PART B – SHIRE OF SERPENTINE-JARRAHDALE

1. Declarations of Due Consideration

2. Disclosure of Interests

3. Form 1 DAP Applications

3.1 Lot 9021 Skyline Boulevard, Whitby - Whitby District Centre – DAP/26/03154

4. Form 2 DAP Applications

Nil

5. Section 31 SAT Reconsiderations

Nil

Part B – Item 3.1 - Lot 9021 Skyline Boulevard, Whitby

RESPONSIBLE AUTHORITY REPORT - FORM 1	
DAP Name:	Metro Outer DAP
DAP File No:	DAP/26/03154
LG Reference:	PA26/49
Proposed Development:	Whitby District Centre
Value of Development:	$30 million
Owner:	Gold Fusion Pty Ltd
Applicant:	SLR Consulting Pty Ltd
Local Government Area:	Serpentine Jarrahdale
Responsible Authority:	Shire of Serpentine Jarrahdale
Authorising Officer:	Andrew Trosic - Director Development Services
Application Acceptance Date:	21 July 2026

LOCATION PLAN



RESPONSIBLE AUTHORITY RECOMMENDATION

That the Metro Outer DAP resolves to **APPROVE** DAP Application reference DAP/26/03154 for the Whitby District Centre at Lot 9021 Skyline Boulevard, Whitby 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 Shire of Serpentine Jarrahdale Local 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
Development Plans	P1 - P18	2 July 2026
Traffic Impact Assessment	P19	24 Sep 2026
Stormwater Management Plan	P20	17 July 2026
Environmental Noise Assessment	P21	25 June 2026
Bushfire Management Plan	P22	July 2026
Waste Management Plan	P23	30 June 2026
Landscaping Concept Plan	P24	1 June 2026
Sustainability Report	P25	7 June 2026

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

3. The ‘Child Care Premises’ is permitted to care for up to 86 children at any one time.

4. The permitted hours of operation for the ‘Child Care Premises’ are 7:00am to 7:00pm Monday to Friday.

5. This approval includes the two ‘Fast Food Outlet’ uses, however does not extend to the physical works components of these uses, including layout, signage and accessibility. Accordingly, prior to the lodgement of a Building Permit for the Fast Food Outlets, amended plans detailing all aspects of physical works, signage and layout are to be submitted to and approved by the Shire of Serpentine Jarrahdale.

6. Prior to the lodgement of a Building Permit, the landowner shall contribute towards development infrastructure pursuant to Local Planning Scheme No. 3, and the specific Development Contribution Plan for Development Contribution Area No. 3, to the satisfaction of the Shire of Serpentine Jarrahdale.

7. Prior to the lodgement of a Building Permit, the landowner shall contribute towards community infrastructure pursuant to Local Planning Scheme No. 3, and the specific Development Contribution Plan for Development Contribution Area No. 4, to the satisfaction of the Shire of Serpentine Jarrahdale.

8. Prior to lodgement of building permit a Public Art Plan shall be submitted to and approved by the Shire consistent with the requirements of Local Planning Policy 1.6 – Public Art. The Public Art Plan shall set out how public art will be curated across the site in a coordinated manner. Once approved, Public Art shall be delivered in accordance with the Public Art Plan to the satisfaction of the Shire.

9. Prior to the lodgement of a Building Permit, amended development plans are to be submitted to and approved by the Shire of Serpentine Jarrahdale which specify:

    a. The final floor plans and elevations of the Community Workshop building;

    b. Provision of an additional 20 public bicycle racks, which take the form of integrated street furniture located either side of Skyline Boulevard, and are located near the main entrance to the development and community space area of the development;

    c. Updated east elevation of the click and collect area of the supermarket facing Skyline Boulevard to include additional material variation and/or vertical treatments to provide articulation and greater visual interest to the street;

    d. Updated site plan to show the construction of Goodwood Boulevard west of the roundabout intersection to an 'Integrator B' standard up to the western most car park entrance, including provision of a suitable temporary cul-de-sac turnaround area at the western end;

    e. Updated site plan to show the pedestrian crossing at Goodwood Boulevard and Skyline Boulevard to be provided perpendicular (at a 90-degree angle) to the road.

    Once approved, development shall be carried out in accordance with the amended development plans to the satisfaction of the Shire of Serpentine Jarrahdale.

10. Prior to the lodgement of a Building Permit, civil drawings shall be submitted to and approved by the Shire of Serpentine Jarrahdale, based on the final revised plans required by the conditions of this approval. The civil drawings should detail vehicle parking areas including street bays, accessways, internal roads, crossovers, median strips and all adjoining verge upgrades pertaining to pathways. The civil drawings must:

    a. Be designed in accordance with the relevant Australian/New Zealand Standard;

    b. Include a suitable number of car parking spaces dedicated to people with disability designed in accordance with the relevant Australian/New Zealand Standard;

    c. Be constructed, sealed, kerbed, drained, marked and thereafter maintained;

    d. Include suitable bus embayment's throughout the site, with final locations to be agreed with the Shire on advice of the Public Transport Authority.

The works are to be completed prior to operation of the development and thereafter maintained.

11. Prior to the lodgement of a Building Permit, a Stormwater Management Plan shall be submitted to and approved by the Shire of Serpentine Jarrahdale. The Plan shall be developed in accordance with Local Planning Policy 2.4: Water Sensitive Urban Design Guidelines to the satisfaction of the Shire of Serpentine Jarrahdale. The Plan must include:

    a. Details that all impervious areas have been appropriately modelled for the catchment area, including all roofs, car parks, loading areas, footpaths, driveways, hardstand and service areas;

    b. Discharge calculations for major rainfall events, given differing critical duration assumptions are provided for each catchment area;

    c. The major event storage and infiltration rate calculations;

    d. That the 0.5m clearance of finished floor levels is achieved for the flood level;

    e. Outlet control to manage discharge rates at pre-development flows;

    f. Acceptable swale and basin design including detail of how biotreatment is to be implemented at swales and basins (i.e. planting of vegetation to treat nutrients and hydrocarbons prior to entering the stormwater system).

    g. The capacity of the system to manage upstream catchment flows in and through the site.

    h. Details of stormwater flows from the site which meet the Public Transport Authority requirements for stormwater management at the adjoining railway corridor.

12. Prior to the lodgement of a Building Permit, a Final Environmental Noise Assessment shall be submitted to and approved by the Shire of Serpentine Jarrahdale. The Assessment shall include final modelling and acoustic treatments demonstrating noise emissions from the development will comply with the *Environmental Protection (Noise) Regulations 1997* and State Planning Policy 5.4. The Assessment shall also provide modelling of noise generated from the undercover play courts. All recommendations detailed in the Final Environmental Noise Assessment shall be implemented and adhered to thereafter to the satisfaction of the Shire.

13. Prior to the lodgement of a Building Permit, a Lighting Plan shall be submitted to and approved by the Shire of Serpentine Jarrahdale to demonstrate the provision of lighting throughout the development area. Once approved, lighting shall be installed prior to occupation and maintained thereafter in accordance with the approved Lighting Plan.

14. Prior to the lodgement of a Building Permit, a Construction Management Plan shall be submitted to and approved by the Shire of Serpentine Jarrahdale.

15. Prior to lodgement of a Building Permit, detailed Landscaping Plans shall be submitted to and approved by the Shire of Serpentine Jarrahdale. The Landscaping Plans shall include all adjoining verge areas and must detail:

    a. Full planting regime including planning details such as the species, tub size, number of plants as well as the planting methodology and irrigation;

    b. Full plans and details of the public open space area, which ordinarily match the detailed drawings received as part of public open space created through the subdivision process;

    c. How drainage basins and swales will be designed with vegetation that will provide a bio-treatment function whilst minimising asset management costs such as through the integration with xeriscaping mulch treatments;

    d. Final design of landscaping around buildings and near carparks to avoid conflicts with building canopies;

    e. Providing a suitable planting regime incorporating additional local native species;

    f. The planting and ongoing management of landscaped areas consistent with the Bushfire Management Plan, where areas are identified as being managed to a 'low threat' state;

    g. Arrangements for the treatment and screening of the northern façade of the noise wall towards future development to the north of the site.

    Once approved, the detailed Landscaping Plan shall be implemented prior to occupation and maintained thereafter, including all adjoining verge areas, to the satisfaction of the Shire of Serpentine Jarrahdale.

16. Prior to occupation, the full extent of Skyline Boulevard shall be constructed to an 'Integrator B' standard, including the intersection of Skyline Boulevard and Norman Road, to the satisfaction of the Shire of Serpentine Jarrahdale.

17. Prior to occupation of each tenancy, a Signage Strategy shall be submitted to and approved by the Shire of Serpentine Jarrahdale. No window signage is permitted on window facades fronting Skyline Boulevard, and instead privacy for sensitive uses (such as medical, allied health, financial services etc) should be approached through the integration of bespoke designed screen elements, to the satisfaction of the Shire. Once approved, signage and privacy screen elements shall be displayed in accordance with the approved strategy.

18. The proposed areas on the development plan(s) identified as Public Open Space outside of the Public Purpose (Community) element shown on the approved development plans shall be ceded and vested to the Crown under Section 152 of the *Planning and Development Act 2005* as a Reserve for Recreation. Such land is to be ceded free of cost and without any payment of compensation by the Shire. The ceding and vesting of Public Open Space is to coincide with the practical completion of all works associated with the Public Open Space element outside of the Public Purpose (Community) element of the development.

19. The proposed areas on the development plan(s) identified as Public Purpose (Community) outside of the Public Open Space element shown on the approved development plans shall be ceded and vested to the Crown under Section 152 of the *Planning and Development Act 2005* as a Reserve for Public Purposes including power to lease. Such land is to be ceded free of cost and without any payment of compensation by the Shire. The ceding and vesting of Public Purpose (Community) is to coincide with the practical completion of all works associated with the Public Purpose (Community) element outside of the Public Open Space element of the development.

20. Prior to occupation of the development, pursuant to Section 165 of the *Planning and Development Act 2005*, a notification is to be placed on the Certificate(s) of Title of the proposed development within 200m of the railway corridor in accordance with SPP5.4 - Road and Rail Noise. The notification is to state:

    "The lots are situated in the vicinity of a transport corridor and are currently affected, or may in the future be affected by, transport noise."

21. Prior to occupation of the development, an amended Waste Management Plan shall be submitted to and approved by the Shire of Serpentine Jarrahdale. Once approved, the amended Plan shall be implemented and thereafter adhered to, to the satisfaction of the Shire of Serpentine Jarrahdale.

22. Prior to occupation of the development, a Bushfire Emergency Plan shall be submitted to and approved by the Shire of Serpentine Jarrahdale for the Swim School, Child Care Premises and Medical Centre. Once approved, the Plan shall be implemented and thereafter adhered to, to the satisfaction of the Shire of Serpentine Jarrahdale.

Advice Notes

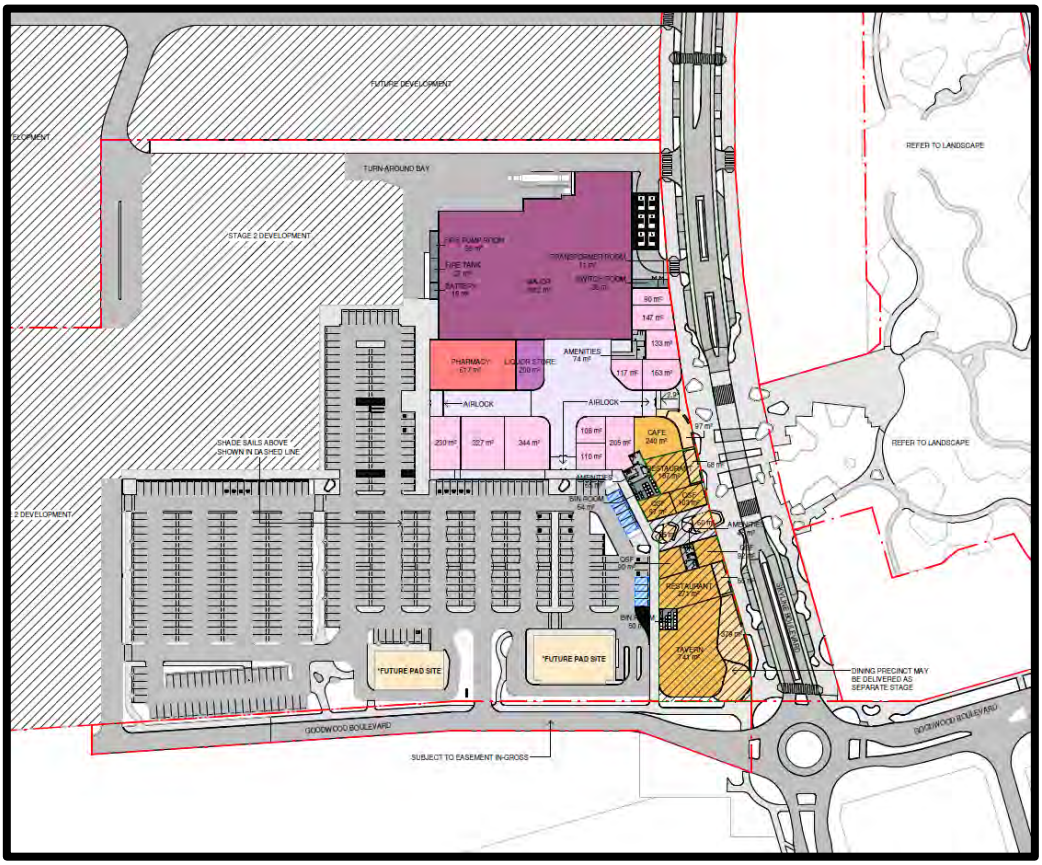
PROPOSAL:

The application seeks approval for the Whitby District Centre at Lot 9021 Skyline Boulevard, Whitby. The development involves the following components:

- Two supermarkets ('Shop') comprising 7,898m^2 and 1,602m^2 in floor area.
- Mixed commercial tenancies with built form drawn towards Skyline Boulevard including smaller 'Shop' tenancies, 'Office', 'Restaurant/Cafe' and 'Fast Food Outlet' tenancies which comprise of approximately 6,000m^2 floor area.
- A 'Child Care Premises' for 86 children.
- A 'Medical Centre'.
- Two 'Recreation - Private' tenancies, including a gymnasium and swim school.
- A 'Community Purpose' facility, including a community workshop and public sports courts beneath a canopy.
- The extension of Skyline Boulevard, including built form presentation and pedestrian focused infrastructure.

