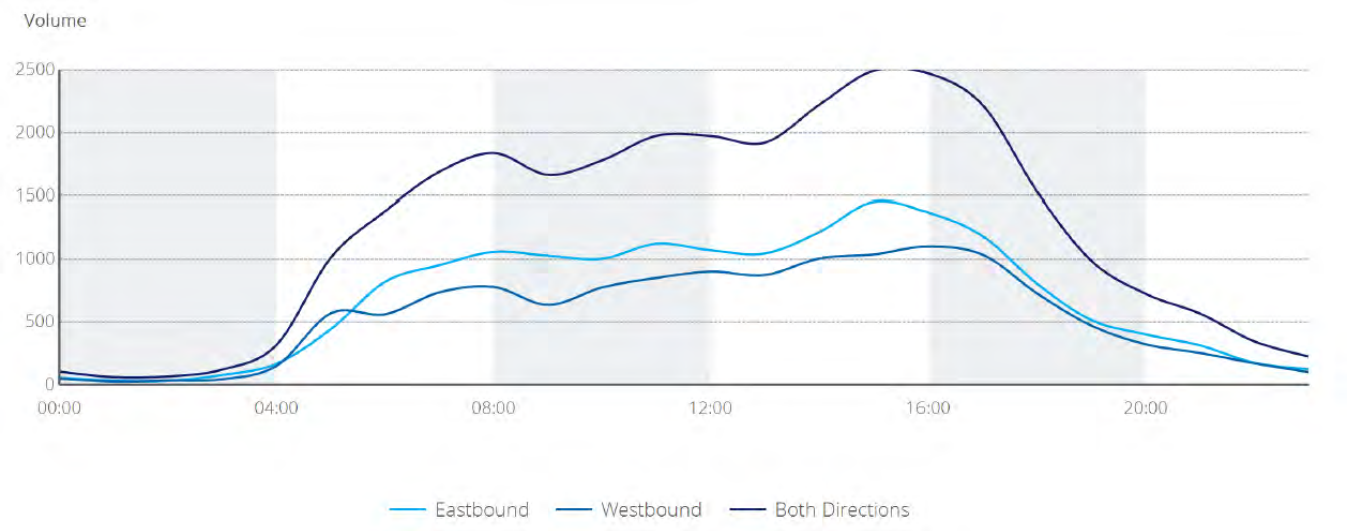

Figure 9: Hourly traffic profile – Beeliar Drive

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.

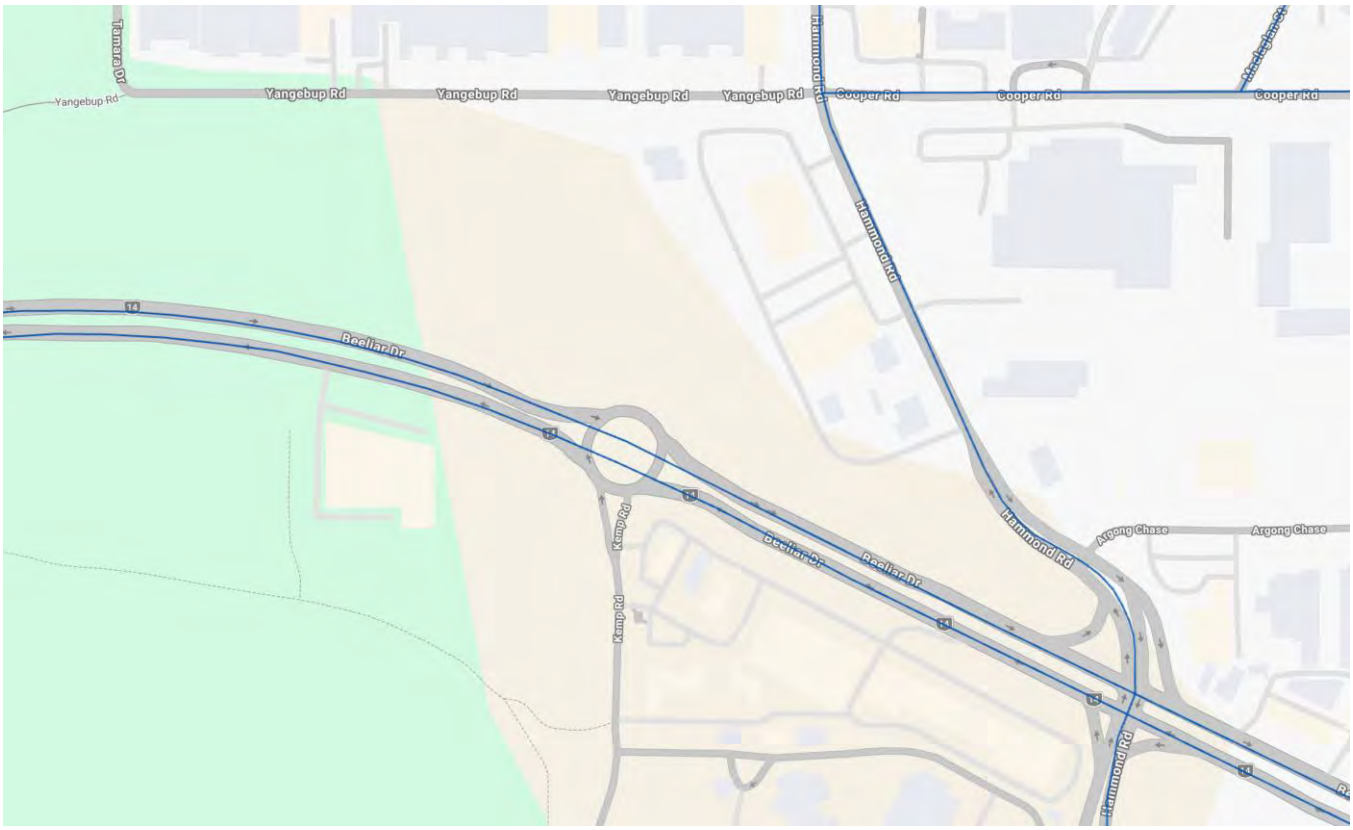

Figure 10: MRWA RAV Network status for Gnangara Road

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

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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

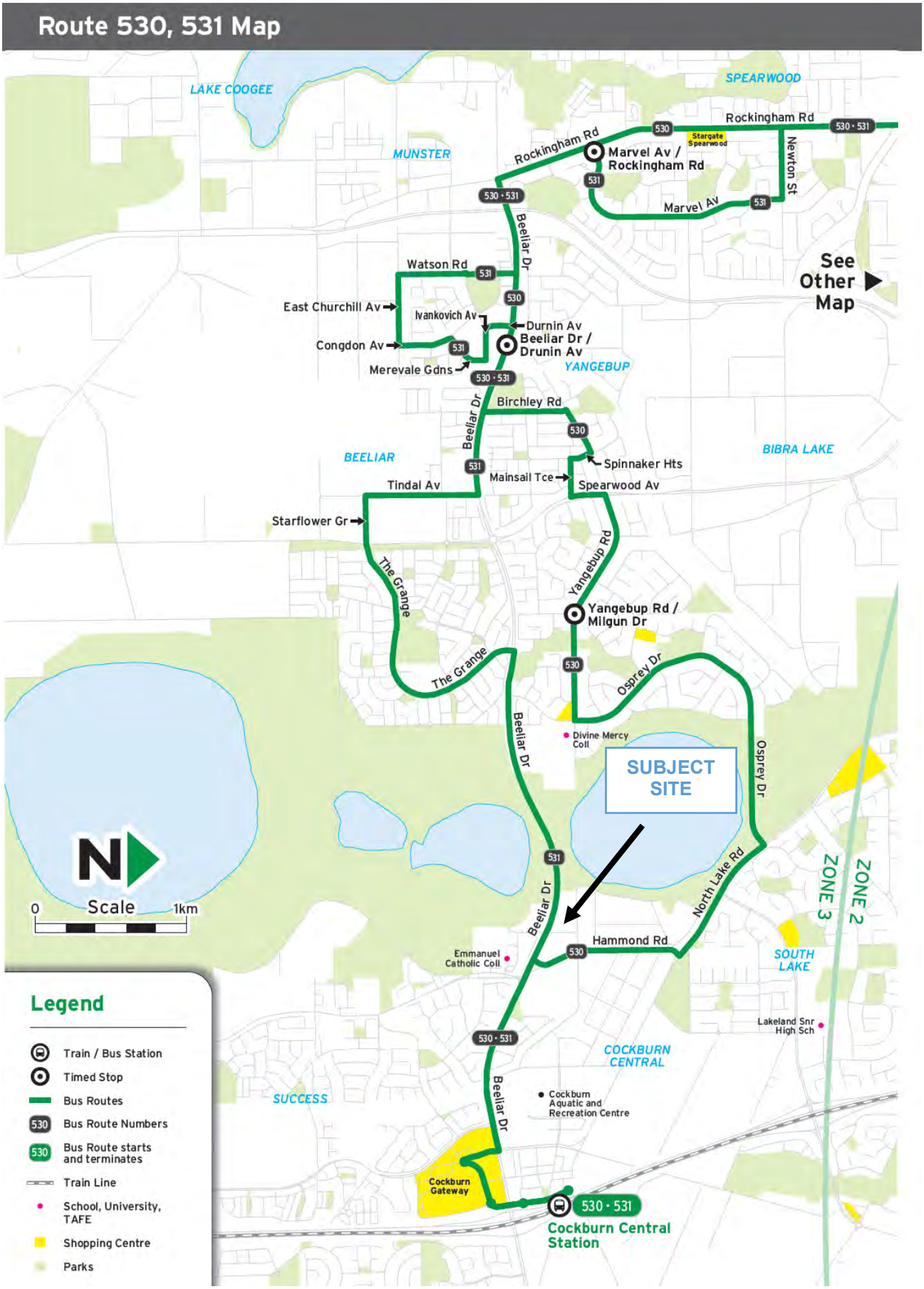

Figure 12: Transperth bus map (route 531)

Source: Transperth

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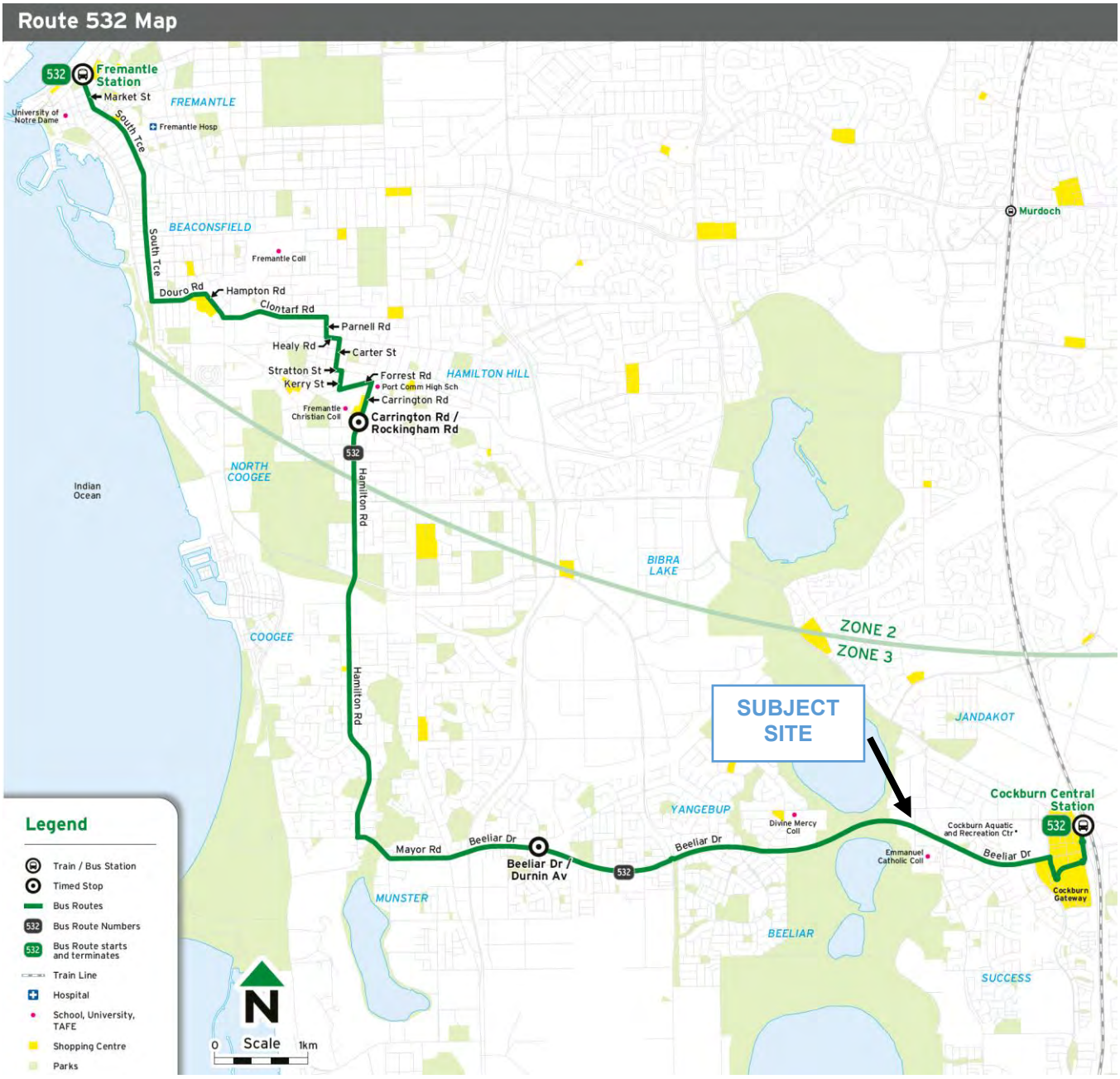

Figure 13: Transperth bus map (route 532)

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.

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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

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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.

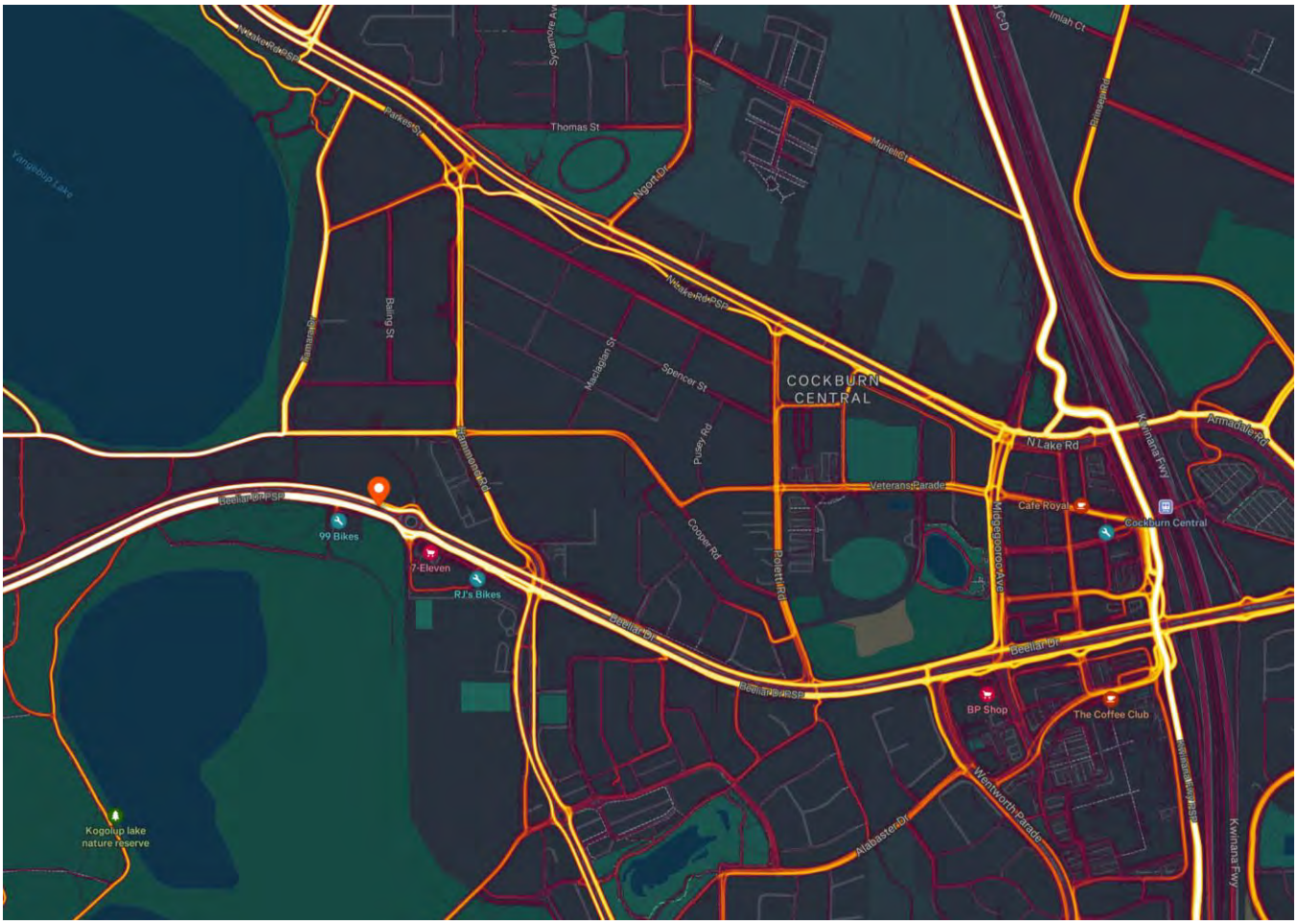

Figure 15: Strava cycling heatmap

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.

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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.

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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.

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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.

T-intersection

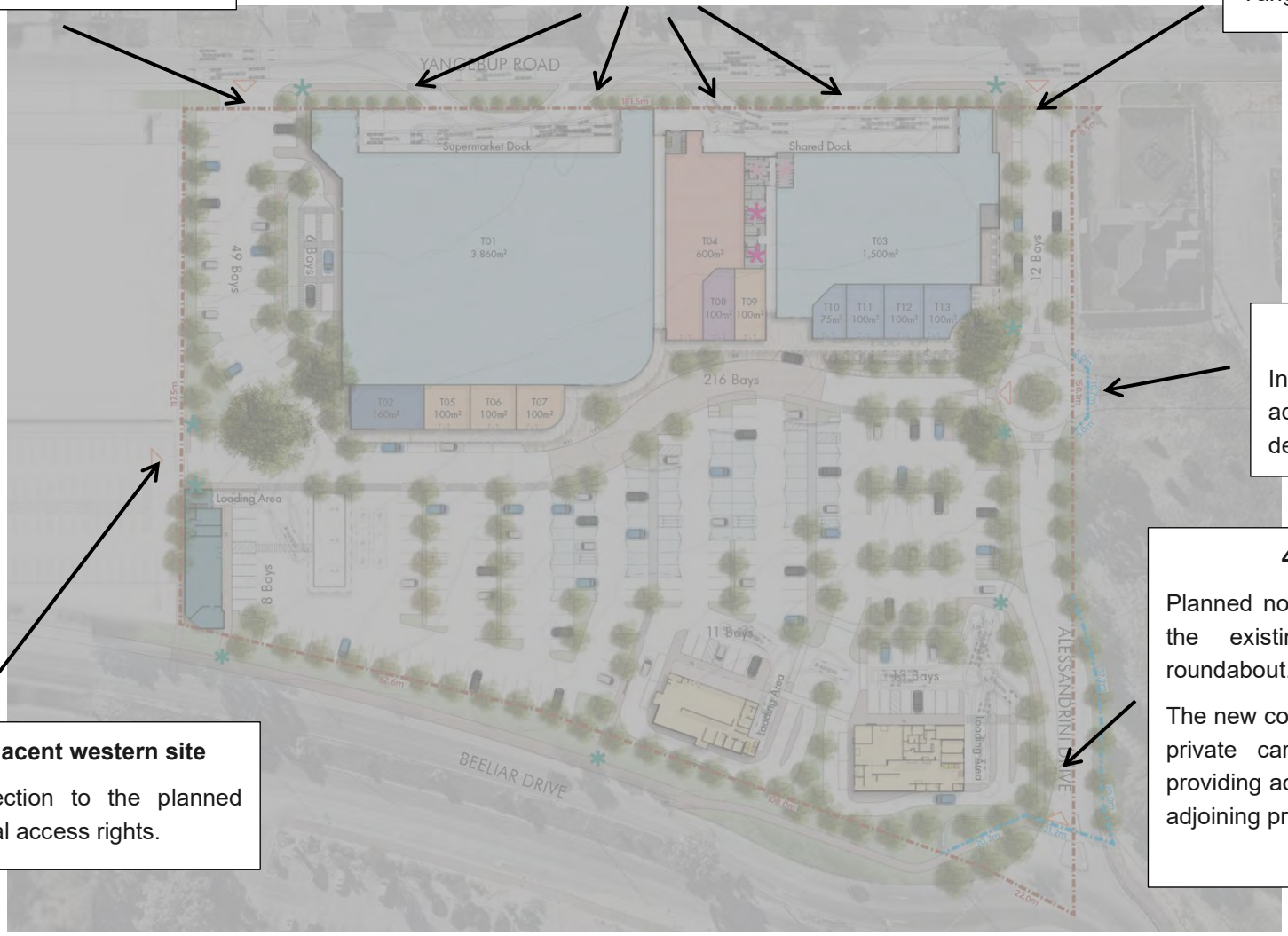
Full movement connection to Yangebup Road.

Loading dock access

4 x crossovers for loading dock access only.

T-intersection

Full movement connection to Yangebup Road.



4-way roundabout

Internal connection to adjacent eastern future development

4-way roundabout

Planned northern (4th) leg connecting to the existing Beeliar Dr/Kemp Rd roundabout.

The new connecting link will operate as a private car park circulation roadway, providing access to the development and adjoining property to the east.

Connection to adjacent western site

Direct parking connection to the planned REVO gym. Reciprocal access rights.

Figure 17: Development access strategy

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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.

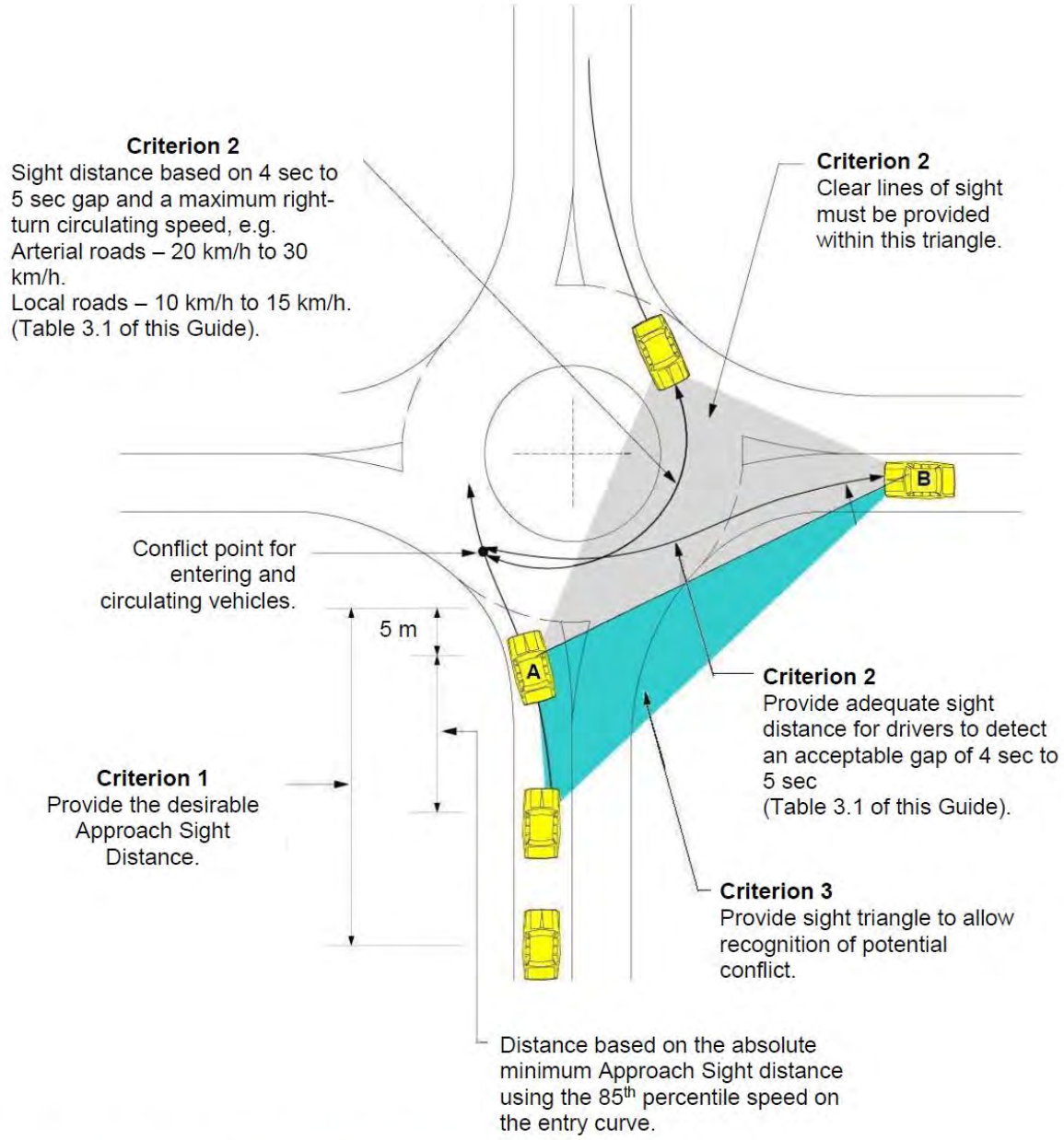
Review of the proposed layout indicates that the required 55 m approach sight distance can be achieved on all roundabout approaches. Sight lines are not obstructed by landscaping, built form or infrastructure within the critical sight envelopes. Detailed sight distance diagrams demonstrating compliance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

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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

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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.

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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 - 20,000m2)	TfNSW	61 trips per 100m2	6.7 trips per 100m2	7.5 trips per 100m2	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 (m2)	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.

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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.

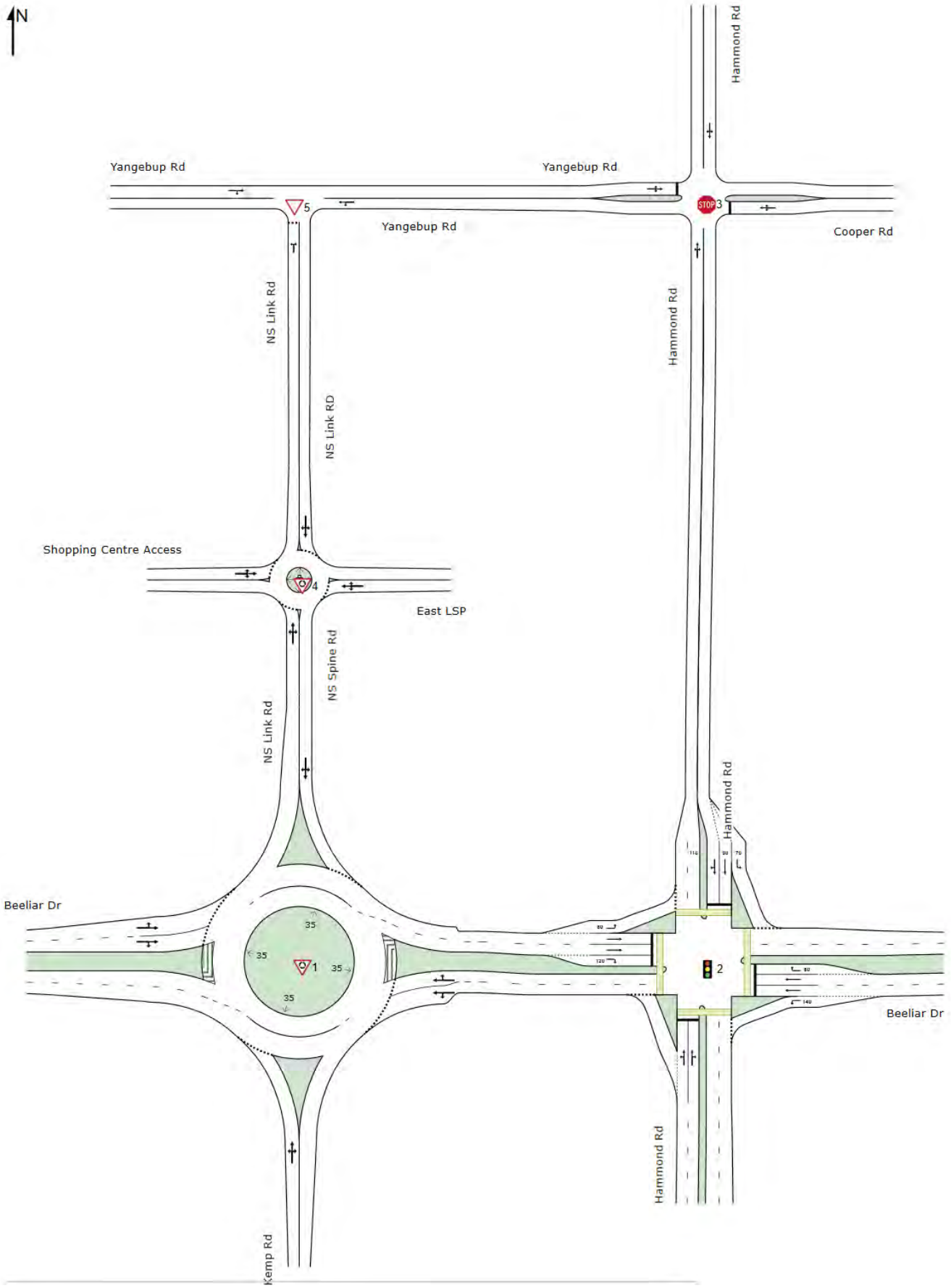

Figure 20: SIDRA network model

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

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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.

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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.

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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.

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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.

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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.

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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.

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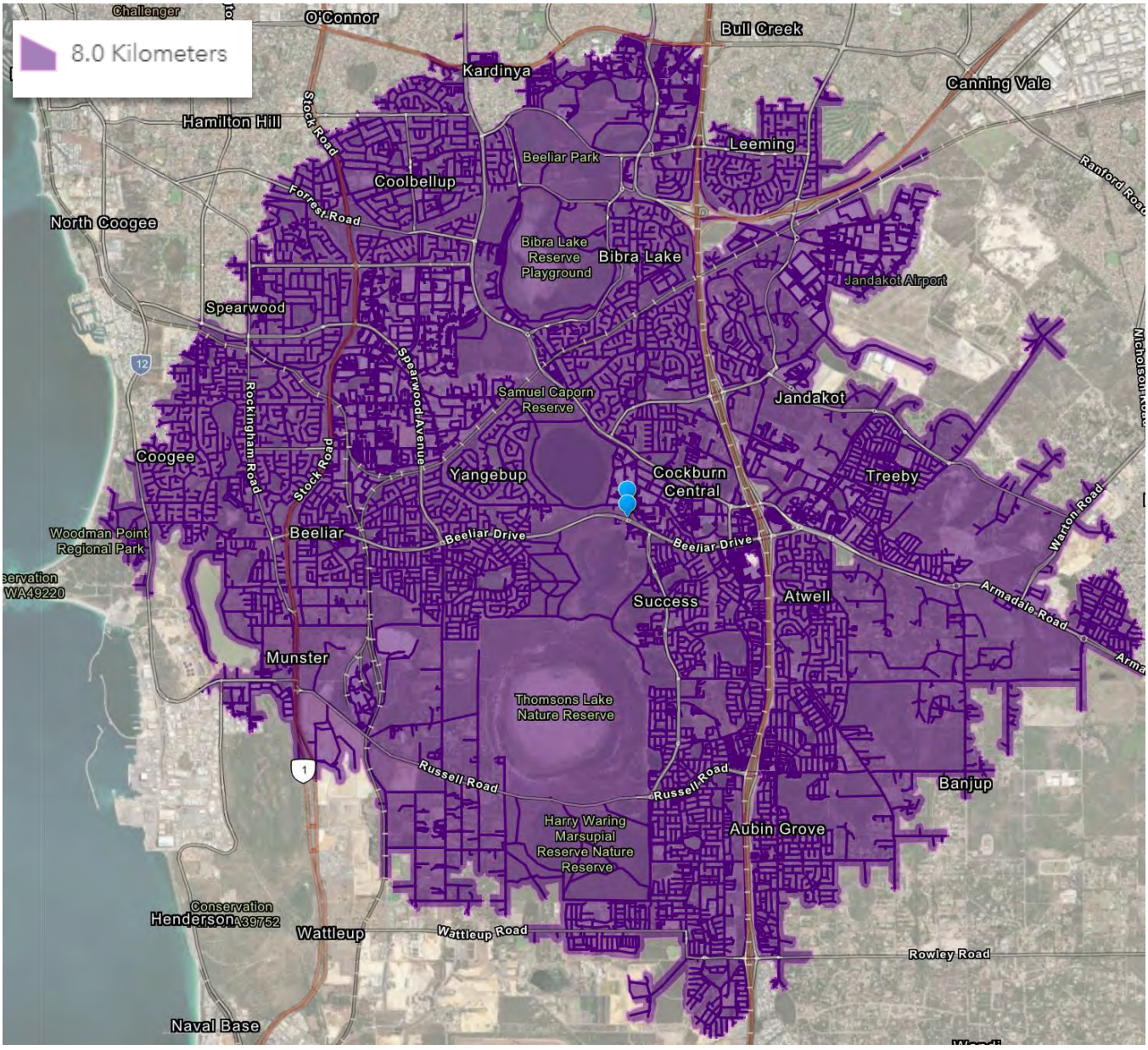

Figure 21: Cycling and micromobility catchment

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.

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Appendices

Appendix A: Proposed development plans

Document Set ID: 12551052
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Legend

- Existing Site Boundary
- Proposed Site Boundary
- Vehicle Entry/Exit
- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

Note:

All NLA measured in accordance with PCA method of measurement.

This plan remains preliminary and subject to design evolution and authority approvals.

CAR PARKING	NUMBERS
On-Site Bays North-West	49
Online Pick Up Bays	6
Street Bays	12
On-Site Bays	216
Pad Site Bays	32
TOTAL BAYS PROVIDED	315
Motorcycle Bays	7

BIKE PARKING	NUMBERS
Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	62

Scale 1:1000 @ A3

0 10 20 30 40 50

Site Plan

Pg 3 Rev A

Beeliar SC 2433 01 2026

place fabric.

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Legend

- Existing Site Boundary
- Proposed Site Boundary
- Vehicle Entry/Exit
- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

Development Summary

Supermarket Major	5,360m²
Consulting Room	100m²
Mini Major	600m²
Liquor	160m²
Retail/ Commercial	400m²
Food & Beverage	375m²
Fast Food	620m²
Fuel	240m²
Amenities	
Services	
TOTAL NLA	**7,855m²**

Note:

All NLA measured in accordance with PCA method of measurement.

This plan remains preliminary and subject to design evolution and authority approvals.

CAR PARKING	NUMBERS
On-Site Bays North-West	49
Online Pick Up Bays	6
Street Bays	12
On-Site Bays	216
Pad Site Bays	32
TOTAL BAYS PROVIDED	315
Motorcycle Bays	7

BIKE PARKING	NUMBERS
Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	62

Scale 1:1000 @ A3

0 10 20 30 40 50

Ground Floor Plan

Pg 4 Rev A

Beeliar SC 2433 01 2026

place fabric.