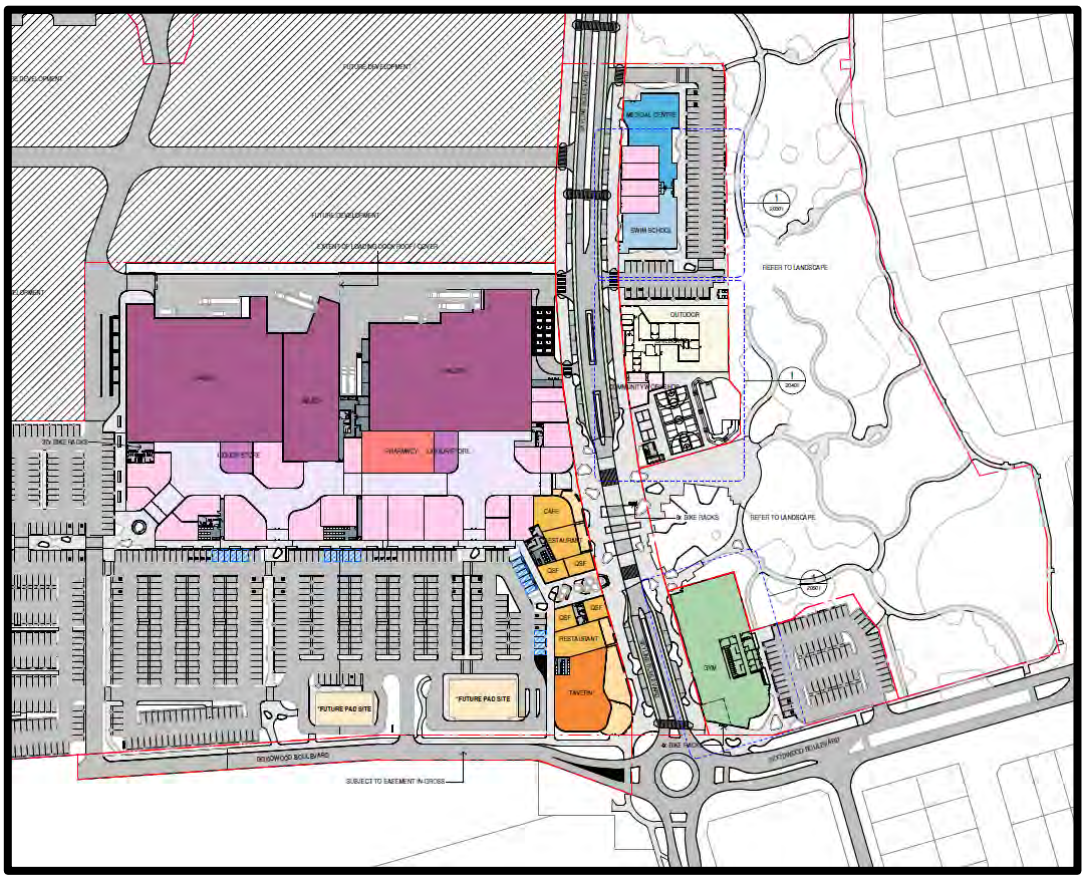
- The extension of Goodwood Boulevard.
- Public Open Space creation to the east of Skyline Boulevard.
- Parking facilities (956 bays), including carparking areas, roadside bays, loading areas for tenancies and click and collect bays.
- Tenancy, directional and pylon signage.

The Whitby District Centre is intended to be constructed in two stages. The first stage contains the development towards Skyline Boulevard, with a single supermarket, as shown following:



Stage 1, development focused towards Skyline Boulevard

The second stage of the development expands on the main development area west of Skyline Boulevard. At full buildout, other mixed commercial tenancies would also be constructed on the east side of Skyline Boulevard. This is shown following:



Stage 2, full development buildout

SUBJECT SITE AND SURROUNDS:

The subject site is situated on a 51.68ha lot in Whitby. To the south and east of the site is existing residential development, and the west an established trainline. The subject site is located at the intersection of Skyline Boulevard and Goodwood Boulevard. It is currently vacant and mostly cleared of vegetation featuring a gradual east to west fall in elevation. The eastern portion of the site contains mature native vegetation intended to be retained and incorporated into public open space.

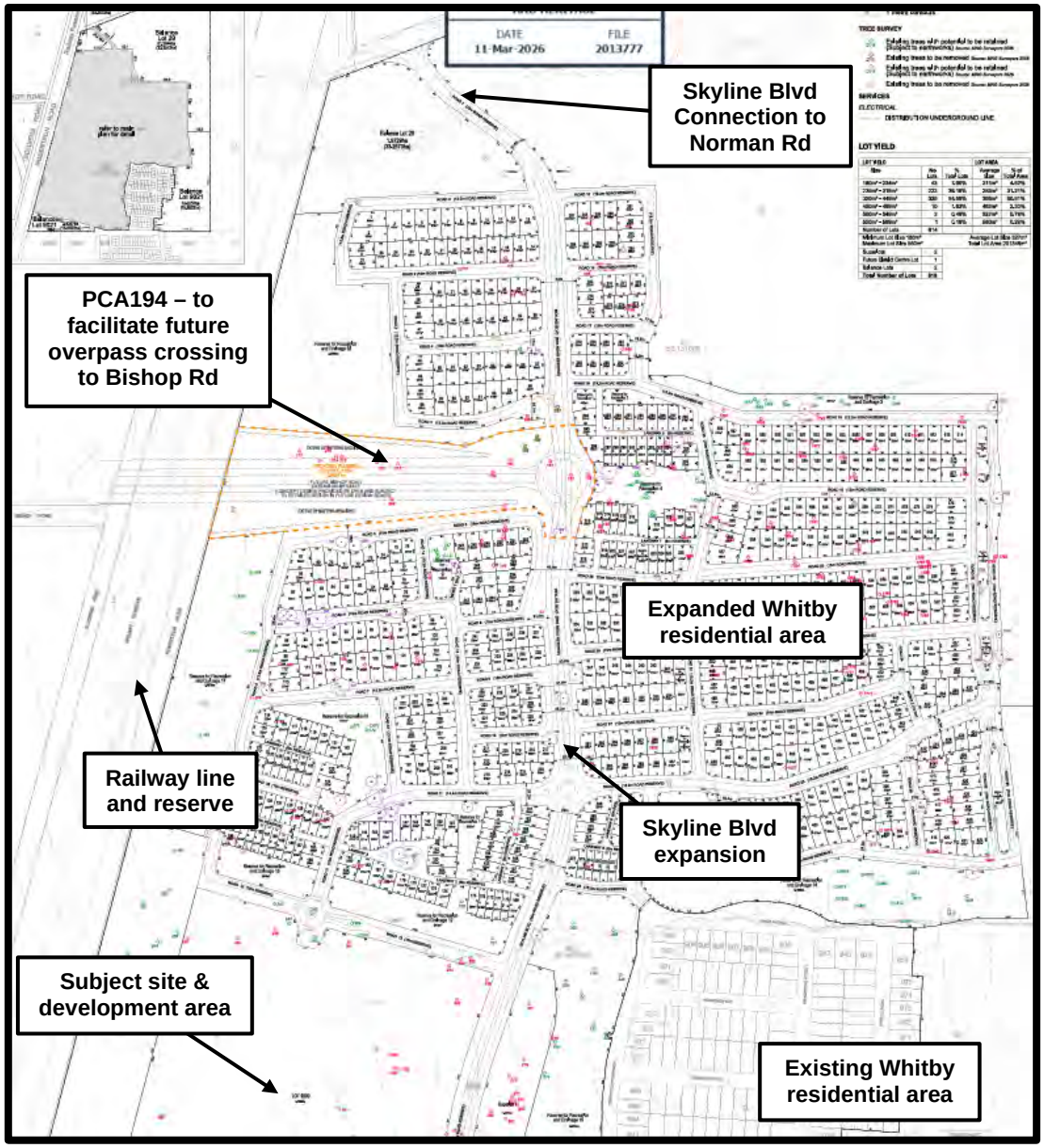
BACKGROUND:

The subject site is not subject to previous development approvals. The Shire's local planning framework identifies the delivery of a district centre in Whitby on the site to provide local retail and employment opportunities to the rapidly expanding Whitby and Mundijong residential areas. The district centre is identified in the Shire's Local Planning Strategy and Mundijong District Structure Plan (DSP) 2025. Furthermore, the WAPC approved the Whitby Activity Centre Plan (ACP) on 30 July 2021. The Whitby ACP provides an indicative layout and structure, as well as key guiding principles for the successful development of the district centre.

Residential subdivisions in the surrounding Whitby Estate have been progressively approved by the Western Australian Planning Commission (WAPC). The most recent subdivision approval was for Stage 6 granted on 11 March 2026 which approved a

future residential area which is partly within the site, though is to the north of the district centre development area.

The subdivision approval would result in the extension of Skyline Boulevard from its current point at the Goodwood Boulevard roundabout, through to Norman Road to the north. This would complete the important north/south linkage for the Whitby Estate, providing a second route out of the estate. The approved Stage 6 subdivision in the context of the subject development area is shown following:



Whitby Estate Stage 6 subdivision approval (WAPC No. 201377)

LEGISLATION AND POLICY:

Legislation

- *Planning and Development Act 2005*
- *Planning and Development (Local Planning Schemes) Regulations 2015*
- *Environmental Protection (Noise) Regulations 1997*
- *Planning and Development (Development Assessments Panel) Regulations 2011*
- *Metropolitan Region Scheme (MRS)*

State Planning Policies

- WA Planning Manual - Non-Residential Car Parking Rates in Perth and Peel
- State Planning Policy 3.7 - Bushfire (SPP3.7)
- State Planning Policy 4.2 - Activity centres for Perth and Peel (SPP4.2)
- State Planning Policy 5.4 - Road and Rail Noise (SPP5.4)
- State Planning Policy 7.0 - Design of the Built Environment (SPP7.0)
- State Planning Policy 7.2 - Precinct Design (SPP7.2)
- Liveable Neighbourhoods 2009

Local Planning Framework

- Shire of Serpentine Jarrahdale Local Planning Scheme No. 3 (LPS3)
- Shire of Serpentine Jarrahdale Local Planning Strategy (LPS)
- Mundijong District Structure Plan
- Whitby Activity Centre Plan

Local Planning Policies

- Local Planning Policy 1.4 - Advertising Development Applications (LPP1.4)
- Local Planning Policy 1.6 - Public Art for Major Developments (LPP1.6)
- Local Planning Policy 2.4 - Water Sensitive Design (LPP2.4)
- Local Planning Policy 2.8 - Public Open Space Development Standards (LPP2.8)
- Local Planning Policy 2.9 - Environmentally Sustainable Design Considerations for Retail and Commercial Development (LPP2.9)
- Local Planning Policy 4.9 - Fast Food Premises (LPP4.9)
- Local Planning Policy 4.11 - Advertising Policy (LPP4.11)
- Local Planning Policy 4.15 - Bicycle Facilities Policy (LPP4.15)
- Local Planning Policy 4.16 - Tree Retention and Planting (LPP4.16)
- Local Planning Policy 4.24 - Child Minding Centres (LPP4.24)
- Local Planning Policy 24 - Designing out Crime (LPP24)

PLANNING ASSESSMENT:

PLANNING FRAMEWORK	
Region Scheme	Metropolitan Region Scheme
Region Scheme - Zone/Reserve	Urban
Local Planning Scheme	Local Planning Scheme No. 3
Local Planning Scheme - Zone	Urban Development
Structure Plan/Precinct Plan	Whitby Activity Centre Plan (Precinct Plan)
Structure Plan/Precinct Plan - Land Use Designation	'Main Street', 'Commercial', 'Transitional', 'Centre Living' and 'Public Open Space'
Lot Size	51.68 hectares
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 all the relevant legislative requirements of the Scheme, State and Local Planning Policies, as outlined in the Legislation and Policy section of this report. The full planning assessment is contained within the attachments. For the purposes of this report, the following matters have been identified as key considerations for the determination of the application.

Land Use

The subject site is zoned 'Urban Development' under the Shire's Local Planning Scheme No.3 (LPS3). Clause 2.2.2 of the Whitby ACP also provides land use permissibility specific to the district centre. The land use permissibility for the development is considered following:

Land Use	LPS3 'Urban Development' Zone permissibility	Whitby ACP Clause 2.2.2 permissibility
'Shop'	D - discretionary	P - permitted
'Restaurant/Cafe'	A - discretionary requiring advertising	P - permitted
Tavern	A - discretionary requiring advertising	SA - discretionary requiring advertising
'Fast Food Outlet'	D - discretionary	P - permitted
'Child Care Premises'	A - discretionary requiring advertising	P - permitted
'Medical Centre'	D - discretionary	P - permitted
'Recreation - Private'	A - discretionary requiring advertising	P - permitted (formerly known as a 'Health Studio')

'Community Purpose'	A - discretionary requiring advertising	Not listed - defer to LPS3 permissibility

The proposed land uses are either permitted or discretionary, meaning that the decision maker is required to exercise its discretion in determining these uses, subject to advertising of the application. It is considered that the land uses are consistent with those expected within a district centre.

Objectives of the Zone

The site is zoned 'Urban Development' under LPS3, of which one of the objectives is to provide an intention of future land use and a basis for more detailed structure planning in accordance with the provisions of the Scheme. In this instance the Mundijong DSP provides a 'District Centre' designation for the site. The objectives are considered following:

Zone Objective	Officer Comment
Provide a community focal point for people, services, employment and leisure that are highly accessible and do not adversely impact on adjoining residential areas.	The proposal would achieve these objectives, while offsite 'traffic' and 'noise' impacts have been addressed in the relevant sections of this report.
Provide for district centres to focus on weekly needs and services for a wider district catchment.	The Mundijong, Whitby and surrounding areas lack mainline supermarkets and other retail opportunities. The growing suburbs and population require the services that this development would deliver.
Provide a broad range of employment opportunities to encourage diversity within the centre.	The development would result in the delivery of significant commercial floor space and opportunities for local employment within a mixed use centre layout.
Ensure a mix of commercial and residential development, which provides for activity and accessibility at the street level and supports the provision of public transport and pedestrian links.	This development leaves space in the northern component of the District Centre area for this to be provided in a future application as the supporting medium and higher density residential development.
Provide for a wide range of different types of residential accommodation, including high density residential, to meet the diverse needs of the community.	

State Planning Policy 4.2 - Activity Centres in Perth and Peel (SPP4.2)

SPP4.2 sets out broad planning requirements for the development of new activity centres. SPP4.2 is primarily concerned with the distribution, function, broad land use and urban design criteria of activity centres, together with coordinating their land use and infrastructure planning.

Clause 7.1 - Activity Centre Hierarchy

The Whitby Centre is an identified District Centre within the hierarchy of activity centres under SPP4.2. The proposal is consistent with the planned hierarchy, given the

function of a District Centre is to provide for the daily and weekly needs of residents, including provision of services, facilities and job opportunities.

SPP4.2 also recognises the opportunity for medium-high density residential development where a train station is planned. While not provided as part of this development application, there is land area preserved within the district centre area to accommodate future residential development to align with the prospective train station.

Clause 7.3 - Requirement for Precinct Structure Plans and Local Development Plans

SPP4.2 requires a precinct structure plan to be prepared for district centres. These are to be developed in accordance with State Planning Policy 7.2 - Precinct Design (SPP7.2). As mentioned earlier, the WAPC approved the Whitby Activity Centre Plan (ACP) on 30 July 2021. The consideration of the layout and built form of the proposed development has therefore been undertaken against the requirements of the Whitby ACP in the following sections of this report.

Site Layout

The Whitby ACP provides key guidance to developing this district centre. It outlines an overall vision that aims to create a welcoming centre, reflecting local natural landscapes, providing local employment and economic opportunities. A key goal is for the development to reflect a 'country town' atmosphere. This is to be achieved through the provision of:

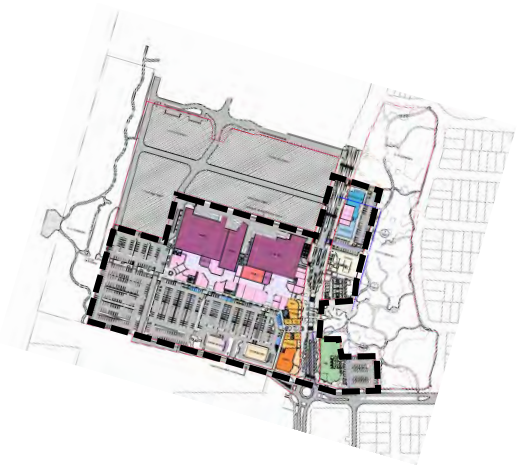
> "*well-designed streets, amenities and public spaces that put people first facilitating a diverse friendly community, lively street encounters and locally unique experiences."*

The method of achieving this vision is through the development of a well-designed 'Main Street'. A Main Street is a central internal access road that provides circulation through a development site. A Main Street is expected to provide building frontages abutting the road and have features for activation such as active shop frontages and high-quality built form. The Main Street is to be the central hub of activity in the district centre, featuring an inviting public realm with supporting pedestrian infrastructure and easy access to public open spaces.

The Whitby ACP guides the layout of development by identifying five-character precincts across the district centre. These are the 'Main Street', 'Commercial', 'Transitional', 'Centre Living' and 'Residential' precincts. It is noted that the proposal does not include the residential development component at this time, with this to be delivered in future development proposals. The proposal seeks to adapt the layout of the centre as contained within the Whitby ACP as shown following:



Whitby ACP planned layout



Comparison of proposed layout

- *Relocating the 'Main Street' preinct from Goodwood Boulevard to Skyline Boulevard:*

  When the Whitby ACP was originally prepared in 2021, it was anticipated that a road over rail crossing would be provided at Goodwood Boulevard, to the west of the site. This would have resulted in Goodwood Boulevard being a key west-east distributor road for the Whitby Estate. However, progressive planning for Whitby resulted in the PTA not supporting the bridge overpass in that location. As part of the advancement of planning associated with the freight rail deviation (which has secured an associated planning control area), and the termination of the future passenger rail to the north side of Goodwood Boulevard, the Shire's Scheme was updated to reflect the western crossing of the rail as being at grade. This would be timed to follow the completion of the freight rail deviation, removing the frequent freight rolling stock from this section of rail and terminating passenger services to the north. Given however the unknown timing associated with this, it was not possible to advance a dependable design to secure a main street orientation east west along Goodwood Boulevard.

  Instead Skyline Boulevard was identified to become the main street spine, for the district centre to orinetate upon. This meets criteria for a district centre main street and thus the design of the district centre has changed to relfect this, with the main street relocating to Skyline Boulevard. This reflects an enhanced oreintating main street that also beenfits from integration with the intended public open space and community infrastructure realm framing the east side of Skyline Boulevard.

- *The Skyline Boulevard alignment:*

  To establish Skyline Boulevard as the 'Main Street' of the district centre, it is vital to provide buildings and active land uses on both sides of the street. To this end, the alignment of Skyline Boulevard has been shifted slightly to the west. The new alignment remains largely consistent with the original layout, though it deviates to the west by 40m. Officers support this change to the original alignment as it enables

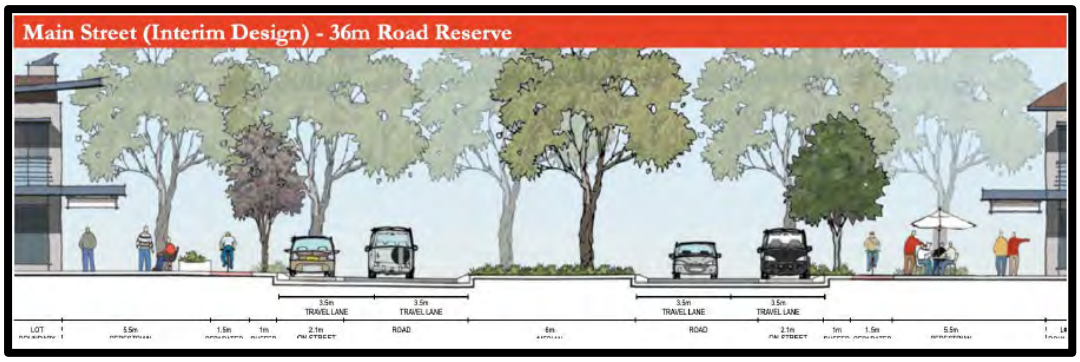
a commercial front on the eastern side of the 'Main Street' and minimises impact on trees worthy of retention within the future public open space, community infrastructure and landscaping areas.

- *Reduced 'Main Street' width from 36m to 28.2m (Skyline Boulevard)*

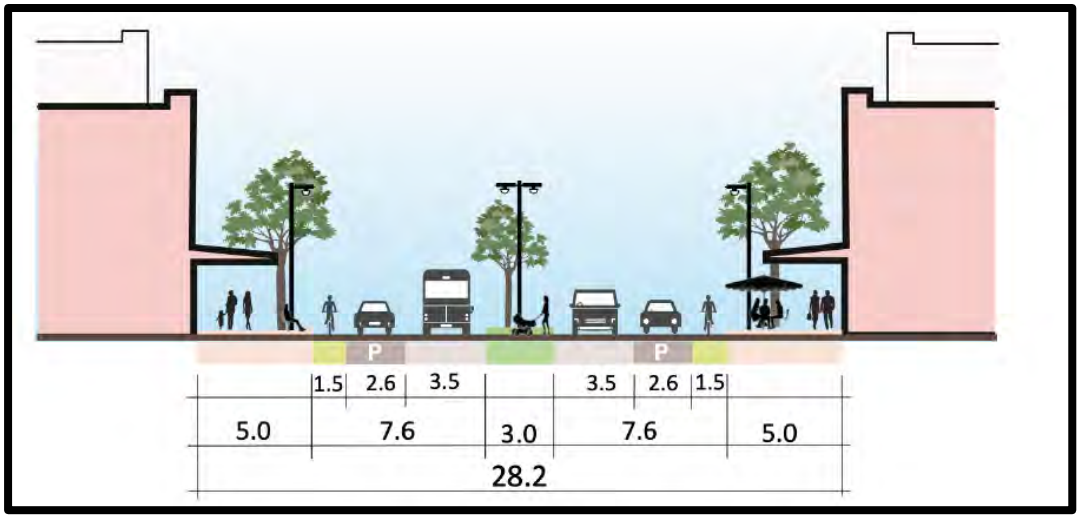
  The main street design was originally 36m in width to account for a future potential upgrade that would accommodate two lanes in each direction. However, due to the relocation of the main street to Skyline Boulevard, it is considered that this prospective upgrade would no longer be required. The key future east-west linkages are still able to be delivered on Goodwood Boulevard without the need to upgrade to two lanes in either direction on the main street of the district centre.

  From a design perspective, it is considered that the narrower main street design also improves connection between both sides of the street and the closer building facades enhance the character of the street. The street design also maintains space for pedestrain crossings, on-street parking, street trees and other supporting infrastructure (planter boxes, seating, bollards, bicycle racks). Therefore, the reduced road reserve width is not considered to compromise the delivery of the main street.

  The original and proposed main street designs are shown following:



Whitby ACP original main street design



Proposed Skyline Boulevard design consistent with Liveable Neighbourhoods Integrator B design

Notwithstanding the layout variations, the proposal is considered to meet the intent of the ACP in providing a main street design. Furthermore, the variations suitably respond to the development of the surrounding the Whitby Estate.

Nature of reoinetation of the main street and balancing accessibility with broader traffic mobility

With the proposed Whitby District Centre now positioned predominantly to the northern side of Goodwood Boulevard, and framing both sides of Skyline Boulevard, the revised planning arrangement provides a more logical and functional response to the competing demands of centre accessibility, pedestrian amenity and broader district-level traffic movement. Importantly, this reorientation allows the intended mobility function of Goodwood Boulevard to be more reasonably achieved through the delivery of future transport infrastructure in its strong east west movement intent, without compromising the ability of the District Centre to develop as an attractive, accessible and pedestrian-oriented activity centre which creates the high amenity environment for walkability and stacked transactions to be the norm.

The previous planning tension, which was a significant consideration in the preparation of the 2021 Activity Centre Plan (ACP), arose from the competing functions associated with establishing a District Centre on both sides of Goodwood Boulevard. On the one hand, the planning framework sought to facilitate a vibrant and integrated main street environment, characterised by convenient pedestrian movements, active frontages, opportunities for community interaction and a high degree of accessibility between commercial, retail and community activities. On the other hand, Goodwood Boulevard was envisaged as an important east-west integrator road, performing a broader movement function by connecting the substantial future residential populations east of the railway corridor with urban areas to the west, and ultimately providing connectivity towards Tonkin Highway. In other words, a severing border running through the middle of a district centre.

These two functions, create significant challenges when accommodated within the same road corridor. The traffic volumes, intersection arrangements and operational characteristics ordinarily associated with an important district-level connector would work against the finer-grain pedestrian accessibility, slower vehicle speeds, frequent crossing opportunities and attractive public realm expected of a successful main street. In particular, a District Centre divided by a major east-west movement corridor risks creating physical and perceptual barriers between its northern and southern components, undermining commercial integration, pedestrian convenience and the overall legibility and functionality of the centre.