Document Set ID: 1225105
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Legend

- Existing Site Boundary
- Proposed Site Boundary
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Development Summary

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Fast Food	620m²
Fuel	240m²
Amenities	
Services	
TOTAL NLA	**7,855m²**

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Street Bays	12
On-Site Bays	216
Pad Site Bays	32
TOTAL BAYS PROVIDED	315
Motorcycle Bays	7

BIKE PARKING	NUMBERS
Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	62

Scale 1:500 @ A3

0 5 10 15 20 25

Floor Plan - North West

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Beeliar SC 2433 01 2026

place fabric.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026

Legend

- Existing Site Boundary
- Proposed Site Boundary
- Vehicle Entry/Exit
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- Staff Amenities - End of Trip

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Pad Site Bays	32
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Motorcycle Bays	7

BIKE PARKING	NUMBERS
Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	62

Scale 1:500 @ A3

0 5 10 15 20 25

Floor Plan - North East

Pg 6 Rev A

Beeliar SC 2433 01 2026

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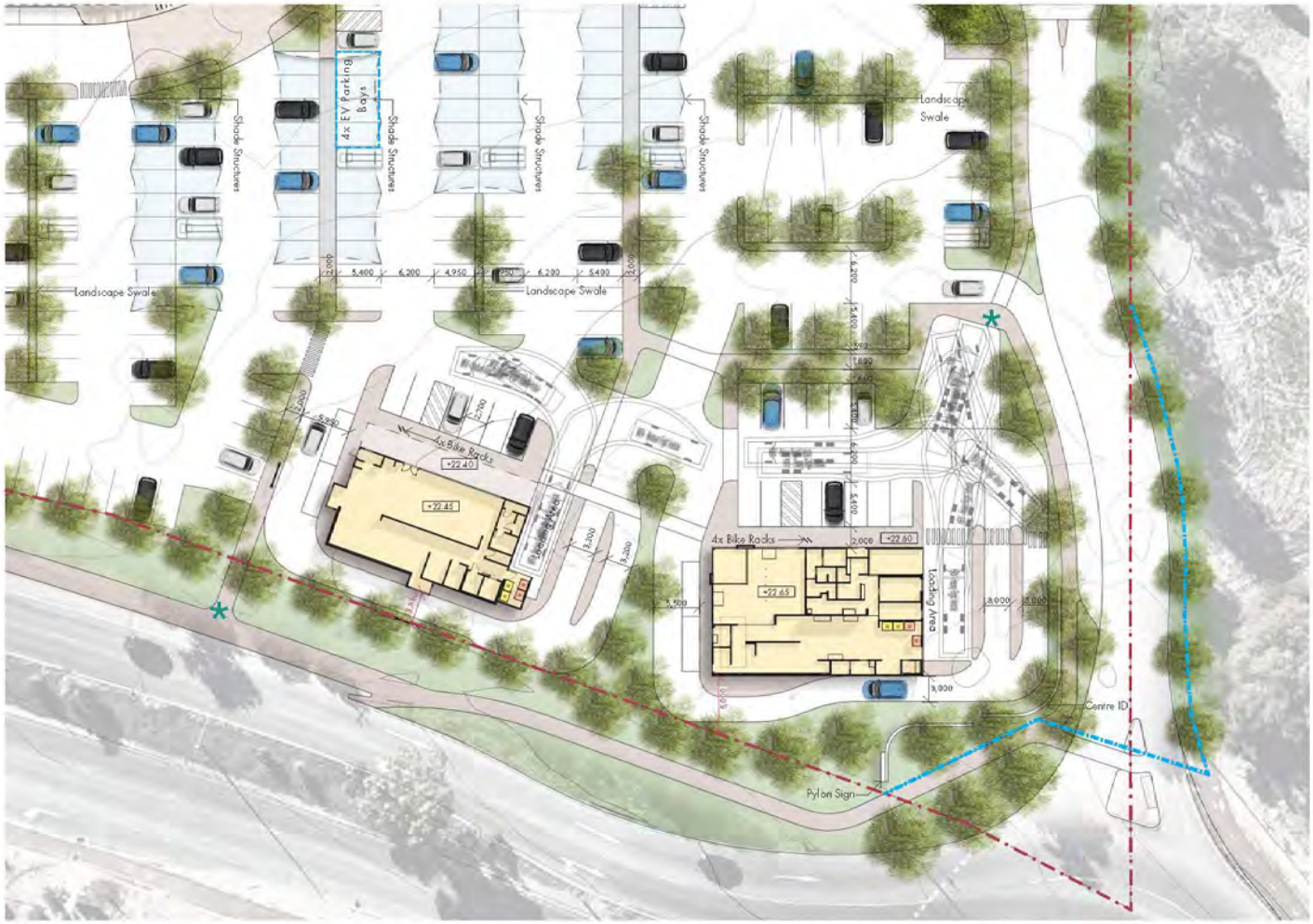

Legend

- Existing Site Boundary
- Proposed Site Boundary
- Vehicle Entry/Exit
- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

Development Summary

Supermarket Major	5,360m²
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Food & Beverage	375m²
Fast Food	620m²
Fuel	240m²
Amenities	
Services	
TOTAL NLA	**7,855m²**

Note:

All NLA measured in accordance with PCA method of measurement.

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Street Bays	12
On-Site Bays	216
Pad Site Bays	32
TOTAL BAYS PROVIDED	315
Motorcycle Bays	7

BIKE PARKING	NUMBERS
Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	62

Scale 1:500 @ A3

0 5 10 15 20 25

Floor Plan - South East

Pg 7 Rev A

Beeliar SC 2433 01 2026

place fabric.

Document Set ID: 12624068
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Legend

- Existing Site Boundary
- Proposed Site Boundary
- Vehicle Entry/Exit
- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

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Food & Beverage	375m²
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Fuel	240m²
Amenities	
Services	
TOTAL NLA	**7,855m²**

Note:

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Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	62

Scale 1:500 @ A3

0 5 10 15 20 25

Floor Plan - South West

Pg 8 Rev A

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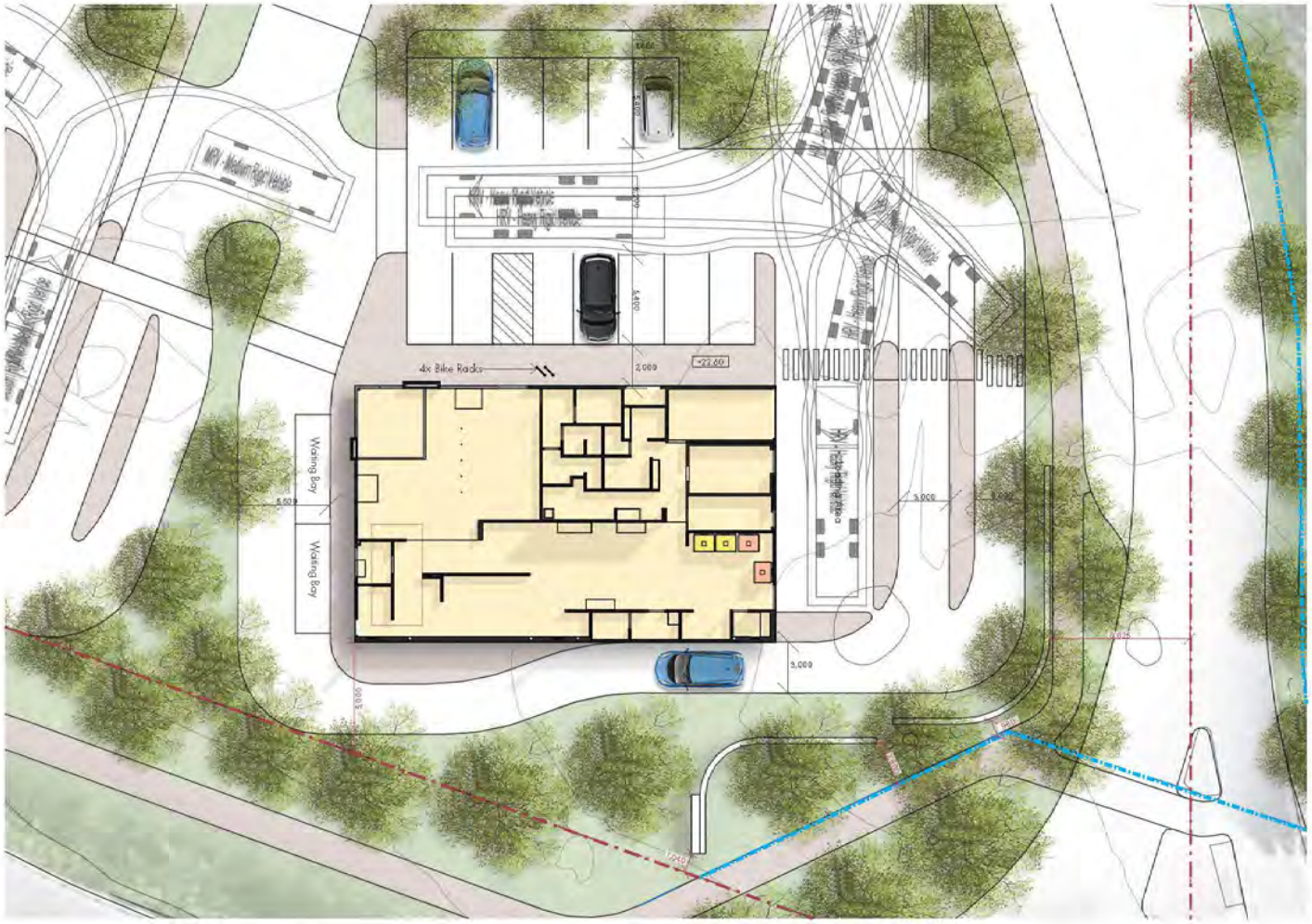

Legend

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- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

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Services	
TOTAL NLA	**7,855m²**

Note:

All NLA measured in accordance with PCA method of measurement.

This plan remains preliminary and subject to design evolution and authority approvals.

CAR PARKING	NUMBERS
On-Site Bays North-West	49
Online Pick Up Bays	6
Street Bays	12
On-Site Bays	216
Pad Site Bays	32
TOTAL BAYS PROVIDED	315
Motorcycle Bays	7

BIKE PARKING	NUMBERS
Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	62

Scale 1:250 @ A3

0 5 10 15

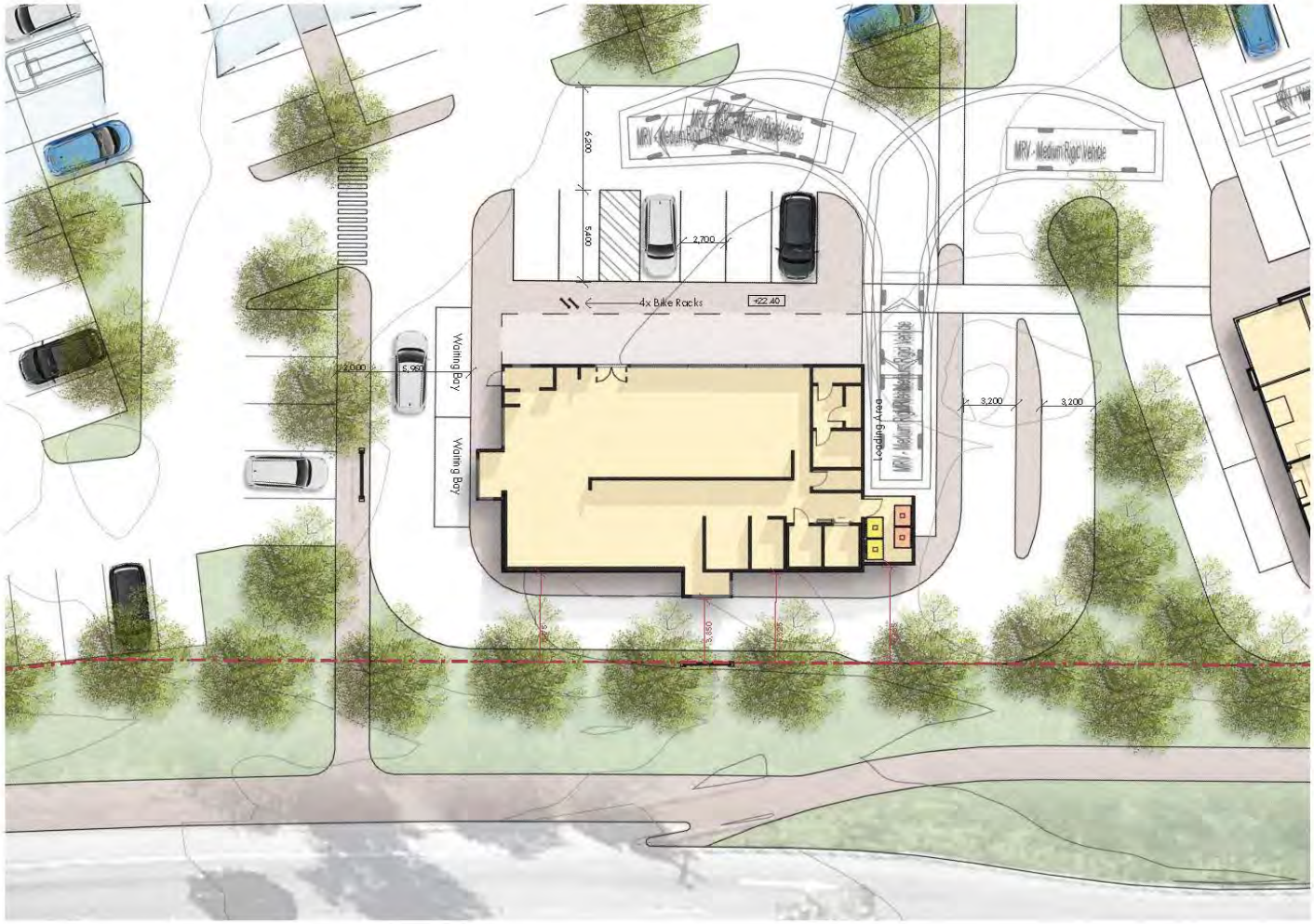
Pad Site 1 - Ground Floor

Pg 20 Rev A

Beeliar SC 2433 01 2026

place fabric.

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026



Legend

- Existing Site Boundary
- Proposed Site Boundary
- Vehicle Entry/Exit
- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

Development Summary

Supermarket Major	5,360m²
Consulting Room	100m²
Mini Major	600m²
Liquor	160m²
Retail/ Commercial	400m²
Food & Beverage	375m²
Fast Food	620m²
Fuel	240m²
Amenities	
Services	
TOTAL NLA	**7,855m²**

Note:

All NLA measured in accordance with PCA method of measurement.

This plan remains preliminary and subject to design evolution and authority approvals.

CAR PARKING	NUMBERS
On-Site Bays North-West	49
Online Pick Up Bays	6
Street Bays	12
On-Site Bays	216
Pad Site Bays	32
TOTAL BAYS PROVIDED	315
Motorcycle Bays	7

BIKE PARKING	NUMBERS
Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	62

Scale 1:250 @ A3

0 5 10 15

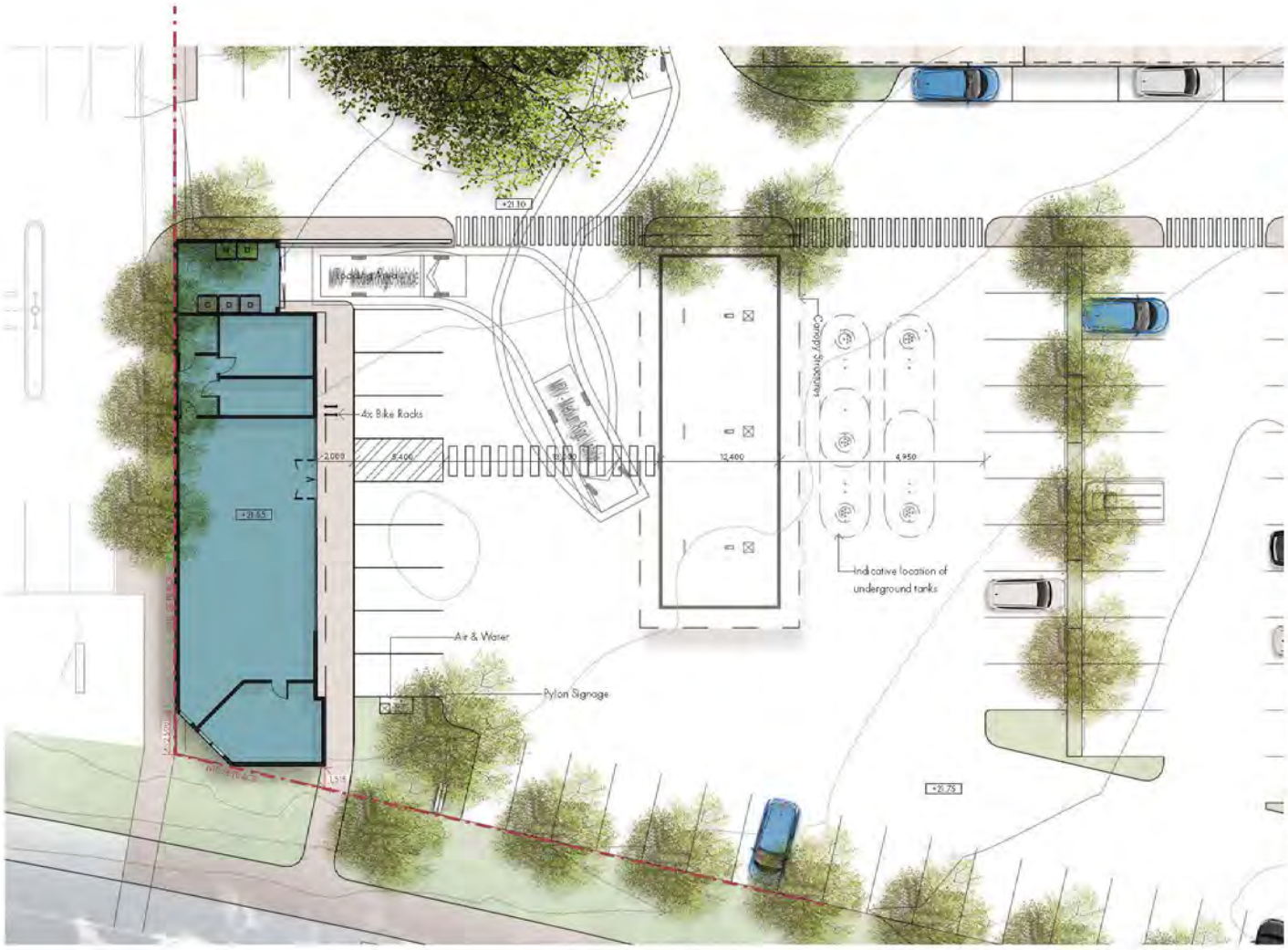
Pad Site 2 - Ground Floor

Pg 24 Rev A

Beeliar SC 2433 01 2026

place fabric.

Document Set ID: 1225105
Version: 1, Version Date: 23/02/2026



Legend

- Existing Site Boundary
- Proposed Site Boundary
- Vehicle Entry/Exit
- Pedestrian Entry
- Public Amenities
- Staff Amenities - End of Trip

Development Summary

Supermarket Major	5,360m²
Consulting Room	100m²
Mini Major	600m²
Liquor	160m²
Retail/ Commercial	400m²
Food & Beverage	375m²
Fast Food	620m²
Fuel	240m²
Amenities	
Services	
TOTAL NLA	**7,855m²**

Note:

All NLA measured in accordance with PCA method of measurement.

This plan remains preliminary and subject to design evolution and authority approvals.

CAR PARKING	NUMBERS
On-Site Bays North-West	49
Online Pick Up Bays	6
Street Bays	12
On-Site Bays	216
Pad Site Bays	32
TOTAL BAYS PROVIDED	315
Motorcycle Bays	7

BIKE PARKING	NUMBERS
Visitor Parking	44
Secure Staff Parking	24
TOTAL BAYS PROVIDED	62

Scale 1:250 @ A3
0 5 10 15

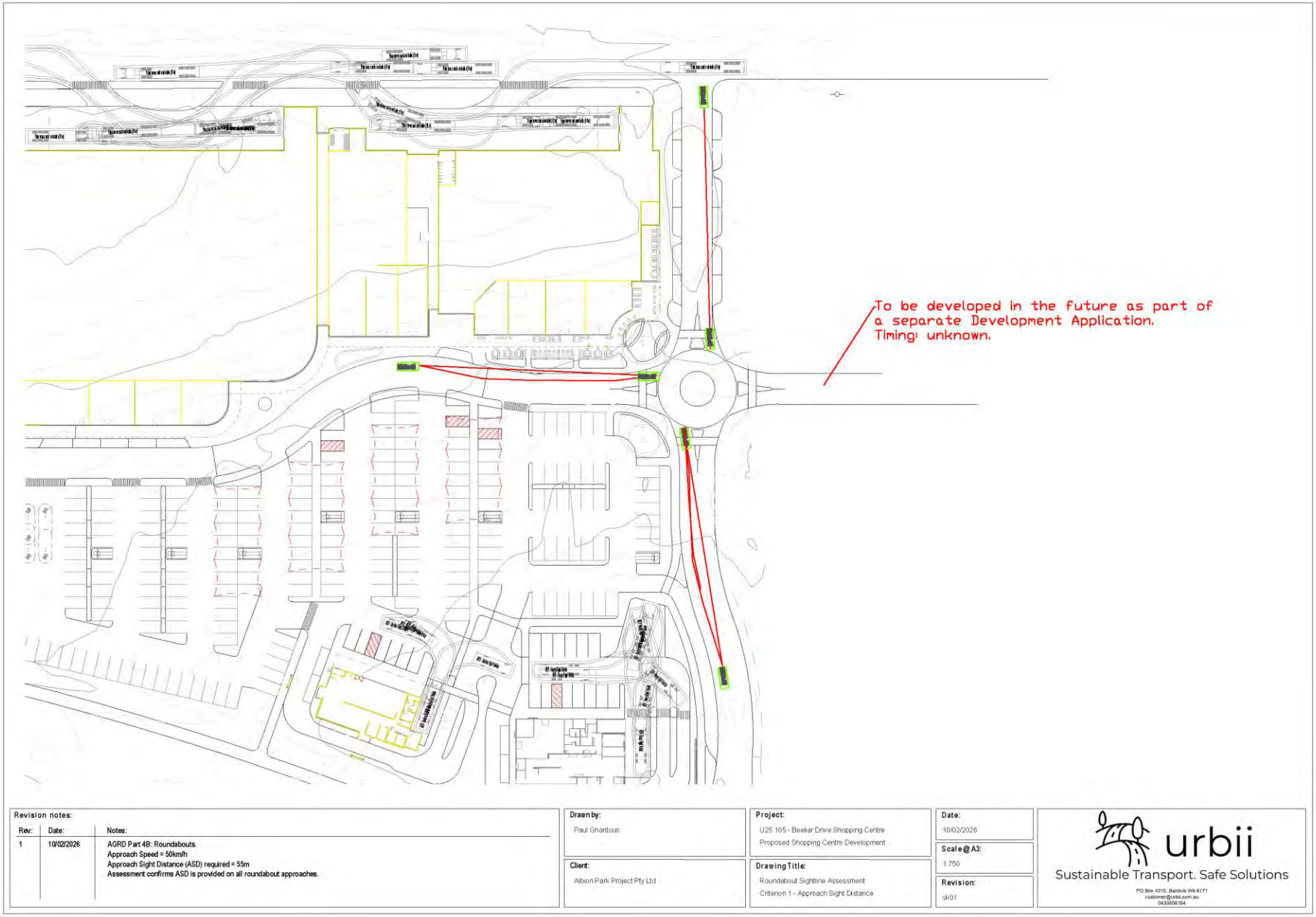
Fuel Site - Ground Floor

Pg 28 Rev A

Beeliar SC 2433 01 2026

place fabric.

Appendix B: Roundabout sight distance assessment



Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	AGRD Part 4B: Roundabouts. Approach Speed = 50km/h Approach Sight Distance (ASD) required = 55m Assessment confirms ASD is provided on all roundabout approaches.

Drawn by: Paul Ghantous

Client: Albion Park Project Pty Ltd

Project: U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title: Roundabout Sightline Assessment
Criterion 1 - Approach Sight Distance

Date: 10/02/2026

Scale @ A3: 1:750

Revision: sk01

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PO Box 4315, Baldivis WA 6171
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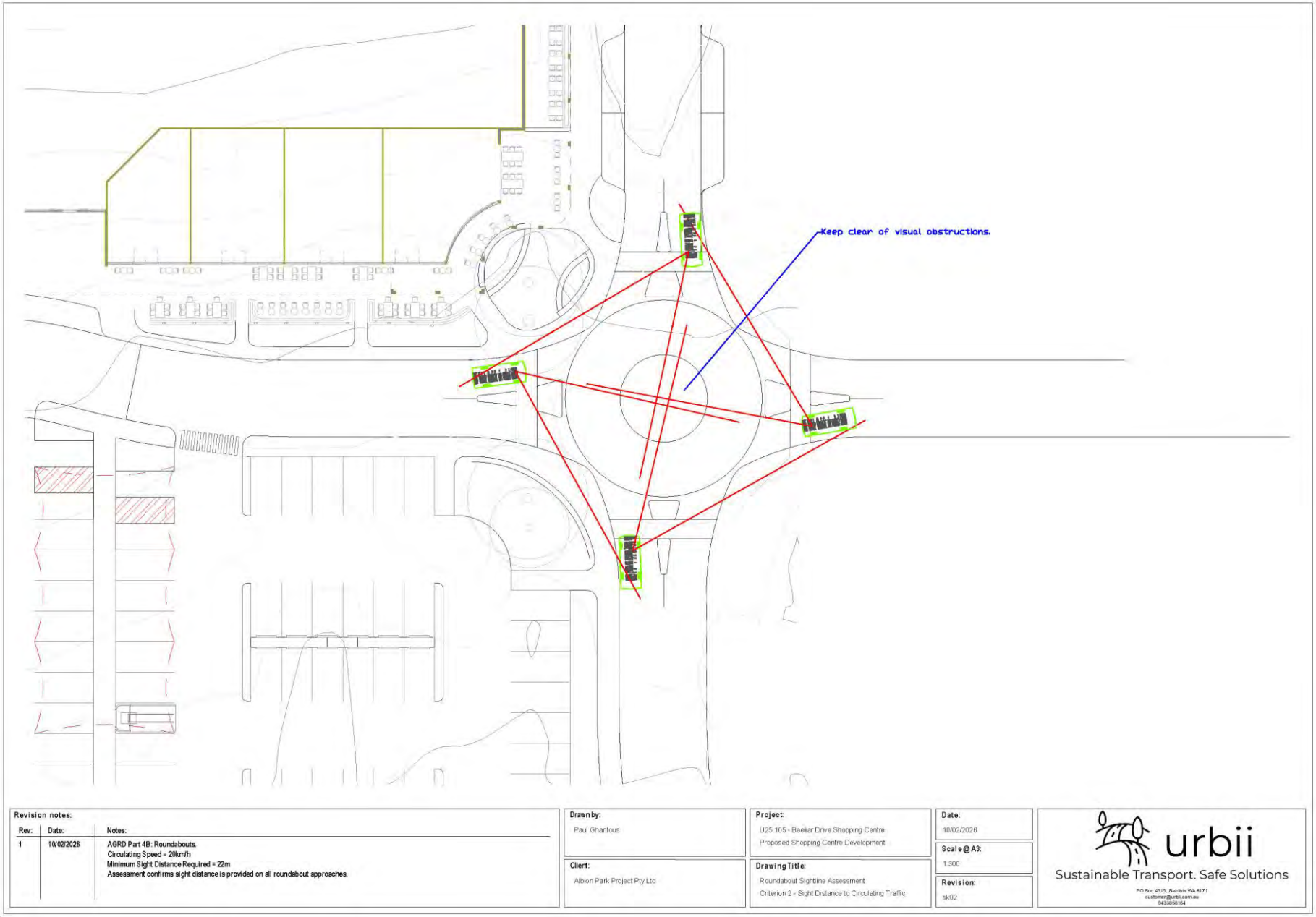
0433656164

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026



Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	AGRD Part 4B: Roundabouts. Circulating Speed = 20km/h Minimum Sight Distance Required = 22m Assessment confirms sight distance is provided on all roundabout approaches.

Drawn by:	Paul Ghantous
Client:	Albion Park Project Pty Ltd
Project:	U25.105 - Beeliar Drive Shopping Centre Proposed Shopping Centre Development
Drawing Title:	Roundabout Sightline Assessment Criterion 2 - Sight Distance to Circulating Traffic
Date:	10/02/2026
Scale @ A3:	1:300
Revision:	sk02

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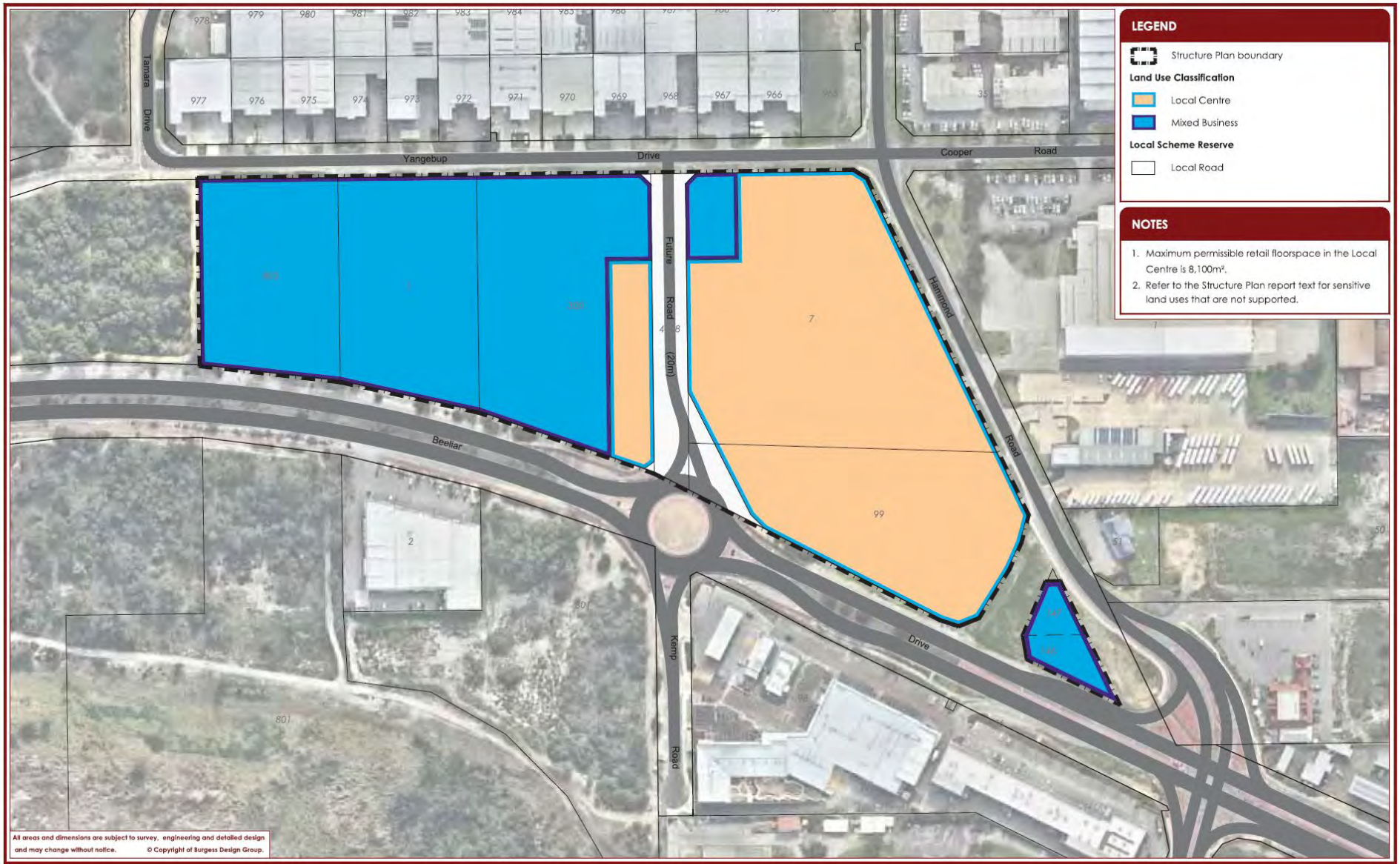
Appendix C: Hammond Road North Structure Plan

Document Set ID: 12524068
Version: 1, Version Date: 23/02/2026

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026



NORTH

0 20 40 60 80 100m

SCALE 1:2000 (A3)

PLAN 1: HAMMOND ROAD NORTH STRUCTURE PLAN MAP

COCKBURN CENTRAL

CITY OF COCKBURN

BURGESS DESIGN GROUP
TOWN PLANNING + URBAN DESIGN
PO Box 8779, Perth Business Centre 6849
www.burgessdesigngroup.com.au
P (08) 9328 6411
F (08) 9328 4062

Plan No: ALE COC 2-01g Client: ALE'S
Date: 22.10.18 Planner: MS/MB

Document Set ID: 12551052
Version: 1, Version Date: 23/02/2026

FIGURE 6: CONCEPT SITE PLAN
HAMMOND ROAD NORTH
COCKBURN CENTRAL

burgess design group
TOWN PLANNING + URBAN DESIGN
PO Box 374 Northbridge WA 6865 P (08) 9328 6411
W www.burgessdesigngroup.com.au F (08) 9328 6511

Plan No: ALE COC 1-05c-01 Client: Tony & John Allessandrini
Date: 22.10.18 Planner: MS

NORTH

All areas and dimensions are subject to survey, engineering and detailed design and may change without notice. © Copyright of Burgess Design Group.