The proposed reorientation of the District Centre towards Skyline Boulevard represents an opportunity to more effectively distinguish between these complementary, but different, transport and place-making functions. Skyline Boulevard can assume a stronger role as the principal main street and organising spine of the centre, supporting active commercial frontages, pedestrian activity, convenient access to retail and community facilities, and a public realm designed around the needs of people using the centre. Conversely, Goodwood Boulevard can retain its important strategic function as an east-west movement corridor, with its ultimate road configuration, intersection treatments and capacity improvements more directly informed by the wider transport demands associated with urban growth across Whitby, Mundijong and the surrounding district.

This approach is considered to represent a more appropriate application of contemporary movement and place planning principles, whereby road corridors are

designed and managed according to their intended function within the broader urban network. Rather than requiring a single corridor to simultaneously perform as both a high-capacity district connector and the principal pedestrian-focused main street, the revised arrangement enables a clearer functional hierarchy to emerge. This distinction is particularly important given the significant residential growth east of the railway corridor and the need to preserve efficient east-west connectivity as the surrounding urban areas progressively develop.

Importantly, the revised configuration does not diminish the need for Goodwood Boulevard to also provide safe and convenient access to the District Centre. Appropriate intersection design, pedestrian and cycling connections, public transport accessibility and local road integration will remain essential considerations through subsequent planning and detailed design stages. However, these requirements can now be addressed within a more coherent movement network, rather than relying upon Goodwood Boulevard itself to deliver the full range of main street functions.

Overall, the revised orientation is considered to provide a more balanced and strategically sound planning outcome.

Distribution of Land Uses

Clause 2.2 of the Whitby ACP provides preferred land uses based on the precinct layout. It is important to ensure that suitable land uses are provided to establish the main street of the district centre. For the purposes of this report, land uses fronting Skyline Boulevard are reviewed against the 'Main Street Precinct'. All other portions of the proposal not fronting Skyline Boulevard are considered against the 'Commercial Precinct' requirements. The distribution of land uses has been considered as follows:

Preferred Uses	Proposed Uses
Main Street Precinct Ground floor: shop (includes supermarket), restaurant, tavern, medical centre, civic buildings, child minding centre, Upper floors: offices, residential (multiple dwellings)	The proposal incorporates the following land uses on Skyline Boulevard: • Shops (including supermarket) • Medical centre • Private recreation (swim school, gym) • Child care premises • Tavern • Restaurant/café • Community purpose
Commercial Precinct Shop (includes discount department store), showrooms, offices, fast food/take away, convenience store, service station	The remainder of the site incorporates the following land uses: • Shops • Fast food/takeaway

The land use distribution of the development is considered to be consistent with the Whitby ACP.

While discussed further in the report, it is noted that a condition has been imposed for those uses within the main street where privacy is a natural reality of how the use presents to the interfacing public realm. In this respect, medical uses do need to afford

suitable levels of privacy to patients and visitors, and as a result there can be conflict between the pursuit of active, transparent frontages with the need to screen such frontages to achieve privacy. Condition 17 has been imposed for this purpose and reads as follows:

Prior to occupation of each tenancy, a Signage Strategy shall be submitted to and approved by the Shire of Serpentine Jarrahdale. No window signage is permitted on window facades fronting Skyline Boulevard, and instead privacy for sensitive uses (such as medical, allied health, financial services etc) should be approached through the integration of bespoke designed screen elements, to the satisfaction of the Shire. Once approved, signage and privacy screen elements shall be displayed in accordance with the approved strategy.

Floor Space

The Whitby ACP seeks to ensure sufficient commercial floor space is provided across the district centre to meet the needs of the growing Mundijong and Whitby areas. Clause 3.3.3 in Part 2 of the ACP requires a total of 31,000m^2 of retail floor space to be provided. The proposal would deliver approximately 17,010m^2 of retail floor space and 6,265m^2 of other general commercial floor space. Despite a 14,000m^2 shortfall in retail floor space, it is considered there is still adequate remaining land within the district centre to deliver future retail opportunities.

Formerly, the 'Recreation - Private' land use (gym tenancy) was described as a 'Health Studio'. Clause 2.2.2.1 of the ACP requires that this land use has a net lettable floor area no greater than 400m^2. When facing the main street, they are also only to be ground floor tenancies. The proposed gym tenancy varies this by proposing development with approximately 1,900m^2 floor area across two storeys. This, however, is considered acceptable in this instance given the proposed gym would provide a service critically required in the broader Whitby and Mundijong area. Furthermore, the design of the site is consistent with the other goals of the ACP to provide an aesthetic edge to corner site development. The two-storey development enables architectural features such as building scale, varied materiality and an overhanging second storey to enhance the main street character and command a strong presence to the public realm and entry gateway to the district centre.

<u>Built Form</u>

Applicable built form requirements for this proposal are contained in several documents which form the basis of review in this section of the report. Firstly, the LSP3 development requirements applicable to the 'District Centre' zone require review given the designation of the site under the Mundijong Whitby District Structure. These have been addressed as follows:

LPS3 'District Centre' zone requirements	
Clause 4.1 - Development Requirement	**Officer Comment**
Building setbacks shall be determined with regard to the streetscape and the surrounding development in the area, in accordance with the objectives of the District Centre zone and to the satisfaction of the local government.	Building setbacks have been addressed within the Whitby 'Activity Centre Plan' section of this report.

The maximum external building wall height on street frontages shall not exceed 10.5 metres. Components of buildings with a height greater than 10.5 metres shall be setback a minimum of 3 metres from the primary building line.	The three tallest components of the development are as follows: • Main district centre building - architectural features on the east façade of the building facing Skyline Boulevard: 8.7m • Gym development: 9m • Covered play court: 9.5m This complies with the requirement.
The external building shall be adequately articulated with varying colours and materials, major openings and awnings to the satisfaction of the local government in accordance with the objectives of the District Centre zone.	The proposal includes a mixture of colours and materials. These are generally earthy tones or natural and suitably reflect the country/rural theme. The building facades include suitable elements such as windows and major openings to activate the frontages, as well as awnings and other design features.

LPS3 Clause 4.2 - Setback, Site Coverage and Plot Ratio:		
Provision	**Requirement**	**Provided**
Landscaping	10% in total 5% in front setback	Total site area: 11.95ha Landscaped area: 3.84ha 32%
Site coverage	75%	Approximately 38% site coverage. POS area excluded from calculation.
Plot ratio	2.0	0.38

The Whitby ACP divides the district centre into five precincts to which further built form standards apply. For this development the relevant precincts are the 'Main Street' and the 'Commercial' precincts. The development fronting Skyline Boulevard has been considered against the 'Main Street' precinct requirements, while all other development has been considered against the 'Commercial' precinct requirements. A full assessment of the ACP requirements has been undertaken in the full planning assessment in the attachments. The key requirements of each precinct are addressed following:

Whitby ACP Built Form Requirements	
Requirement Summary	**Provided & Officer Comment**
Main Street Precinct	

Setback: Nil to street boundary	Nil setback to Skyline Boulevard boundary provided.
Minimum front façade height: 7.6m	The heights of facades facing Skyline Boulevard are as follows: • Tavern, restaurant/café area - 5.5m to 7.7m • Main shopping centre - 6m to 8.7m • Medical centre, swim school area - 5.7m to 7.1m • Child care premises - 6.6m to 8m • Community purpose - 9.5m • Gym - 6m to 9m The intent of having a minimum height on the main street of a district centre is to provide suitable scale to the streetscape, creating prominence and enhancing its character. What was particularly a challenge with the previous ACP, was commanding a suitable scale to a street (Goodwood Boulevard) which as previously mentioned was designed to be much wider and thus more difficult in which to command a strong building character response towards. By shifting of the centre to frame a more narrower, and thus more intimate, setting in the form of Skyline Boulevard, means that the vertical form of development does not need to be as strong as if it were interfacing a wider transport corridor. On this basis, the heights as proposed are considered satisfactory.
Façade and building frontages: Articulation provided to building facades above ground floor level, including: Materiality, colours, textures, windows, openings, balconies, architectural design details.	The facades and frontages of buildings on the main street are generally provided to a high standard. Architectural features employed include articulated frontages, pitched and skillion roofs, feature material panels, awnings, and windows, Materials and colours across the site generally reflect the rural history of the Whitby area, incorporating natural materials and earthy tones into design. This is supported as it facilitates the 'country town atmosphere' that the ACP seeks to achieve. The only portion of the main street that is considered to not meet this standard is the 'click and collect' area on the main supermarket tenancy. Ideally, this would not be located on the main street, though it is required due to a lack of suitable frontage for the tenancy. The awning and façade of the wall therefore require additional design treatments to suitably address this concern. This could include the provision of feature panels, landscape crawler plants or the shape of the awning to ameliorate the potential impact to the character of the main street. A condition of determination has been recommended to this effect. Also as mentioned previously, a condition has been imposed for those uses within the main street where privacy is a natural reality of how the use presents to the interfacing public realm. In this respect, medical uses do need to afford suitable levels of privacy to patients and visitors, and as a result there can be conflict between the pursuit of active, transparent frontages with the need to screen such frontages to achieve privacy.

	Condition 17 has been imposed for this purpose and reads as follows: *Prior to occupation of each tenancy, a Signage Strategy shall be submitted to and approved by the Shire of Serpentine Jarrahdale. No window signage is permitted on window facades fronting Skyline Boulevard, and instead privacy for sensitive uses (such as medical, allied health, financial services etc) should be approached through the integration of bespoke designed screen elements, to the satisfaction of the Shire. Once approved, signage and privacy screen elements shall be displayed in accordance with the approved strategy.*
<u>Weather protection:</u> Provision of awnings at a minimum 3m depth.	Development on Skyline Boulevard is generally built up to the street boundary. Awnings provided overhang the street and range in depth between 1.5m to 2.5m. While the full 3m envisaged by the ACP is not provided, it is considered that this is acceptable due to the high-quality public realm design, which includes street tree planting, landscaping, on street parking and pedestrian infrastructure. The main street realm also includes large areas of cover provided near to the main shopping centre entrance that fronts Skyline Boulevard, to further assist with weather protection.
<u>Ground floor active frontages:</u> Active trading frontages, including 75% transparent or glazing (window) on frontages. Ground floor 3.5m ceiling heights. Architectural features provided to building entry points facing the main street.	The building frontages facing the main street include large portions of windows and glazing. These frontages do not have any signage or blockages affecting the windows. This is considered sufficient in terms of achieving the desired active frontages outcome for the main street. However as mentioned, those uses which require privacy for patients (for example medical) and clients (for example financial and legal services), a condition has been imposed to address both signage and how any privacy screen may occur. In respect of signage, any future signage of tenancies is not to be supported on the windows and should instead be placed on building facades. The heights of awnings on the front facades facing the main street are at minimum 3.5m in height. While internal ceiling heights are not known, the Applicant advises that this will be achieved for all tenancies fronting Skyline Boulevard. There are sufficient architectural features on the building entries
Commercial Precinct	
<u>Setbacks:</u> Maximum of 3m Nil setback permitted	Development fronting Goodwood Boulevard includes the tavern and gym corner sites, and the fast-food outlet buildings. The gym is set back 2.9m and the tavern has a nil setback proposed. The main shopping centre is set back from the secondary street of Goodwood Boulevard, noting that the centre has reorientated to a north south axis fronting Skyline Boulevard. This sees land use fronting Goodwood Boulevard to primarily include access and parking, noting the nature of this road as an integrator road and one where development cannot readily front; and any development remaining being largely car based.

	This accounts for the proposed fast-food outlet buildings. It should be noted that no details as to the physical works, signage and layout components of the fast-food outlets have been provided. Considering this, a condition has been imposed for such details to be separately submitted and approved. This states as follows: *This approval includes the two 'Fast Food Outlet' uses, however does not extend to the physical works components of these uses, including layout, signage and accessibility. Accordingly, prior to the lodgement of a Building Permit for the Fast Food Outlets, amended plans detailing all aspects of physical works, signage and layout are to be submitted to and approved by the Shire of Serpentine Jarrahdale.*
<u>Facades and Building Frontages:</u> Frontages to provide suitable design elements including articulation, varied colours, materials, texture, windows, openings, balconies and indentations or extrusions.	Further to the above section on main street façades and building frontages, the design of the gym and tavern buildings includes an appropriate mixture of design elements to create an attractive streetscape. As mentioned, the fast-food outlet buildings will be subject to subsequent details needing to be submitted and approved by the Shire.
<u>Access and Car Parking:</u> Where a development orients to more than one street, parking may be visible to the secondary street where it is sufficiently softened by landscaping that contributes to streetscape amenity.	The main shopping centre and gym car parking areas include sufficient detailed landscaping fronting Goodwood Blvd. The landscape concept plan provided shows trees and verge planting in these areas. Car parks will also include trees within them. These measures will suitably soften the car parking areas towards secondary streets throughout the development.
General Requirements	
<u>Corner sites:</u> Buildings located on corner sites shall emphasise the prominence of the street corner via architectural features that may protrude above the normal roof line	This requirement applies particularly to the gym and tavern buildings at the corner of the Skyline Blvd and Goodwood Blvd intersection. The tavern offers a curved façade that incorporates suitable materiality and windows to produce a prominent façade with visual interest. The gym building also provides an aesthetic edge through the use of building mass, and an overhanging second storey towards the intersection. Both buildings also incorporate high-quality and varied materiality, to provide a prominent architectural response to the intersection.
<u>Access and car parking:</u> Vehicular access is discouraged from the main street. Where necessary they should be appropriately designed and service multiple	The main shopping centre car park, which will facilitate the most trip movements of the district centre, is suitably located off the main street, with access being via the mobility based road of Goodwood Blvd. The gym tenancy car park will also be located towards Goodwood Blvd. The only access points on Skyline Blvd are to the childcare premises/swim school area and the loading area for the shopping centre. These access points are

tenancies to reduce proliferation on the main street.	considered necessary to service certain tenancies that otherwise would not have a secondary access road, and they are shared between tenancies meaning there is less proliferation of access points on the main street.
<u>Weather protection:</u> Awnings to be provided wherever a nil setback is proposed.	This is generally achieved, except on the south and east of the tavern building, which faces the roundabout intersection. The applicant has justified this façade of the building as it is intended to provide an aesthetic edge on this key corner site. An awning in this location would detract from what is intended to be a prominent building, and would further seem unresponsive to a section of the main street near a roundabout which generally feature as unpleasant spaces to dwell near. Furthermore, the section of footpath without an awning here is minor, with weather protection in close proximity as seen in the image below: 

The proposed district centre is generally consistent with the built form requirements of the Whitby ACP. The proposal offers suitable justification and rationale to support the variations to front façade height on the main street.