0 10 20 30 40 50 60 70m
SCALE 1:1,500 (A3)

CITY OF COCKBURN

Appendix D: Traffic volume diagrams

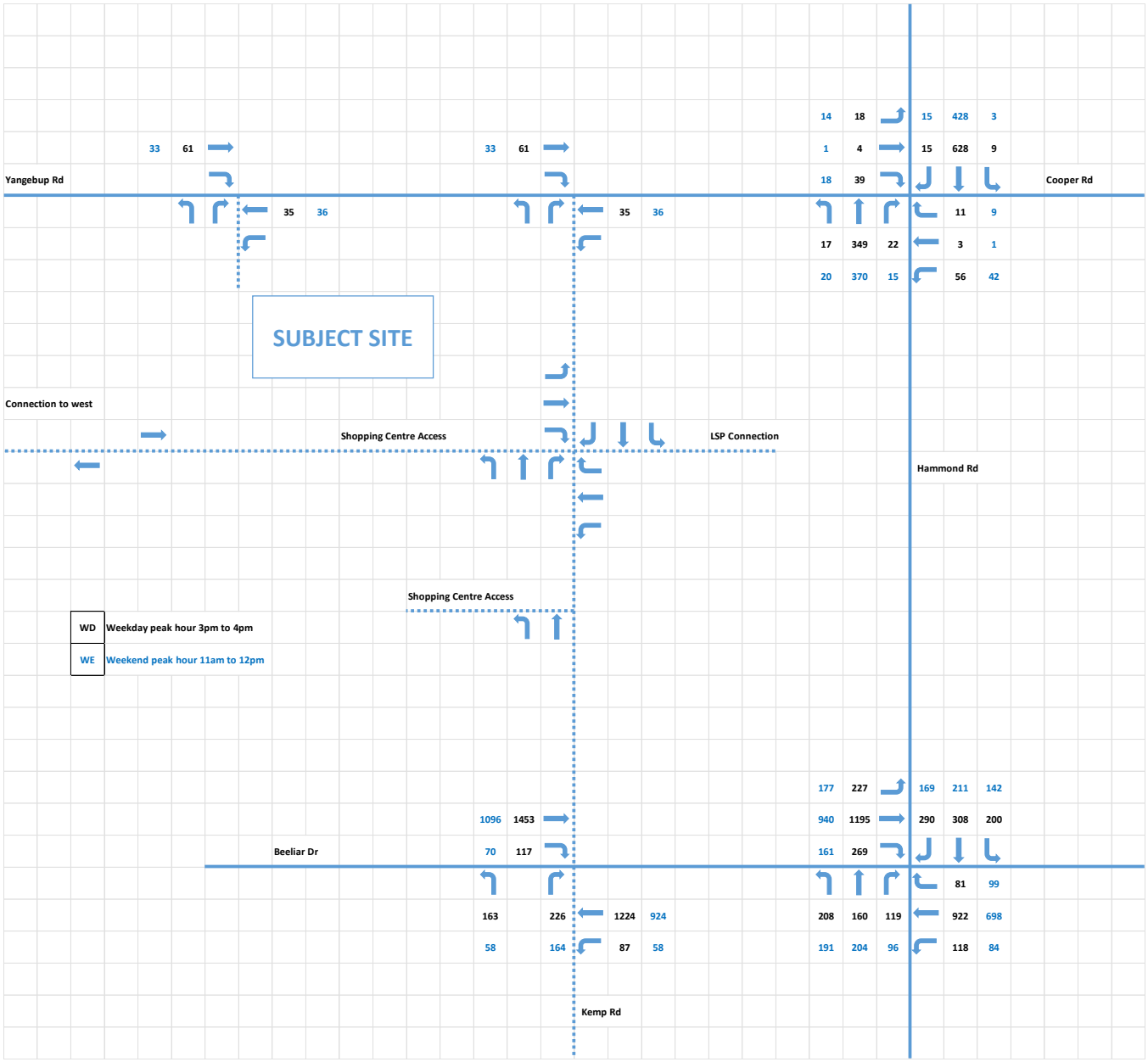


Figure 22: Existing traffic volumes

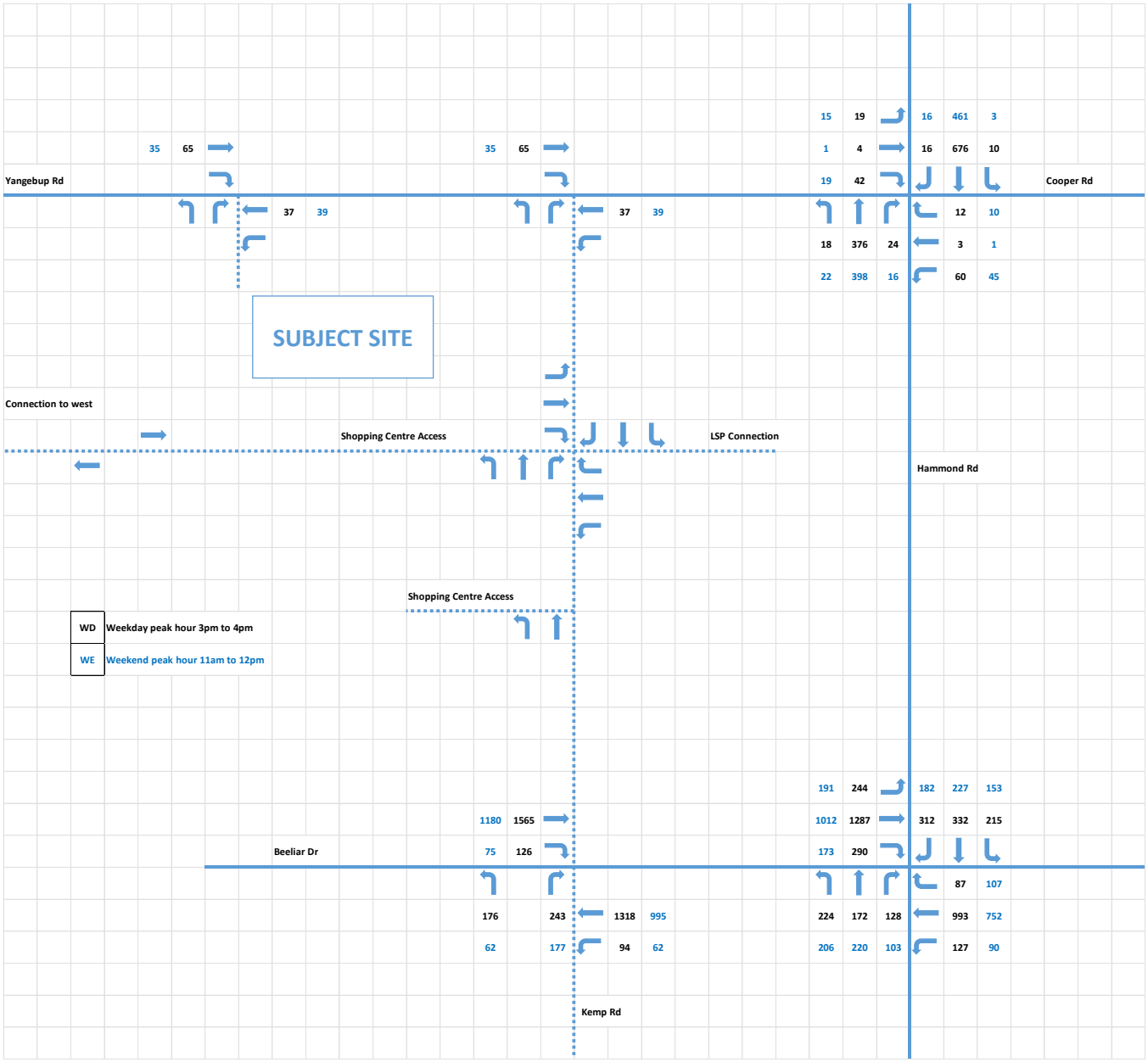


Figure 23: 2028 base traffic volumes

Document Set ID: 11624068
Version: 1, Version Date: 23/02/2026

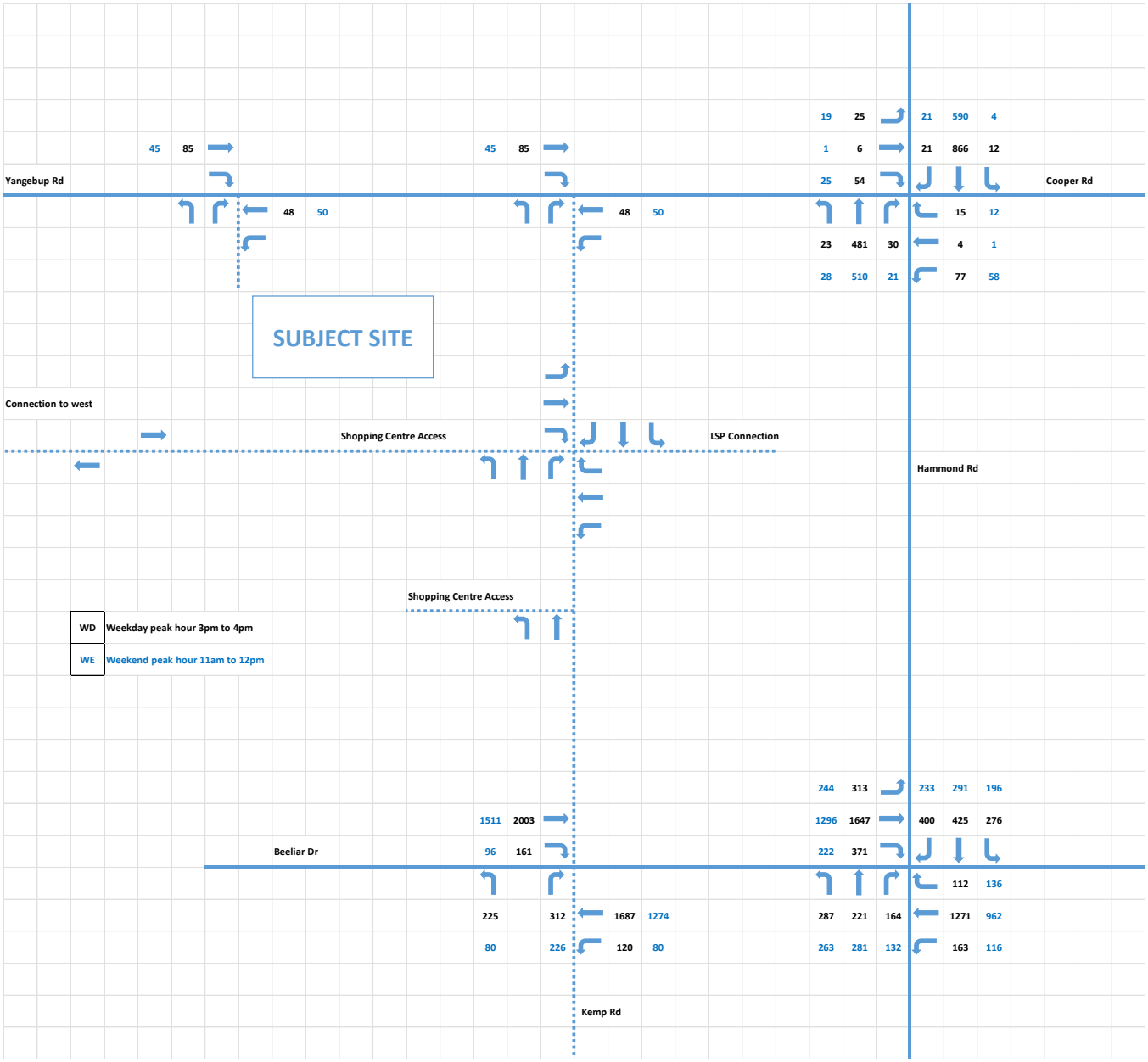


Figure 24: 2038 base traffic volumes

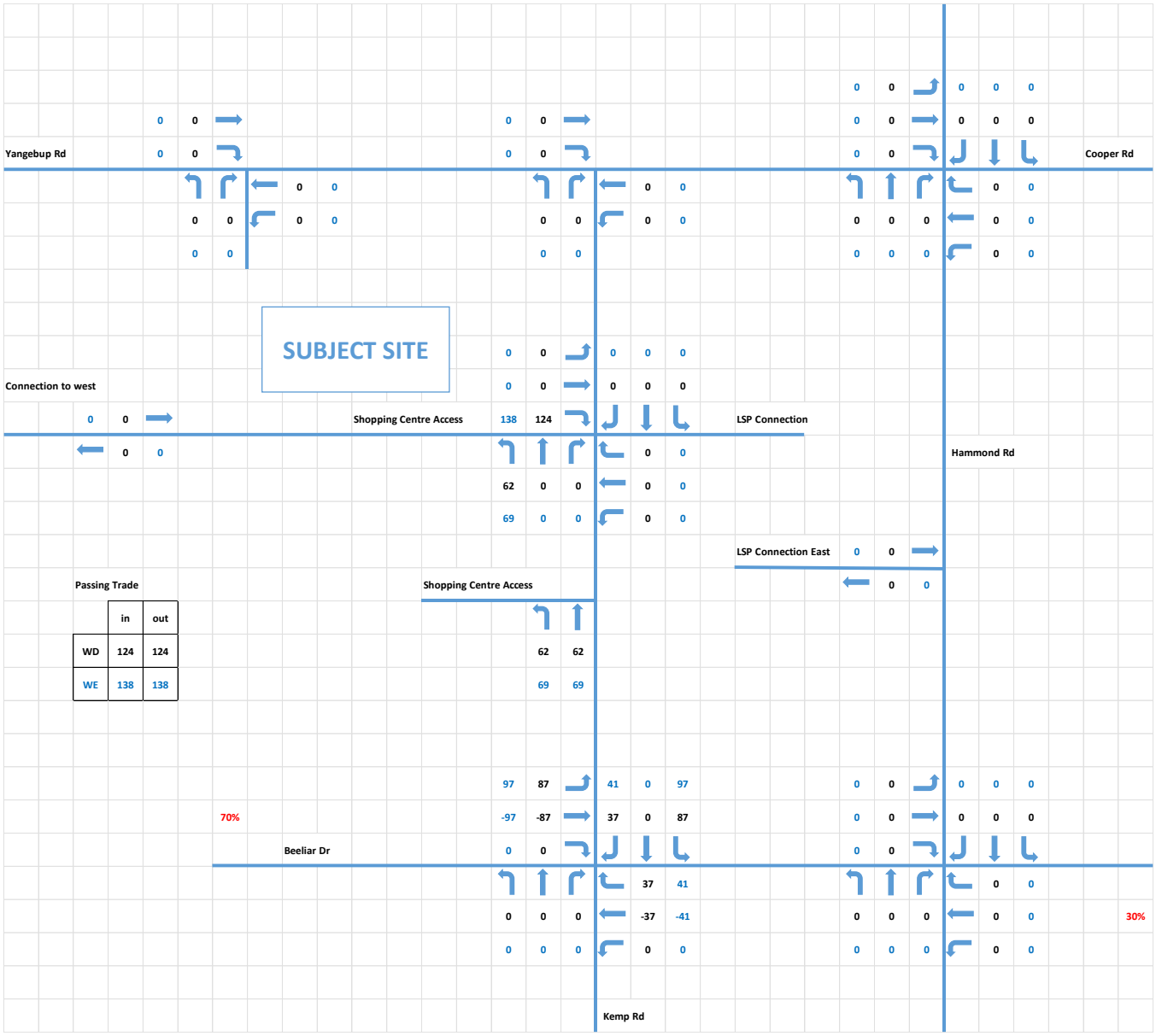


Figure 25: Development traffic volumes – passing trade

Document Set ID: 11624068
Version: 1, Version Date: 23/02/2026

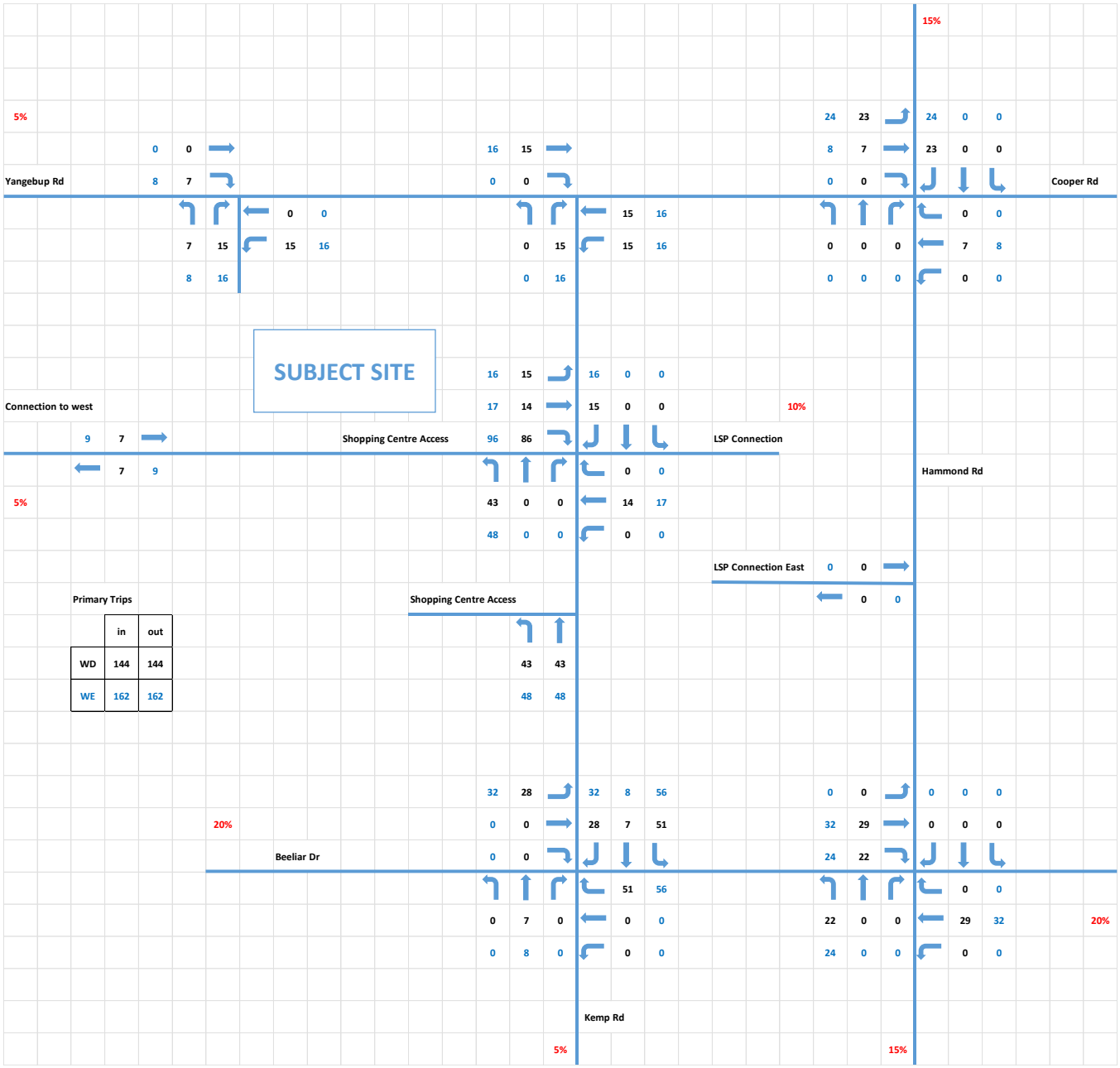


Figure 26: Development traffic volumes – primary trips

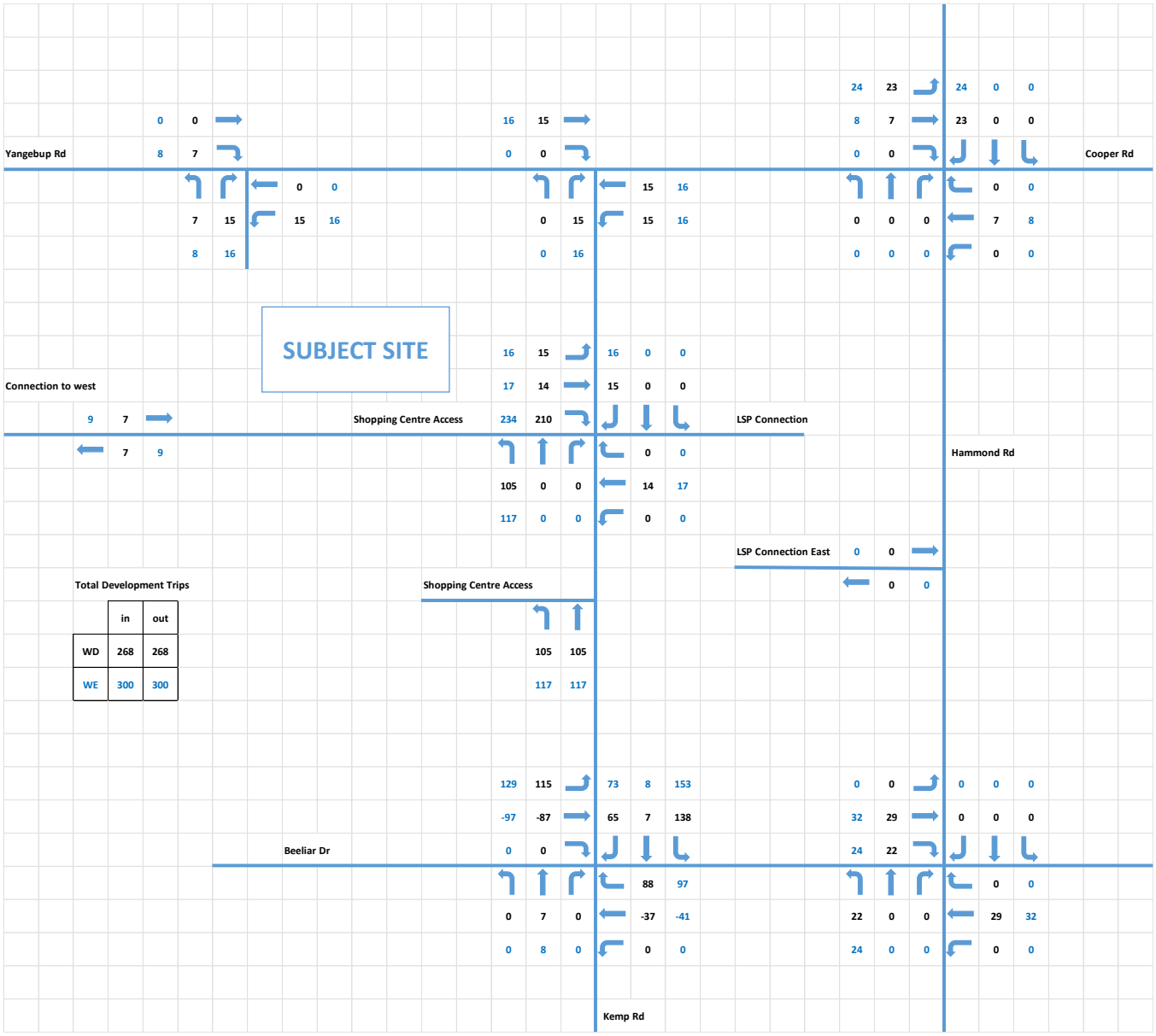


Figure 27: Development traffic volumes – total trips

Document Set ID: 11624068
Version: 1, Version Date: 23/02/2026

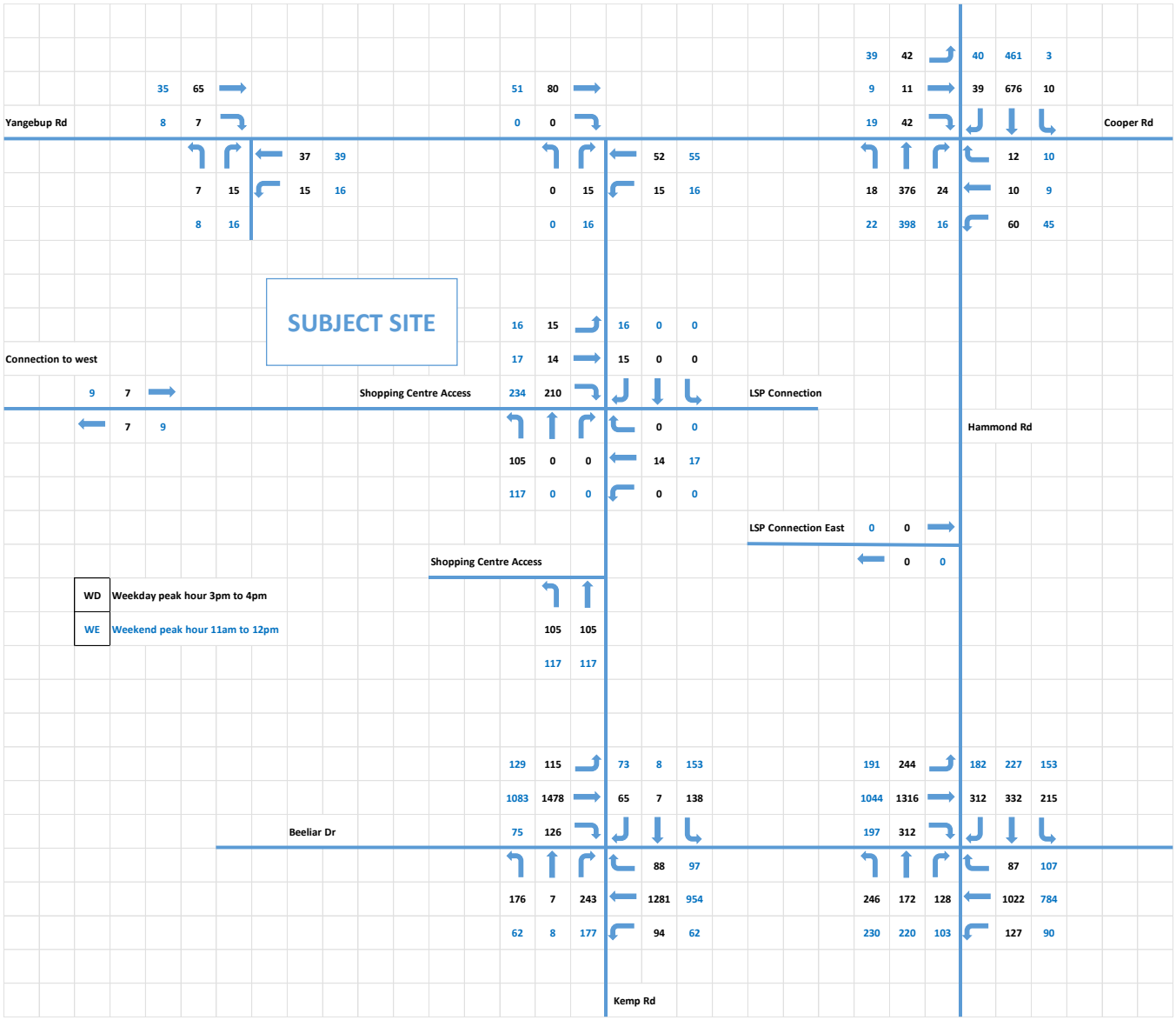


Figure 28: 2028 post development traffic volumes

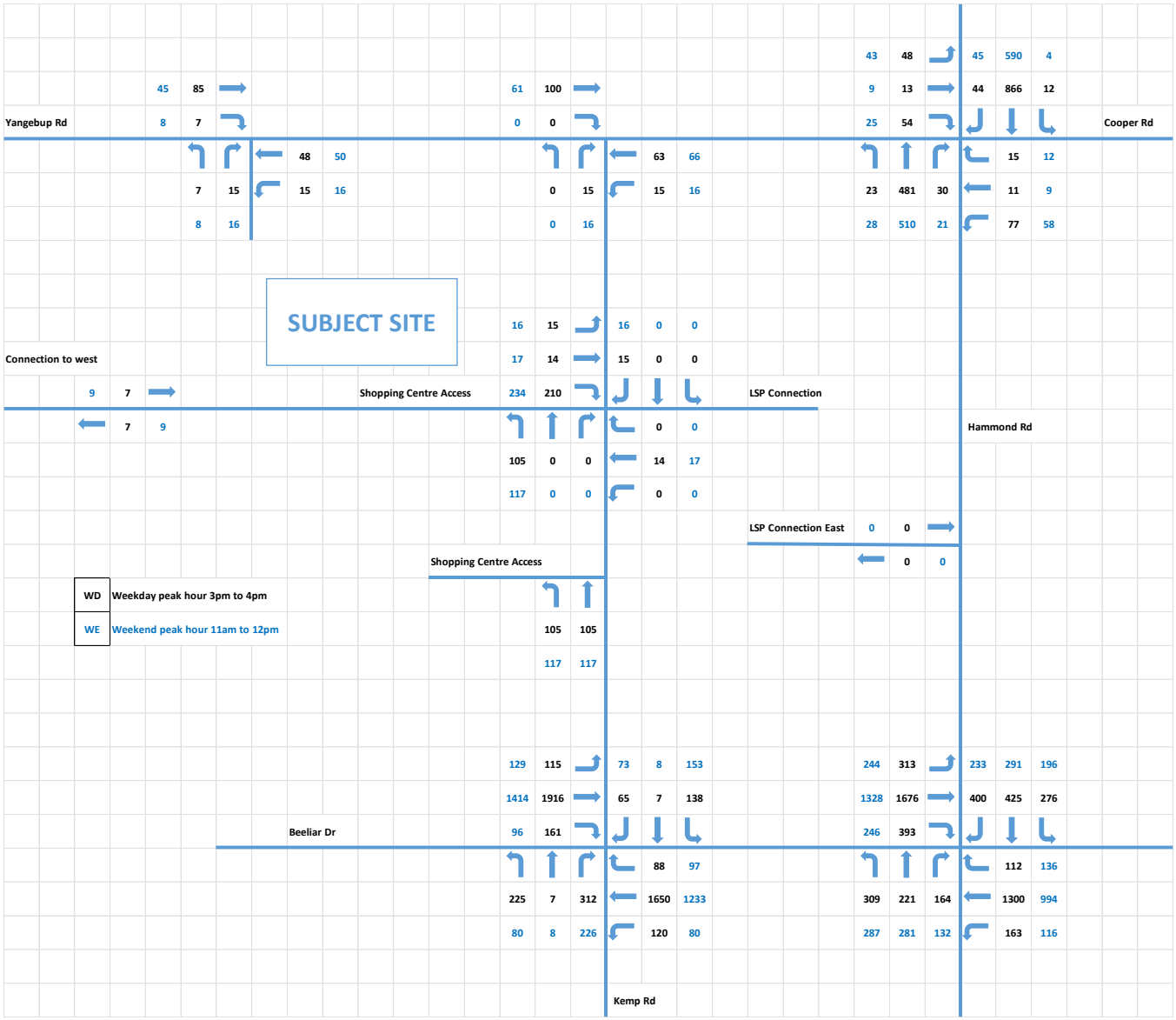


Figure 29: 2038 post development traffic volumes

Document Set ID: 11264068
Version: 1, Version Date: 23/02/2026

Appendix E: SIDRA analysis outputs

SIDRA outputs are presented in the form of Degree of Saturation, Level of Service, Average Delay and 95% Queue. These characteristics are defined as follows:

- **Degree of Saturation (DoS):** is the ratio of the arrival traffic flow to the capacity of the approach during the same period. The Degree of Saturation ranges from close to zero for varied traffic flow up to one for saturated flow or capacity.
- **Level of Service (LoS):** is the qualitative measure describing operational conditions within a traffic stream and the perception by motorists and/or passengers. In general, there are 6 levels of service, designated from A to F, with Level of Service A representing the best operating condition (i.e. free flow) and Level of Service F the worst (i.e. forced or breakdown flow).
- **Average Delay:** is the average of all travel time delays for vehicles through the intersection.
- **95% Queue:** is the queue length below which 95% of all observed queue lengths fall.

Existing

MOVEMENT SUMMARY

Site: [1] Beeliar Dr / Kemp Rd (Folder1)
Network: [1] 2025 Existing Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Kemp Rd															
1	L2	All MCs	172	1.0	172	1.0	0.713	10.4	LOS B	5.2	36.5	0.96	0.94	1.30	45.4
2	T1	All MCs	1	1.0	1	1.0	0.713	10.0	LOS B	5.2	36.5	0.96	0.94	1.30	30.3
3	R2	All MCs	238	1.0	238	1.0	0.713	15.8	LOS B	5.2	36.5	0.96	0.94	1.30	25.4
Approach			411	1.0	411	1.0	0.713	13.5	LOS B	5.2	36.5	0.96	0.94	1.30	37.2
East: Beeliar Dr															
4	L2	All MCs	92	3.0	**91**	3.0	0.458	4.9	LOS A	3.2	23.2	0.25	0.44	0.25	50.3
5	T1	All MCs	1288	5.0	**1274**	5.0	0.458	5.1	LOS A	3.2	23.2	0.26	0.44	0.26	59.3
6	R2	All MCs	1	1.0	1	1.0	0.458	11.3	LOS B	3.0	21.6	0.27	0.44	0.27	49.9
Approach			1381	4.9	**1366**	4.9	0.458	5.1	LOS A	3.2	23.2	0.26	0.44	0.26	58.9
North: NS Spine Rd															
7	L2	All MCs	1	1.0	1	1.0	0.010	7.9	LOS A	0.0	0.3	0.83	0.73	0.83	26.7
8	T1	All MCs	1	1.0	1	1.0	0.010	7.5	LOS A	0.0	0.3	0.83	0.73	0.83	33.9
9	R2	All MCs	1	1.0	1	1.0	0.010	13.5	LOS B	0.0	0.3	0.83	0.73	0.83	47.7
Approach			3	1.0	3	1.0	0.010	9.6	LOS A	0.0	0.3	0.83	0.73	0.83	39.2
West: Beeliar Dr															
10	L2	All MCs	1	1.0	1	1.0	1.044	52.0	LOS E	44.1	322.2	1.00	2.09	3.05	25.3
11	T1	All MCs	1529	5.0	1529	5.0	1.044	52.6	LOS E	44.1	322.2	1.00	2.06	3.05	23.3
12	R2	All MCs	123	0.0	123	0.0	1.044	59.6	LOS E	37.4	271.3	1.00	2.02	3.05	25.9
Approach			1654	4.6	1654	4.6	1.044	53.1	LOS E	44.1	322.2	1.00	2.06	3.05	23.6
All Vehicles			3448	4.3	**3433**	4.3	1.044	29.2	LOS C	44.1	322.2	0.70	1.28	1.73	35.2

Document Set ID: 11624068
Version: 1, Version Date: 23/02/2026

MOVEMENT SUMMARY

Site: [2] Beeliar Dr / Hammond Rd (Folder1)
Network: [1] 2025 Existing Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	219	2.0	219	2.0	0.791	19.1	LOS B	21.4	151.8	1.00	1.25	1.05	12.6
2	T1	All MCs	168	1.0	168	1.0	*0.791	97.3	LOS F	21.4	151.8	1.00	1.25	1.05	12.6
3	R2	All MCs	125	3.0	125	3.0	0.533	72.8	LOS E	8.7	62.8	0.98	0.80	0.98	27.7
Approach			513	1.9	513	1.9	0.791	57.9	LOS E	21.4	151.8	1.00	1.14	1.02	16.0
East: Beeliar Dr															
4	L2	All MCs	124	3.0	124	3.0	0.102	11.4	LOS B	1.8	13.1	0.38	1.10	0.38	41.6
5	T1	All MCs	971	4.0	971	4.0	0.739	52.3	LOS D	31.8	230.0	0.94	0.83	0.94	26.1
6	R2	All MCs	85	7.0	85	7.0	0.342	84.7	LOS F	5.7	42.4	0.95	0.78	0.95	19.5
Approach			1180	4.1	1180	4.1	0.739	50.3	LOS D	31.8	230.0	0.88	0.86	0.88	25.2
North: Hammond Rd															
7	L2	All MCs	211	4.0	211	4.0	0.226	44.3	LOS D	6.0	43.7	0.54	1.31	0.54	31.8
8	T1	All MCs	324	2.0	324	2.0	*1.058	171.4	LOS F	39.0	281.3	1.00	1.34	1.70	16.2
9	R2	All MCs	305	4.0	305	4.0	1.058	160.8	LOS F	39.0	281.3	1.00	1.27	1.65	8.8
Approach			840	3.2	840	3.2	1.058	135.7	LOS F	39.0	281.3	0.88	1.31	1.39	14.3
West: Beeliar Dr															
10	L2	All MCs	239	7.0	**230**	7.0	0.148	32.0	LOS C	1.5	11.2	0.12	0.81	0.12	36.4
11	T1	All MCs	1258	3.0	**1213**	3.0	*1.046	146.7	LOS F	66.5	477.7	1.00	1.39	1.54	17.6
12	R2	All MCs	283	2.0	**273**	2.0	*1.046	162.0	LOS F	28.5	202.9	1.00	1.14	1.65	15.1
Approach			1780	3.4	**1716**	3.4	1.046	133.7	LOS F	66.5	477.7	0.88	1.28	1.36	15.6
All Vehicles			4313	3.4	**4249**	3.4	1.058	101.8	LOS F	66.5	477.7	0.90	1.15	1.19	16.8

MOVEMENT SUMMARY

Site: [3] Hammond Rd / Yangebup Rd / Cooper Rd (Folder1)
Network: [1] 2025 Existing Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	18	0.0	18	0.0	0.227	8.8	LOS A	0.4	2.9	0.12	0.17	0.12	52.4
2	T1	All MCs	367	6.0	**361**	5.9	0.227	0.5	LOS A	0.4	2.9	0.12	0.17	0.12	58.5
3	R2	All MCs	23	9.0	23	8.9	0.227	9.9	LOS A	0.4	2.9	0.12	0.17	0.12	51.1
Approach			408	5.9	**401**	5.8	0.227	1.4	NA	0.4	2.9	0.12	0.17	0.12	57.8
East: Cooper Rd															
4	L2	All MCs	59	5.0	59	5.0	0.179	12.5	LOS B	0.6	4.3	0.69	1.00	0.69	36.6
5	T1	All MCs	3	0.0	3	0.0	0.179	20.2	LOS C	0.6	4.3	0.69	1.00	0.69	37.0
6	R2	All MCs	12	9.0	12	9.0	0.179	28.2	LOS D	0.6	4.3	0.69	1.00	0.69	43.5
Approach			74	5.4	74	5.4	0.179	15.3	LOS C	0.6	4.3	0.69	1.00	0.69	38.2
North: Hammond Rd															
7	L2	All MCs	9	11.0	9	11.0	0.356	7.2	LOS A	0.2	1.6	0.04	0.05	0.04	52.6
8	T1	All MCs	661	4.0	661	4.0	0.356	0.1	LOS A	0.2	1.6	0.04	0.05	0.04	59.3
9	R2	All MCs	16	7.0	16	7.0	0.356	7.7	LOS A	0.2	1.6	0.04	0.05	0.04	54.3
Approach			686	4.2	686	4.2	0.356	0.4	NA	0.2	1.6	0.04	0.05	0.04	58.9
West: Yangebup Rd															
10	L2	All MCs	19	6.0	19	6.0	0.259	10.5	LOS B	0.9	6.4	0.76	1.04	0.87	35.8
11	T1	All MCs	4	0.0	4	0.0	0.259	21.4	LOS C	0.9	6.4	0.76	1.04	0.87	33.1
12	R2	All MCs	41	3.0	41	3.0	0.259	27.9	LOS D	0.9	6.4	0.76	1.04	0.87	14.3
Approach			64	3.7	64	3.7	0.259	22.3	LOS C	0.9	6.4	0.76	1.04	0.87	25.8
All Vehicles			1233	4.8	**1225**	4.8	0.356	2.8	NA	0.9	6.4	0.14	0.20	0.15	55.1

MOVEMENT SUMMARY

Site: [1] Beeliar Dr / Kemp Rd (Folder1)
Network: [1] 2025 Existing Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Kemp Rd															
1	L2	All MCs	61	0.0	61	0.0	0.234	4.5	LOS A	1.2	8.3	0.57	0.66	0.57	49.9
2	T1	All MCs	1	1.0	1	1.0	0.234	4.1	LOS A	1.2	8.3	0.57	0.66	0.57	35.5
3	R2	All MCs	173	1.0	173	1.0	0.234	9.9	LOS A	1.2	8.3	0.57	0.66	0.57	31.4
Approach			235	0.7	235	0.7	0.234	8.5	LOS A	1.2	8.3	0.57	0.66	0.57	39.4
East: Beeliar Dr															
4	L2	All MCs	61	2.0	61	2.0	0.324	4.7	LOS A	1.5	10.6	0.14	0.41	0.14	51.4
5	T1	All MCs	973	2.0	973	2.0	0.324	4.8	LOS A	1.5	10.6	0.15	0.41	0.15	60.4
6	R2	All MCs	1	1.0	1	1.0	0.324	11.0	LOS B	1.4	10.3	0.15	0.41	0.15	51.2
Approach			1035	2.0	1035	2.0	0.324	4.8	LOS A	1.5	10.6	0.15	0.41	0.15	60.0
North: NS Spine Rd															
7	L2	All MCs	1	1.0	1	1.0	0.004	5.1	LOS A	0.0	0.1	0.64	0.60	0.64	30.2
8	T1	All MCs	1	1.0	1	1.0	0.004	4.7	LOS A	0.0	0.1	0.64	0.60	0.64	36.9
9	R2	All MCs	1	1.0	1	1.0	0.004	10.7	LOS B	0.0	0.1	0.64	0.60	0.64	50.1
Approach			3	1.0	3	1.0	0.004	6.8	LOS A	0.0	0.1	0.64	0.60	0.64	42.2
West: Beeliar Dr															
10	L2	All MCs	1	1.0	1	1.0	0.410	5.0	LOS A	2.4	16.8	0.33	0.43	0.33	54.6
11	T1	All MCs	1154	2.0	1154	2.0	0.410	4.9	LOS A	2.4	16.8	0.34	0.45	0.34	56.2
12	R2	All MCs	74	0.0	74	0.0	0.410	11.4	LOS B	2.3	16.0	0.35	0.48	0.35	54.2
Approach			1228	1.9	1228	1.9	0.410	5.3	LOS A	2.4	16.8	0.34	0.45	0.34	56.0
All Vehicles			2501	1.8	2501	1.8	0.410	5.4	LOS A	2.4	16.8	0.28	0.45	0.28	56.9

MOVEMENT SUMMARY

Site: [2] Beeliar Dr / Hammond Rd (Folder1)
Network: [1] 2025 Existing Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	201	0.0	201	0.0	0.575	7.2	LOS A	10.7	75.1	0.85	1.17	0.85	17.8
2	T1	All MCs	215	0.0	215	0.0	*0.575	35.2	LOS D	10.7	75.1	0.86	1.14	0.86	18.1
3	R2	All MCs	101	0.0	101	0.0	0.382	50.9	LOS D	5.7	40.0	0.94	0.78	0.94	33.5
Approach			517	0.0	517	0.0	0.575	27.4	LOS C	10.7	75.1	0.87	1.08	0.87	21.1
East: Beeliar Dr															
4	L2	All MCs	88	0.0	88	0.0	0.068	7.3	LOS A	0.4	2.8	0.17	0.84	0.17	46.8
5	T1	All MCs	735	2.0	735	2.0	0.606	34.6	LOS C	16.8	119.3	0.91	0.78	0.91	30.6
6	R2	All MCs	104	3.0	104	3.0	0.535	59.0	LOS E	5.5	39.7	0.99	0.78	0.99	22.1
Approach			927	1.9	927	1.9	0.606	34.8	LOS C	16.8	119.3	0.84	0.79	0.84	31.2
North: Hammond Rd															
7	L2	All MCs	149	3.0	149	3.0	0.146	11.5	LOS B	3.0	21.2	0.46	1.31	0.46	35.9
8	T1	All MCs	222	0.0	222	0.0	*0.588	45.9	LOS D	10.4	72.5	0.97	0.80	0.97	32.8
9	R2	All MCs	178	2.0	178	2.0	0.588	51.6	LOS D	9.8	69.7	0.97	0.81	0.97	20.0
Approach			549	1.5	549	1.5	0.588	38.4	LOS D	10.4	72.5	0.83	0.94	0.83	30.2
West: Beeliar Dr															
10	L2	All MCs	186	1.0	186	1.0	0.127	11.7	LOS B	0.5	3.6	0.09	0.75	0.09	38.1
11	T1	All MCs	989	1.0	989	1.0	*0.844	46.5	LOS D	28.2	199.3	1.00	0.96	1.12	34.3
12	R2	All MCs	169	0.0	169	0.0	*0.843	66.4	LOS E	10.0	70.0	1.00	0.94	1.28	25.6
Approach			1345	0.9	1345	0.9	0.844	44.2	LOS D	28.2	199.3	0.87	0.93	1.00	32.0
All Vehicles			3339	1.1	3339	1.1	0.844	38.0	LOS D	28.2	199.3	0.86	0.92	0.91	29.4

MOVEMENT SUMMARY

Site: [3] Hammond Rd / Yangebup Rd / Cooper Rd (Folder1)
Network: [1] 2025 Existing Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	21	0.0	21	0.0	0.220	6.6	LOS A	0.2	1.3	0.06	0.10	0.06	53.4
2	T1	All MCs	389	1.0	389	1.0	0.220	0.1	LOS A	0.2	1.3	0.06	0.10	0.06	59.2
3	R2	All MCs	16	0.0	16	0.0	0.220	7.6	LOS A	0.2	1.3	0.06	0.10	0.06	51.8
Approach			426	0.9	426	0.9	0.220	0.7	NA	0.2	1.3	0.06	0.10	0.06	58.7
East: Cooper Rd															
4	L2	All MCs	44	0.0	44	0.0	0.082	9.7	LOS A	0.3	2.0	0.53	0.93	0.53	39.5
5	T1	All MCs	1	0.0	1	0.0	0.082	14.6	LOS B	0.3	2.0	0.53	0.93	0.53	39.5
6	R2	All MCs	9	0.0	9	0.0	0.082	16.5	LOS C	0.3	2.0	0.53	0.93	0.53	45.9
Approach			55	0.0	55	0.0	0.082	11.0	LOS B	0.3	2.0	0.53	0.93	0.53	41.2
North: Hammond Rd															
7	L2	All MCs	3	0.0	3	0.0	0.242	7.2	LOS A	0.2	1.3	0.05	0.06	0.05	52.8
8	T1	All MCs	451	2.0	451	2.0	0.242	0.1	LOS A	0.2	1.3	0.05	0.06	0.05	59.1
9	R2	All MCs	16	0.0	16	0.0	0.242	7.3	LOS A	0.2	1.3	0.05	0.06	0.05	54.7
Approach			469	1.9	469	1.9	0.242	0.4	NA	0.2	1.3	0.05	0.06	0.05	58.8
West: Yangebup Rd															
10	L2	All MCs	15	7.0	15	7.0	0.079	9.6	LOS A	0.3	1.9	0.60	0.95	0.60	41.2
11	T1	All MCs	1	0.0	1	0.0	0.079	14.3	LOS B	0.3	1.9	0.60	0.95	0.60	37.8
12	R2	All MCs	19	0.0	19	0.0	0.079	17.0	LOS C	0.3	1.9	0.60	0.95	0.60	19.9
Approach			35	3.0	35	3.0	0.079	13.8	LOS B	0.3	1.9	0.60	0.95	0.60	34.3
All Vehicles			985	1.4	985	1.4	0.242	1.6	NA	0.3	2.0	0.10	0.15	0.10	56.8

2028 without development

MOVEMENT SUMMARY

Site: [1] Beeliar Dr / Kemp Rd (Folder1)
Network: [1] 2028 Base - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Kemp Rd															
1	L2	All MCs	185	1.0	185	1.0	0.800	14.9	LOS B	7.6	53.9	1.00	1.11	1.57	42.0
2	T1	All MCs	1	1.0	1	1.0	0.800	14.5	LOS B	7.6	53.9	1.00	1.11	1.57	26.8
3	R2	All MCs	256	1.0	256	1.0	0.800	20.3	LOS C	7.6	53.9	1.00	1.11	1.57	21.8
Approach			442	1.0	442	1.0	0.800	18.0	LOS B	7.6	53.9	1.00	1.11	1.57	33.4
East: Beeliar Dr															
4	L2	All MCs	99	3.0	**97**	3.0	0.489	4.9	LOS A	3.6	26.1	0.25	0.44	0.25	50.3
5	T1	All MCs	1387	5.0	**1367**	5.0	0.489	5.1	LOS A	3.6	26.1	0.26	0.44	0.26	59.3
6	R2	All MCs	1	1.0	1	1.0	0.489	11.3	LOS B	3.3	24.3	0.27	0.44	0.27	50.0
Approach			1487	4.9	**1465**	4.9	0.489	5.1	LOS A	3.6	26.1	0.26	0.44	0.26	58.9
North: NS Spine Rd															
7	L2	All MCs	1	1.0	1	1.0	0.010	7.7	LOS A	0.0	0.3	0.82	0.73	0.82	27.0
8	T1	All MCs	1	1.0	1	1.0	0.010	7.3	LOS A	0.0	0.3	0.82	0.73	0.82	34.2
9	R2	All MCs	1	1.0	1	1.0	0.010	13.2	LOS B	0.0	0.3	0.82	0.73	0.82	47.9
Approach			3	1.0	3	1.0	0.010	9.4	LOS A	0.0	0.3	0.82	0.73	0.82	39.5
West: Beeliar Dr															
10	L2	All MCs	1	1.0	1	1.0	1.170	161.9	LOS F	103.7	757.0	1.00	4.26	7.30	11.6
11	T1	All MCs	1647	5.0	1647	5.0	1.170	162.2	LOS F	103.7	757.0	1.00	4.14	7.23	10.2
12	R2	All MCs	133	0.0	133	0.0	1.170	168.9	LOS F	85.8	622.0	1.00	3.97	7.14	12.1
Approach			1781	4.6	1781	4.6	1.170	162.7	LOS F	103.7	757.0	1.00	4.13	7.23	10.4
All Vehicles			3714	4.3	**3692**	4.3	1.170	82.7	LOS F	103.7	757.0	0.71	2.30	3.78	19.5

MOVEMENT SUMMARY

Site: [2] Beeliar Dr / Hammond Rd (Folder1)
Network: [1] 2028 Base - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	236	2.0	236	2.0	0.885	35.7	LOS D	29.6	209.8	1.00	1.29	1.17	11.0
2	T1	All MCs	181	1.0	181	1.0	*0.885	118.5	LOS F	29.6	209.8	1.00	1.28	1.16	11.1
3	R2	All MCs	135	3.0	135	3.0	0.589	73.4	LOS E	9.8	70.2	0.99	0.80	0.99	27.6
Approach			552	1.9	552	1.9	0.885	72.1	LOS E	29.6	209.8	1.00	1.17	1.08	14.4
East: Beeliar Dr															
4	L2	All MCs	134	3.0	134	3.0	0.112	15.1	LOS B	2.2	15.9	0.40	1.13	0.40	41.0
5	T1	All MCs	1045	4.0	1045	4.0	0.850	65.9	LOS E	38.6	279.4	1.00	0.94	1.07	23.1
6	R2	All MCs	92	7.0	92	7.0	0.383	91.0	LOS F	6.2	46.1	0.96	0.78	0.96	19.3
Approach			1271	4.1	1271	4.1	0.850	62.3	LOS E	38.6	279.4	0.93	0.95	0.99	22.0
North: Hammond Rd															
7	L2	All MCs	226	4.0	226	4.0	0.237	42.1	LOS D	6.3	45.3	0.53	1.31	0.53	31.7
8	T1	All MCs	349	2.0	349	2.0	*1.080	185.9	LOS F	44.8	323.2	1.00	1.40	1.77	15.2
9	R2	All MCs	328	4.0	328	4.0	1.080	179.4	LOS F	44.8	323.2	1.00	1.32	1.72	8.2
Approach			904	3.2	904	3.2	1.080	147.5	LOS F	44.8	323.2	0.88	1.35	1.44	13.5
West: Beeliar Dr															
10	L2	All MCs	257	7.0	**225**	6.9	0.146	32.6	LOS C	1.5	11.0	0.12	0.83	0.12	35.5
11	T1	All MCs	1355	3.0	**1187**	2.9	*1.070	164.3	LOS F	67.6	485.2	1.00	1.45	1.63	15.9
12	R2	All MCs	305	2.0	**268**	2.0	*1.071	179.6	LOS F	29.1	207.4	1.00	1.17	1.73	14.0
Approach			1917	3.4	**1680**	3.3	1.071	149.1	LOS F	67.6	485.2	0.88	1.32	1.44	14.3
All Vehicles			4643	3.4	**4406**	3.6	1.080	114.1	LOS F	67.6	485.2	0.91	1.20	1.27	15.4

MOVEMENT SUMMARY

Site: [3] Hammond Rd / Yangebup Rd / Cooper Rd (Folder1)
Network: [1] 2028 Base - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	19	0.0	**18**	0.0	0.236	9.4	LOS A	0.4	3.2	0.14	0.19	0.14	52.2
2	T1	All MCs	396	6.0	**372**	5.8	0.236	0.6	LOS A	0.4	3.2	0.14	0.19	0.14	58.3
3	R2	All MCs	25	9.0	**24**	8.7	0.236	10.5	LOS B	0.4	3.2	0.14	0.19	0.14	50.9
Approach			440	5.9	**413**	5.7	0.236	1.6	NA	0.4	3.2	0.14	0.19	0.14	57.7
East: Cooper Rd															
4	L2	All MCs	63	5.0	63	5.0	0.217	13.6	LOS B	0.7	5.4	0.73	1.02	0.79	35.4
5	T1	All MCs	3	0.0	3	0.0	0.217	22.8	LOS C	0.7	5.4	0.73	1.02	0.79	36.1
6	R2	All MCs	13	9.0	13	9.0	0.217	32.4	LOS D	0.7	5.4	0.73	1.02	0.79	42.7
Approach			79	5.4	79	5.4	0.217	17.0	LOS C	0.7	5.4	0.73	1.02	0.79	37.2
North: Hammond Rd															
7	L2	All MCs	11	11.0	11	11.0	0.384	7.3	LOS A	0.2	1.8	0.04	0.05	0.04	52.6
8	T1	All MCs	712	4.0	712	4.0	0.384	0.1	LOS A	0.2	1.8	0.04	0.05	0.04	59.3
9	R2	All MCs	17	7.0	17	7.0	0.384	7.8	LOS A	0.2	1.8	0.04	0.05	0.04	54.3
Approach			739	4.2	739	4.2	0.384	0.4	NA	0.2	1.8	0.04	0.05	0.04	58.9
West: Yangebup Rd															
10	L2	All MCs	20	6.0	20	6.0	0.317	11.5	LOS B	1.1	8.0	0.80	1.06	0.98	33.9
11	T1	All MCs	4	0.0	4	0.0	0.317	24.7	LOS C	1.1	8.0	0.80	1.06	0.98	31.5
12	R2	All MCs	44	3.0	44	3.0	0.317	32.4	LOS D	1.1	8.0	0.80	1.06	0.98	12.8
Approach			68	3.7	68	3.7	0.317	25.8	LOS D	1.1	8.0	0.80	1.06	0.98	23.7
All Vehicles			1326	4.8	**1300**	4.9	0.384	3.1	NA	1.1	8.0	0.15	0.21	0.17	54.6

MOVEMENT SUMMARY

Site: [1] Beeliar Dr / Kemp Rd (Folder1)
Network: [1] 2028 Base - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Kemp Rd															
1	L2	All MCs	65	0.0	65	0.0	0.258	4.8	LOS A	1.4	9.6	0.60	0.67	0.60	49.7
2	T1	All MCs	1	1.0	1	1.0	0.258	4.4	LOS A	1.4	9.6	0.60	0.67	0.60	35.3
3	R2	All MCs	186	1.0	186	1.0	0.258	10.2	LOS B	1.4	9.6	0.60	0.67	0.60	31.2
Approach			253	0.7	253	0.7	0.258	8.8	LOS A	1.4	9.6	0.60	0.67	0.60	39.2
East: Beeliar Dr															
4	L2	All MCs	65	2.0	65	2.0	0.350	4.7	LOS A	1.7	12.1	0.15	0.41	0.15	51.3
5	T1	All MCs	1047	2.0	1047	2.0	0.350	4.8	LOS A	1.7	12.1	0.16	0.41	0.16	60.3
6	R2	All MCs	1	1.0	1	1.0	0.350	11.0	LOS B	1.6	11.6	0.16	0.41	0.16	51.1
Approach			1114	2.0	1114	2.0	0.350	4.8	LOS A	1.7	12.1	0.16	0.41	0.16	59.9
North: NS Spine Rd															
7	L2	All MCs	1	1.0	1	1.0	0.005	5.5	LOS A	0.0	0.1	0.66	0.61	0.66	29.7
8	T1	All MCs	1	1.0	1	1.0	0.005	5.0	LOS A	0.0	0.1	0.66	0.61	0.66	36.5
9	R2	All MCs	1	1.0	1	1.0	0.005	11.0	LOS B	0.0	0.1	0.66	0.61	0.66	49.9
Approach			3	1.0	3	1.0	0.005	7.2	LOS A	0.0	0.1	0.66	0.61	0.66	41.9
West: Beeliar Dr															
10	L2	All MCs	1	1.0	1	1.0	0.446	5.1	LOS A	2.7	19.3	0.36	0.43	0.36	54.3
11	T1	All MCs	1242	2.0	1242	2.0	0.446	5.0	LOS A	2.7	19.3	0.37	0.46	0.37	55.9
12	R2	All MCs	79	0.0	79	0.0	0.446	11.4	LOS B	2.6	18.3	0.38	0.48	0.38	54.0
Approach			1322	1.9	1322	1.9	0.446	5.4	LOS A	2.7	19.3	0.37	0.46	0.37	55.7
All Vehicles			2692	1.8	2692	1.8	0.446	5.5	LOS A	2.7	19.3	0.30	0.46	0.30	56.6

MOVEMENT SUMMARY

Site: [2] Beeliar Dr / Hammond Rd (Folder1)
Network: [1] 2028 Base - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	217	0.0	217	0.0	0.649	8.3	LOS A	13.0	91.1	0.91	1.23	0.91	16.0
2	T1	All MCs	232	0.0	232	0.0	*0.649	50.6	LOS D	13.0	91.1	0.91	1.19	0.91	16.5
3	R2	All MCs	108	0.0	108	0.0	0.432	55.4	LOS E	7.1	49.4	0.95	0.79	0.95	32.3
Approach			557	0.0	557	0.0	0.649	35.1	LOS D	13.0	91.1	0.92	1.13	0.92	19.4
East: Beeliar Dr															
4	L2	All MCs	95	0.0	95	0.0	0.068	7.7	LOS A	0.6	4.2	0.20	0.90	0.20	45.9
5	T1	All MCs	792	2.0	792	2.0	0.602	35.4	LOS D	19.2	136.7	0.89	0.77	0.89	30.3
6	R2	All MCs	113	3.0	113	3.0	0.549	62.9	LOS E	6.5	46.4	0.99	0.79	0.99	21.1
Approach			999	1.9	999	1.9	0.602	35.9	LOS D	19.2	136.7	0.84	0.79	0.84	30.7
North: Hammond Rd															
7	L2	All MCs	161	3.0	161	3.0	0.165	13.8	LOS B	3.7	26.3	0.48	1.32	0.48	35.0
8	T1	All MCs	239	0.0	239	0.0	*0.673	52.1	LOS D	12.5	87.4	0.99	0.83	1.01	30.9
9	R2	All MCs	192	2.0	192	2.0	0.673	57.9	LOS E	11.8	84.2	0.99	0.84	1.02	18.5
Approach			592	1.5	592	1.5	0.673	43.6	LOS D	12.5	87.4	0.85	0.97	0.87	28.5
West: Beeliar Dr															
10	L2	All MCs	201	1.0	201	1.0	0.142	16.2	LOS B	1.0	7.3	0.14	0.85	0.14	34.2
11	T1	All MCs	1065	1.0	1065	1.0	*0.861	52.1	LOS D	33.9	239.1	1.00	0.98	1.12	33.1
12	R2	All MCs	182	0.0	182	0.0	*0.860	73.1	LOS E	11.8	82.4	1.00	0.95	1.28	24.4
Approach			1448	0.9	1448	0.9	0.861	49.8	LOS D	33.9	239.1	0.88	0.95	1.00	29.9
All Vehicles			3596	1.1	3596	1.1	0.861	42.6	LOS D	33.9	239.1	0.87	0.94	0.92	27.7

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MOVEMENT SUMMARY

Site: [3] Hammond Rd / Yangebup Rd / Cooper Rd (Folder1)
Network: [1] 2028 Base - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	23	0.0	23	0.0	0.238	6.8	LOS A	0.2	1.5	0.06	0.10	0.06	53.4
2	T1	All MCs	419	1.0	419	1.0	0.238	0.2	LOS A	0.2	1.5	0.06	0.10	0.06	59.2
3	R2	All MCs	17	0.0	17	0.0	0.238	7.8	LOS A	0.2	1.5	0.06	0.10	0.06	51.8
Approach			459	0.9	459	0.9	0.238	0.8	NA	0.2	1.5	0.06	0.10	0.06	58.7
East: Cooper Rd															
4	L2	All MCs	47	0.0	47	0.0	0.095	10.0	LOS A	0.3	2.4	0.56	0.95	0.56	39.1
5	T1	All MCs	1	0.0	1	0.0	0.095	15.8	LOS C	0.3	2.4	0.56	0.95	0.56	39.2
6	R2	All MCs	11	0.0	11	0.0	0.095	17.9	LOS C	0.3	2.4	0.56	0.95	0.56	45.6
Approach			59	0.0	59	0.0	0.095	11.5	LOS B	0.3	2.4	0.56	0.95	0.56	40.8
North: Hammond Rd															
7	L2	All MCs	3	0.0	3	0.0	0.261	7.4	LOS A	0.2	1.5	0.05	0.06	0.05	52.8
8	T1	All MCs	485	2.0	485	2.0	0.261	0.1	LOS A	0.2	1.5	0.05	0.06	0.05	59.1
9	R2	All MCs	17	0.0	17	0.0	0.261	7.5	LOS A	0.2	1.5	0.05	0.06	0.05	54.7
Approach			505	1.9	505	1.9	0.261	0.4	NA	0.2	1.5	0.05	0.06	0.05	58.8
West: Yangebup Rd															
10	L2	All MCs	16	7.0	16	7.0	0.092	9.8	LOS A	0.3	2.2	0.62	0.97	0.62	40.5
11	T1	All MCs	1	0.0	1	0.0	0.092	15.5	LOS C	0.3	2.2	0.62	0.97	0.62	37.2
12	R2	All MCs	20	0.0	20	0.0	0.092	18.5	LOS C	0.3	2.2	0.62	0.97	0.62	19.1
Approach			37	3.0	37	3.0	0.092	14.7	LOS B	0.3	2.2	0.62	0.97	0.62	33.6
All Vehicles			1060	1.4	1060	1.4	0.261	1.7	NA	0.3	2.4	0.10	0.16	0.10	56.8

2028 with development

MOVEMENT SUMMARY

Site: [1] Beeliar Dr / Kemp Rd (Folder1)
Network: [1] 2028 Post Development - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Kemp Rd															
1	L2	All MCs	185	1.0	185	1.0	0.856	19.3	LOS B	9.3	65.6	1.00	1.28	1.83	39.1
2	T1	All MCs	7	1.0	7	1.0	0.856	18.8	LOS B	9.3	65.6	1.00	1.28	1.83	19.2
3	R2	All MCs	256	1.0	256	1.0	0.856	24.6	LOS C	9.3	65.6	1.00	1.28	1.83	19.2
Approach			448	1.0	448	1.0	0.856	22.3	LOS C	9.3	65.6	1.00	1.28	1.83	30.3
East: Beeliar Dr															
4	L2	All MCs	99	3.0	**97**	3.0	0.524	5.2	LOS A	3.5	25.4	0.29	0.47	0.29	50.0
5	T1	All MCs	1348	5.0	**1327**	5.0	0.524	5.4	LOS A	3.5	25.4	0.30	0.49	0.30	58.7
6	R2	All MCs	93	1.0	**91**	1.0	0.524	11.6	LOS B	3.3	23.7	0.31	0.52	0.31	49.8
Approach			1540	4.6	**1516**	4.6	0.524	5.7	LOS A	3.5	25.4	0.30	0.49	0.30	58.0
North: NS Spine Rd															
7	L2	All MCs	145	1.0	145	1.0	0.774	13.9	LOS B	3.7	25.8	0.97	1.09	1.36	19.9
8	T1	All MCs	7	1.0	7	1.0	0.774	13.5	LOS B	3.7	25.8	0.97	1.09	1.36	28.0
9	R2	All MCs	68	1.0	68	1.0	0.774	19.4	LOS B	3.7	25.8	0.97	1.09	1.36	42.4
Approach			221	1.0	221	1.0	0.774	15.6	LOS B	3.7	25.8	0.97	1.09	1.36	31.0
West: Beeliar Dr															
10	L2	All MCs	121	1.0	121	1.0	1.226	212.8	LOS F	130.5	948.9	1.00	5.34	9.96	8.1
11	T1	All MCs	1556	5.0	1556	5.0	1.226	213.1	LOS F	130.5	948.9	1.00	5.15	9.84	8.1
12	R2	All MCs	133	0.0	133	0.0	1.226	219.7	LOS F	101.8	738.1	1.00	4.90	9.66	9.7
Approach			1809	4.4	1809	4.4	1.226	213.6	LOS F	130.5	948.9	1.00	5.15	9.83	8.2
All Vehicles			4019	3.9	**3995**	3.9	1.226	102.3	LOS F	130.5	948.9	0.73	2.72	4.85	16.2

MOVEMENT SUMMARY

Site: [2] Beeliar Dr / Hammond Rd (Folder1)
Network: [1] 2028 Post Development - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	259	2.0	259	2.0	0.914	43.7	LOS D	33.6	238.7	1.00	1.29	1.22	10.5
2	T1	All MCs	181	1.0	181	1.0	*0.914	130.2	LOS F	33.6	238.7	1.00	1.27	1.20	10.7
3	R2	All MCs	135	3.0	135	3.0	0.609	73.6	LOS E	10.1	72.8	1.00	0.81	1.00	27.6
Approach			575	1.9	575	1.9	0.914	77.9	LOS E	33.6	238.7	1.00	1.17	1.11	13.7
East: Beeliar Dr															
4	L2	All MCs	134	3.0	134	3.0	0.112	16.9	LOS B	2.2	15.6	0.40	1.13	0.40	41.0
5	T1	All MCs	1076	4.0	1076	4.0	0.888	73.5	LOS E	42.1	304.8	1.00	1.00	1.12	21.5
6	R2	All MCs	92	7.0	92	7.0	0.367	91.7	LOS F	6.2	45.7	0.95	0.78	0.95	19.5
Approach			1301	4.1	1301	4.1	0.888	69.0	LOS E	42.1	304.8	0.94	1.00	1.03	20.5
North: Hammond Rd															
7	L2	All MCs	226	4.0	226	4.0	0.236	41.7	LOS D	6.2	44.9	0.53	1.31	0.53	31.8
8	T1	All MCs	349	2.0	349	2.0	*1.087	191.4	LOS F	45.2	326.1	1.00	1.41	1.79	14.9
9	R2	All MCs	328	4.0	328	4.0	1.087	185.3	LOS F	45.2	326.1	1.00	1.33	1.75	7.9
Approach			904	3.2	904	3.2	1.087	151.7	LOS F	45.2	326.1	0.88	1.36	1.46	13.3
West: Beeliar Dr															
10	L2	All MCs	257	7.0	**220**	6.8	0.140	32.9	LOS C	1.5	10.9	0.11	0.81	0.11	36.8
11	T1	All MCs	1385	3.0	**1186**	2.9	*1.076	169.0	LOS F	68.0	487.5	1.00	1.47	1.65	15.6
12	R2	All MCs	328	2.0	**281**	1.9	*1.077	184.2	LOS F	31.0	220.7	1.00	1.18	1.75	13.7
Approach			1971	3.4	**1687**	3.2	1.077	153.8	LOS F	68.0	487.5	0.88	1.33	1.47	14.0
All Vehicles			4751	3.4	**4467**	3.6	1.087	118.9	LOS F	68.0	487.5	0.91	1.22	1.30	15.0

MOVEMENT SUMMARY

Site: [3] Hammond Rd / Yangebup Rd / Cooper Rd (Folder1)
Network: [1] 2028 Post Development - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	19	0.0	**18**	0.0	0.234	9.4	LOS A	0.4	3.2	0.14	0.19	0.14	56.4
2	T1	All MCs	396	6.0	**368**	5.7	0.234	0.6	LOS A	0.4	3.2	0.14	0.19	0.14	58.3
3	R2	All MCs	25	9.0	**23**	8.5	0.234	10.5	LOS B	0.4	3.2	0.14	0.19	0.14	50.9
Approach			440	5.9	**409**	5.6	0.234	1.6	NA	0.4	3.2	0.14	0.19	0.14	57.8
East: Cooper Rd															
4	L2	All MCs	63	5.0	63	5.0	0.261	14.1	LOS B	0.9	6.6	0.76	1.04	0.87	34.4
5	T1	All MCs	11	0.0	11	0.0	0.261	24.3	LOS C	0.9	6.6	0.76	1.04	0.87	34.4
6	R2	All MCs	13	9.0	13	9.0	0.261	36.4	LOS E	0.9	6.6	0.76	1.04	0.87	41.9
Approach			86	5.0	86	5.0	0.261	18.6	LOS C	0.9	6.6	0.76	1.04	0.87	36.0
North: Hammond Rd															
7	L2	All MCs	11	11.0	11	11.0	0.405	7.6	LOS A	0.5	4.0	0.09	0.10	0.09	52.4
8	T1	All MCs	712	4.0	712	4.0	0.405	0.2	LOS A	0.5	4.0	0.09	0.10	0.09	58.6
9	R2	All MCs	41	7.0	41	7.0	0.405	7.8	LOS A	0.5	4.0	0.09	0.10	0.09	58.6
Approach			763	4.3	763	4.3	0.405	0.7	NA	0.5	4.0	0.09	0.10	0.09	58.4
West: Yangebup Rd															
10	L2	All MCs	44	6.0	44	6.0	0.396	12.2	LOS B	1.6	11.4	0.79	1.09	1.07	34.6
11	T1	All MCs	12	0.0	12	0.0	0.396	27.2	LOS D	1.6	11.4	0.79	1.09	1.07	32.1
12	R2	All MCs	44	3.0	44	3.0	0.396	36.3	LOS E	1.6	11.4	0.79	1.09	1.07	13.3
Approach			100	4.0	100	4.0	0.396	24.6	LOS C	1.6	11.4	0.79	1.09	1.07	28.3
All Vehicles			1389	4.8	**1358**	4.9	0.405	3.9	NA	1.6	11.4	0.20	0.26	0.22	53.5

MOVEMENT SUMMARY

Site: [4] Shopping Centre Roundabout (Folder1)
Network: [1] 2028 Post Development - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: NS Link Rd															
1	L2	All MCs	111	1.0	**99**	1.0	0.077	4.2	LOS A	0.4	2.7	0.13	0.49	0.13	31.9
2	T1	All MCs	1	1.0	1	1.0	0.077	3.9	LOS A	0.4	2.7	0.13	0.49	0.13	31.6
3	R2	All MCs	1	1.0	1	1.0	0.077	6.8	LOS A	0.4	2.7	0.13	0.49	0.13	31.4
Approach			113	1.0	**101**	1.0	0.077	4.3	LOS A	0.4	2.7	0.13	0.49	0.13	31.9
East: East LSP															
4	L2	All MCs	1	1.0	1	1.0	0.017	4.6	LOS A	0.1	0.5	0.38	0.49	0.38	25.2
5	T1	All MCs	15	1.0	15	1.0	0.017	4.3	LOS A	0.1	0.5	0.38	0.49	0.38	24.3
6	R2	All MCs	1	1.0	1	1.0	0.017	7.1	LOS A	0.1	0.5	0.38	0.49	0.38	25.2
Approach			17	1.0	17	1.0	0.017	4.5	LOS A	0.1	0.5	0.38	0.49	0.38	24.3
North: NS Link RD															
7	L2	All MCs	1	1.0	1	1.0	0.017	5.0	LOS A	0.1	0.6	0.38	0.60	0.38	21.8
8	T1	All MCs	1	1.0	1	1.0	0.017	4.6	LOS A	0.1	0.6	0.38	0.60	0.38	22.4
9	R2	All MCs	16	1.0	16	1.0	0.017	7.6	LOS A	0.1	0.6	0.38	0.60	0.38	21.4
Approach			18	1.0	18	1.0	0.017	7.3	LOS A	0.1	0.6	0.38	0.60	0.38	21.5
West: Shopping Centre Access															
10	L2	All MCs	16	1.0	16	1.0	0.156	3.4	LOS A	0.8	5.8	0.03	0.62	0.03	24.0
11	T1	All MCs	15	1.0	15	1.0	0.156	3.1	LOS A	0.8	5.8	0.03	0.62	0.03	23.8
12	R2	All MCs	221	1.0	221	1.0	0.156	5.9	LOS A	0.8	5.8	0.03	0.62	0.03	24.0
Approach			252	1.0	252	1.0	0.156	5.6	LOS A	0.8	5.8	0.03	0.62	0.03	23.9
All Vehicles			399	1.0	**387**	1.0	0.156	5.3	LOS A	0.8	5.8	0.09	0.58	0.09	26.5

MOVEMENT SUMMARY

Site: [5] Yangebup Rd / NS Link Rd (Folder1)
Network: [1] 2028 Post Development - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: NS Link Rd															
1	L2	All MCs	1	1.0	1	1.0	0.015	4.4	LOS A	0.0	0.3	0.20	0.52	0.20	36.0
3	R2	All MCs	16	1.0	16	1.0	0.015	4.8	LOS A	0.0	0.3	0.20	0.52	0.20	25.2
Approach			17	1.0	17	1.0	0.015	4.8	LOS A	0.0	0.3	0.20	0.52	0.20	26.7
East: Yangebup Rd															
4	L2	All MCs	16	1.0	**15**	1.0	0.037	4.6	LOS A	0.0	0.0	0.00	0.12	0.00	44.3
5	T1	All MCs	55	3.0	**54**	3.1	0.037	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	47.6
Approach			71	2.6	**69**	2.6	0.037	1.0	NA	0.0	0.0	0.00	0.12	0.00	47.2
West: Yangebup Rd															
11	T1	All MCs	84	3.0	84	3.0	0.043	0.0	LOS A	0.0	0.0	0.01	0.01	0.01	49.7
12	R2	All MCs	1	1.0	1	1.0	0.043	4.6	LOS A	0.0	0.0	0.01	0.01	0.01	49.7
Approach			85	3.0	85	3.0	0.043	0.1	NA	0.0	0.0	0.01	0.01	0.01	49.7
All Vehicles			173	2.6	**171**	2.6	0.043	0.9	NA	0.0	0.3	0.02	0.10	0.02	46.9

MOVEMENT SUMMARY

Site: [1] Beeliar Dr / Kemp Rd (Folder1)
Network: [1] 2028 Post Development - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Kemp Rd															
1	L2	All MCs	65	0.0	65	0.0	0.285	5.2	LOS A	1.6	10.9	0.66	0.70	0.66	49.4
2	T1	All MCs	8	1.0	8	1.0	0.285	4.8	LOS A	1.6	10.9	0.66	0.70	0.66	30.8
3	R2	All MCs	186	1.0	186	1.0	0.285	10.6	LOS B	1.6	10.9	0.66	0.70	0.66	30.8
Approach			260	0.7	260	0.7	0.285	9.0	LOS A	1.6	10.9	0.66	0.70	0.66	38.6
East: Beeliar Dr															
4	L2	All MCs	65	2.0	65	2.0	0.391	5.0	LOS A	2.0	14.4	0.23	0.45	0.23	50.5
5	T1	All MCs	1004	2.0	1004	2.0	0.391	5.1	LOS A	2.0	14.4	0.24	0.47	0.24	59.2
6	R2	All MCs	102	1.0	102	1.0	0.391	11.4	LOS B	1.9	13.6	0.25	0.51	0.25	50.1
Approach			1172	1.9	1172	1.9	0.391	5.7	LOS A	2.0	14.4	0.24	0.48	0.24	58.4
North: NS Spine Rd															
7	L2	All MCs	161	1.0	161	1.0	0.380	7.0	LOS A	2.0	14.0	0.77	0.85	0.86	27.1
8	T1	All MCs	8	1.0	8	1.0	0.380	6.5	LOS A	2.0	14.0	0.77	0.85	0.86	34.6
9	R2	All MCs	77	1.0	77	1.0	0.380	12.5	LOS B	2.0	14.0	0.77	0.85	0.86	48.6
Approach			246	1.0	246	1.0	0.380	8.7	LOS A	2.0	14.0	0.77	0.85	0.86	38.6
West: Beeliar Dr															
10	L2	All MCs	136	1.0	136	1.0	0.482	5.5	LOS A	3.3	23.2	0.47	0.49	0.47	55.3
11	T1	All MCs	1140	2.0	1140	2.0	0.482	5.5	LOS A	3.3	23.2	0.48	0.51	0.48	54.8
12	R2	All MCs	79	0.0	79	0.0	0.482	12.0	LOS B	3.1	21.7	0.49	0.53	0.49	53.2
Approach			1355	1.8	1355	1.8	0.482	5.9	LOS A	3.3	23.2	0.48	0.51	0.48	54.7
All Vehicles			3033	1.7	3033	1.7	0.482	6.3	LOS A	3.3	23.2	0.43	0.54	0.43	54.5