State Planning Policy 7.0 - Design of the Built Environment (SPP7.0)

State Planning Policy 7.0 - Design of the Built Environment (SPP 7.0) establishes the overarching planning framework for achieving high-quality built form and urban design outcomes throughout Western Australia. The Policy recognises that good design extends beyond the architectural appearance of individual buildings, requiring an integrated consideration of how buildings, streets, public spaces, landscapes and movement networks collectively contribute to the functionality, amenity, sustainability and identity of a place. Central to the Policy are ten design principles which provide a framework for assessing development proposals and ensuring positive and enduring contributions to the built environment.

The application of SPP 7.0 is particularly important in the context of the proposed Whitby District Centre, given its intended role as a commercial, employment, community and social focal point for the substantial residential population anticipated across Whitby and the surrounding urban catchment. The planning and design of the centre must therefore achieve more than a functional arrangement of commercial activities. It must establish a distinctive, attractive and enduring urban environment that contributes positively to the identity of Whitby and its emergence as a genuine urban village.

Importantly, the external architectural design is considered to be of a high quality, presenting a contemporary, confident and welcoming built form that establishes a positive design keynote for the future development of the District Centre. The architectural expression draws visual cues from the surrounding natural landscape, ensuring that the contemporary character of the development remains grounded in its local context. This relationship between built form and landscape is particularly important for Whitby, where the interface between the emerging urban environment and the surrounding natural landscape provides an opportunity to establish a distinctive sense of place. Rather than adopting a generic commercial design response, the proposal seeks to celebrate this relationship, reinforcing the identity of Whitby as an urban village connected to its natural setting.

The architectural design is complemented by the revised spatial arrangement of the District Centre, particularly the reorientation of the principal main street towards Skyline Boulevard. By consolidating commercial and community activities around a more identifiable and pedestrian-oriented main street, the proposal provides greater opportunities for active building frontages, convenient movement between complementary uses, landscaping and a cohesive public realm. This approach also assists in resolving the previous tension associated with Goodwood Boulevard performing the competing roles of a major east-west movement corridor and the principal pedestrian-focused main street.

The Shire's assessment has considered the proposal against the ten design principles of SPP 7.0, with particular regard to the following matters:

1. Context and character: The design responds positively to Whitby's emerging urban identity, drawing upon the character of the surrounding natural landscape to establish an architectural and public realm outcome that is contemporary while remaining connected to its local setting.

2. Landscape quality: The proposal provides opportunities to integrate landscaping, street trees, pedestrian shade and coordinated public realm treatments, reinforcing the relationship between the District Centre and the broader natural landscape while contributing to urban amenity and climate responsiveness.

3. Built form and scale: The architectural presentation is considered to be of a high quality, with a modern and cohesive design language that establishes a positive benchmark for the future character of the District Centre. The arrangement of built form also supports a more legible and identifiable main street environment.

4. Functionality and build quality: The revised configuration provides a clearer distinction between the pedestrian-focused main street function of Skyline Boulevard and the broader east-west mobility function of Goodwood Boulevard, supporting a more practical and enduring arrangement of commercial activity and transport infrastructure.

5. Sustainability: The concentration of commercial and community activities within an accessible and connected centre supports opportunities for walking, cycling and reduced reliance upon private vehicles, complemented by opportunities for climate-responsive design and landscape integration. A condition is recommended to address incidental matters of increased bike parking in the central main street of the development, to be integrated through street furniture design.

6. Amenity: The proposal establishes a positive foundation for pedestrian comfort, attractive streetscapes and a high-quality public realm. The architectural design and

landscape response are considered to contribute to the creation of a welcoming and enjoyable environment for residents, workers and visitors.

7. Legibility: The establishment of Skyline Boulevard as the principal main street provides a clear organising element for the District Centre, assisting in the identification of key commercial activities, public spaces and pedestrian connections.

8. Safety: The revised urban structure provides opportunities to better manage the interaction between pedestrians, cyclists and vehicles, while the orientation of buildings towards streets and public spaces can contribute to passive surveillance and a safer public environment.

9. Community: The District Centre is intended to perform an important social and community function beyond the provision of retail services. The proposed design supports the creation of an identifiable gathering place that strengthens community identity and reinforces Whitby's intended character as an urban village.

10. Aesthetics: The contemporary architectural expression is considered to achieve a high-quality visual outcome, balancing modern design elements with references to the natural landscape. This provides a distinctive and reassuring architectural character that celebrates the local context rather than relying upon a generic commercial built form response.

Overall, Officers consider that the proposal demonstrates a high level of consistency with the ten design principles of SPP 7.0, as further detailed in the assessment contained within this report.

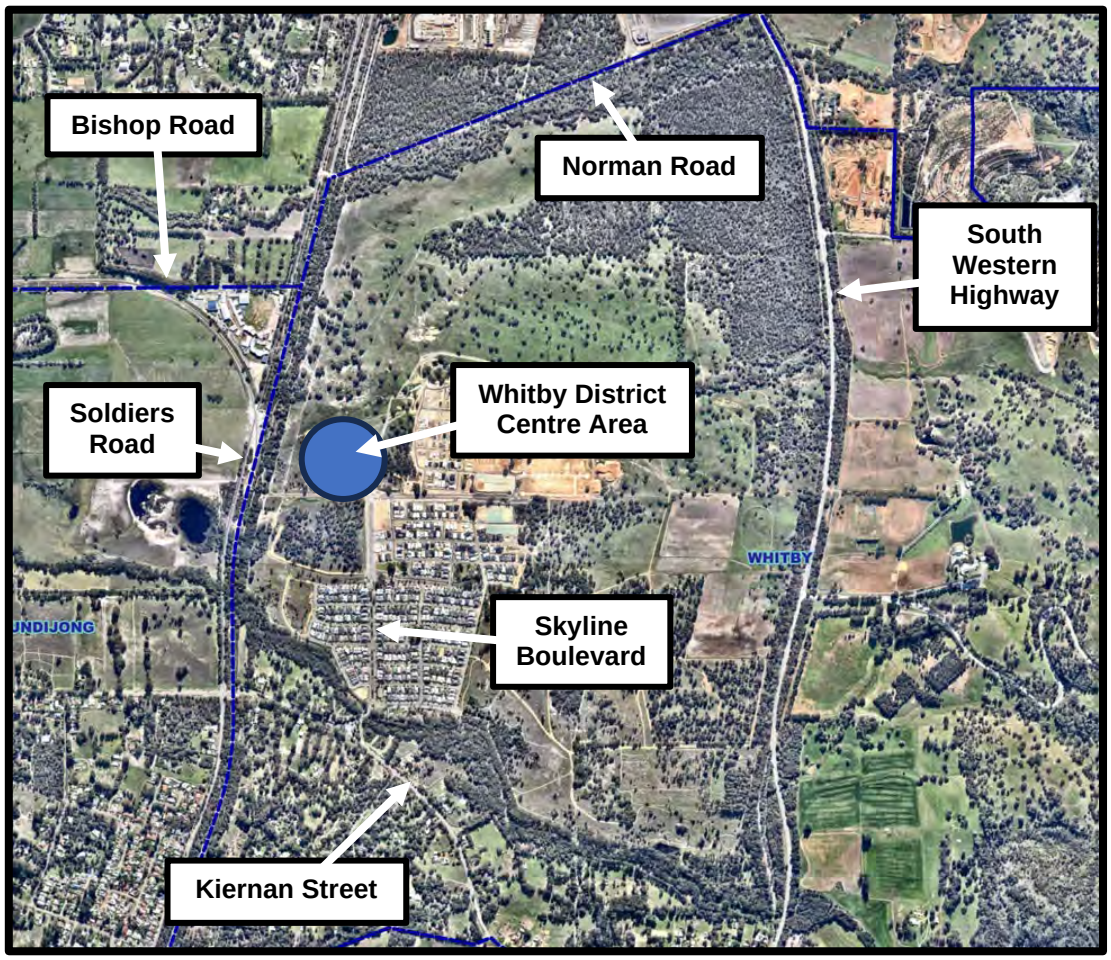
Child Care Premises

LPP4.24 provides important considerations for ‘Child Care Premises’ including noise, traffic and operational measures. These matters have been addressed in the respective sections of the report, which wholistically take into account the district centre impact in these areas. In accordance with LPP4.24, a condition is recommended to be imposed to limit the operational hours to 7:00am to 7:00pm, Monday to Friday, consistent with the policy.

Traffic

Road Network

The Whitby estate is bound by Soldiers Road (west), Norman Road (north), South Western Highway (east) and Kiernan Street (south). At present, the only access to the Whitby Estate and the District Centre is via Kiernan Street and Skyline Boulevard. Skyline Boulevard is developed as an ‘Integrator B’. The existing road network is shown following:



Local Road Network

There are several key infrastructure upgrades anticipated to the road network. These are either to be developed as part of subdivision, other development application proposals or as development contribution items under LPS3. It is important to note these given their impact on the ultimate build out scenario model within the submitted Traffic Impact Assessment (TIA). These are as follows:

- Skyline Boulevard extension - The Stage 6 Whitby Estate subdivision approved by the WAPC (No. 201377) would see Skyline Boulevard extended through to Norman Road in the north of the estate.
- Skyline Boulevard/Bishop Road roundabout - There is a planned overpass connection of Bishop Road, over Soldiers Road and the railway line, to connect to Skyline Boulevard. This is north of the District Centre area and will provide a key east-west linkage for the Whitby estate. This is governed by DPLH through Planning Control Area 194 and there is no timing on the delivery.
- Goodwood Boulevard extension - A future extension of Goodwood Boulevard to the east (South Western Highway) and to the west (connecting to Norman Road). This will ultimately be to an Integrator B standard, with the possibility of 2 lanes of traffic in each direction.
- The South Western Highway / Norman Road T-intersection upgrade.

- Tonkin Highway Extension - This would also facilitate transport movement at a regional scale.

Traffic Volume Assessment

The submitted TIA identifies that Skyline Boulevard and Goodwood Boulevard will be developed to an Integrator B standard. However, as detailed in this report, it has been very important to distinguish the through centre design intent of Skyline Boulevard, vs the edge of centre interface that is provided by Goodwood Boulevard. This accounts for the TIA informing how Skyline Boulevard for its section of the north south main street is scaled differently to emphasise an environment for pedestrian accessibility, dwelling and comfort. Conversely, the edge of centre nature of Goodwood Boulevard is capable of carrying the intended mobility function, whereby it will border (as opposed to severe) the district centre by being placed on the southern edge of the development.

There road types align with the standard of roads required to support, on the one hand, a main street within a district centre, and on the other hand, an efficient movement system to connect cars with the regional mobility road networks of South Western Highway and Tonkin Highway.

In considering ultimate build out standards and traffic volumes, Liveable Neighbourhoods states that Integrator B roads have a capacity of 7,000-15,000 vehicles per day. The TIA models traffic volumes based on a full build out scenario which accounts for traffic generated by the district centre development, and from background residential traffic generated by the entire Whitby Estate. The model identifies that the Skyline Boulevard would experience approximately 8,100 vehicle movements per day, with Goodwood Boulevard a magnitude higher than that but only at full integration of the road network spanning between Taylor Road and South Western Highway. These numbers are within the design capacity of the respective roads.