MOVEMENT SUMMARY

Site: [2] Beeliar Dr / Hammond Rd (Folder1)
Network: [1] 2028 Post Development - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 130.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	242	0.0	242	0.0	0.666	8.8	LOS A	15.1	105.4	0.91	1.24	0.91	15.7
2	T1	All MCs	232	0.0	232	0.0	*0.666	55.5	LOS E	15.1	105.4	0.92	1.18	0.92	16.2
3	R2	All MCs	108	0.0	108	0.0	0.443	59.3	LOS E	7.9	55.4	0.95	0.79	0.95	31.3
Approach			582	0.0	582	0.0	0.666	36.8	LOS D	15.1	105.4	0.92	1.13	0.92	18.8
East: Beeliar Dr															
4	L2	All MCs	95	0.0	95	0.0	0.063	7.9	LOS A	0.6	4.3	0.22	0.91	0.22	45.7
5	T1	All MCs	825	2.0	825	2.0	0.611	38.6	LOS D	21.7	154.5	0.89	0.77	0.89	29.4
6	R2	All MCs	113	3.0	113	3.0	0.493	67.9	LOS E	6.8	49.1	0.98	0.79	0.98	20.5
Approach			1033	1.9	1033	1.9	0.611	39.0	LOS D	21.7	154.5	0.83	0.79	0.83	29.3
North: Hammond Rd															
7	L2	All MCs	161	3.0	161	3.0	0.168	15.6	LOS B	4.0	29.0	0.49	1.33	0.49	34.4
8	T1	All MCs	239	0.0	239	0.0	*0.714	58.2	LOS E	13.8	96.5	1.00	0.86	1.04	29.2
9	R2	All MCs	192	2.0	192	2.0	0.714	64.1	LOS E	13.1	92.9	1.00	0.86	1.05	17.2
Approach			592	1.5	592	1.5	0.714	48.5	LOS D	13.8	96.5	0.86	0.99	0.90	27.2
West: Beeliar Dr															
10	L2	All MCs	201	1.0	201	1.0	0.141	20.4	LOS C	1.0	7.3	0.13	0.82	0.13	35.3
11	T1	All MCs	1099	1.0	1099	1.0	*0.880	61.0	LOS E	38.4	271.0	1.00	1.00	1.13	31.4
12	R2	All MCs	207	0.0	207	0.0	*0.880	82.4	LOS F	14.6	102.4	1.00	0.96	1.28	23.3
Approach			1507	0.9	1507	0.9	0.880	58.5	LOS E	38.4	271.0	0.88	0.97	1.02	27.4
All Vehicles			3714	1.1	3714	1.1	0.880	48.1	LOS D	38.4	271.0	0.87	0.95	0.93	26.0

MOVEMENT SUMMARY

Site: [3] Hammond Rd / Yangebup Rd / Cooper Rd (Folder1)
Network: [1] 2028 Post Development - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Queued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	23	0.0	23	0.0	0.238	6.8	LOS A	0.2	1.5	0.06	0.10	0.06	58.2
2	T1	All MCs	419	1.0	419	1.0	0.238	0.2	LOS A	0.2	1.5	0.06	0.10	0.06	59.2
3	R2	All MCs	17	0.0	17	0.0	0.238	7.8	LOS A	0.2	1.5	0.06	0.10	0.06	51.8
Approach			459	0.9	459	0.9	0.238	0.8	NA	0.2	1.5	0.06	0.10	0.06	58.8
East: Cooper Rd															
4	L2	All MCs	47	0.0	47	0.0	0.123	10.0	LOS B	0.4	3.0	0.59	0.97	0.59	38.4
5	T1	All MCs	9	0.0	9	0.0	0.123	16.4	LOS C	0.4	3.0	0.59	0.97	0.59	38.4
6	R2	All MCs	11	0.0	11	0.0	0.123	19.5	LOS C	0.4	3.0	0.59	0.97	0.59	45.1
Approach			67	0.0	67	0.0	0.123	12.4	LOS B	0.4	3.0	0.59	0.97	0.59	40.0
North: Hammond Rd															
7	L2	All MCs	3	0.0	3	0.0	0.282	7.5	LOS A	0.5	3.5	0.12	0.13	0.12	52.4
8	T1	All MCs	485	2.0	485	2.0	0.282	0.3	LOS A	0.5	3.5	0.12	0.13	0.12	58.1
9	R2	All MCs	42	0.0	42	0.0	0.282	7.6	LOS A	0.5	3.5	0.12	0.13	0.12	58.1
Approach			531	1.8	531	1.8	0.282	0.9	NA	0.5	3.5	0.12	0.13	0.12	58.0
West: Yangebup Rd															
10	L2	All MCs	41	7.0	41	7.0	0.149	9.9	LOS A	0.5	3.8	0.62	0.95	0.62	41.4
11	T1	All MCs	9	0.0	9	0.0	0.149	16.4	LOS C	0.5	3.8	0.62	0.95	0.62	37.9
12	R2	All MCs	20	0.0	20	0.0	0.149	20.0	LOS C	0.5	3.8	0.62	0.95	0.62	20.1
Approach			71	4.1	71	4.1	0.149	13.7	LOS B	0.5	3.8	0.62	0.95	0.62	38.0
All Vehicles			1127	1.5	1127	1.5	0.282	2.3	NA	0.5	3.8	0.15	0.22	0.15	55.8

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Version: 1, Version Date: 23/02/2026

MOVEMENT SUMMARY

Site: [4] Shopping Centre Roundabout - Import (Folder1)
Network: [1] 2028 Post Development - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: NS Link Rd															
1	L2	All MCs	123	1.0	123	1.0	0.096	4.3	LOS A	0.5	3.5	0.15	0.49	0.15	31.9
2	T1	All MCs	1	1.0	1	1.0	0.096	3.9	LOS A	0.5	3.5	0.15	0.49	0.15	31.5
3	R2	All MCs	1	1.0	1	1.0	0.096	6.8	LOS A	0.5	3.5	0.15	0.49	0.15	31.3
Approach			125	1.0	125	1.0	0.096	4.3	LOS A	0.5	3.5	0.15	0.49	0.15	31.8
East: East LSP															
4	L2	All MCs	1	1.0	1	1.0	0.020	4.8	LOS A	0.1	0.7	0.40	0.50	0.40	25.0
5	T1	All MCs	18	1.0	18	1.0	0.020	4.4	LOS A	0.1	0.7	0.40	0.50	0.40	24.2
6	R2	All MCs	1	1.0	1	1.0	0.020	7.3	LOS A	0.1	0.7	0.40	0.50	0.40	25.0
Approach			20	1.0	20	1.0	0.020	4.6	LOS A	0.1	0.7	0.40	0.50	0.40	24.2
North: NS Link RD															
7	L2	All MCs	1	1.0	1	1.0	0.019	5.2	LOS A	0.1	0.6	0.40	0.61	0.40	21.6
8	T1	All MCs	1	1.0	1	1.0	0.019	4.8	LOS A	0.1	0.6	0.40	0.61	0.40	22.1
9	R2	All MCs	17	1.0	17	1.0	0.019	7.8	LOS A	0.1	0.6	0.40	0.61	0.40	21.3
Approach			19	1.0	19	1.0	0.019	7.5	LOS A	0.1	0.6	0.40	0.61	0.40	21.3
West: Shopping Centre Access															
10	L2	All MCs	17	1.0	17	1.0	0.174	3.4	LOS A	0.9	6.6	0.03	0.62	0.03	24.0
11	T1	All MCs	18	1.0	18	1.0	0.174	3.1	LOS A	0.9	6.6	0.03	0.62	0.03	23.8
12	R2	All MCs	246	1.0	246	1.0	0.174	5.9	LOS A	0.9	6.6	0.03	0.62	0.03	24.0
Approach			281	1.0	281	1.0	0.174	5.6	LOS A	0.9	6.6	0.03	0.62	0.03	23.9
All Vehicles			445	1.0	445	1.0	0.174	5.2	LOS A	0.9	6.6	0.10	0.58	0.10	26.7

MOVEMENT SUMMARY

Site: [5] Yangebup Rd / NS Link Rd - Import (Folder1)
Network: [1] 2028 Post Development - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: NS Link Rd															
1	L2	All MCs	1	1.0	1	1.0	0.015	4.4	LOS A	0.0	0.3	0.19	0.52	0.19	36.1
3	R2	All MCs	17	1.0	17	1.0	0.015	4.7	LOS A	0.0	0.3	0.19	0.52	0.19	25.4
Approach			18	1.0	18	1.0	0.015	4.7	LOS A	0.0	0.3	0.19	0.52	0.19	26.8
East: Yangebup Rd															
4	L2	All MCs	17	1.0	17	1.0	0.039	4.6	LOS A	0.0	0.0	0.00	0.12	0.00	44.4
5	T1	All MCs	58	0.0	58	0.0	0.039	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	47.6
Approach			75	0.2	75	0.2	0.039	1.0	NA	0.0	0.0	0.00	0.12	0.00	47.3
West: Yangebup Rd															
11	T1	All MCs	54	3.0	54	3.0	0.028	0.0	LOS A	0.0	0.0	0.01	0.01	0.01	49.5
12	R2	All MCs	1	1.0	1	1.0	0.028	4.6	LOS A	0.0	0.0	0.01	0.01	0.01	49.5
Approach			55	3.0	55	3.0	0.028	0.1	NA	0.0	0.0	0.01	0.01	0.01	49.5
All Vehicles			147	1.3	147	1.3	0.039	1.1	NA	0.0	0.3	0.03	0.13	0.03	46.3

2038 without development

MOVEMENT SUMMARY

Site: [1] Beeliar Dr / Kemp Rd (Folder1)
Network: [1] 2038 Base - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Kemp Rd															
1	L2	All MCs	237	1.0	237	1.0	1.072	96.7	LOS F	40.8	287.8	1.00	3.28	5.61	17.7
2	T1	All MCs	1	1.0	1	1.0	1.072	96.2	LOS F	40.8	287.8	1.00	3.28	5.61	8.7
3	R2	All MCs	328	1.0	328	1.0	1.072	102.0	LOS F	40.8	287.8	1.00	3.28	5.61	6.1
Approach			566	1.0	566	1.0	1.072	99.8	LOS F	40.8	287.8	1.00	3.28	5.61	11.6
East: Beeliar Dr															
4	L2	All MCs	126	3.0	**104**	3.1	0.519	4.9	LOS A	4.0	29.4	0.25	0.43	0.25	50.3
5	T1	All MCs	1776	5.0	**1462**	5.2	0.519	5.1	LOS A	4.0	29.4	0.26	0.44	0.26	59.3
6	R2	All MCs	1	1.0	1	1.0	0.519	11.2	LOS B	3.7	27.3	0.27	0.44	0.27	50.0
Approach			1903	4.9	**1567**	5.0	0.519	5.0	LOS A	4.0	29.4	0.26	0.44	0.26	58.9
North: NS Spine Rd															
7	L2	All MCs	1	1.0	1	1.0	0.010	7.4	LOS A	0.0	0.3	0.82	0.72	0.82	27.3
8	T1	All MCs	1	1.0	1	1.0	0.010	7.0	LOS A	0.0	0.3	0.82	0.72	0.82	34.5
9	R2	All MCs	1	1.0	1	1.0	0.010	12.9	LOS B	0.0	0.3	0.82	0.72	0.82	48.2
Approach			3	1.0	3	1.0	0.010	9.1	LOS A	0.0	0.3	0.82	0.72	0.82	39.8
West: Beeliar Dr															
10	L2	All MCs	1	1.0	1	1.0	1.632	576.7	LOS F	305.3	2228.7	1.00	9.97	19.29	3.9
11	T1	All MCs	2108	5.0	2108	5.0	1.632	576.9	LOS F	305.3	2228.7	1.00	9.60	19.04	3.5
12	R2	All MCs	169	0.0	169	0.0	1.632	583.5	LOS F	264.9	1921.4	1.00	9.10	18.69	4.3
Approach			2279	4.6	2279	4.6	1.632	577.4	LOS F	305.3	2228.7	1.00	9.56	19.01	3.5
All Vehicles			4752	4.3	**4415**	4.6	1.632	312.6	LOS F	305.3	2228.7	0.74	5.51	10.62	6.9

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Version: 1, Version Date: 23/02/2026

MOVEMENT SUMMARY

Site: [2] Beeliar Dr / Hammond Rd (Folder1)
Network: [1] 2038 Base - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	302	2.0	302	2.0	1.143	168.6	LOS F	64.2	455.8	1.00	1.46	1.94	6.6
2	T1	All MCs	233	1.0	233	1.0	*1.143	205.8	LOS F	64.2	455.8	1.00	1.42	1.88	6.9
3	R2	All MCs	173	3.0	173	3.0	0.761	76.9	LOS E	13.9	99.5	1.00	0.88	1.09	26.9
Approach			707	1.9	707	1.9	1.143	158.5	LOS F	64.2	455.8	1.00	1.31	1.48	9.5
East: Beeliar Dr															
4	L2	All MCs	172	3.0	172	3.0	0.150	33.3	LOS C	3.6	25.5	0.44	1.16	0.44	40.0
5	T1	All MCs	1338	4.0	1338	4.0	*1.227	297.6	LOS F	96.9	701.7	1.00	1.89	2.21	7.0
6	R2	All MCs	118	7.0	118	7.0	0.586	108.6	LOS F	8.4	62.4	1.00	0.80	1.00	18.3
Approach			1627	4.1	1627	4.1	1.227	256.1	LOS F	96.9	701.7	0.94	1.73	1.94	7.9
North: Hammond Rd															
7	L2	All MCs	291	4.0	**290**	4.0	0.296	38.4	LOS D	7.7	55.8	0.54	1.30	0.54	31.0
8	T1	All MCs	447	2.0	447	2.0	*1.241	316.1	LOS F	77.1	556.4	1.00	1.76	2.32	10.7
9	R2	All MCs	421	4.0	421	4.0	1.241	317.9	LOS F	77.1	556.4	1.00	1.66	2.28	5.4
Approach			1159	3.2	**1158**	3.2	1.241	247.1	LOS F	77.1	556.4	0.88	1.61	1.86	9.8
West: Beeliar Dr															
10	L2	All MCs	329	7.0	**218**	6.6	0.145	33.9	LOS C	1.7	12.6	0.16	0.92	0.16	32.3
11	T1	All MCs	1734	3.0	**1148**	2.8	1.121	206.3	LOS F	71.5[N8]	512.7[N8]	1.00	1.58	1.83	13.4
12	R2	All MCs	391	2.0	**259**	1.9	*1.229	311.6	LOS F	36.6	260.6	1.00	1.38	2.29	9.5
Approach			2454	3.4	**1625**	3.2	1.229	200.0	LOS F	71.5[N8]	512.7[N8]	0.89	1.46	1.68	11.7
All Vehicles			5947	3.4	**5117**	3.9	1.241	222.8	LOS F	96.9[N8]	701.7[N8]	0.92	1.56	1.81	9.7

MOVEMENT SUMMARY

Site: [3] Hammond Rd / Yangebup Rd / Cooper Rd (Folder1)
Network: [1] 2038 Base - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	24	0.0	**19**	0.0	0.273	12.6	LOS B	0.7	5.2	0.19	0.23	0.19	50.8
2	T1	All MCs	506	6.0	**402**	5.5	0.273	1.4	LOS A	0.7	5.2	0.19	0.23	0.19	57.3
3	R2	All MCs	32	9.0	**25**	8.3	0.273	14.0	LOS B	0.7	5.2	0.19	0.23	0.19	50.2
Approach			562	5.9	**447**	5.5	0.273	2.5	NA	0.7	5.2	0.19	0.23	0.19	56.7
East: Cooper Rd															
4	L2	All MCs	81	5.0	81	5.0	0.685	24.9	LOS C	1.8	13.2	0.93	1.16	1.47	27.6
5	T1	All MCs	4	0.0	4	0.0	0.685	44.3	LOS E	1.8	13.2	0.93	1.16	1.47	29.0
6	R2	All MCs	16	9.0	16	9.0	0.685	67.0	LOS F	1.8	13.2	0.93	1.16	1.47	36.4
Approach			101	5.4	101	5.4	0.685	32.2	LOS D	1.8	13.2	0.93	1.16	1.47	29.6
North: Hammond Rd															
7	L2	All MCs	13	11.0	13	11.0	0.749	8.7	LOS A	1.1	8.0	0.06	0.07	0.12	52.3
8	T1	All MCs	912	4.0	912	4.0	0.749	0.5	LOS A	1.1	8.0	0.06	0.07	0.12	58.5
9	R2	All MCs	22	7.0	22	7.0	0.749	9.5	LOS A	1.1	8.0	0.06	0.07	0.12	53.8
Approach			946	4.2	946	4.2	0.749	0.8	NA	1.1	8.0	0.06	0.07	0.12	58.2
West: Yangebup Rd															
10	L2	All MCs	26	6.0	26	6.0	1.016	83.3	LOS F	5.9	42.5	1.00	1.85	3.63	14.5
11	T1	All MCs	6	0.0	6	0.0	1.016	112.6	LOS F	5.9	42.5	1.00	1.85	3.63	14.0
12	R2	All MCs	57	3.0	57	3.0	1.016	130.3	LOS F	5.9	42.5	1.00	1.85	3.63	3.4
Approach			89	3.7	89	3.7	1.016	115.2	LOS F	5.9	42.5	1.00	1.85	3.63	8.1
All Vehicles			1699	4.8	**1584**	5.1	1.016	9.7	NA	5.9	42.5	0.20	0.29	0.42	47.0

MOVEMENT SUMMARY

Site: [1] Beeliar Dr / Kemp Rd (Folder1)
Network: [1] 2038 Base - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Kemp Rd															
1	L2	All MCs	84	0.0	84	0.0	0.619	9.3	LOS A	3.7	25.9	0.92	0.86	1.16	45.7
2	T1	All MCs	1	1.0	1	1.0	0.619	8.9	LOS A	3.7	25.9	0.92	0.86	1.16	30.9
3	R2	All MCs	238	1.0	238	1.0	0.619	14.7	LOS B	3.7	25.9	0.92	0.86	1.16	26.2
Approach			323	0.7	323	0.7	0.619	13.3	LOS B	3.7	25.9	0.92	0.86	1.16	34.3
East: Beeliar Dr															
4	L2	All MCs	84	2.0	84	2.0	0.462	4.8	LOS A	3.3	23.5	0.23	0.43	0.23	50.5
5	T1	All MCs	1341	2.0	1341	2.0	0.462	4.9	LOS A	3.3	23.5	0.24	0.43	0.24	59.7
6	R2	All MCs	1	1.0	1	1.0	0.462	11.2	LOS B	3.1	21.9	0.25	0.43	0.25	50.2
Approach			1426	2.0	1426	2.0	0.462	4.9	LOS A	3.3	23.5	0.24	0.43	0.24	59.3
North: NS Spine Rd															
7	L2	All MCs	1	1.0	1	1.0	0.010	7.9	LOS A	0.0	0.3	0.83	0.73	0.83	26.8
8	T1	All MCs	1	1.0	1	1.0	0.010	7.4	LOS A	0.0	0.3	0.83	0.73	0.83	34.0
9	R2	All MCs	1	1.0	1	1.0	0.010	13.4	LOS B	0.0	0.3	0.83	0.73	0.83	47.8
Approach			3	1.0	3	1.0	0.010	9.6	LOS A	0.0	0.3	0.83	0.73	0.83	39.3
West: Beeliar Dr															
10	L2	All MCs	1	1.0	1	1.0	1.047	54.5	LOS E	47.3	337.0	1.00	2.14	3.15	24.7
11	T1	All MCs	1591	2.0	1591	2.0	1.047	54.9	LOS E	47.3	337.0	1.00	2.11	3.15	22.7
12	R2	All MCs	101	0.0	101	0.0	1.047	62.0	LOS E	38.1	270.4	1.00	2.06	3.15	25.3
Approach			1693	1.9	1693	1.9	1.047	55.3	LOS E	47.3	337.0	1.00	2.10	3.15	22.9
All Vehicles			3445	1.8	3445	1.8	1.047	30.5	LOS C	47.3	337.0	0.68	1.29	1.76	34.7

MOVEMENT SUMMARY

Site: [2] Beeliar Dr / Hammond Rd (Folder1)
Network: [1] 2038 Base - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 130.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	277	0.0	277	0.0	0.905	33.4	LOS C	33.3	233.0	1.00	1.32	1.20	11.6
2	T1	All MCs	296	0.0	296	0.0	*0.905	91.4	LOS F	33.3	233.0	1.00	1.24	1.16	12.5
3	R2	All MCs	139	0.0	139	0.0	0.603	60.8	LOS E	11.2	78.5	0.98	0.81	0.98	31.0
Approach			712	0.0	712	0.0	0.905	62.9	LOS E	33.3	233.0	0.99	1.19	1.09	15.0
East: Beeliar Dr															
4	L2	All MCs	122	0.0	122	0.0	0.086	8.7	LOS A	1.1	7.4	0.27	0.98	0.27	44.6
5	T1	All MCs	1013	2.0	1013	2.0	0.746	43.4	LOS D	28.9	205.7	0.94	0.83	0.94	28.7
6	R2	All MCs	143	3.0	143	3.0	0.694	78.8	LOS E	9.2	65.9	1.00	0.84	1.07	19.6
Approach			1278	1.9	1278	1.9	0.746	44.0	LOS D	28.9	205.7	0.88	0.85	0.89	27.3
North: Hammond Rd															
7	L2	All MCs	206	3.0	206	3.0	0.236	37.6	LOS D	5.3	38.3	0.56	1.30	0.56	31.5
8	T1	All MCs	306	0.0	306	0.0	0.920	91.6	LOS F	20.7	144.6	1.00	1.07	1.32	25.7
9	R2	All MCs	245	2.0	245	2.0	*0.920	80.5	LOS F	19.9	141.5	1.00	1.04	1.33	14.6
Approach			758	1.5	758	1.5	0.920	73.3	LOS E	20.7	144.6	0.88	1.13	1.11	21.5
West: Beeliar Dr															
10	L2	All MCs	257	1.0	**247**	1.0	0.165	27.2	LOS C	2.1	15.1	0.21	1.01	0.21	29.7
11	T1	All MCs	1364	1.0	**1312**	1.0	*1.058	141.9	LOS F	67.5	476.7	1.00	1.47	1.66	17.6
12	R2	All MCs	234	0.0	**225**	0.0	*1.056	155.8	LOS F	21.5	150.7	1.00	1.18	1.80	15.4
Approach			1855	0.9	**1784**	0.9	1.058	127.8	LOS F	67.5	476.7	0.89	1.37	1.48	16.0
All Vehicles			4602	1.1	**4531**	1.1	1.058	84.8	LOS F	67.5	476.7	0.90	1.15	1.20	18.5

MOVEMENT SUMMARY

Site: [3] Hammond Rd / Yangebup Rd / Cooper Rd (Folder1)
Network: [1] 2038 Base - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	29	0.0	29	0.0	0.305	7.6	LOS A	0.3	2.4	0.08	0.12	0.08	53.1
2	T1	All MCs	537	1.0	**529**	1.0	0.305	0.3	LOS A	0.3	2.4	0.08	0.12	0.08	59.0
3	R2	All MCs	22	0.0	22	0.0	0.305	8.9	LOS A	0.3	2.4	0.08	0.12	0.08	51.6
Approach			588	0.9	**580**	0.9	0.305	1.0	NA	0.3	2.4	0.08	0.12	0.08	58.5
East: Cooper Rd															
4	L2	All MCs	61	0.0	61	0.0	0.161	11.3	LOS B	0.6	3.9	0.65	1.00	0.65	37.4
5	T1	All MCs	1	0.0	1	0.0	0.161	22.2	LOS C	0.6	3.9	0.65	1.00	0.65	37.7
6	R2	All MCs	13	0.0	13	0.0	0.161	25.9	LOS D	0.6	3.9	0.65	1.00	0.65	44.4
Approach			75	0.0	75	0.0	0.161	13.9	LOS B	0.6	3.9	0.65	1.00	0.65	39.1
North: Hammond Rd															
7	L2	All MCs	4	0.0	4	0.0	0.337	8.3	LOS A	0.3	2.3	0.06	0.08	0.06	52.7
8	T1	All MCs	621	2.0	621	2.0	0.337	0.2	LOS A	0.3	2.3	0.06	0.08	0.06	59.0
9	R2	All MCs	22	0.0	22	0.0	0.337	8.4	LOS A	0.3	2.3	0.06	0.08	0.06	54.6
Approach			647	1.9	647	1.9	0.337	0.5	NA	0.3	2.3	0.06	0.08	0.06	58.7
West: Yangebup Rd															
10	L2	All MCs	20	7.0	20	7.0	0.179	10.8	LOS B	0.6	4.2	0.75	1.01	0.76	37.0
11	T1	All MCs	1	0.0	1	0.0	0.179	21.8	LOS C	0.6	4.2	0.75	1.01	0.76	34.2
12	R2	All MCs	26	0.0	26	0.0	0.179	27.2	LOS D	0.6	4.2	0.75	1.01	0.76	15.4
Approach			47	3.0	47	3.0	0.179	20.2	LOS C	0.6	4.2	0.75	1.01	0.76	29.2
All Vehicles			1358	1.4	**1350**	1.4	0.337	2.1	NA	0.6	4.2	0.13	0.18	0.13	56.2

2038 with development

MOVEMENT SUMMARY

Site: [1] Beeliar Dr / Kemp Rd (Folder1)
Network: [1] 2038 Post Development - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Kemp Rd															
1	L2	All MCs	237	1.0	237	1.0	1.130	141.3	LOS F	54.2	382.3	1.00	4.18	7.61	13.4
2	T1	All MCs	7	1.0	7	1.0	1.130	140.9	LOS F	54.2	382.3	1.00	4.18	7.61	4.4
3	R2	All MCs	328	1.0	328	1.0	1.130	146.6	LOS F	54.2	382.3	1.00	4.18	7.61	4.4
Approach			573	1.0	573	1.0	1.130	144.4	LOS F	54.2	382.3	1.00	4.18	7.61	8.5
East: Beeliar Dr															
4	L2	All MCs	126	3.0	**103**	3.1	0.546	5.2	LOS A	3.8	27.4	0.29	0.47	0.29	50.0
5	T1	All MCs	1737	5.0	**1410**	5.1	0.546	5.4	LOS A	3.8	27.4	0.30	0.48	0.30	58.8
6	R2	All MCs	93	1.0	**75**	1.0	0.546	11.6	LOS B	3.5	25.6	0.31	0.51	0.31	50.1
Approach			1956	4.7	**1588**	4.8	0.546	5.7	LOS A	3.8	27.4	0.30	0.48	0.30	58.2
North: NS Spine Rd															
7	L2	All MCs	145	1.0	145	1.0	0.820	15.0	LOS B	3.8	26.8	0.99	1.12	1.46	19.1
8	T1	All MCs	7	1.0	7	1.0	0.820	14.6	LOS B	3.8	26.8	0.99	1.12	1.46	27.1
9	R2	All MCs	68	1.0	68	1.0	0.820	20.5	LOS C	3.8	26.8	0.99	1.12	1.46	41.6
Approach			221	1.0	221	1.0	0.820	16.7	LOS B	3.8	26.8	0.99	1.12	1.46	30.1
West: Beeliar Dr															
10	L2	All MCs	121	1.0	121	1.0	1.691	630.1	LOS F	328.0	2387.1	1.00	10.63	21.31	3.3
11	T1	All MCs	2017	5.0	2017	5.0	1.691	630.4	LOS F	328.0	2387.1	1.00	10.20	20.98	3.4
12	R2	All MCs	169	0.0	169	0.0	1.691	637.0	LOS F	278.3	2017.9	1.00	9.66	20.57	4.3
Approach			2307	4.4	2307	4.4	1.691	630.9	LOS F	328.0	2387.1	1.00	10.18	20.97	3.4
All Vehicles			5057	4.0	**4689**	4.3	1.691	330.8	LOS F	328.0	2387.1	0.76	5.74	11.42	6.7

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MOVEMENT SUMMARY

Site: [2] Beeliar Dr / Hammond Rd (Folder1)
Network: [1] 2038 Post Development - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	325	2.0	325	2.0	1.162	183.4	LOS F	68.7	487.4	1.00	1.47	2.00	6.4
2	T1	All MCs	233	1.0	233	1.0	*1.162	219.1	LOS F	68.7	487.4	1.00	1.43	1.93	6.7
3	R2	All MCs	173	3.0	173	3.0	0.773	77.4	LOS E	14.2	101.9	1.00	0.89	1.10	26.8
Approach			731	1.9	731	1.9	1.162	169.7	LOS F	68.7	487.4	1.00	1.32	1.52	9.2
East: Beeliar Dr															
4	L2	All MCs	172	3.0	172	3.0	0.150	34.1	LOS C	3.5	25.4	0.45	1.16	0.45	40.0
5	T1	All MCs	1368	4.0	1368	4.0	*1.241	310.3	LOS F	101.0	731.0	1.00	1.93	2.26	6.8
6	R2	All MCs	118	7.0	118	7.0	0.562	108.2	LOS F	8.4	62.0	0.99	0.80	0.99	18.5
Approach			1658	4.1	1658	4.1	1.241	267.3	LOS F	101.0	731.0	0.94	1.77	1.98	7.6
North: Hammond Rd															
7	L2	All MCs	291	4.0	**289**	4.0	0.266	38.9	LOS D	7.7	55.9	0.55	1.30	0.55	30.8
8	T1	All MCs	447	2.0	**444**	2.0	*1.257	330.4	LOS F	77.7	560.8	1.00	1.79	2.37	10.4
9	R2	All MCs	421	4.0	**418**	4.0	1.257	332.5	LOS F	77.7	560.8	1.00	1.68	2.34	5.3
Approach			1159	3.2	**1151**	3.2	1.257	258.1	LOS F	77.7	560.8	0.89	1.63	1.90	9.5
West: Beeliar Dr															
10	L2	All MCs	329	7.0	**217**	6.5	0.142	34.1	LOS C	1.6	11.7	0.13	0.87	0.13	34.0
11	T1	All MCs	1764	3.0	**1164**	2.8	1.126	210.6	LOS F	72.9[N8]	522.4[N8]	1.00	1.59	1.85	13.2
12	R2	All MCs	414	2.0	**273**	1.8	*1.243	323.8	LOS F	39.4	280.4	1.00	1.40	2.33	9.3
Approach			2507	3.4	**1654**	3.1	1.243	206.2	LOS F	72.9[N8]	522.4[N8]	0.89	1.47	1.70	11.5
All Vehicles			6055	3.4	**5194**	3.9	1.257	232.1	LOS F	101.0[N8]	731.0[N8]	0.92	1.58	1.85	9.4

MOVEMENT SUMMARY

Site: [3] Hammond Rd / Yangebup Rd / Cooper Rd (Folder1)
Network: [1] 2038 Post Development - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	24	0.0	**19**	0.0	0.271	12.6	LOS B	0.7	5.2	0.19	0.23	0.19	54.4
2	T1	All MCs	506	6.0	**400**	5.5	0.271	1.3	LOS A	0.7	5.2	0.19	0.23	0.19	57.3
3	R2	All MCs	32	9.0	**25**	8.2	0.271	14.0	LOS B	0.7	5.2	0.19	0.23	0.19	50.2
Approach			562	5.9	**444**	5.4	0.271	2.5	NA	0.7	5.2	0.19	0.23	0.19	56.8
East: Cooper Rd															
4	L2	All MCs	81	5.0	81	5.0	0.813	31.6	LOS D	2.4	17.6	0.96	1.28	1.88	24.3
5	T1	All MCs	12	0.0	12	0.0	0.813	53.7	LOS F	2.4	17.6	0.96	1.28	1.88	24.3
6	R2	All MCs	16	9.0	16	9.0	0.813	82.7	LOS F	2.4	17.6	0.96	1.28	1.88	33.3
Approach			108	5.0	108	5.0	0.813	41.4	LOS E	2.4	17.6	0.96	1.28	1.88	26.1
North: Hammond Rd															
7	L2	All MCs	13	11.0	13	11.0	0.785	9.7	LOS A	2.4	17.3	0.12	0.13	0.26	51.8
8	T1	All MCs	912	4.0	912	4.0	0.785	1.0	LOS A	2.4	17.3	0.12	0.13	0.26	57.2
9	R2	All MCs	46	7.0	46	7.0	0.785	10.0	LOS B	2.4	17.3	0.12	0.13	0.26	57.2
Approach			971	4.2	971	4.2	0.785	1.5	NA	2.4	17.3	0.12	0.13	0.26	57.0
West: Yangebup Rd															
10	L2	All MCs	51	6.0	**50**	6.0	1.147	168.1	LOS F	13.7	99.3	1.00	2.76	6.08	10.3
11	T1	All MCs	14	0.0	14	0.0	1.147	201.4	LOS F	13.7	99.3	1.00	2.76	6.08	10.1
12	R2	All MCs	57	3.0	57	3.0	1.147	222.3	LOS F	13.7	99.3	1.00	2.76	6.08	2.3
Approach			121	3.9	121	3.9	1.147	197.3	LOS F	13.7	99.3	1.00	2.76	6.08	6.9
All Vehicles			1762	4.8	**1643**	5.1	1.147	18.8	NA	13.7	99.3	0.26	0.43	0.77	40.5

MOVEMENT SUMMARY

Site: [4] Shopping Centre Roundabout (Folder1)
Network: [1] 2038 Post Development - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: NS Link Rd															
1	L2	All MCs	111	1.0	**77**	1.0	0.061	4.2	LOS A	0.3	2.1	0.13	0.49	0.13	32.0
2	T1	All MCs	1	1.0	1	1.0	0.061	3.9	LOS A	0.3	2.1	0.13	0.49	0.13	31.7
3	R2	All MCs	1	1.0	1	1.0	0.061	6.8	LOS A	0.3	2.1	0.13	0.49	0.13	31.4
Approach			113	1.0	**78**	1.0	0.061	4.3	LOS A	0.3	2.1	0.13	0.49	0.13	31.9
East: East LSP															
4	L2	All MCs	1	1.0	1	1.0	0.017	4.6	LOS A	0.1	0.5	0.38	0.49	0.38	25.2
5	T1	All MCs	15	1.0	15	1.0	0.017	4.3	LOS A	0.1	0.5	0.38	0.49	0.38	24.3
6	R2	All MCs	1	1.0	1	1.0	0.017	7.1	LOS A	0.1	0.5	0.38	0.49	0.38	25.2
Approach			17	1.0	17	1.0	0.017	4.5	LOS A	0.1	0.5	0.38	0.49	0.38	24.3
North: NS Link RD															
7	L2	All MCs	1	1.0	1	1.1	0.017	5.0	LOS A	0.1	0.5	0.38	0.60	0.38	21.8
8	T1	All MCs	1	1.0	1	1.1	0.017	4.6	LOS A	0.1	0.5	0.38	0.60	0.38	22.4
9	R2	All MCs	16	1.0	**15**	1.1	0.017	7.6	LOS A	0.1	0.5	0.38	0.60	0.38	21.4
Approach			18	1.0	**17**	1.1	0.017	7.3	LOS A	0.1	0.5	0.38	0.60	0.38	21.5
West: Shopping Centre Access															
10	L2	All MCs	16	1.0	16	1.0	0.155	3.4	LOS A	0.8	5.9	0.03	0.62	0.03	24.0
11	T1	All MCs	15	1.0	15	1.0	0.155	3.1	LOS A	0.8	5.9	0.03	0.62	0.03	23.8
12	R2	All MCs	221	1.0	221	1.0	0.155	5.9	LOS A	0.8	5.9	0.03	0.62	0.03	24.0
Approach			252	1.0	252	1.0	0.155	5.6	LOS A	0.8	5.9	0.03	0.62	0.03	24.0
All Vehicles			399	1.0	**363**	1.1	0.155	5.3	LOS A	0.8	5.9	0.08	0.59	0.08	26.1