Peak Hour Intersection Performance Assessment

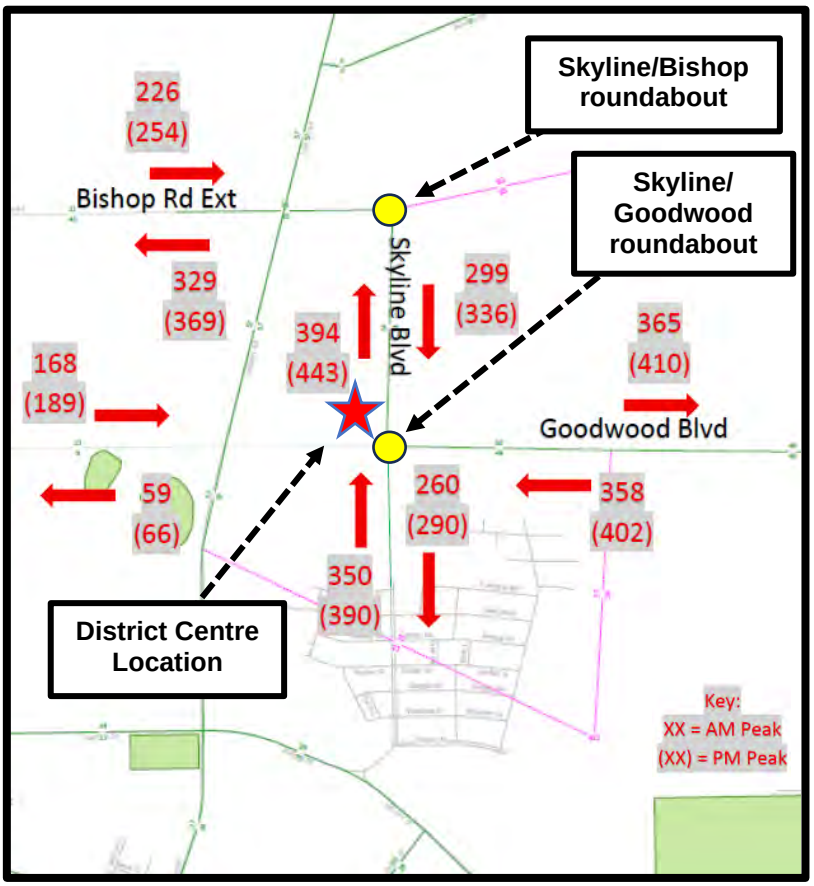
The TIA also models the impact of peak hour traffic volumes on intersection performance. The key intersections of this development are the ‘Skyline Boulevard/Bishop Road’ and ‘Skyline Boulevard/Goodwood Boulevard’ roundabouts.

The combined peak hour traffic volume scenario is as follows:

- AM peak hour - 438 vehicle trips
- PM peak hour - 1,208 vehicle trips

The main generation of traffic comes from the ‘Tavern’, Café/Restaurant’ and ‘Shop’, which would attract a greater number of customers in the peak PM period.

The TIA provides distribution of peak hour trips as follows:

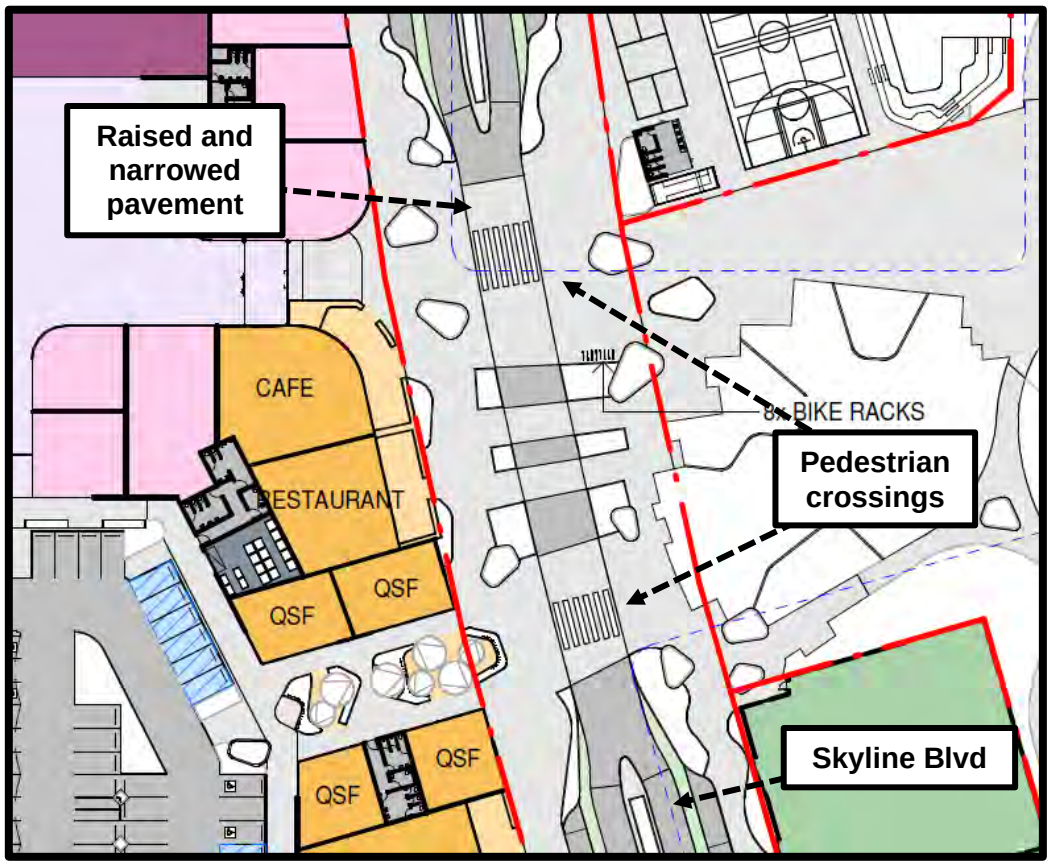


TIA peak hour intersection performance assessment

The intersection assessment was undertaken using SIDRA modelling. This identified that all intersections associated with the development would operate with a Level of Service A, meaning that traffic would be free flowing without significant delays at intersections. This also underpins the importance of how the section of Skyline Boulevard, interfacing between the centre frontage and community purpose / main public parklands is carefully treated so that traffic speeds are moderated to balance with the pedestrian safety, accessibility, dwelling and comfort needed in this critical section of road environment. This is discussed further following.

Safety

District centre development needs to balance the dual goals of facilitating traffic access to the centre and providing a pedestrian-oriented environment. A key element in the design of this district centre is the pedestrian crossing on Skyline Boulevard. This section of road includes reducing the speed to 30km/hr, and a raised pedestrian priority shared movement space as follows:



Pedestrian crossing at Main Street

Given approximately 7,900 vehicles are expected to pass through this pedestrian crossing daily at ultimate build out, it is important to consider safety and function. The applicant's TIA justifies this through comparison to other district centre developments which also provide a dual function of accommodating a high number of traffic movements through a low-speed pedestrian environment. Most applicable is the Albany Highway Precinct (East Victoria Park), which accommodates 11,000 vehicles per day alongside a pedestrian oriented realm. The volumes associated with the subject arrangement are not considered to result in any undue safety impacts.

The TIA requires design treatments to the road network near the pedestrian crossing. This includes features such as; a speed zone reduction to 30km/hr, ramps for vehicles to go up onto the raised pedestrian crossing, a change in road surface material, change in the road design and associated pedestrian crossing signage. These features would ensure that drivers are suitably aware of the pedestrian crossing and would ensure behavior matches the environment to address safety concerns.

Access

The TIA identifies the following access points across the district centre:

- Two full-turning movement car park access points to Goodwood Boulevard.
- A one-way click-and-collect access via Skyline Boulevard.
- Two left-in / left-out vehicle connections to Skyline Boulevard to the north that will also service future development to the north
- Loading vehicle access via Skyline Boulevard and the internal road network.

- A left-in / left-out access to the medical centre / swim school car park via Skyline Boulevard.
- A full turning movement access to the medical centre / swim school car park via Skyline Boulevard.
- A left-in / left-out access to the gym car park via Goodwood Boulevard.

The TIA provides a swept path analysis for each key access point identifying that vehicle movements can be facilitated by access design. However, several areas are required to be widened, particularly to facilitate service vehicle movements. A condition is recommended to require that the development plans are updated to reflect the recommendations of widening within TIA.

Road Network Upgrades

The following upgrades are identified within the TIA to facilitate traffic across the district centre:

- Construction of Goodwood Boulevard with a temporary roundabout installation at its western end.
- Extension of Skyline Boulevard through to Norman Road. This is to occur within the adjoining subdivision of Stage 6 Whitby Estate; however, this should be delivered to ensure that two-ways of egress from the site are possible. Therefore, a condition is recommended to require its construction prior to occupation of the development.

Conditions are recommended in this regard.

Car Parking

The Whitby ACP sets out minimum car parking requirements for specific land uses for the District Centre Development, as shown following: -

Car Parking Assessment			
Land Use	**Criteria**	**Whitby ACP requirement**	**Provided**
Shop	Major: 9496.8m^2 NLA Other shops: 4481.92m^2 NLA Liquor store: 405.27m^2 NLA	1 bay per 20m^2 NLA = 719.19 bays	Total required: 1077 bays Total provided: 956 bays (including on-street bays) **Total shortfall: 121 bays**
Tavern	741.9m^2 NLA	1 bay per 20m^2 NLA = 37.09 bays	
Restaurant/Cafe	1987.51m^2 NLA	1 bay per 20m^2 NLA = 99.37 bays	
Fast Food Outlet	687.08m^2 NLA	1 bay per 20m^2 NLA = 34.35 bays	

Medical Centre	10 practitioners	6 spaces for first practitioner, 4 spaced for other practitioners = 42 bays	
Private Recreation (swim school)	480.57m^2 NLA	1 bay per 20m^2 NLA = 24.02 bays	
Private Recreation (gym)	1926.9m^2 NLA	1 bay per 20m^2 NLA = 96.34 bays	
Child Care Premises	120 children	1 space per 5 children accommodated = 24 bays	

The development has a 121-bay shortfall across the site.

Clause 4.3 of LPS3 requires car parking rates to be met unless reciprocal arrangements can be achieved. This requires consideration of the peak period demand for each land use and operating times. Furthermore, clause 3.3.1.b.ii of the Whitby ACP states that, "*Parking bays may be credited to more than one land use where those land uses are complementary, or where hours of operation will not result in undue conflicting demand for parking*".

Clause 77D of the *Deemed Provisions* also allows for a variation to the minimum parking requirements where it is demonstrated that, "*in the case of a variation - the lower number of car parking spaced would be adequate for the demands of the development*".

The applicant has provided the following reasoning to justify the shortfall:

- Differing peak demand periods of land uses means that parking supply can be shared by tenancies within the district centre. Land uses such as the gym, childcare, tavern and restaurant/café that have a high evening demand would fall outside of the core shopping centre hours.
- Any overflow parking from the childcare land use morning peak can be catered for in the main centre car park given the low demand during that period.
- District centre trips often have a high degree of reciprocal parking between uses. This means that customers are likely to attend multiple tenancies (i.e. multiple shops) or land uses in a single trip. This is a measure of a successful centre, whereby the desire for pedestrian dwelling and stacked transactions can occur where the pedestrian movement network makes this the logical and comfortable choice in which to undertake these multiple purpose functions. This further reduces the burden on parking supply.

Further, the WA Planning Manual - Non-Residential Car Parking Rates in Perth and Peel was prepared by the State Government to provide a consistent approach to the provision of non-residential car parking across the Perth and Peel regions. Its introduction seeks to reduce inconsistencies between local government parking requirements and to provide clearer and more contemporary guidance.

For District Centres, the parking approach recognises that demand is generated across the centre as a whole, rather than separately by each individual tenancy. This provides a more accurate representation of actual parking demand because district centres contain a mix of complementary land uses that share parking, experience

different peak operating periods and generate reciprocal trips, where customers visit multiple businesses or facilities during a single visit. Applying a centre-wide floor-area rate therefore avoids overstating demand through the cumulative application of individual land-use rates, while allowing the required parking provision to respond to the centre's location, accessibility, operating characteristics and available evidence.

This approach supports a more efficient use of land and ensures that parking provision reflects the way District Centres function in practice. The manual applies a minimum of one bay per 100m² and a maximum of one bay per 25m² of floor area within District Centres, consistent with the broader objective of establishing evidence-based parking requirements. According to the manual, the development would require, if applying the maximum rate, 20% less car parking bays (max of 1 bay per 25sqm vs the current 20sqm) bringing the supply of parking into conformity.

Therefore, taking a balanced approach to the differing requirements of the planning framework, and having regard to the varied peak parking periods of individual land uses and the likelihood of multipurpose trips, the proposed parking provision is considered sufficient to meet the anticipated demand generated by the District Centre. Requiring additional parking would in the opinion of officers result in an inefficient use of land, create unnecessarily large areas of hardstand and undermine the intended function and amenity of the centre.

Bicycle Parking Facilities

The development provides 49 bicycle racks. These racks and amenities are provided across the tenancies of the site as follows:

- Main Shopping Centre: 37 bicycle racks
- Multi-purpose Space: 16 bicycle racks
- Gym: 8 bicycle racks
- Amenities: 4 showers/changerooms and lockers dedicated to staff.

LPS3 prescribes bicycle rack rates, in which a total of 144 bicycle bays are required when assessing the site collectively. Furthermore, Clause 4.4.(3) of LPS3 prescribes end of trip facilities based on the number of bicycle parking bays, which in this instance means that 15 showers/change rooms and lockers would be required.