MOVEMENT SUMMARY

Site: [5] Yangebup Rd / NS Link Rd (Folder1)
Network: [1] 2038 Post Development - Existing Geometry - Weekday Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: NS Link Rd															
1	L2	All MCs	1	1.0	1	1.0	0.016	4.5	LOS A	0.0	0.3	0.23	0.53	0.23	35.8
3	R2	All MCs	16	1.0	16	1.0	0.016	4.9	LOS A	0.0	0.3	0.23	0.53	0.23	25.0
Approach			17	1.0	17	1.0	0.016	4.9	LOS A	0.0	0.3	0.23	0.53	0.23	26.5
East: Yangebup Rd															
4	L2	All MCs	16	1.0	**15**	1.1	0.041	4.6	LOS A	0.0	0.0	0.00	0.10	0.00	45.0
5	T1	All MCs	66	3.0	**62**	3.2	0.041	0.0	LOS A	0.0	0.0	0.00	0.10	0.00	47.9
Approach			82	2.6	**77**	2.8	0.041	0.9	NA	0.0	0.0	0.00	0.10	0.00	47.7
West: Yangebup Rd															
11	T1	All MCs	105	3.0	105	3.0	0.057	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	49.8
12	R2	All MCs	1	1.0	1	1.0	0.057	4.6	LOS A	0.0	0.0	0.00	0.01	0.00	49.8
Approach			106	3.0	106	3.0	0.057	0.0	NA	0.0	0.0	0.00	0.01	0.00	49.8
All Vehicles			205	2.7	**200**	2.7	0.057	0.8	NA	0.0	0.3	0.02	0.09	0.02	47.4

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MOVEMENT SUMMARY

Site: [1] Beeliar Dr / Kemp Rd (Folder1)
Network: [1] 2038 Post Development - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Kemp Rd															
1	L2	All MCs	84	0.0	84	0.0	0.663	10.8	LOS B	4.2	29.9	0.97	0.92	1.28	44.6
2	T1	All MCs	8	1.0	8	1.0	0.663	10.4	LOS B	4.2	29.9	0.97	0.92	1.28	24.9
3	R2	All MCs	238	1.0	238	1.0	0.663	16.2	LOS B	4.2	29.9	0.97	0.92	1.28	24.9
Approach			331	0.7	331	0.7	0.663	14.7	LOS B	4.2	29.9	0.97	0.92	1.28	32.8
East: Beeliar Dr															
4	L2	All MCs	84	2.0	84	2.0	0.501	5.1	LOS A	3.2	22.6	0.27	0.46	0.27	50.1
5	T1	All MCs	1298	2.0	1298	2.0	0.501	5.3	LOS A	3.2	22.6	0.28	0.48	0.28	59.0
6	R2	All MCs	102	1.0	102	1.0	0.501	11.5	LOS B	3.0	21.2	0.29	0.51	0.29	49.9
Approach			1484	1.9	1484	1.9	0.501	5.7	LOS A	3.2	22.6	0.28	0.48	0.28	58.3
North: NS Spine Rd															
7	L2	All MCs	161	1.0	161	1.0	0.838	17.0	LOS B	4.5	31.7	0.98	1.16	1.54	17.8
8	T1	All MCs	8	1.0	8	1.0	0.838	16.5	LOS B	4.5	31.7	0.98	1.16	1.54	25.7
9	R2	All MCs	77	1.0	77	1.0	0.838	22.5	LOS C	4.5	31.7	0.98	1.16	1.54	40.2
Approach			246	1.0	246	1.0	0.838	18.7	LOS B	4.5	31.7	0.98	1.16	1.54	28.6
West: Beeliar Dr															
10	L2	All MCs	136	1.0	136	1.0	1.099	101.0	LOS F	73.3	521.6	1.00	3.22	5.56	14.9
11	T1	All MCs	1488	2.0	1488	2.0	1.099	101.2	LOS F	73.3	521.6	1.00	3.13	5.51	14.9
12	R2	All MCs	101	0.0	101	0.0	1.099	108.1	LOS F	54.5	387.3	1.00	3.00	5.43	17.3
Approach			1725	1.8	1725	1.8	1.099	101.6	LOS F	73.3	521.6	1.00	3.13	5.51	15.1
All Vehicles			3786	1.7	3786	1.7	1.099	51.0	LOS E	73.3	521.6	0.72	1.77	2.83	25.8

MOVEMENT SUMMARY

Site: [2] Beeliar Dr / Hammond Rd (Folder1)
Network: [1] 2038 Post Development - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 130.0 seconds (Site Practical Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Queued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	302	0.0	302	0.0	0.944	45.8	LOS D	39.1	273.5	1.00	1.35	1.29	10.6
2	T1	All MCs	296	0.0	296	0.0	*0.944	104.9	LOS F	39.1	273.5	1.00	1.25	1.23	11.7
3	R2	All MCs	139	0.0	139	0.0	0.628	61.2	LOS E	11.7	82.0	0.99	0.82	0.99	30.9
Approach			737	0.0	737	0.0	0.944	72.4	LOS E	39.1	273.5	1.00	1.21	1.14	13.9
East: Beeliar Dr															
4	L2	All MCs	122	0.0	122	0.0	0.087	8.7	LOS A	1.0	7.1	0.28	0.98	0.28	44.5
5	T1	All MCs	1046	2.0	1046	2.0	0.789	46.9	LOS D	31.3	222.9	0.96	0.87	0.99	27.5
6	R2	All MCs	143	3.0	143	3.0	0.653	78.7	LOS E	9.0	64.6	1.00	0.82	1.03	20.0
Approach			1312	1.9	1312	1.9	0.789	46.8	LOS D	31.3	222.9	0.90	0.88	0.93	26.3
North: Hammond Rd															
7	L2	All MCs	206	3.0	206	3.0	0.233	35.6	LOS D	5.3	37.7	0.55	1.30	0.55	31.7
8	T1	All MCs	306	0.0	306	0.0	0.920	90.1	LOS F	20.7	144.6	1.00	1.07	1.32	25.7
9	R2	All MCs	245	2.0	245	2.0	*0.920	80.5	LOS F	19.9	141.5	1.00	1.04	1.33	14.6
Approach			758	1.5	758	1.5	0.920	72.1	LOS E	20.7	144.6	0.88	1.13	1.11	21.8
West: Beeliar Dr															
10	L2	All MCs	257	1.0	**239**	1.0	0.160	27.5	LOS C	2.0	14.4	0.20	0.97	0.20	31.0
11	T1	All MCs	1398	1.0	**1301**	1.0	*1.066	147.8	LOS F	67.7	478.0	1.00	1.49	1.70	17.0
12	R2	All MCs	259	0.0	**241**	0.0	*1.065	162.3	LOS F	23.6	165.2	1.00	1.20	1.83	14.9
Approach			1914	0.9	**1781**	0.9	1.066	133.6	LOS F	67.7	478.0	0.89	1.38	1.51	15.6
All Vehicles			4720	1.1	**4587**	1.2	1.066	88.8	LOS F	67.7	478.0	0.91	1.17	1.23	18.0

MOVEMENT SUMMARY

Site: [3] Hammond Rd / Yangebup Rd / Cooper Rd (Folder1)
Network: [1] 2038 Post Development - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Hammond Rd															
1	L2	All MCs	29	0.0	29	0.0	0.301	7.6	LOS A	0.3	2.3	0.08	0.12	0.08	57.8
2	T1	All MCs	537	1.0	**523**	1.0	0.301	0.3	LOS A	0.3	2.3	0.08	0.12	0.08	59.0
3	R2	All MCs	22	0.0	22	0.0	0.301	8.9	LOS A	0.3	2.3	0.08	0.12	0.08	51.6
Approach			588	0.9	**573**	0.9	0.301	1.0	NA	0.3	2.3	0.08	0.12	0.08	58.6
East: Cooper Rd															
4	L2	All MCs	61	0.0	61	0.0	0.205	11.5	LOS B	0.7	5.0	0.70	1.01	0.73	36.3
5	T1	All MCs	9	0.0	9	0.0	0.205	23.4	LOS C	0.7	5.0	0.70	1.01	0.73	36.3
6	R2	All MCs	13	0.0	13	0.0	0.205	28.4	LOS D	0.7	5.0	0.70	1.01	0.73	43.6
Approach			83	0.0	83	0.0	0.205	15.4	LOS C	0.7	5.0	0.70	1.01	0.73	38.0
North: Hammond Rd															
7	L2	All MCs	4	0.0	4	0.0	0.361	8.4	LOS A	0.7	4.6	0.12	0.15	0.12	52.4
8	T1	All MCs	621	2.0	621	2.0	0.361	0.4	LOS A	0.7	4.6	0.12	0.15	0.12	58.1
9	R2	All MCs	47	0.0	47	0.0	0.361	8.5	LOS A	0.7	4.6	0.12	0.15	0.12	58.1
Approach			673	1.8	673	1.8	0.361	1.0	NA	0.7	4.6	0.12	0.15	0.12	58.0
West: Yangebup Rd															
10	L2	All MCs	45	7.0	45	7.0	0.257	11.6	LOS B	0.9	6.8	0.73	1.04	0.83	37.7
11	T1	All MCs	9	0.0	9	0.0	0.257	24.0	LOS C	0.9	6.8	0.73	1.04	0.83	34.8
12	R2	All MCs	26	0.0	26	0.0	0.257	30.3	LOS D	0.9	6.8	0.73	1.04	0.83	16.0
Approach			81	3.9	81	3.9	0.257	19.1	LOS C	0.9	6.8	0.73	1.04	0.83	33.5
All Vehicles			1425	1.5	**1410**	1.5	0.361	2.9	NA	0.9	6.8	0.17	0.24	0.18	55.2

MOVEMENT SUMMARY

Site: [4] Shopping Centre Roundabout (Folder1)
Network: [1] 2038 Post Development - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Roundabout
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: NS Link Rd															
1	L2	All MCs	123	1.0	**117**	1.0	0.092	4.3	LOS A	0.5	3.3	0.15	0.49	0.15	31.9
2	T1	All MCs	1	1.0	1	1.0	0.092	3.9	LOS A	0.5	3.3	0.15	0.49	0.15	31.5
3	R2	All MCs	1	1.0	1	1.0	0.092	6.8	LOS A	0.5	3.3	0.15	0.49	0.15	31.3
Approach			125	1.0	**119**	1.0	0.092	4.3	LOS A	0.5	3.3	0.15	0.49	0.15	31.9
East: East LSP															
4	L2	All MCs	1	1.0	1	1.0	0.020	4.8	LOS A	0.1	0.7	0.40	0.50	0.40	25.0
5	T1	All MCs	18	1.0	18	1.0	0.020	4.4	LOS A	0.1	0.7	0.40	0.50	0.40	24.2
6	R2	All MCs	1	1.0	1	1.0	0.020	7.3	LOS A	0.1	0.7	0.40	0.50	0.40	25.0
Approach			20	1.0	20	1.0	0.020	4.6	LOS A	0.1	0.7	0.40	0.50	0.40	24.2
North: NS Link RD															
7	L2	All MCs	1	1.0	1	1.0	0.019	5.2	LOS A	0.1	0.6	0.40	0.61	0.40	21.6
8	T1	All MCs	1	1.0	1	1.0	0.019	4.8	LOS A	0.1	0.6	0.40	0.61	0.40	22.1
9	R2	All MCs	17	1.0	17	1.0	0.019	7.8	LOS A	0.1	0.6	0.40	0.61	0.40	21.3
Approach			19	1.0	19	1.0	0.019	7.5	LOS A	0.1	0.6	0.40	0.61	0.40	21.3
West: Shopping Centre Access															
10	L2	All MCs	17	1.0	17	1.0	0.173	3.4	LOS A	0.9	6.6	0.03	0.62	0.03	24.0
11	T1	All MCs	18	1.0	18	1.0	0.173	3.1	LOS A	0.9	6.6	0.03	0.62	0.03	23.8
12	R2	All MCs	246	1.0	246	1.0	0.173	5.9	LOS A	0.9	6.6	0.03	0.62	0.03	24.0
Approach			281	1.0	281	1.0	0.173	5.6	LOS A	0.9	6.6	0.03	0.62	0.03	23.9
All Vehicles			445	1.0	**439**	1.0	0.173	5.3	LOS A	0.9	6.6	0.10	0.58	0.10	26.6

MOVEMENT SUMMARY

Site: [5] Yangebup Rd / NS Link Rd (Folder1)
Network: [1] 2038 Post Development - Existing Geometry - Weekend Peak Hour (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

NA
Site Category: (None)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: NS Link Rd															
1	L2	All MCs	1	1.0	1	1.0	0.016	4.5	LOS A	0.0	0.3	0.20	0.52	0.20	36.0
3	R2	All MCs	17	1.0	17	1.0	0.016	4.8	LOS A	0.0	0.3	0.20	0.52	0.20	25.2
Approach			18	1.0	18	1.0	0.016	4.8	LOS A	0.0	0.3	0.20	0.52	0.20	26.6
East: Yangebup Rd															
4	L2	All MCs	17	1.0	17	1.0	0.044	4.6	LOS A	0.0	0.0	0.00	0.11	0.00	45.0
5	T1	All MCs	69	0.0	69	0.0	0.044	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	47.9
Approach			86	0.2	86	0.2	0.044	0.9	NA	0.0	0.0	0.00	0.11	0.00	47.7
West: Yangebup Rd															
11	T1	All MCs	64	3.0	64	3.0	0.033	0.0	LOS A	0.0	0.0	0.01	0.01	0.01	49.6
12	R2	All MCs	1	1.0	1	1.0	0.033	4.6	LOS A	0.0	0.0	0.01	0.01	0.01	49.6
Approach			65	3.0	65	3.0	0.033	0.1	NA	0.0	0.0	0.01	0.01	0.01	49.6
All Vehicles			169	1.3	169	1.4	0.044	1.0	NA	0.0	0.3	0.02	0.11	0.02	46.8

Appendix F: Swept path diagrams

Swept path diagrams are included in this section of the report. Different coloured lines are employed to represent the various envelopes of the vehicle swept path, as described below:

Cyan represents the wheel path of the vehicle

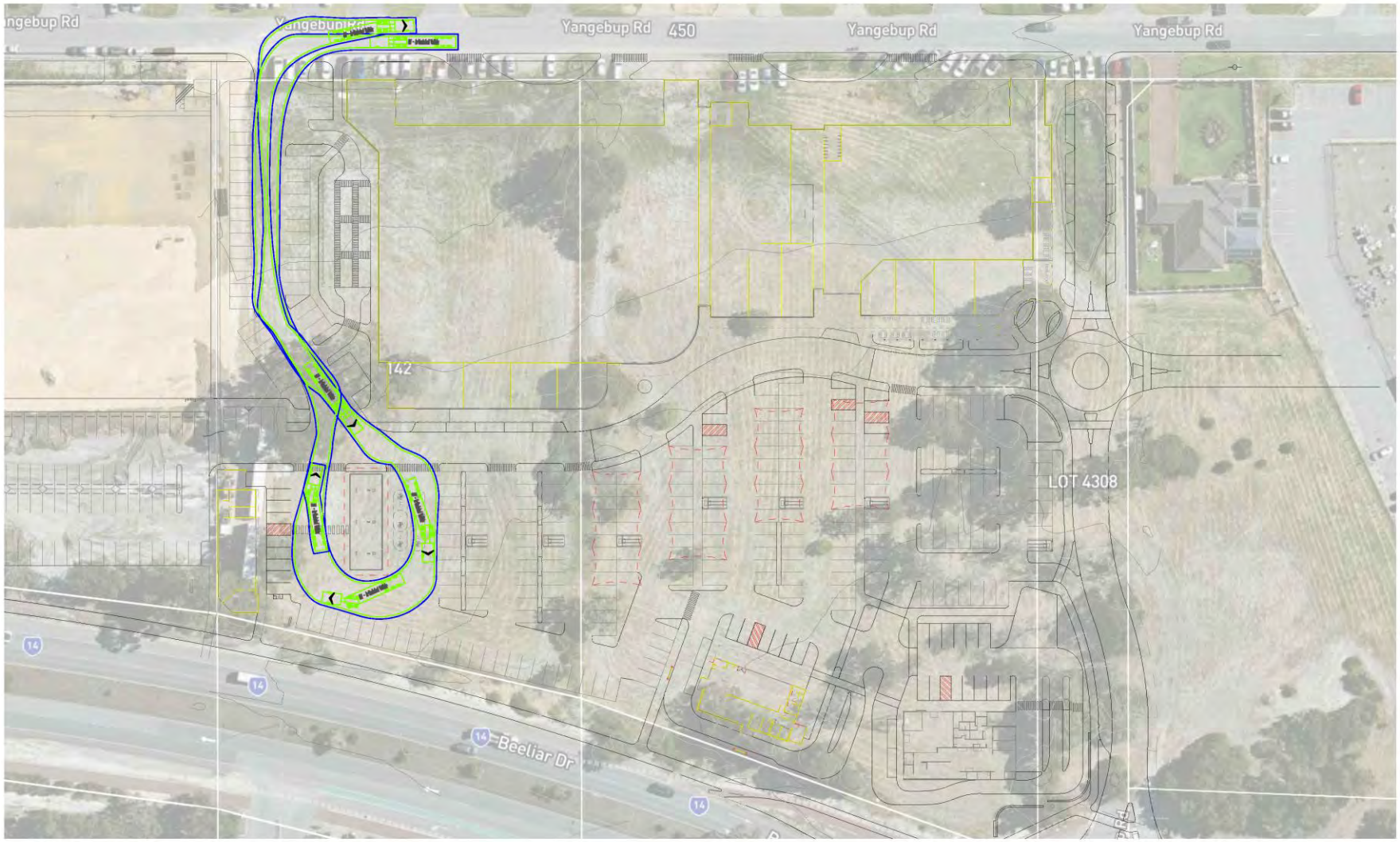
Green represents the vehicle body envelope

Blue represents a 300/500mm buffer line, offset from the vehicle swept path

The swept path diagrams are also provided separately in high-quality, A3 PDF format.

Document Set ID: 11624068
Version: 1, Version Date: 23/02/2026

Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026



Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	Dark blue swept path line represents a 500mm buffer.

Drawn by: Paul Ghantous

Client: Albion Park Project Pty Ltd

Project: U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title: Swept path analysis - fuel truck delivery
AS2890.2 - 19m Articulated Vehicle (AV)

Date: 10/02/2026

Scale @ A3: 1:800

Revision: sk03

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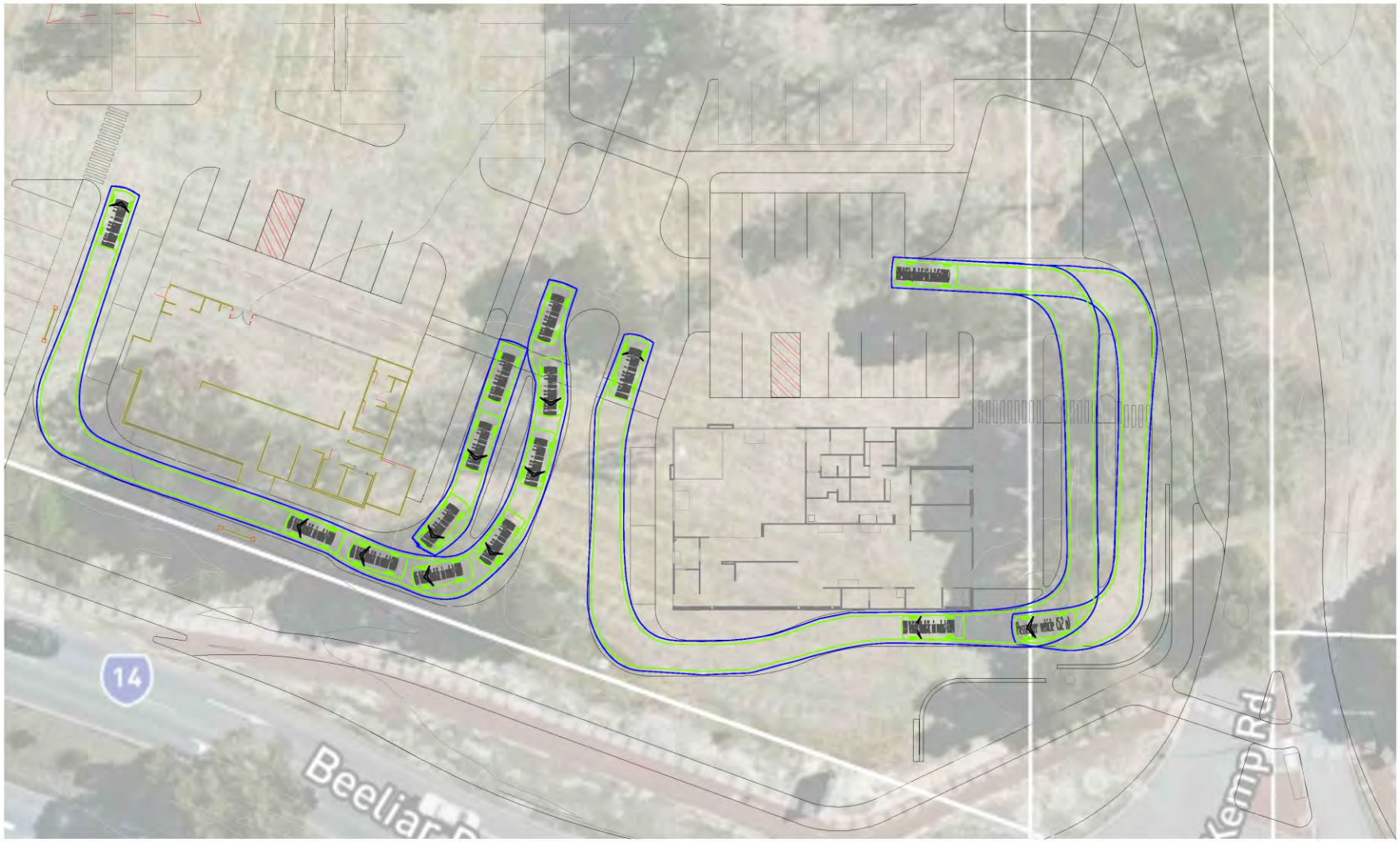
Version: 1, Version Date: 23/02/2026



Revision notes:		
Rev:	Date:	Notes:
1	10/02/2026	Dark blue swept path line represents a 300mm buffer.

Drawn by: Paul Ghantous

Client: Albion Park Project Pty Ltd

Project: U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title: Swept path analysis - drive through
AS2890.1 - B85/B99 Vehicle

Date: 10/02/2026

Scale @ A3: 1:300

Revision: sk04

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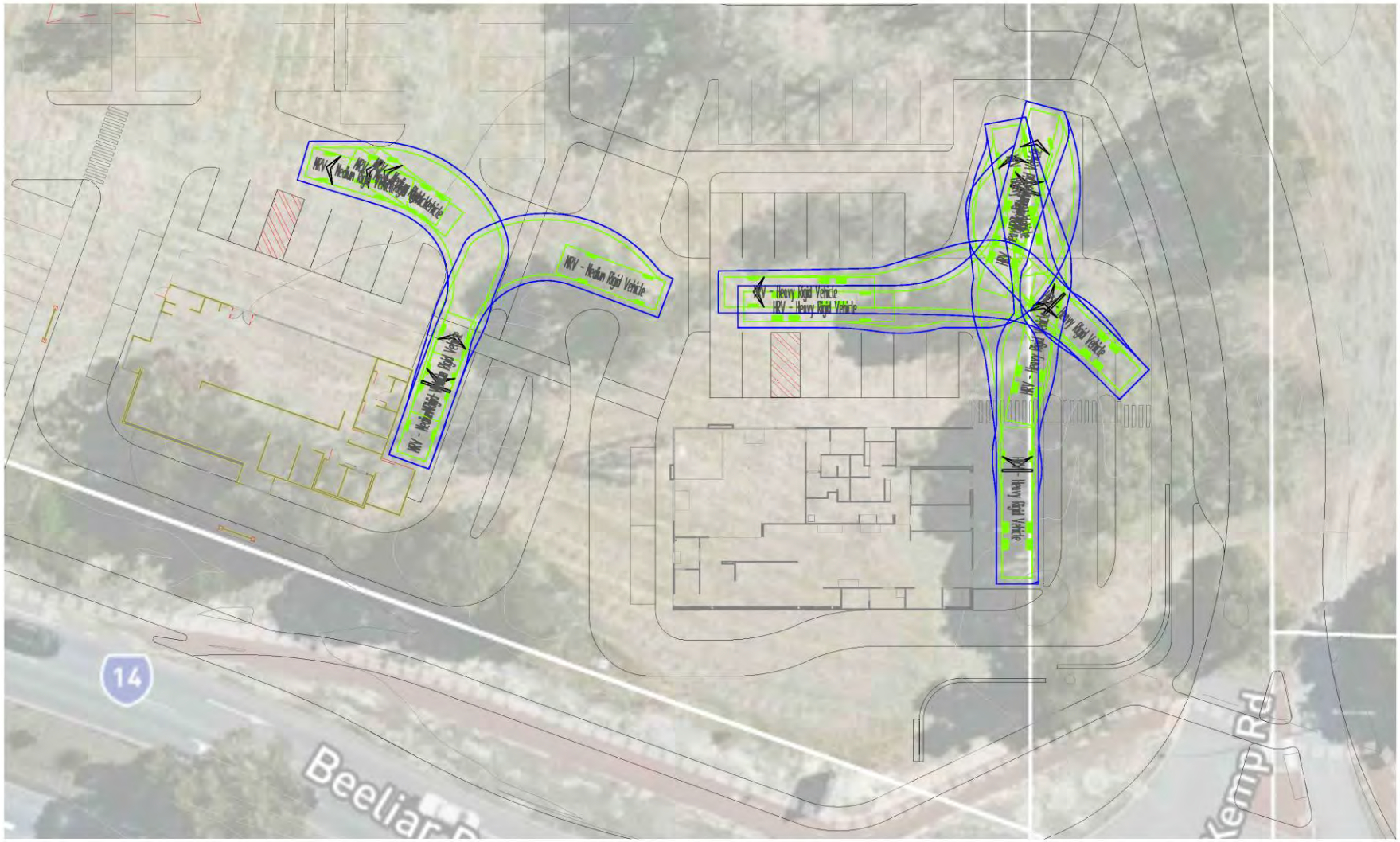

Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	Dark blue swept path line represents a 500mm buffer.

Drawn by: Paul Ghantous

Client: Albion Park Project Pty Ltd

Project: U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title: Swept path analysis - fast food servicing
AS2890.2 - 8.8m MRV & 12.5m HRV

Date: 10/02/2026

Scale @ A3: 1:300

Revision: sk05

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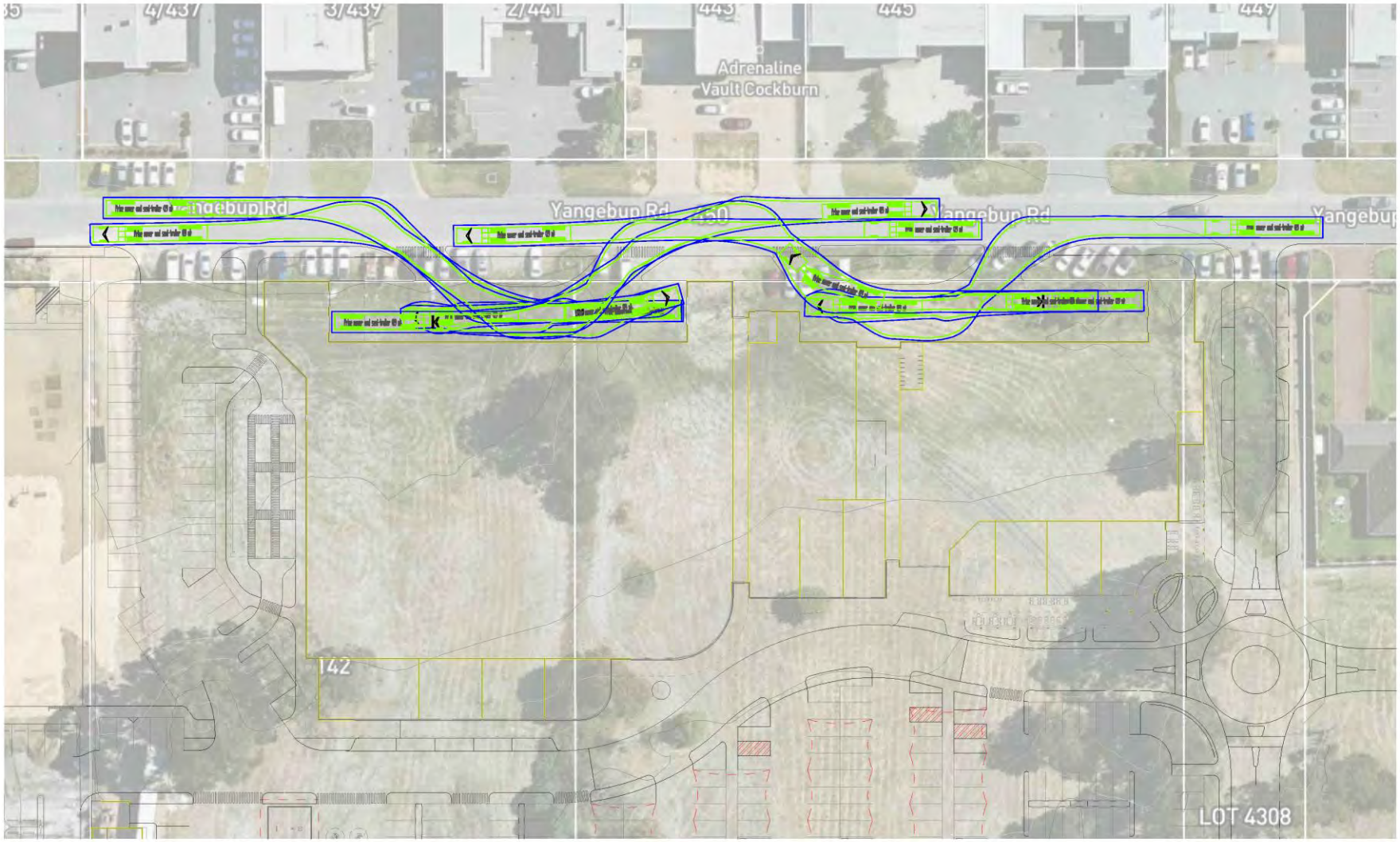

Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	Dark blue swept path line represents a 500mm buffer.

Drawn by: Paul Ghantous

Client: Albion Park Project Pty Ltd

Project: U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title: Swept path analysis - rear loading dock areas
AS2890.2 - 19m AV

Date: 10/02/2026

Scale @ A3: 1:600

Revision: sk06

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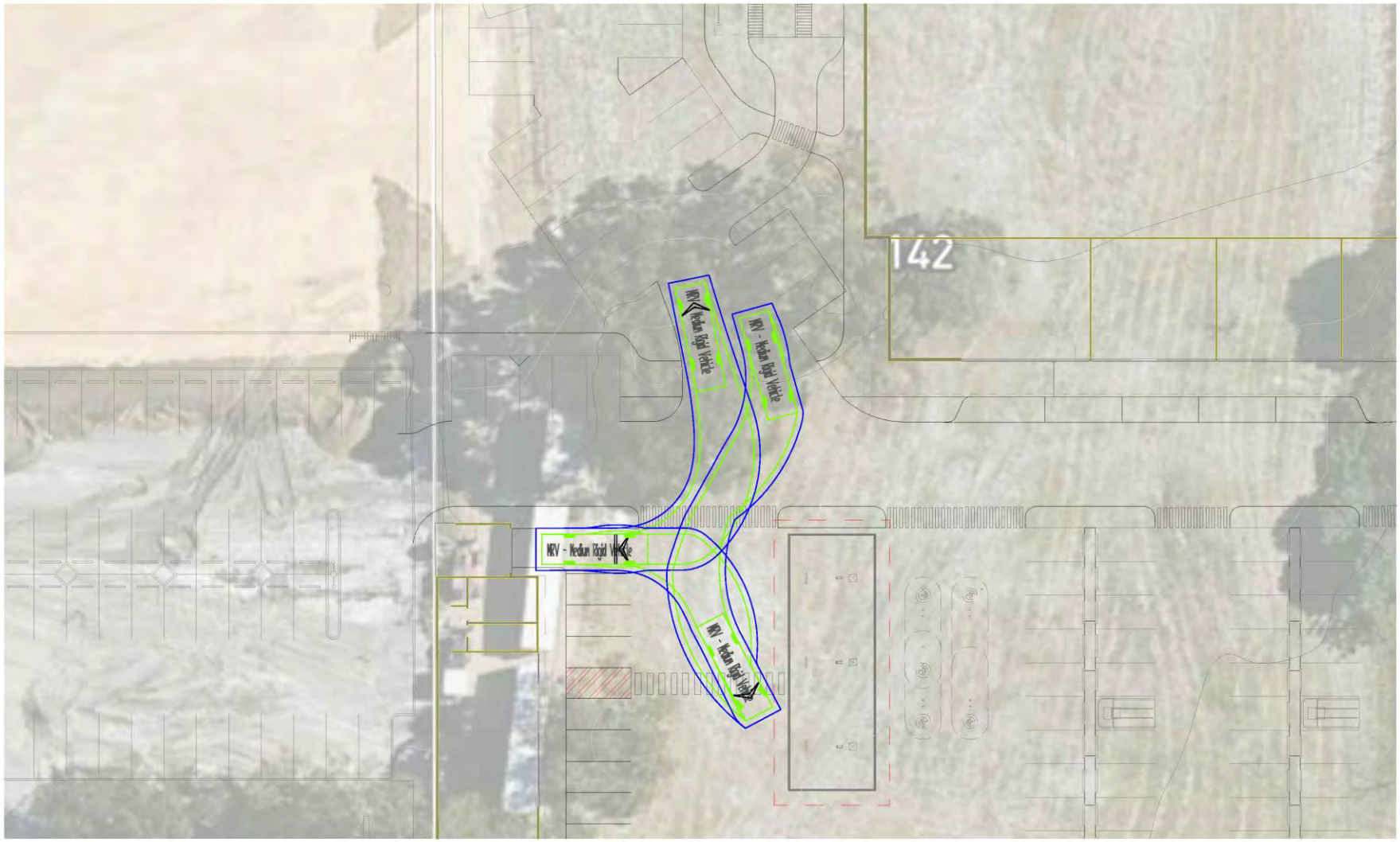
Document Set ID: 12624068
Version: 1, Version Date: 23/02/2026



Revision notes:

Rev:	Date:	Notes:
1	10/02/2026	Dark blue swept path line represents a 500mm buffer.

Drawn by: Paul Ghantous

Client: Albion Park Project Pty Ltd

Project: U25.105 - Beeliar Drive Shopping Centre
Proposed Shopping Centre Development

Drawing Title: Swept path analysis - fuel station deliveries and waste
AS2890.2 - 8.8m MRV

Date: 10/02/2026

Scale @ A3: 1:300

Revision: sk07

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0433858194

LEGEND

Structure Plan boundary

Land Use Classification

Local Centre

Mixed Business

Local Scheme Reserve

Local Road

NOTES

1. Maximum permissible retail floorspace in the Local Centre is 8,100m².
2. Refer to the Structure Plan report text for sensitive land uses that are not supported.

Tamara Drive

Yangebup Drive

Cooper Road

Future Road (20m)

Hammond Road

Beeliar Drive

Kemp Road

It is certified that this Structure Plan was approved by resolution of the Western Australian Planning Commission on 14 / 11 / 2018

This Structure Plan expires on 14 November 2028

Signed

Director, Planning and Development

File No. 110/149

All areas and dimensions are subject to survey, engineering and detailed design and may change without notice.

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NORTH

0 20 40 60 80 100m

SCALE 1:2000 (A3)

PLAN 1: HAMMOND ROAD NORTH
STRUCTURE PLAN MAP
COCKBURN CENTRAL

CITY OF COCKBURN

BURGESS DESIGN GROUP
PO Box 8779, Perth Business Centre 6849
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Plan No: ALE COC 2-01g Client: ALE'S
Date: 22.10.18 Planner: MS/MB

Document Set ID: 7963243
Version: 1, Version Date: 19/11/2018

HAMMOND ROAD NORTH STRUCTURE PLAN

THE HAMMOND ROAD NORTH STRUCTURE PLAN FOR LOTS 1, 300 AND 803, YANGEBUP ROAD; LOTS 7, 99, 146, AND 147 HAMMOND ROAD; AND LOT 4308 BEELIAR DRIVE, COCKBURN CENTRAL

CITY OF COCKBURN

NOVEMBER 2018

Issue 3

BURGESS DESIGN GROUP

TOWN PLANNING + URBAN DESIGN

THE HAMMOND ROAD NORTH STRUCTURE PLAN FOR LOTS 1, 300 AND 803 YANGEBUP ROAD; LOTS 7, 99, 146 AND 147 HAMMOND ROAD; AND LOT 4308 BEELIAR DRIVE, COCKBURN CENTRAL

City of Cockburn

HAMMOND ROAD NORTH STRUCTURE PLAN

Issue 3: November 2018

Prepared for: **Tony and John Alessandrini**

Prepared by: Burgess Design Group

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Project Planner: Mark Szabo

Job code: ALE COC

File reference: 181105RLGA_Structure Plan v3

Revision No: 3

Quality Assurance

Issue/Version:	Description	Date:	Author:	Reviewer:
1	First issue	11/02/16	Mitch Bisby	Mark Szabo
2	WAPC Modifications	03/09/18	Mitch Bisby	Mark Szabo
3	WAPC Modifications 19/10/18	5/11/18	Zarina MacDonald	Mark Szabo

APPROVAL OF THE LOCAL STRUCTURE PLAN FOR LOTS 1, 300 AND 803 YANGEBUP ROAD, LOTS 7, 99, 146 AND 147 HAMMOND ROAD, AND LOT 4308 BEELIAR DRIVE, COCKBURN CENTRAL, CITY OF COCKBURN

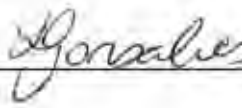
This structure plan is prepared under the provisions of the City of Cockburn Town Planning Scheme No.3 (TPS3).

IT IS CERTIFIED THAT THIS STRUCTURE PLAN WAS APPROVED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON:

14 November 2018 Date

Signed for and on behalf of the Western Australian Planning Commission:

An officer of the Commission duly authorised by the Commission pursuant to section 16 of the Planning and Development Act 2005 for that purpose, in the presence of:



Witness

15 November 2018 Date

14 November 2028 Date of Expiry

TABLE 1: TABLE OF AMENDMENTS

AMENDMENT NO.	SUMMARY OF THE AMENDMENT	AMENDMENT TYPE	DATE APPROVED BY WAPC

EXECUTIVE SUMMARY

This Structure Plan applies to Lots 1, 300 and 803 Yangebup Road, Lots 7, 99, 146 and 147 Hammond Road, and Lot 4308 Beeliar Drive, Cockburn Central.

This Structure Plan intends to facilitate the development of a neighbourhood centre. To that end, the Structure Plan designates a combination of 'Local Centre' zone and 'Mixed Business' zone over the land, and requires that development is in accordance with a Local Development Plan.

A summary of the areas and land uses proposed is provided in **Table 2**, below.

TABLE 2: SUMMARY TABLE

ITEM	DATA	STRUCTURE PLAN, PART TWO, (SECTION NO.)
Total area covered by the structure plan	7.5235 hectares	1.2.2
Area of each land use proposed: - Local Centre - Mixed Business	Hectares 3.5533 3.2763	 3.1.1 3.1.2
Estimated commercial floor space	8,100m² net lettable area	3.5
Estimated number of jobs created	648 jobs	3.5

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ABBREVIATIONS

AS3959	Australian Standard 3959: Construction of buildings in bushfire-prone areas
ASS	Acid Sulphate Soils
CCACP	Cockburn Central Activity Centre Plan
DA35	Development Area 35
DCP13	Development Contribution Plan 13
LCACS	City of Cockburn's Local Commercial Activity Centre Strategy
LDP	Local Development Plan
mAHD	Metres Australian Height Datum
MRS	Metropolitan Region Scheme
Scheme/TPS3	City of Cockburn Town Planning Scheme No.3

PART ONE | IMPLEMENTATION

1. STRUCTURE PLAN AREA

The Structure Plan is identified as the Hammond Road North Structure Plan. This Structure Plan shall apply to the land contained within the inner edge of the line denoting the Structure Plan boundary on the Structure Plan Map (refer **Plan 1 – Structure Plan Map**).

2. OPERATION

The date the Structure Plan comes into effect is the date the Structure Plan is approved by the WAPC.

3. STAGING

As all infrastructure and services are readily available to the site, development of the Structure Plan area for various land uses is not dependent on a staged approach.

4. SUBDIVISION AND DEVELOPMENT REQUIREMENTS

4.1 LAND USE

Land use permissibility within the Structure Plan area shall be in accordance with that identified in the Scheme for the applicable zone. Pursuant to the principles identified by State Planning Policy 4.1 State Industrial Buffer (Amended), the following sensitive land uses are not supported within the Structure Planning area:

- Bed and Breakfast;
- Child Care Premises;
- Dwelling – Aged or Dependent Persons;
- Dwelling – Caretakers;
- Dwelling – Grouped;
- Dwelling – Multiple;
- Home Business;
- Home Occupation;
- Home Office;
- House – Lodging;
- House – Single;
- Residential Building; and
- Tourist Accommodation.

4.2 RETAIL FLOORSPACE

Retail floorspace within the Structure Planning area shall not exceed 8,100m².

4.3 LANDSCAPING PLAN

A Landscaping Plan to be provided at the subdivision and/or development stage that provides for the management of the interface between the western portion of the subject land and the abutting Bush Forever area.

4.4 BUSHFIRE HAZARD ASSESSMENT

A bushfire hazard assessment will be required to accompany subdivision or development application(s), whichever comes first.

4.5 URBAN WATER MANAGEMENT PLAN

An urban water management plan will be required at the subdivision stage.

4.6 ROAD INFRASTRUCTURE

The Developer shall make arrangements with the City of Cockburn detailing timing and cost sharing for the upgrade of the Hammond Road, Cooper Road, and Yangebup Road intersection, and the upgrade of Yangebup Road to an urban standard where it abuts the Structure Plan Area.

5. LOCAL DEVELOPMENT PLANS

Local Development Plan/s will be prepared for the Structure Plan area pursuant to the WAPC's Local Development Plan Framework and Schedule 2, Part 6, 'Deemed Provisions for Local Planning Schemes' of the *Planning and Development (Local Planning Schemes) Regulations 2015.* To inform the subdivision and/or development stages, the Local Development Plan/s will encompass all the Structure Plan area and as a minimum each Local Development Plan is to respond to the following intended outcomes:

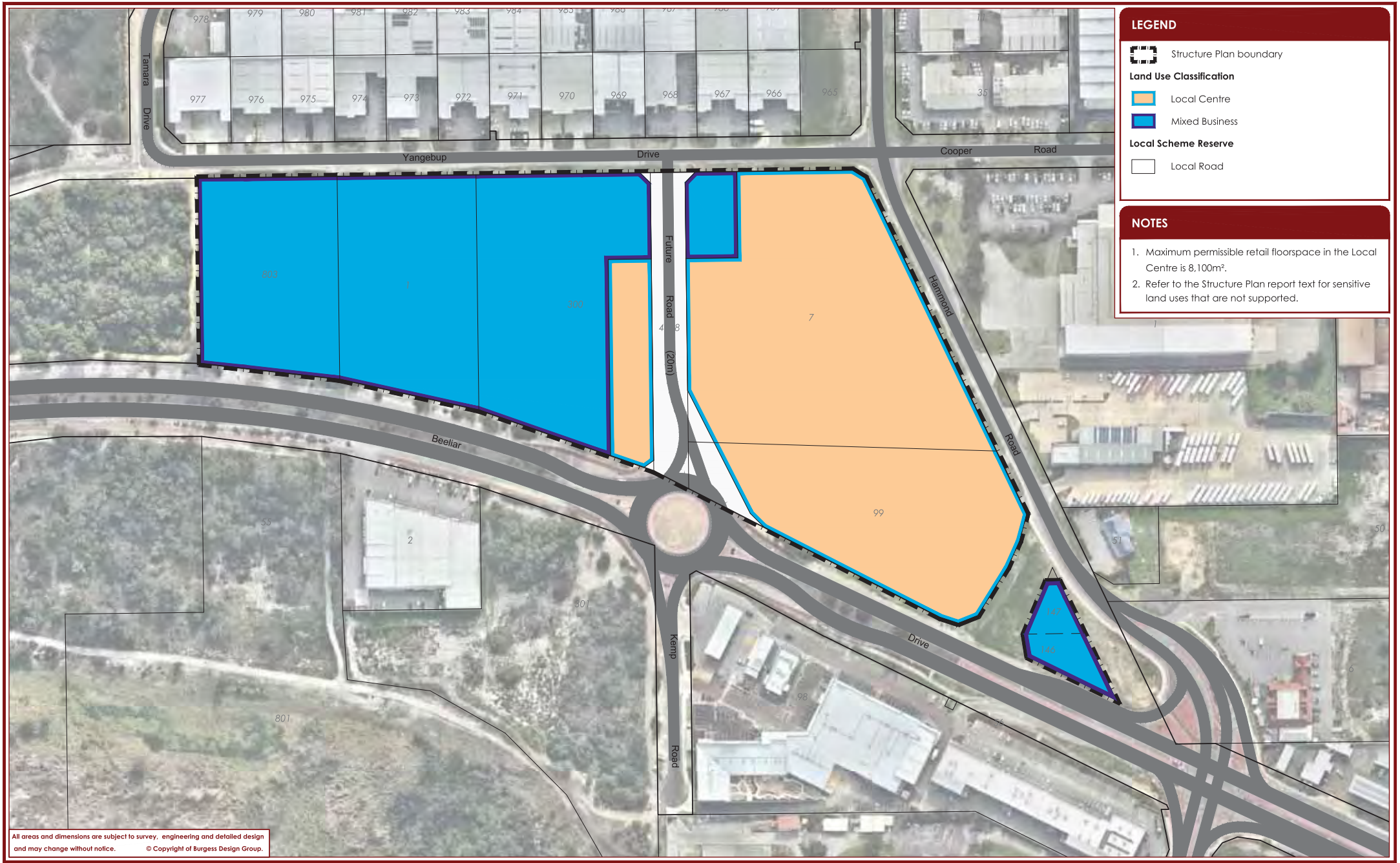
i. Built form in terms of location, orientation, bulk, scale, and height of buildings;
ii. Mix of land uses;
iii. Vehicle access, vehicle parking, pedestrian and cyclist movements;
iv. Provision of end of trip facilities and improvements to access and facilities for pedestrians and cyclists;
v. Street interface treatments along the 'main street' and Beeliar Drive.

6. ADDITIONAL INFORMATION

Table 3, below, sets out the additional information that is required to be submitted under the Structure Plan, and the stage at which it is to be submitted.

TABLE 3: ADDITIONAL INFORMATION REQUIRED

ADDITIONAL INFORMATION	APPROVAL STAGE	CONSULTATION REQUIRED
Local Development Plan	Prior to development approval, or such later stage as deemed appropriate at the City's discretion	As per Scheme requirements



LEGEND

Structure Plan boundary

Land Use Classification

Local Centre

Mixed Business

Local Scheme Reserve

Local Road

NOTES

1. Maximum permissible retail floorspace in the Local Centre is 8,100m².
2. Refer to the Structure Plan report text for sensitive land uses that are not supported.

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NORTH

0 20 40 60 80 100m

SCALE 1:2000 (A3)

PLAN 1: HAMMOND ROAD NORTH STRUCTURE PLAN MAP COCKBURN CENTRAL

CITY OF COCKBURN

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TOWN PLANNING + URBAN DESIGN
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Plan No: ALE COC 2-01g Client: ALE'S
Date: 22.10.18 Planner: MS/MB

PART TWO | EXPLANATORY SECTION

1. PLANNING BACKGROUND

1.1 INTRODUCTION AND PURPOSE

This Structure Plan has been prepared on behalf of the landowners of Lots 1, 300 and 803 Yangebup Road, 7, 99, 146 and 147 Hammond Road, and Lot 4308 Beeliar Drive, Cockburn Central.

The general objectives of the Structure Plan are to:

- Provide for commercial, retail, and mixed business development and compatible land uses incidental thereto;
- Promote a high quality urban form, centred around a main street; and,
- Create a retail environment that complements the Cockburn Central Activity Centre.

1.2 LAND DESCRIPTION

1.2.1 LOCATION

The site is located approximately 1.7km west of the Cockburn Central Train Station, and approximately 19km south of the Perth CBD (see **Figure 1 – Location Plan**). The site is generally bound by Yangebup Road to the north, Hammond Road to the east, Beeliar Drive to the south, and the Yangebup Flora and Fauna Reserve to the west.

1.2.2 AREA AND LAND USE

The site comprises 8 lots, and a portion of road reserve, totalling approximately 7.5235ha.

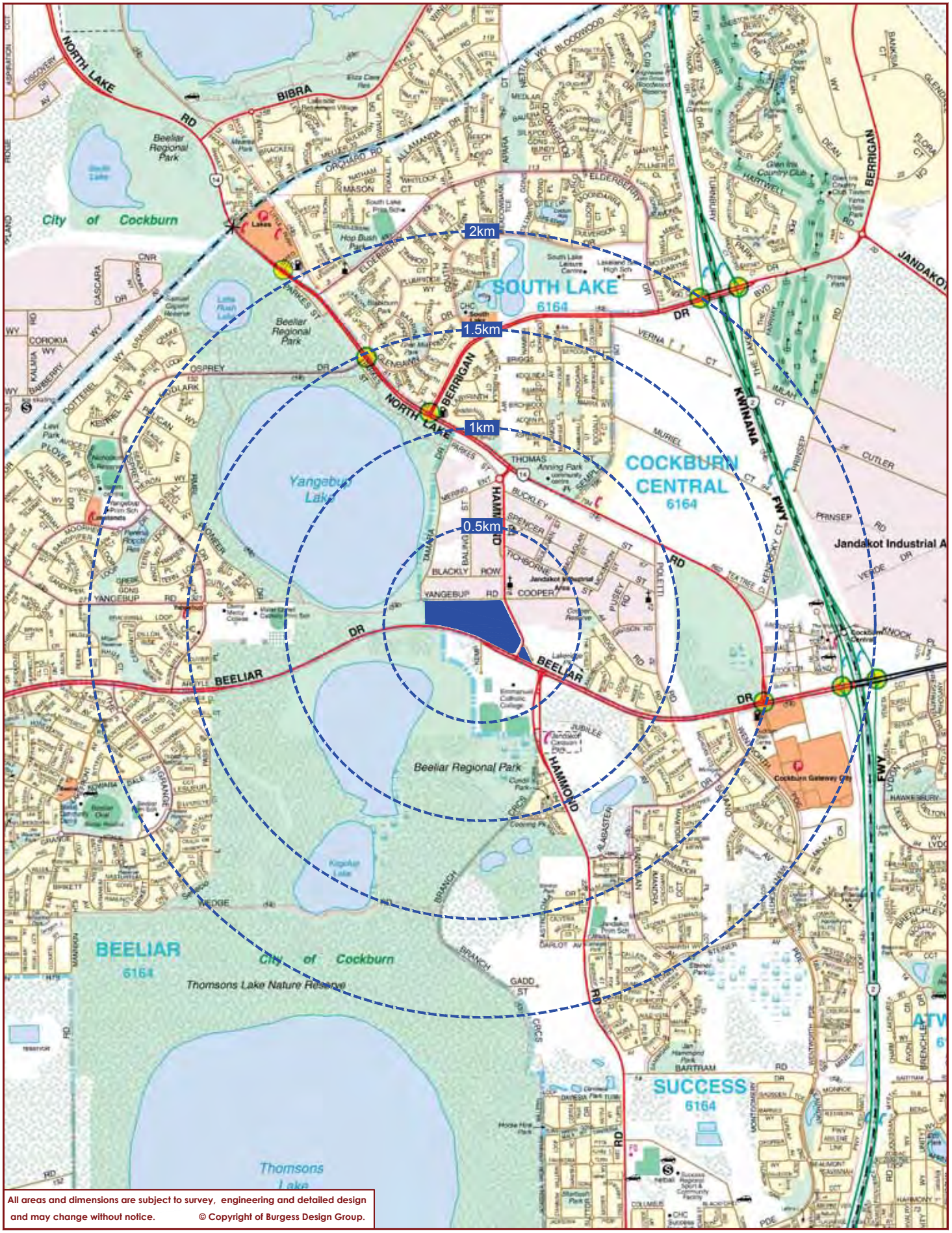
The site currently accommodates a Waldecks Nursery, West 'n' Fresh Fishmongers, Tony Ale Markets, three residences (on Lots 1, 7, and 99) and a large shed (on Lot 803). The remainder of the site is cleared, having previously been used for agricultural purposes (**see Figure 2 – Aerial Photograph**).

1.2.3 LEGAL DESCRIPTION AND OWNERSHIP

The land can be legally described as:

- Lot 1 on Deposited Plan 59832, Volume 2702, Folio 759;
- Lot 7 on Diagram 25994, Volume 1250, Folio 932;
- Lot 99 on Deposited Plan 57197, Volume 2688, Folio 903;
- Lot 146 on Diagram 91759, Volume 2189, Folio 263;
- Lot 147 on Plan 21688, Volume 2214, Folio 609;
- Lot 300 on Deposited Plan 402552, Volume 2898, Folio 294;
- Lot 803 on Deposited Plan 44876, Volume 2624, Folio 442; and,
- Lot 4308 on Deposited Plan 193038, Volume 2151, Folio 262.

Copies of the relevant Certificates of Title are attached at **Appendix 1**.


2km
1.5km
1km
0.5km
SOUTH LAKE
6164
COCKBURN CENTRAL
6164
BEELIAR
6164
SUCCESS
6164
City of Cockburn
Beeliar Regional Park
Yangebup Lake
Thomsons Lake Nature Reserve
Thomsons Lake
Jandakot Industrial A
NORTH LAKE RD
BIBRA
BERRIGAN
KWINANA FWY
HAMMOND RD
BEELIAR DR
JANDAKOT
YANGEBUP RD
NORTH LAKE
PARKES ST
OSPREY DR
VERNA CT
MUREL
CUTLER
PRINSEP RD
BUCKLEY
SPENCER
TIGHSORNE
BLACKLY ROW
COOPER
TEATREE
KENTWELL
KNOCK
JUBILEE
WENTWORTH
RABASTER
BRANCH
GADD ST
BARTRAM RD
HEDGE
ARGYLE
ORCHARD RD
ELDERBERRY
Glen Iris Country Club
South Lake Leisure Centre
Lakeland Senior High Sch
Hop Bush Park
Blackburn Park
Little Rush Lake
Lake Coogee Nature Reserve
Yangebup Prim Sch
Beeliar Prim Sch
Cockburn Gateway City
Jandakot Prim Sch
Emmanuel Catholic College
Success Regional Sport & Community Facility
Jan Hammond Park
Manhattan Park
Davilak Park
Cundi Park
Kogolup Lake
Lake Yangebup
Lake Coogee
Lake Rush
Lake Beeliar
Lake Jandakot
Lake Success
Lake Thomsons
Lake Hope
Lake Mayor
Lake Lakes
Lake Lake
Lake Lake
Lake Lake

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AERIAL DATED 24 APRIL 2015

NORTH

0 20 40 60 80 100m

SCALE 1:2000 (A3)

FIGURE 2: AERIAL PHOTOGRAPH
HAMMOND ROAD NORTH
COCKBURN CENTRAL
CITY OF COCKBURN

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Plan No: ALE COC 9-01a Client: ALE'S
Date: 22.10.18 Planner: MS/MB

1.3 PLANNING FRAMEWORK

1.3.1 ZONING AND RESERVATIONS

The site is zoned 'Urban' under the Metropolitan Region Scheme (MRS) and 'Development' under the TPS3, which also designates the land 'Development Area 35' (DA35) (see **Figures 3** & **4**, respectively).

DA35, through the Development Area provisions listed under Table 9 of the Scheme, seeks to facilitate commercial, retail, and mixed business development over the site in accordance with an approved Structure Plan that addresses retail sustainability and traffic/parking considerations.

1.3.2 REGIONAL AND SUB-REGIONAL STRUCTURE PLAN

South Metropolitan Peel Sub-Regional Planning Framework

The WAPC's South Metropolitan Peel Sub-Regional Planning Framework (Framework) provides high level strategic guidance for the future development of the Metropolitan South-West, Metropolitan South-East and Peel sub regions to accommodate part of the long-term growth of the Perth and Peel regions to 3.5 million people.

The proposed development complies with the principles of the Framework, in that it contributes to a socially, economically, and environmentally sustainable urban form that maximises the use of existing infrastructure to provide employment opportunities and goods and services for the surrounding communities.

1.3.3 PLANNING STRATEGIES

City of Cockburn Local Commercial Activity Centre Strategy

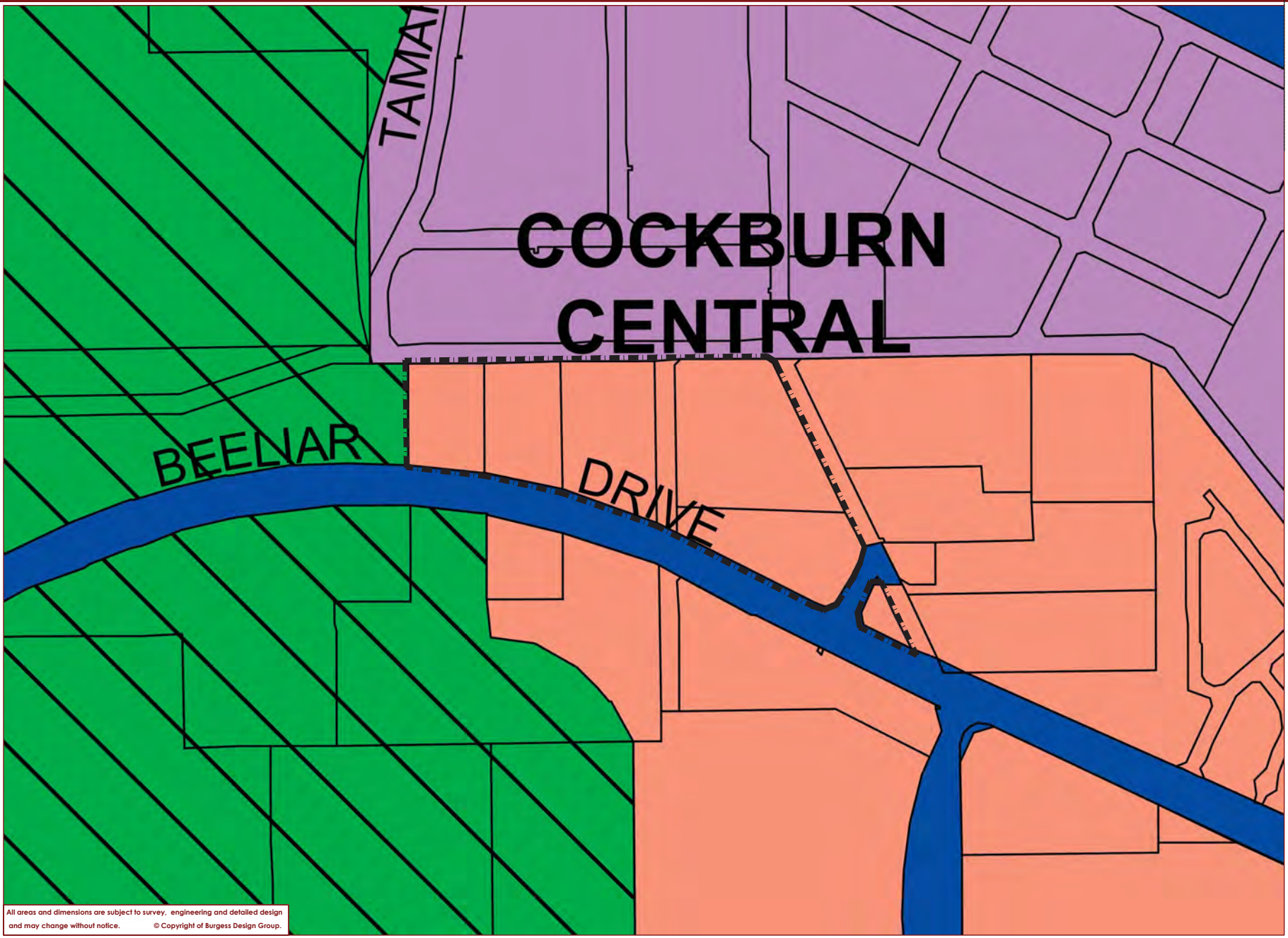
The City of Cockburn's Local Commercial Activity Centre Strategy (LCACS) represents a new strategic direction for the planning and development of activity centres within the City, and responds to the policy context established in *Directions 2031 and beyond*, and *State Planning Policy No.4.2 – Activity Centres for Perth and Peel*.

LCACS identifies the subject site as 'Tony Ales Local Centre' and shows it being within a strategic employment centre, as well as being located adjacent to the 'Beeliar Drive Mixed Business Area'.

Cockburn Central Activity Centre Plan

The Cockburn Central Activity Centre Plan (CCACP) seeks to capitalise on high density residential and mixed use development, high levels of amenity, proximity to natural settings and high levels of public infrastructure to make Cockburn Central the most important centre south of Perth.

CCACP shows the site as being located within the 'frame' area surrounding Cockburn Central (the 'frame' area is deemed to have a direct influence and reliance on the activity centre). This Structure Plan recognises this role, and seeks to create a centre that provides for retail and mixed business uses that support rather than compete with Cockburn Central.



Legend

Subject site

Reserved lands

- Civic and cultural
- Parks and recreation
- Public purposes
- CP Public purposes - car park
- CG Public purposes - Commonwealth Government
- HS Public purposes - high school
- H Public purposes - hospital
- P Public purposes - prison
- SU Public purposes - special uses
- SEC Public purposes - State Energy Commission
- TS Public purposes - technical school
- WSD Public purposes - Water Authority of WA
- U Public purposes - university
- Railways
- Port installations
- State forests
- Waterways
- Water catchments

Reserved roads

- Primary regional roads
- Other regional roads

Zones

- Central city area
- Industrial
- Special industrial
- Private recreation
- Rural
- Rural - water protection
- Urban
- Urban deferred

Notice of delegation

- Bush Forever area

Redevelopment schemes

- Redevelopment scheme/act area area

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NORTH

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FIGURE 3: MRS ZONING
HAMMOND ROAD NORTH
COCKBURN CENTRAL

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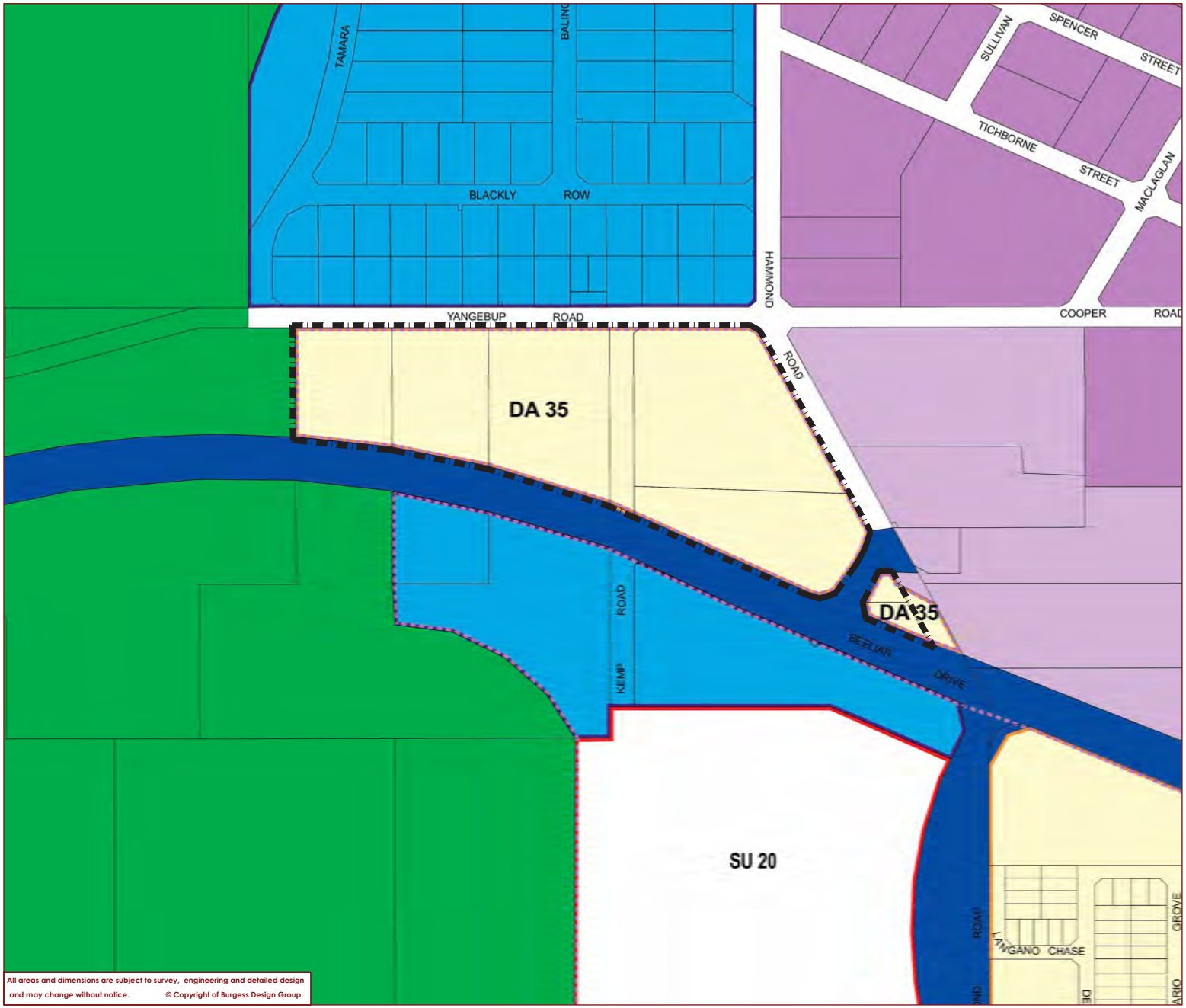

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LEGEND

REGION SCHEME RESERVES (MRS)

- Civic and cultural
- Other regional roads
- Parks and recreation
- R Parks and recreation restricted
- Port installations
- Primary regional roads
- Railways
- State forests
- Waterways
- Water catchments
- Public purposes
- CP Public purposes - car park
- CG Public purposes - Commonwealth Government
- HS Public purposes - high school
- H Public purposes - hospital
- P Public purposes - prison
- SU Public purposes - special uses
- SEC Public purposes - State Energy Commission
- TS Public purposes - technical school
- U Public purposes - university
- WSD Public purposes - Water Authority of WA

LOCAL SCHEME RESERVES

(see scheme text for additional information)

- Lakes and drainage
- Local road
- Parks and recreation
- C Public purposes : Civic
- AG Public purposes : Dept of
- FS Public purposes : Fire station
- GS Public purposes : Gas pipeline
- OP Public purposes : Oil pipeline
- P Public purposes : Police station
- K Public purposes : Pre-school
- PS Public purposes : Primary school
- WC Public purposes : Water Corporation
- WP Public purposes : Western Power

LOCAL SCHEME ZONES

(see scheme text for additional information)

- Development
- District centre
- Industry
- Light and service industry
- Local centre
- Mixed business
- Mixed use
- Regional centre
- Residential
- Resource
- Rural
- Rural living
- Special use

OTHER CATEGORIES

(see scheme text for additional information)

- Scheme boundary
- Local Government boundary
- Hope Valley - Wattleup Redevelopment Area
- R20 R Codes
- A1 Additional uses
- R1 Restricted uses
- SU1 Special use area
- Peel-Harvey coastal plain catchment area
- Building envelope
- BVA Bushfire vulnerability areas
- DA1 Development area
- Development contribution area
- JA Jandakot airport
- Heritage place
- No zone
- Waterbodies
- SUBJECT SITE

NORTH

NTS

FIGURE 4: TPS NO.3 ZONING
HAMMOND ROAD NORTH
COCKBURN CENTRAL

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1.3.4 PLANNING POLICIES

State Planning Policy 4.1 – State Industrial Buffer

State Planning Policy 4.1 (SPP4.1) sets out objectives and principles guiding the application and implementation of buffer requirements to protect the long term security of industrial zones by ensuring suitable separation is provided to sensitive land uses.

A number of Industrial uses exist in the vicinity of the site, giving rise to a need for off-site buffer areas that impact the Structure Plan area. Pursuant to the provisions of SPP4.1, the following sensitive land uses will not be supported within the Structure Plan area:

- Bed and Breakfast;
- Dwelling – Aged or Dependent Persons;
- Dwelling – Caretakers;
- Dwelling – Grouped;
- Dwelling – Multiple;
- Home Business;
- Home Occupation;
- Home Office;
- House – Lodging;
- House – Single;
- Residential Building; and
- Tourist Accommodation.

State Planning Policy 4.2 – Activity Centres for Perth and Peel

State Planning Policy 4.2 (SPP4.2) specifies planning requirements for the planning and development of activity centres and provides for an even distribution of jobs, services and amenities according to the strategic function of centres within the activity centre hierarchy.

Under SPP 4.2, the subject site is classified as a 'Neighbourhood Centre', providing for daily and weekly household shopping needs, community facilities and a small range of other convenience services. This Structure Plan has been prepared in accordance with the requirements of SPP 4.2.

1.3.5 OTHER APPROVALS AND DECISIONS

Scheme Amendment No.90

The subject land was rezoned from 'Light & Service Industry' & 'Local Centre' to 'Development' zone with a 'DA35' designation through Scheme Amendment No.90, gazetted on 17 October 2014. This amendment also introduced a number of special provisions relating to the site under Schedule 11 of the Scheme, with the intent of facilitating commercial, retail, and mixed business development in accordance with an approved Structure Plan.

This Structure Plan has been prepared in accordance with the provisions of Schedule 11, and the intent of Amendment No.90.

1.3.6 Pre Lodgement Consultation

TABLE 4: PRE LODGEMENT CONSULTATION

AGENCY	DATE OF CONSULTATION	METHOD OF CONSULTATION	SUMMARY OF OUTCOME
Land owners within and adjacent to the structure plan area	NA.		
Relevant community groups in the area	NA.		
Local government	Various	Various, via Scheme Amendment process and subsequent meetings.	No issues.
Department of Planning	Various	Various, via Scheme Amendment process.	Scheme Amendment for proposed uses supported.
Department of Water	By sub-consultant – dates unknown.		No issues.
Department of Environment and Conservation	NA.		
Department of Education	NA.		
Department of Indigenous Affairs	NA.		
Main Roads Western Australia	By sub-consultant – dates unknown.	Unknown.	No issues.
Heritage Council	NA.		
Department of Transport	Nil.		
Department of Health	NA.		
Public Transport Authority	NA.		
Environmental Protection Authority	NA.		
Western Power	By sub-consultant – dates unknown.	Unknown.	No issues.
Alinta Gas	By sub-consultant – dates unknown.	Unknown.	No issues.
Water Corporation	By sub-consultant – dates unknown.	Unknown.	No issues.
Telstra	By sub-consultant – dates unknown.	Unknown.	No issues.
Non-government school providers	NA.		
Department for Community Development	NA.		
Department of Sports and Recreation	NA.		
Department of Agriculture and Food Western Australia	NA.		
Fire and Emergency Services Authority	NA.		

2. SITE CONDITIONS AND CONSTRAINTS

A Context and Constraints Plan (refer **Figure 5**) has been prepared to illustrate the main issues discussed in this section of the LSP.

2.1 BIODIVERSITY AND NATURAL AREA ASSETS

The majority of the site comprises managed grassland with some stands of mature trees. The balance of the land (comprising approximately 1.9562ha) has been developed for retail and residential uses and has been cleared, paved and/or landscaped accordingly.

Given that there is no native understory remaining across the site, the vegetation is likely to be considered degraded or completely degraded, and therefore, of little conservation significance or biological value. Additionally, given that the land is surrounded on its northern, eastern, [and to an extent] southern sides by mixed business/commercial development, there is limited opportunity to form ecological linkages with the adjacent reserve.

2.2 LANDFORM AND SOILS

The land slopes gently from a low point of approximately 20m Australian Height Datum (mAHD) in the north western corner of the site to a high point of approximately 25mAHD in the south eastern corner of the site.