The application considers that the provision of bicycle racks is sufficient given the development would not generate a significant volume of cyclists. However, it is considered that there should be suitable provision of bicycle racks in proximity to active land uses on the main street (including the restaurant/café tenancies and the main shopping centre entrance). A condition is imposed as follows:

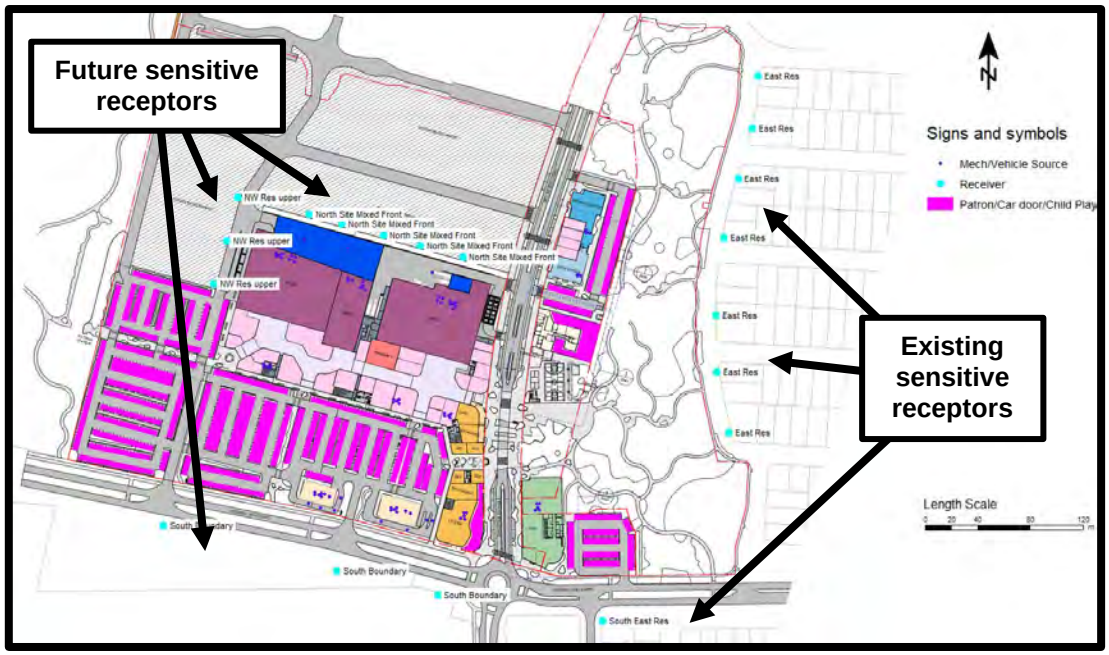
Provision of an additional 20 public bicycle racks, which take the form of integrated street furniture located either side of Skyline Boulevard, and are located near the main entrance to the development and community space area of the development;

Noise

The application includes an Environmental Noise Assessment (ENA) to address the requirements of the *Environmental Protection (Noise) Regulations 1997* (Noise Regulations). It considers the noise emissions of the development against the acceptable levels of the Noise Regulations. The following key noise sources are addressed through the ENA:

- Mechanical services (all) - Mechanical plant would be 1m above rooftop level, with a 1.2m parapet wall around the tenancies roof.
- Delivery areas (Shop) - Modelling conservatively accounts for 3 delivery trucks present at any one time.
- Patron noise (Tavern) - Includes consideration of the capacity of the tavern's alfresco dining capacity being up to 300 persons. Indoor noise was not considered.
- Gym activities (Private - Recreation Gym) - Including weights dropping, background music and machine use.
- Outdoor child play areas (Child Care Premises)
- Closing car doors (all carparking areas)

The nearest sensitive receivers that are modelled are the established residences to the east, and the future residential areas to the north and south. The sensitive receptors and the noise sources modelled in the ENA are shown following:



Sensitive receptors and noise source locations

The ENA noise modelling incorporates considerations like ground adsorption, the topography of the site, meteorological conditions, the sound power levels, and the type and duration of the noise (i.e. whether LA10, LA1 or LAmax applies). The modelling also assumes the future residential development to the north-west towards the future train station would be a 3-storey development, with the north development backing onto the loading area being 2-storeys. A noise wall to the rear of the loading areas (north side of the district centre) has been included in the modelling assumptions.

The ENA models five scenarios, worst-case, for the development. These scenarios are identified below along with any exceedances to the assigned levels:

Scenario	Scenario Details	Exceedances

1. Sunday/ Evening LA10	All plant operating for all tenancies except the child care centre. Delivery truck noise in the supermarket loading bay area. Drive through vehicles.	Future south: +6dB Existing south-east: +1dB Future north (1F): +4dB Future north-west (2F): +3dB
2. Day LA10	All plant operating at all tenancies Child play noise from child care centre.	Future south: +1dB Future north (1F): +8dB
3. Night LA10	Refrigeration plant for supermarket, all fast food outlets operating, tavern noise, and gym noise.	Future south: +11dB Existing south-east: +6dB Future north (GF): +1dB Future north (1F): +8dB Future north-west (1F): +2dB Future north-west (2F): +7dB
4. Night Deliveries LA1	Delivery truck noise from refrigerated deliveries in the designated supermarket loading area and smaller rigid trucks to the fast-food outlets.	Future north (1F): +7dB
5. Night LAmax	Car park door closing noise and delivery area impact noise.	Future north (GF): +7dB Future north (1F): +13dB Future north-west (GF): +10dB Future north-west (1F): +9dB Future north-west (2F): +5dB
Note: GF = ground floor, 1F = first floor & 2F = second floor		

The ENA identifies several exceedances to the assigned levels. The main areas are:

- Noise received at the future multi-storey residences to the north and north-west of the site from vehicle deliveries, refrigerating units and plant in the shopping centre loading areas.
- Noise received at existing and future residences to the south from outdoor patrons at the tavern.
- It is anticipated that the evening and night periods are when the highest impact would occur.
- It is noted that the ENA does not model noise generated from the undercover play courts.

Section 5 of the ENA identifies a series of recommendations to address assigned level exceedances. These recommendations address both design treatments and operational or behavioral management of tenancies, including:

- Noise wall to the north of the main supermarket loading areas.

- Acoustic barriers to the alfresco areas of the tavern.
- Acoustic screening around external fixtures and plant.
- Tenancy specific noise management plans (NMP) being required for each land use.
- Low speed options for plant during the evening periods.
- Turning delivery vehicles off during unloading.
- Constructing noise generating tenancies with thick acoustic rated glass.
- Notifications on the certificate of title, to give notice that the future developments to the north and south of the district centre are affected by noise emissions.
- Requirements to incorporate acoustic design elements into future adjoining sensitive receptor development to the north and south of the district centre.

Whilst noise exceedances were present in the modelling, it is considered that the recommendations will result in the development being capable of achieving compliance with the Noise Regulations. This, however, requires demonstrating prior to the development occurring.

A condition is recommended requiring a revised ENA which provides updated modelling demonstrating compliance with the Noise Regulations. This is to incorporate the design features recommended in Section 5 of the ENA. It should also address noise generated from the undercover play courts which were not modelled in the original.

State Planning Policy 5.4 - Road and Rail Noise (SPP5.4)

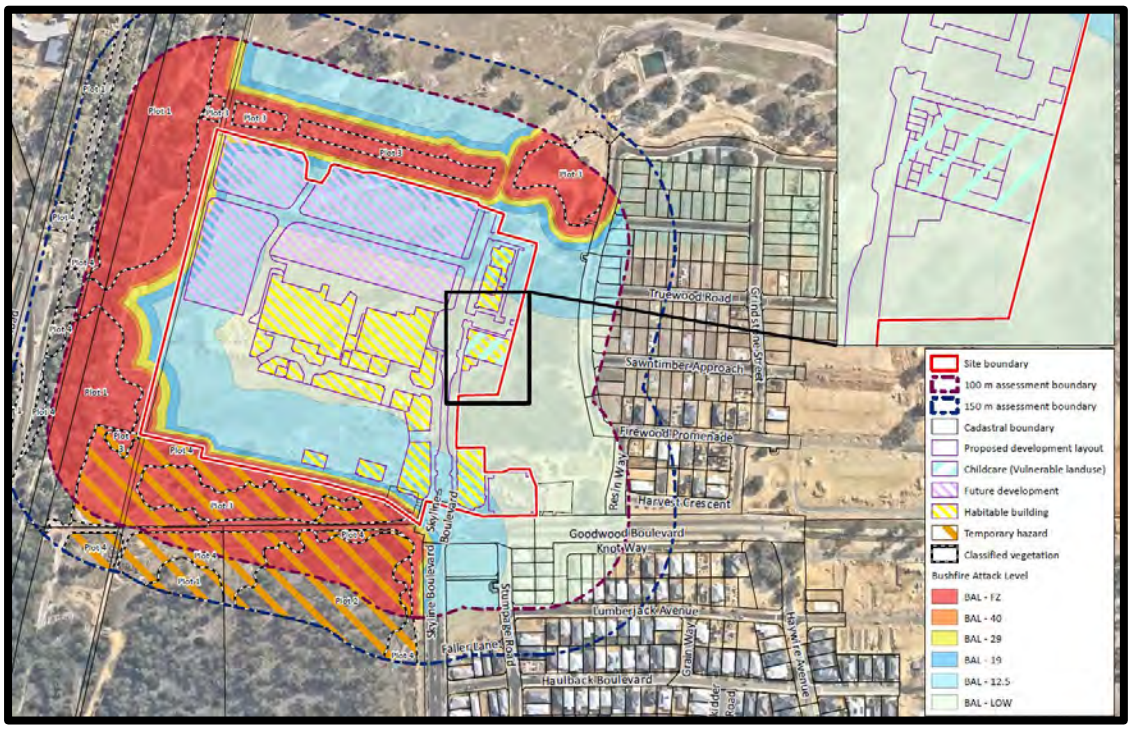
The site is in proximity to the railway line that currently carries freight through Mundijong. SPP5.4 identifies that a 200m buffer from the railway is applicable. Consideration should be given to the potential noise impacts to any sensitive developments within that area. In this instance, only car parking is located within the 200m buffer. The noise-sensitive land uses proposed on this site (medical centre, child care premises, swim school) are located suitably away from the railway line. It is likely that future district centre development adjoining this site would include residential development within the 200m buffer area. Therefore, a condition is recommended to place a notification on the title that would make future purchasers aware and ensure any future development accounts for this.

Bushfire

The site is located in a bushfire prone area, according to State Planning Policy 3.7 - Planning in Bushfire Prone Areas (SPP3.7). The applicant has provided a Bushfire Management Plan (BMP) to address the requirements of SPP3.7 and the associated SPP3.7 Guidelines. The discussion in this section of the report is confined to the requirements of Sections 7 and 8 of the Guidelines, which pertain to Commercial and Vulnerable development types present in this development.

Element 2 - Siting and Design

The BMP undertakes a review of nearby vegetation plots and associated bushfire threat to the proposed development. It is identified that all development associated with this proposal will be able to be suitably located within areas no higher than BAL-29. The BAL contour map is shown following:



BAL contour map

The following factors support the classification of the BAL-29 rating for the district centre:

- The site is mostly historically cleared of vegetation.
- General management of the site, streetscapes and landscaped areas to a 'low threat' standard.
- The BMP proposes to manage the POS areas to the west and east of the district centre to a 'low threat' state as per the technical requirements of SPP3.7.
- Retention of small, unmanaged plots of remnant vegetation within the POS to the east of the site to both ensure the retention of native vegetation where possible and separation from habitable buildings is achieved. These plots of vegetation meet suitable exclusion requirements within clause 2.2.3.2 of AS 3595, though would require the ongoing management of the surrounding POS to maintain their exclusion.

It is considered that nearby vegetation complexes are suitably identified and accounted for by the BMP. The main risk associated with the site is the ongoing maintenance of the POS landscaped areas to the BMP requirements. A detailed landscaping plan is required to be prepared to show the final POS design and how this can meet the requirements of the BMP. A condition has been recommended to this effect.

Element 3 - Access

The main consideration regarding access is to ensure that suitable public road access in two directions from the site is possible in the case of an emergency. The current public road network is inadequate to this end given the only egress from the district centre is to the south via the Skyline Boulevard/Kiernan Street intersection. However, the BMP notes that the Stage 6 Whitby Estate subdivision approval will result in the creation of another access/egress point to the north when Skyline Boulevard is

extended through to Norman Road. The BMP requires that this be installed to satisfy this requirement of the Guidelines. Therefore, a condition of approval requires the completion of the Skyline Boulevard extension prior to occupation of the district centre development.

Element 4 - Water

The site is serviced by reticulated water supply. The BMP identifies that there are existing hydrants to the south and east of the site. As part of the development, this network of hydrants will be extended through the site according to the technical requirements of SPP3.7. This complies with the Water Element of the Guidelines.

Environment

The following key environmental features are present at this site:

- The western portion of the site is mapped as being a buffer area to a conservation category wetland and so it is nominated as an environmentally sensitive area.
- The remnant vegetation on the east of future Skyline Boulevard is identified as being threatened ecological community (TEC) vegetation, black cockatoo feeding habitat and local native vegetation.
- Bush Forever Site No. 350 borders the site immediately to the west of the district centre area, within the railway reserve.

The above environmental features are largely unaffected by the footprint and layout of the proposed district centre development. However, development should be careful to ensure that the values of these assets are protected and enhanced.

The retention of the values of the vegetation in the east of the site is tied to the proposed construction of the public open space on the east of Skyline Boulevard. The main measure to preserve the values of this area is to retain as many mature trees within the future public open space as possible. The landscaping plan aligns with this aim and states that the intent is to preserve mature trees. However, it is noted that the provided landscaping plan does not include a tree survey nor does it identify the trees for retention. As such, a condition is recommended to provide a final landscaping plan which clearly shows the trees to be retained and removed. Additionally, fauna management should be contemplated to ensure minimal impact occurs to the black cockatoo population and other fauna in this area.