The Geological Survey of WA Map indicates that the site is made up of Bassendean sand, which comprises quartz sand (dunes) and swamp and lacustrine deposits, peat, and peaty sand and clay.

2.2.1 ACID SULFATE SOIL RISK

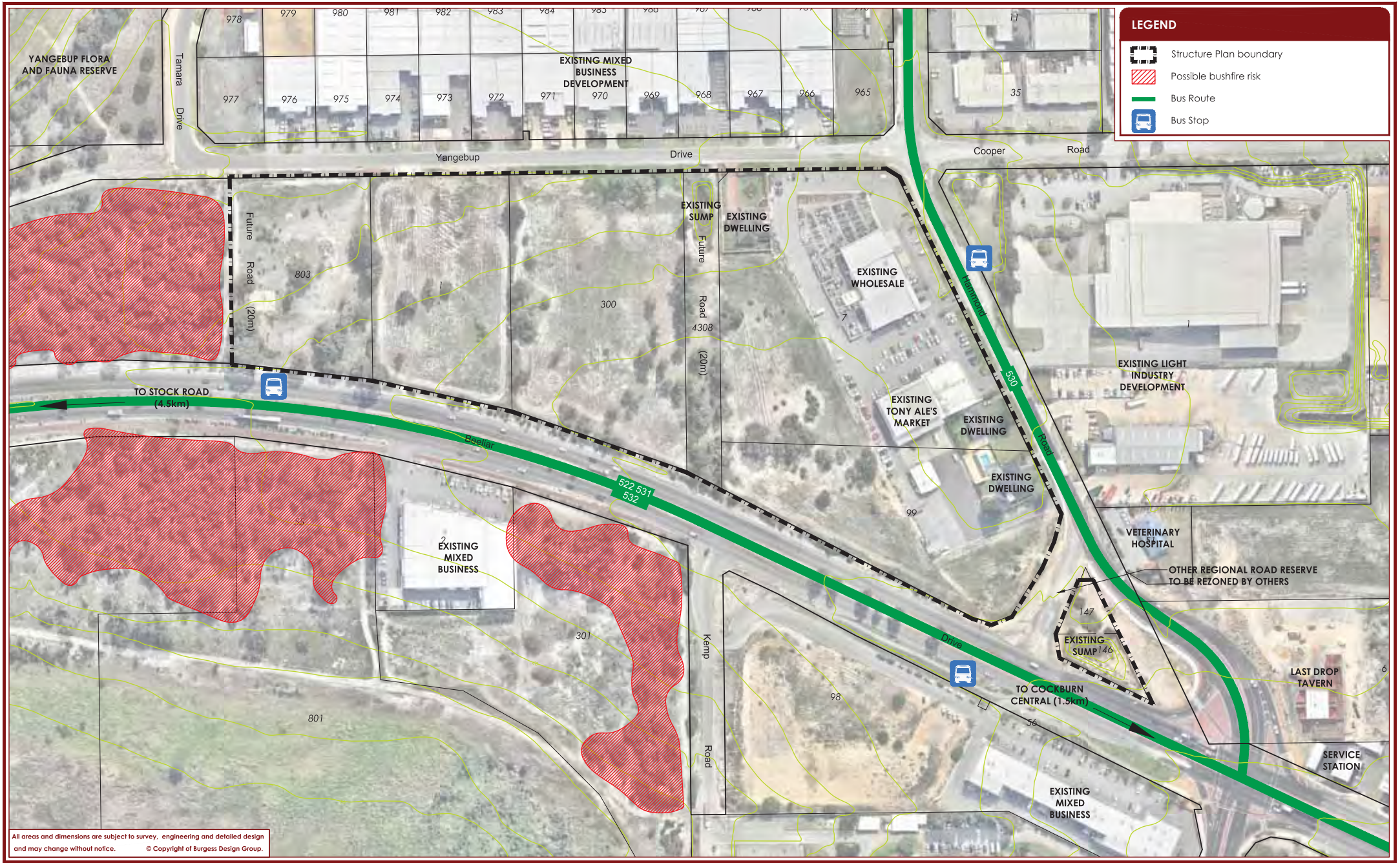
WAPC mapping identifies the site as having a '*moderate to low risk of Acid Sulfate Soils occurring within 3m of natural soil surface but high to moderate risk of ASS beyond 3m of the natural soul surface*'. As such, if significant earthworks are proposed at subsequent development stages, an ASS investigation may be required.

2.3 GROUNDWATER

The Department of Water's Perth Groundwater Atlas indicates that groundwater occurs at a depth of approximately 4-7m below surface level, and flows in a westerly direction towards Yangebup Lake. This depth is considered sufficient so as not to warrant the importation of significant fill across the site.

2.4 SURFACE WATER

A review of contour mapping and aerial imagery indicates that surface water flows across the site in a westerly direction toward Yangebup Lake. The land accommodates a drainage basin on Lot 146, and another minor basin in the northern portion of Lot 4308. The site is otherwise devoid of any surface water features, and it is understood that the majority of rainfall events are currently accommodated on site through infiltration, or suitable soak wells for the developed portions of the land.



NORTH

0 20 40 60 80 100m

SCALE 1:2000 (A3)

FIGURE 5: OPPORTUNITIES & CONSTRAINTS

HAMMOND ROAD NORTH

COCKBURN CENTRAL

CITY OF COCKBURN

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2.5 BUSHFIRE HAZARD

There may be some bushfire hazard associated with vegetation to the west and south of the site, contained within the Yangebup Flora and Fauna Reserve and the Beeliar Regional Park.

State Planning Policy 3.7 aims to minimise the risk to life and property caused by bushfire through the implementation of various policy objectives and measures via the *Planning for Bushfire Risk Management Guidelines*. These Guidelines specify requirements for bushfire hazard assessments and bushfire management plans for land identified as being bushfire prone. These plans typically outline specific built form requirements for residential uses under AS3959 (generally comprising BAL construction standards and setbacks), along with various access requirements and evacuation plans if relevant.

As the proposed uses comprise commercial, retail, and mixed business (i.e. non residential uses), the requirements of AS3959 will not apply. As such, there is limited merit in preparing a bushfire hazard assessment or management plan at the Structure Plan stage, as the issues outlined therein will have no bearing on the siting of structures or suitability of land use. Thus, a bushfire hazard assessment and/or bushfire management plan will be required at either the subdivision or development application stage, whichever comes first. This will enable the formulation of detailed evacuation measures once specific access arrangements are known.

2.6 HERITAGE

A search of the Department of Aboriginal Affair's Land Enquiry System and the City of Cockburn's Municipal Heritage Inventory revealed no registered heritage sites within the LSP area.

3. LAND USE AND SUBDIVISION REQUIREMENTS

3.1 LAND USE

The Structure Plan aims to provide for a mixture of commercial and retail uses that will provide for the daily and weekly shopping needs and services of surrounding residents.

Land use permissibility shall be in accordance with the Scheme for the applicable zoning, together with any provisions of future Local Development Plans prepared over the site. Built form outcomes and access arrangements shall be determined through the preparation of a Local Development Plan (see Section 3.2 for more detail).

3.1.1 LOCAL CENTRE

The Local Centre zone is 3.5533ha, and aims to provide for convenience retailing, local offices, health, welfare and community facilities.

The Local Centre zone could potentially accommodate the existing wholesale uses currently located in the eastern portion of the site, together with a redeveloped Tony Ale's Fresh Food Market, as well as a range of retail and office uses and a possible medical centre.

Small-format retail is expected to be concentrated along the proposed main street, with larger premises (such as Tony Ale's and wholesale uses) to be located behind. This approach is demonstrated in the Concept Plan contained at **Figure 6**.

Careful consideration shall be given to the specific siting and built form outcomes of development through the preparation of a Local Development Plan (see Section 3.2 for more detail).

3.1.2 MIXED BUSINESS

The Mixed Business zone is 3.2763ha, and aims to provide for a wide range of light and service industrial, wholesaling, showrooms, trade and professional services, which, by reason of their scale, character, operation or land requirements, are not generally appropriate to, or cannot conveniently or economically be accommodated within the Centre or Industry zones.

The Mixed Business zoning reflects the existing uses directly to the north of the site, and aims to provide a transition between those uses and the proposed retail uses. The Concept Plan contained at **Figure 6** demonstrates a potential solution, whereby light industrial uses fronting Yangebup Road back on to Showroom Uses facing Beeliar Drive which then lead to the retail, wholesale and possible health services shown in the eastern portion of the site. This effectively provides a transition from business/industry-based activity to retail-based activity whilst minimising any land use or movement conflicts between the two.

Specific interface treatments shall be determined through the preparation of a Local Development Plan (see Section 3.2 for more detail).

3.2 LOCAL DEVELOPMENT PLANS

All development on the site shall generally be in accordance with a Local Development Plan (LDP).

Local Development Plan/s will be prepared for the Structure Plan area pursuant to the WAPC's Local Development Plan Framework and the Schedule 2 Part 6 'Deemed Provisions for Local Planning Schemes' of the *Planning and Development (Local Planning Schemes) Regulations 2015*. To inform the subdivision and/or development stages, the Local Development Plan/s will encompass all the Structure Plan area and as a minimum each Local Development Plan is to respond to the following intended outcomes:

i. Built form in terms of location, orientation, bulk, scale, and height of buildings;
ii. Mix of land uses;
iii. Vehicle access, vehicle parking, pedestrian and cyclist movements;
iv. Provision of end of trip facilities and improvements to access and facilities for pedestrians and cyclists;
v. Street interface treatments along the 'main street' and Beeliar Drive.

3.2.1 Development Applications

An LDP should be prepared over the site, or relevant portion of the site, prior to development approval being granted.

3.3 MOVEMENT NETWORKS

The Structure Plan proposes a new main street, extending from the intersection of Beeliar Drive and Kemp Road north to Yangebup Road through the centre of the site, and an internal movement network with access points to Beelier Drive, Hammond Road, and Yangebup Road. This arrangement will provide ample access to and throughout the site.

Transcore prepared a Transport Assessment Report over the subject site which can be found attached at **Appendix 2**, a summary of which is provided in the subsequent sections. This assessment is based upon land use distribution and access arrangements shown in the Concept Plan contained at **Figure 6**. It should be noted that the final layout of the site, including access arrangements, will be set out in a Local Development Plan.

3.3.1 EXISTING ROAD NETWORK

A summary of the existing road network is provided in **Table 5** below:

TABLE 5: EXISTING ROAD NETWORK

Road	Cross-section	Speed Limit	Road Classification
Beeliar Drive	Dual carriageway, with shared path on southern side	70km/h	District Distributor A Road
Hammond Road	8m single carriageway	60km/h	District Distributor B
Yangebup Road	8m single carriageway	50km/h	Access Road

3.3.2 TRAFFIC IMPACTS

The estimated daily traffic impact impacts arising from the proposed development are summarised in **Table 6** below:

TABLE 6: SUMMARY OF TRAFFIC IMPACTS

Road Sections	Total Daily Traffic (vpd)			Impact (%)
	Existing	LSP	Total	
Yangebup Rd (W of Hammond Rd)	800	1,360	2,160	170%
Hammond Rd (N of Yangebup)	13,000	1,840	14,840	14%
Hammond Rd (S of Beeliar Dr)	11,200	620	11,820	5.5%
Beeliar Dr (W of LSP)	31,000	1,360	32,360	4.4%
Beeliar Dr (E of Hammond Rd)	27,600	1,360	28,960	4.9%

The *WAPC Transport Assessment Guidelines* (2016) provide that an increase in traffic of less than 10 per cent is generally not considered to have a material impact, and thus does not require further assessment. Other than Yangebup Road and Hammond road (north of Yangebup Road), the proposed development will not cause an increase in traffic flow beyond this threshold.

Yangebup Road is currently significantly underutilised, and even with the addition of the traffic generated from the development, is only predicted to reach 72% of its capacity. As such, Yangebup Road is considered to have sufficient capacity to accommodate the predicted traffic generated by the development.

Hammond Road (north of Yangebup Road) is estimated to carry 13,000 vehicles per day at present, increasing to 15,000 vehicles per day with the addition of traffic generated by the development. This daily volume is within the capacity threshold of a District Distributor B and the physical threshold of a two-lane single carriageway road.

3.3.3 FUTURE ROAD NETWORK

Proposed changes to the road network include:

- A new main street linking Beeliar Drive and Yangebup Road, bisecting the site;
- Upgrading the intersection of Hammond Road, Yangebup Road and Cooper Road;
- Consolidating the existing crossovers to Hammond Road into a single left-in/left-out crossover;
- A new crossover to Beeliar Drive and Yangebup Road; and
- An integrated internal movement network.

A number of additional crossovers and/or service laneways may also be provided as required to ensure the safe and efficient movement of vehicles throughout the site. As access arrangements will not be finalised until a Local Development Plan has been prepared, some minor changes may occur.

3.3.4 HAMMOND ROAD LEFT-IN/LEFT-OUT

A suitable design treatment shall be required at the proposed left-in/left-out intersection to Hammond Road to facilitate safe and controlled access.

It is envisaged this will involve the construction of a left-turn slip lane to minimise any impacts on the operation of northbound traffic along Hammond Road. Additionally, it is understood the City of Cockburn expects a median treatment to be provided on Hammond Road to physically reinforce the left-in/left-out treatment and that a simple seagull island treatment is not sufficient.

3.3.5 HAMMOND ROAD/COOPER ROAD/YANGEBUP ROAD INTERSECTION

The intersection of Hammond Road, Yangebup Road, and Cooper Road is required to be upgraded to maintain an acceptable level of service and standard of safety. SIDRA analysis indicates this upgrade will maintain an excellent level of service (LOS A) in both AM and PM peak periods through to year 2026. This upgrade is expected to require land acquisition for road widening to accommodate a treatment that meets *Restricted Access Vehicle – Network 4* standards.

Cost contribution arrangements shall be agreed with the City to fund the upgrade. It is understood the City's expectation is that this cost be met in full by the developer because the upgrade is required to address issues related to the development of the Structure Plan Area and would otherwise not be needed.

The City of Cockburn also expects that a detailed design review will be required to assess the feasibility and demand for Restricted Access Vehicle movements along the intersecting roads, and to determine the extent of road widening required.

3.3.6 UPGRADING OF YANGEBUP ROAD

Yangebup Road is currently constructed as a single carriageway, two-way rural road, and will need to be upgraded to an urban standard, with appropriate kerbing, drainage, paths, and possibly embayed parking, as part of any future development of abutting land.

The City of Cockburn expects this upgrade to be undertaken by the developer.

3.3.7 PUBLIC TRANSPORT

There are several bus services operating along Beeliar Drive and Hammond Road, with bus stops within a 5-10min walking distance from the LSP area. A summary of these services is provided in **Table 7** below:

TABLE 7: BUS SERVICES

Bus Service	Route
522	Cockburn Central Train Station/Phoenix Shopping Centre
530	Cockburn Central Train Station/Fremantle Train Station
531	Cockburn Central Train Station/Fremantle Train Station
532	Cockburn Central Train Station/ Fremantle Train Station

These services provide excellent access to both Cockburn Central and Fremantle Train Stations, linking the site to important local and regional destinations.

3.3.8 PEDESTRIAN AND BIKE NETWORK

The Perth Bike Map series published by the Department of Transport shows local roads around the site have good road riding environments.

Additionally, a shared path is located along the southern side of Beeliar Drive connecting to the Principal Shared Path along the Kwinana Freeway approximately 1.6km east of site. There is also a shared path (recreational path) in place along the perimeter of Yangebup Lake that connects to the residential areas located west of the Lake.

A new shared path will be constructed within the southern verge of Yangibup Road and the northern verge of Beeliar Drive, and an existing path along Hammond Road will be upgraded to a shared path standard where each abuts the LSP area.

Notwithstanding what is shown on the Concept Plan, the City's expectation is that any new pedestrian crossings along Beeliar Drive must be given approval in principle by Main Roads WA.

3.3.9 PARKING

The total parking provision requirements for the LSP area will be finalised at the development approval stage once final floor areas are known.

Notwithstanding the above, the Concept Plan contained at **Figure 6** provides for approximately 1,022 bays distributed in several parking clusters over the LSP area. Based on preliminary calculations, the parking supply shown conforms with the City's Scheme requirements.

3.4 WATER MANAGEMENT

3.4.1 URBAN WATER MANAGEMENT PLAN

An Urban Water Management Plan will be required as a condition of subdivision approval in accordance with the WAPC's *Better Urban Water Management* document.

3.4.2 STORMWATER MANAGEMENT

A Stormwater Drainage Strategy will be prepared for the site, and will ensure that:

- All catchment runoff is retained up to and including the 1 in 20 year ARI event within the development area;
- 1 in 100 year events will be discharged via the road network to the district drainage system; and
- Stormwater from the 1-20 year events is retained and infiltrated on individual sites in keeping with the City's commercial stormwater discharge principles.

In order to minimise the runoff from individual lots, soakwells or other appropriate soakage systems will need to be provided within the lots. These will be designed to have the capacity to infiltrate and retain stormwater runoff generated from a 1 in 1 year storm event with appropriate first flush capture and overflow (either direct or by surface grading) to the road drainage network during storm events greater than 1 in 20 year return period.

3.4.3 WASTEWATER DISPOSAL

Based on preliminary discussions with the Water Corporation, all lots within the proposed development area will be connected to the existing sewerage system available on all common boundaries with adjacent land holdings.

All internal sewer reticulation pipework will be designed and constructed to the standards and requirements of the Water Corporation of Western Australia.

3.5 RETAIL ASSESSMENT & EMPLOYMENT

A retail sustainability assessment prepared by Tactiks4 (refer **Appendix 3**) indicates that the subject site can sustain 8,100m² of retail/shop uses, comprising the following net lettable areas:

- 3,300m² of Supermarket; and,
- 4,800m² of shop/retail.

The proposed development will effectively capitalise on the significant residential growth expected in the catchment area; thereby providing for a range of services and employment opportunities that complement existing uses in nearby centres without compromising the continued implementation and sustainability of those centres.

The development is expected to deliver 648 jobs in total, or 562 jobs in addition to the 87 already provided. The proposed development is also expected to significantly contribute to employment diversity in the area, with the reliance on industrial floorspace falling from 96% to 77% of total floorspace in the Jandakot West Industrial Precinct. Additionally, the employment profile within the site itself is expected to reduce its reliance on shop floorspace; which is predicted to fall from 87% to 50% of floorspace, with industrial, bulky goods, and office uses providing additional employment bases.

3.6 INFRASTRUCTURE COORDINATION, SERVICING AND STAGING

An Engineering Servicing Report was prepared over the site in 2016 by Peritas Group (refer **Appendix 4)**. The report confirms that there are no identified servicing constraints that prevent the land from being developed. A summary of this report is provided in the proceeding sections.

3.6.1 WATER

Existing services are present in the surrounding area, which will be extended to service future development as needed. All internal water reticulation pipework will be designed and constructed to the standards and requirements of the Water Corporation of Western Australia.

3.6.2 POWER

It is anticipated that all future development will be serviced with underground power. This system will connect to the existing overhead/underground network located in adjoining roads.

3.6.3 TELECOMMUNICATIONS

Information from Telstra indicates there is a service network within the surrounding area. It is anticipated that all lots within the proposed development will be served with Telstra Telecommunication services.

3.6.4 GAS

ATCO Gas has advised that reticulated gas services are available in the surrounding area.

It is anticipated that this network will have sufficient capacity to service the development with reticulated gas services by extension of two existing mains.

3.7 DEVELOPER CONTRIBUTION ARRANGEMENTS

Development within the Structure Plan area will not generate a need for any major new infrastructure items. As such, no developer contribution arrangements will be needed.

The site falls within the City-wide Development Contribution Plan 13 (DCP13). As DCP13 applies only to new dwellings, it will not have any effect on the proposed development.

FIGURE 6: CONCEPT SITE PLAN
HAMMOND ROAD NORTH
COCKBURN CENTRAL

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Plan No: ALE COC 1-05c-01 Client: Tony & John Allessandrini
Date: 22.10.18 Planner: MS

NORTH

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0 10 20 30 40 50 60 70m
SCALE 1:1,500 (A3)

CITY OF COCKBURN

4. CONCLUSION

The Structure Plan as described in this report satisfies the planning frameworks adopted by the City of Cockburn and the Western Australian Planning Commission, and the advice received during consultation with other agencies.

The proposed retail and commercial development has been shown to be an ideal and timely addition to the area, and will provide for a range of goods services that meet the demands of the local community and which complement the functions of the wider Cockburn Central Activity Centre. To that end, the Structure Plan utilises a combination of 'Local Centre' zone and 'Mixed Business' zone to accommodate a range of retail, office, showroom, and light industrial uses, which together will form a cohesive and vibrant centre that will provide up to 27,350m² of net letable area.

In light of the information presented herein, the Structure Plan represents a logical and well planned addition to the ongoing development of the wider Cockburn Central Activity Centre.

Design Review Report

Local Retail Centre
86-88 Lot 7 & 99 Hammond Rd, Cockburn Central

City of Cockburn

October 2025

Design Review Report		
Subject	**Local Retail Centre – 86-88 Lot 7 & 99 Hammond Rd, Cockburn Central**	
Date	22/10/2025	
Time	3:20PM – 4:00PM	
Location	City of Cockburn	
Design Reviewers	Simon Venturi Lisa Shine Adriano Piviali	Panel Chair Panel Member Panel Member
Proponent	David Maiorana	Rowe Group
Project Team	Graeme Taylor Greg Pearce Tarryn Stain Kelsie Davies	Place Fabric Windsor Knight Windsor Knight KDLA
Planning Authority	City of Cockburn	
City of Cockburn	Lucia Dunstan Gayle O'Leary	Service Manager Development Services Planning Officer
Declarations	None	
Design Review Report Endorsement		
Chair Signature		

Introductory Comments

The Panel thanks the applicant for presenting the proposal. Commentary and recommendations are provided below to inform the proposal's design development moving forward.

Design quality evaluation

		Supported
		Pending further attention
		Not supported
		Insufficient information provided by applicant to assess
Strengths of the Proposal		• The 'click and collect' is positioned in an appropriate location on the site • Retaining a number of existing mature trees on the site and integrating some into the tenancy alfresco area is supported and commended • A generous number of new trees are shown in the carpark providing shade supplemented by shade canopies • The landscaping incorporates endemic / native planting and some larger trees • A link to the adjacent west side Gym site has been established • East west pedestrian pathways through the site are generally legible and continuous • Some vehicle movement within the carpark is flush with pedestrian pathways establishing a pedestrian orientated environment • A diversity of materiality is included on the external elevations
Principle 1 **Context and character**		*Good design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place.*
		a) Built form on the site is positioned at the rear of the site with car parking in-front of the building visible from the primary streetscape interfaces, the loading docks are positioned in close proximity to the commercial properties at the rear, drive-through takeaway offerings are positioned on landmark corners and parking is butted up against both primary streetscapes with minimal landscaping buffers which is not optimal from surrounding context, community, streetscape interactivity or passive surveillance perspectives
Recommendations		**1. Consider all strategies to activate the corner, north south entry road and Beeliar Drive streetscape interfaces. Introduce a pocket park on the corner of the site and consider the north south entry road and Beeliar Drive streetscapes as linear pocket parks all incorporating public space infrastructure and integrated landscaping to soften as well as activate these edges whilst also allowing pedestrians to filter through these spaces to access the site** **2. Introduce greater architectural screening as well as generous landscaping to establish a stronger buffer between the loading docks and adjoining context at the rear of the site**
Principle 2 **Landscape quality**		*Good design recognises that together landscape and buildings operate as an integrated and sustainable system, within a broader ecological context.*
		a) Landscaping metrics on the site are generally positive however landscaping can be strategically employed in a number of areas to improve built form interfaces such as on the perimeter streetscapes and the rear loading docks
Recommendations		**1. Add a generous landscaping strip on the perimeter streetscape interface of the site between car parking and adjoining streetscapes** **2. Introduce 'linear pocket parks' on both streetscape interfaces to soften as well as activate these edges whilst also facilitating pedestrian movement to the centre**

		3. Add more generous landscaping at the rear of the site as a buffer between the loading dock and adjacent properties
Principle 3 **Built form and scale**		*Good design ensures that the massing and height of development is appropriate to its setting and successfully negotiates between existing built form and the intended future character of the local area.*
		a) The development's height is appropriate however as noted in the Context & Character Principle the organisation of built form on the site is not optimal from a surrounding context, community, streetscape interactivity or passive surveillance perspective.
Recommendations		**1) Refer to recommendations in the Context & Character Principle**
Principle 4 **Functionality and build quality**		*Good design meets the needs of users efficiently and effectively, balancing functional requirements to perform well and deliver optimum benefit over the full life-cycle.*
		a) The proposal is a highly functionally driven outcome
Recommendations		**None**
Principle 5 **Sustainability**		*Good design optimises the sustainability of the built environment, delivering positive environmental, social and economic outcomes.*
		a) The current ESD narrative is a high level framework which is a good start but requires further detail and firm initiative commitments b) The passive ESD aspect is not optimal with every speciality tenancy as well as the alfresco areas on the site all facing south
Recommendations		**1. Provide further detail on the nominated ESD initiatives such as the sizes of the PV solar systems that will be installed as well as the number of EV charging bays that will be installed as part of the development's initial construction** **2. Show bicycle racks nominated as an ESD initiative on the drawings** **3. Consider integrating further active ESD initiatives** **4. Include solar access diagrams for the speciality tenancies and consider all opportunities to increase north light access to speciality tenancies and alfresco areas**
Principle 6 **Amenity**		*Good design optimises internal and external amenity for occupants, visitors and neighbours, providing environments that are comfortable, productive and healthy.*
		a) The width of the F&B alfresco area could be increased and this area could also incorporate additional public uses such as a children's play area b) The car bays on the north side of the main east west vehicle access circulation link near the main entrances to the centre introduce a vehicle use in what is a pedestrian orientated area of the site
Recommendations		**1. Increase the width of the F&B alfresco area and introduce additional public spaces (rather than alfresco spaces directly linked to F&B tenancies) such as a children's play space** **2. Introduce a pocket park on the corner of the site and linear pocket parks on both streetscape interfaces as noted in the Context & Character Principle**
Principle 7 **Legibility**		*Good design results in buildings and places that are legible, with clear connections and easily identifiable elements to help people find their way around.*
		a) The east west pedestrian pathways are legible and continuous however the north south pathways are more fragmented, stop start, have dead ends and lead to fast food tenancies b) The north south pedestrian pathways don't align with the main entrances to the centre c) The two entrances to the centre aren't particularly visible if you remove the signage. Both entrances currently visually meld into the centre's surrounding built form
Recommendations		**1. Strengthen the legibility and continuity of the north south pedestrian pathways on the site and introduce additional connections to the Beeliar Drive streetscape interface**

		2. Consider aligning the north south pedestrian pathways on the site with the main entrances to the centre to make the pathways as well as centre entrances more legible **3. Introduce greater articulation of architectural form and diversity of materiality at the main entrances to the centre to make them more visually prominent and legible**
Principle 8 **Safety**		*Good design optimises safety and security, minimising the risk of personal harm and supporting safe behaviour and use.*
		a) The end of trip facilities currently appear isolated in terms of accessing them from parts of the centre with workers needing to come outside to access them b) The arrangement of built form on the site generates low levels of passive surveillance of all streetscapes as well as some areas on the site
Recommendations		**1. Consider more convenient and direct access to the end of trip facilities from the main retail centre** **2. Illustrate that high quality and a high level of artificial lighting will be provided on all external areas of the site** **3. Refer to recommendations in the Context & Character Principle in relation to introducing pocket parks on the permitter of the site to increase streetscape interactivity and passive surveillance**
Principle 9 **Community**		*Good design responds to local community needs as well as the wider social context, providing environments that support a diverse range of people and facilitate social interaction.*
		a) Public art has currently been used on the long blank walls at the rear of the site to mitigate a sub-optimal built form outcome however there are further opportunities for public art that could contribute to site users as well as the surrounding community in a more meaningful way
Recommendations		**1. Provide a high level Public Art Strategy for the site illustrating additional locations and forms of public art at the front of the site, such as sculptural works integrated into the recommended corner pocket park and F&B alfresco area of the site**
Principle 10 **Aesthetics**		*Good design is the product of a skilled, judicious design process that results in attractive and inviting buildings and places that engage the senses.*
		a) Signage typically plays and important role in defining the feel of this type of development
Recommendations		**1. Provide a Signage Strategy clearly nominating the types and locations of signage that will be integrated into the development in a sensitive way whilst still achieving adequate commercial visibility** **2. Refer to recommendations in the Legibility Principle in relation to introducing greater articulation of form / architectural language as well as diversity of materiality at the main entrances to improve the entry 'experience' as well as legibility**

Concluding Remarks

The Proposal includes a number of positive aspects as noted above however the applicant is encouraged to provide further information in relation to the Sustainability Principle and undertake further design development to address the above recommendations in order to gain DRP endorsement for the proposal.

The proposal will be required to return to the DRP.

Design Review progress			
	Supported		
	Pending further attention		
	Not yet supported		
	Insufficient information provided by applicant to assess		
	DR1 – 22/10/25	***DR2***	***DR3***
Principle 1 - **Context and character**			
Principle 2 - **Landscape quality**			
Principle 3 - **Built form and scale**			
Principle 4 - **Functionality and build quality**			
Principle 5 - **Sustainability**			
Principle 6 - **Amenity**			
Principle 7 - **Legibility**			
Principle 8 - **Safety**			
Principle 9 - **Community**			
Principle 10 - **Aesthetics**			

Design Review Report

Local Retail Centre
Lot 1, 704, and 4308 Yangebup Rd, Cockburn Central

City of Cockburn

November 2025

Design Review Report		
Subject	**Local Retail Centre – Lot 1, 704, and 4308 Yangebup Rd, Cockburn Central**	
Date	26/11/2025	
Time	5:00PM – 5:45PM	
Location	City of Cockburn	
Design Reviewers	Simon Venturi Brett Wood-Gush David Barr	Panel Chair Panel Member Panel Member
Proponent	George Hajigabriel	Rowe Group
Project Team	Graeme Taylor Greg Pearce Tarryn Stain Kelsie Davies Prasanna Suraweera	Place Fabric Windsor Knight Windsor Knight KDLA Summation
Planning Authority	City of Cockburn	
City of Cockburn	Lucia Dunstan Riley Brown Gayle O'Leary	Service Manager Development Services Service Lead Development Services Planning Officer
Declarations	None	
Design Review Report Endorsement		
Chair Signature		

Introductory Comments		
The Panel thanks the applicant for presenting the proposal and responding strongly to the Panel's previous commentary and recommendations.		
Design quality evaluation		
		Supported
		Pending further attention
		Not supported
		Insufficient information provided by applicant to assess
Strengths of the Proposal (based on changes)		• The presentation directly addresses the Panel's previous comments • Olive trees proposed alongside the north south road (Allesandrini Drive) links to the history of the site • Moving the roundabout further south and increasing the size of the public space on the corner of the alfresco area is supported • The internal Main Street and alfresco areas are generous • The subtle curve in the east west internal road acts as a traffic calming device • A low height wall on the corner of the site softens the presentation of the fast food offering when viewed from the streetscape which previously appeared exposed and a little like a service area • Parklets or 'pause' areas on the perimeter as well as throughout the site along pedestrian pathways establish a series of community spaces and activates the site • The buffer to the loading docks at rear of the site in the form of screening and landscaping has been strengthened • ESD commitments including a 30kW PV solar system, all electric development and EV charging have been added • Bicycle parking is now shown on the drawings • Two set-down parking bays have been removed near main entry to the centre • The legibility of the north south pedestrian pathways through site have been strengthened and now connect to the Beeliar Drive streetscape as well as the main entries to the centre • A greater diversity of public art has been shown on the site including in the alfresco areas at the front of the site
Principle 1 **Context and character**		*Good design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place.*
		a) Built form is positioned at the rear of the site with car parking in-front of the building visible from the primary streetscape interfaces, the loading docks are positioned in close proximity to the commercial properties at the rear, drive-through takeaway offerings are positioned on landmark corners and parking is butted up against both primary streetscapes which is not optimal from surrounding context, community, streetscape interactivity or passive surveillance perspectives.
Recommendations		**1. Consider positioning built form addressing the primary streetscape on the site and establish a greater buffer to the properties at the rear of the site.**
Principle 2 **Landscape quality**		*Good design recognises that together landscape and buildings operate as an integrated and sustainable system, within a broader ecological context.*

		a) Landscaping on the site is generous however there is an opportunity to plant some larger trees on the site.
Recommendations		• **Consider all opportunities for larger trees on the site.**
Principle 3 **Built form and scale**		*Good design ensures that the massing and height of development is appropriate to its setting and successfully negotiates between existing built form and the intended future character of the local area.*
		a) No further development comments. Supported.
Recommendations		• **None**
Principle 4 **Functionality and build quality**		*Good design meets the needs of users efficiently and effectively, balancing functional requirements to perform well and deliver optimum benefit over the full life-cycle.*
		a) No further development comments. Supported.
Recommendations		• **None**
Principle 5 **Sustainability**		*Good design optimises the sustainability of the built environment, delivering positive environmental, social and economic outcomes.*
		a) No further development comments. Supported.
Recommendations		• **None**
Principle 6 **Amenity**		*Good design optimises internal and external amenity for occupants, visitors and neighbours, providing environments that are comfortable, productive and healthy.*
		a) No further development comments. Supported.
Recommendations		• **None**
Principle 7 **Legibility**		*Good design results in buildings and places that are legible, with clear connections and easily identifiable elements to help people find their way around.*
		a) No further development comments. Supported.
Recommendations		• **None**
Principle 8 **Safety**		*Good design optimises safety and security, minimising the risk of personal harm and supporting safe behaviour and use.*
		a) The arrangement of built form on the site generally generates low levels of streetscape passive surveillance however the introduction of Parklets throughout the site plays a role in activating the site, generating some streetscape passive surveillance and well as surveillance internally on the site.
Recommendations		• **None**
Principle 9 **Community**		*Good design responds to local community needs as well as the wider social context, providing environments that support a diverse range of people and facilitate social interaction.*
		a) Public art is proposed on the long blank walls at the rear of the site to enliven blank walls and some public art has now been introduced in the alfresco area near the roundabout on the corner to the east west street. Additional public art at the front of the site has the potential to engage with users of the site as well as the surrounding community in a more meaningful way. b) Ensure public space infrastructure public art achieves a unique, engaging outcome that possesses a level of artistic integrity rather than providing standard bench seats, tables, bike racks etc. using the Percent for Art budget which would not be supported. c) Public art should not incorporate the name of the centre, business names, primary functions / uses of the centre etc. which are typically considered marketing and not permitted under Percent for Art policies. Allow artists to generate unique creative concepts for the public art.
Recommendations		**1. Further integrate public art into the Parklets dispersed throughout the site and ensure artistic concepts are unique as well as engaging with a**

		high level of artistic integrity to contribute to the site and surrounding local community in a meaningful way.
Principle 10 **Aesthetics**		*Good design is the product of a skilled, judicious design process that results in attractive and inviting buildings and places that engage the senses.*
		a) Signage typically plays and important role in defining the feel of this type of development in conjunction with the development's architectural language.
Recommendations		**1. Provide a Signage Strategy clearly nominating the types and locations of signage that will be integrated into the development in a sensitive way whilst still achieving adequate commercial visibility.**

Concluding Remarks

The applicant has responded strongly to the Panel's previous comments and recommendations. Whilst the organisation of built form on the site positioned at the rear of the site is not the Panel's preferred arrangement, the applicant has strengthened the buffer to the loading docks at the rear of the site, improved the network of pedestrian pathways through the site and introduced a series of small Parklet style public spaces on the perimeter as well as dispersed throughout the site which assists in activating the site.

On balance the proposal is supported by the Panel pending the inclusion of an appropriate Signage Strategy being provided prior to the submission of a Development Approval application.

Design Review progress

	Supported
	Pending further attention
	Not yet supported
	Insufficient information provided by applicant to assess

	DR1 – 22/10/25	***DR2 – 26/11/25***	***DR3***
Principle 1 - **Context and character**			
Principle 2 - **Landscape quality**			
Principle 3 - **Built form and scale**			
Principle 4 - **Functionality and build quality**			
Principle 5 - **Sustainability**			
Principle 6 - **Amenity**			
Principle 7 - **Legibility**			
Principle 8 - **Safety**			
Principle 9 - **Community**			
Principle 10 - **Aesthetics**			

PART D – OTHER BUSINESS

1. **State Administrative Tribunal Applications and Supreme Court Appeals**

2. **Meeting Closure**