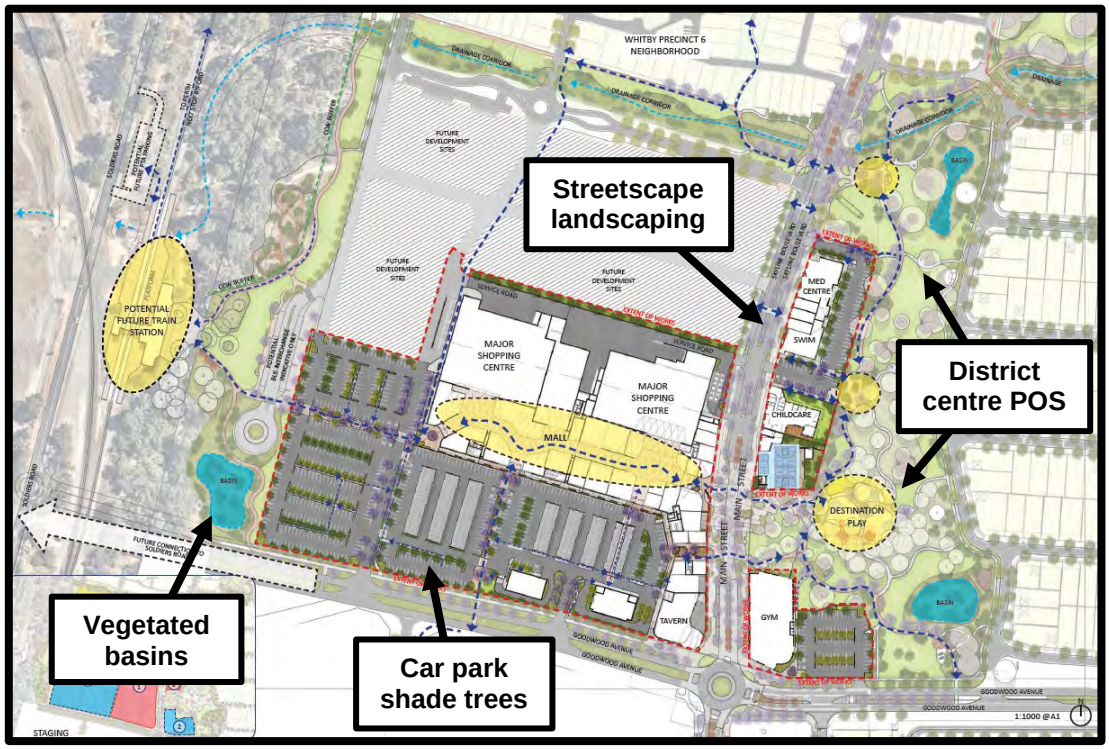
In addressing the conservation category wetland buffer area, the landscaping plan identifies the 50m buffer that extends into the site. The BMP also identifies the buffer area as being retained as a permanent managed ‘class A forest’. Officers are satisfied that the development has been appropriately planned for and will not adversely impact on this wetland buffer area.

Landscaping

The Mundijong DSP identifies that a public open space (POS) area servicing the local neighbourhood is to be delivered within the district centre. The Whitby ACP identifies a total area 11.5ha of POS is to be reserved across the district centre. Of this, an area of approximately 3.48ha is expected to form the key neighbourhood POS on the east of Skyline Boulevard. The ACP further details that this should consist of retained remnant vegetation, a central playground feature, path systems and recreation spaces. The ACP also requires the provision of landscaped areas throughout the district centre.

The application includes a landscaping concept plan to address this requirement. This shows the proposal for neighbourhood POS with an acceptable area of 3.84ha on the

east of Skyline Boulevard. It also details the provision of landscaping and bush reserves towards the railway reserve on the west of the site. Vegetated drainage basins, swales, streetscape landscaping and shade trees in carparking areas are also proposed throughout the site. This concept is shown following:



Landscaping concept plan

The plan is considered suitable on a conceptual level, meeting the requirements of the ACP. The proposal also seeks to incorporate and preserve as many of the remnant trees within the POS as possible, which is supported. A condition is recommended to ensure a final landscaping plan is provided to address the following matters:

- Full planting regime including details such as the species, tub size, number of plants as well as the planting methodology and irrigation.
- A tree retention report for the district centre POS to ensure as many existing mature trees can be retained as possible. This is especially important for the applicant to address prior to work occurring given the important black cockatoo habitat values within the plot of remnant vegetation.
- Full plans and details of the 'iconic playground' in the POS.
- How drainage basins and swales will be designed with vegetation that will provide a bio-treatment function.
- Final design of landscaping around buildings and near car parks to avoid conflicts with building canopies.
- Providing a suitable planting regime incorporating additional local native species.
- Arrangements for the treatment and screening of the northern façade of the noise wall towards future development to the north of the site.

A key element of importance is the timing by which to precipitate the creation of the POS area. In this regard, the following condition is recommended:

The proposed areas on the development plan(s) identified as Public Open Space outside of the Public Purpose (Community) element shown on the approved development plans shall be ceded and vested to the Crown under Section 152 of the Planning and Development Act 2005 as a Reserve for Recreation. Such land is to be ceded free of cost and without any payment of compensation by the Shire. The ceding and vesting of Public Open Space is to coincide with the practical completion of all works associated with the Public Open Space element outside of the Public Purpose (Community) element of the development.

The purpose of the condition is to ensure that the Public Open Space (POS) component of the Whitby District Centre is appropriately secured for public recreation, while recognising that the adjoining Public Purpose (Community) component has a distinctly different intended function, land tenure requirement and potentially different timeframe for delivery. This is explained further on in the report, with a subtly different condition proposed.

In respect of the POS condition, this is supported by section 152 of the Planning and Development Act 2005, which provides a statutory mechanism for land identified through the subdivision process to vest in the Crown for specified purposes, including recreation.

Importantly, the condition recognises the need to distinguish between two separate, albeit complementary, components of the development.

Firstly, the Public Open Space component is intended to provide publicly accessible recreational land, supporting the amenity, landscape character and community needs of the District Centre. Its intended function is consistent with the establishment of a Crown reserve for recreation, with the expectation that the Shire will ultimately assume responsibility for its ongoing management and maintenance, subject to the appropriate management arrangements being established.

Secondly, the Public Purpose (Community) component is intended to accommodate community infrastructure. This represents a materially different land use outcome from conventional public recreation land. Its intended function requires more flexible tenure and management arrangements, being that the vesting in the Crown and subsequent placement by way of management order to the Shire to manage include power to lease and licence.

Under sections 41 and 46 of the Land Administration Act 1997, the purpose of a Crown reserve and the powers conferred through its Management Order are important considerations. In particular, the ability of a local government to lease land within a managed Crown reserve is not automatic and generally requires an express power to lease conferred through the Management Order. Accordingly, the Public Purpose (Community) component requires a separate reserve purpose and appropriate leasing powers to facilitate its intended future operation. This is covered next.

Community Purpose Building

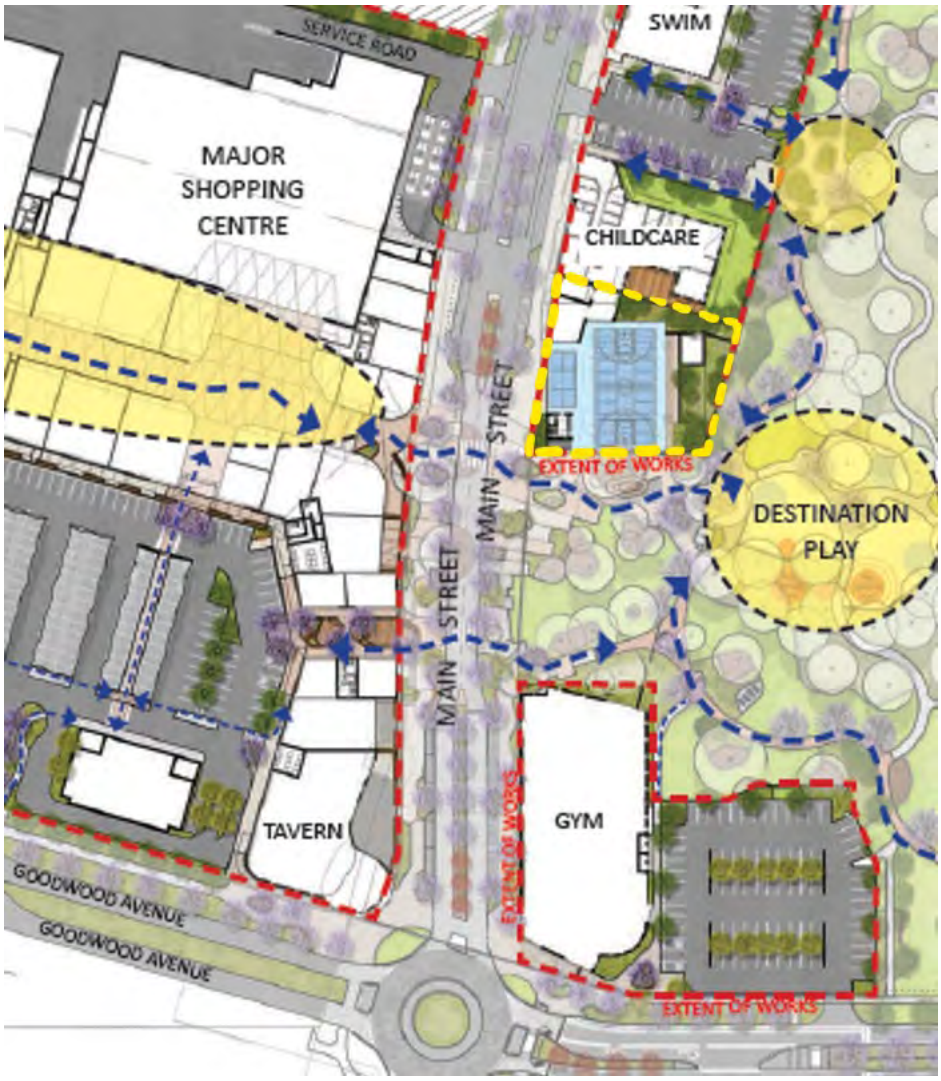
The delivery of community infrastructure is vital in supporting a growing community such as in Whitby. The Mundijong DSP recognises community infrastructure provision should coincide with the development of POS in the district centre.

This is further refined through the ACP, which identifies the specific provision of community infrastructure to be created and integrated with the adjoining public open space. This is shown following:



Activity Centre Plan

The revisions discussed through this report has seen the relocation of this element to a central position in the main street, meaningfully connected with the public open space element. This is shown following:



Location and function of community purpose element

The proposal includes this 'Community Purpose' land use, which is identified on the plans as a community workshop space and active play elements, integrated under an encompassing roof canopy. This is located facing Skyline Boulevard, including the undercover basketball courts facilities and near to the main POS. This is a significant piece of community infrastructure that will ultimately need to be constructed, delivered and vested in the Crown, with appropriate power to lease which is a key distinguishing factor from more traditional recreational POS. Further details are required to demonstrate suitable size and function of the space. This would require amended development plans to show the layout and design of the community facility. To facilitate this, conditions have been recommended as follows:

The proposed areas on the development plan(s) identified as Public Purpose (Community) outside of the Public Open Space element shown on the approved development plans shall be ceded and vested to the Crown under Section 152 of the Planning and Development Act 2005 as a Reserve for Public Purposes including power to lease. Such land is to be ceded free of cost and without any payment of compensation by the Shire. The ceding and vesting of Public Purpose (Community) is

to coincide with the practical completion of all works associated with the Public Purpose (Community) element outside of the Public Open Space element of the development.

Prior to the lodgement of a Building Permit, amended development plans are to be submitted to and approved by the Shire of Serpentine Jarrahdale which specify:

a. The final floor plans and elevations of the Community Workshop building;

The Shire maintains that there is a sound and legitimate planning basis for requiring the construction and ceding, free of cost, of the identified Public Purpose (Community) infrastructure, with the land ultimately vested in the Crown and placed under the care, control and management of the Shire through an appropriate Management Order. This position is grounded in the adopted planning framework for the Whitby District Centre, the nature and scale of the proposed development, and the importance of securing genuine and enduring community infrastructure as part of the establishment of a new district centre.

The Shire acknowledges the applicant's willingness to construct the proposed facility. However, the applicant's preference to retain ownership and control introduces a fundamental distinction between the physical delivery of a building and the actual delivery of public community infrastructure. A facility which remains subject to private ownership and operational discretion does not necessarily provide the same certainty of community access, civic purpose, long-term availability or public accountability as a facility secured for public purposes and managed by the local government.

The Shire considers that the proposed condition has a demonstrable planning purpose and a direct relationship to the development proposed. Its justification can be considered against the three established principles arising from Newbury District Council v Secretary of State for the Environment [1981] AC 578, commonly referred to as the Newbury tests for the validity of planning conditions.

1. The condition must be imposed for a legitimate planning purpose:

- The Mundijong District Structure Plan and associated Whitby Activity Centre Plan establish a strategic planning expectation for the integration of community infrastructure within the District Centre. The requirement is therefore not a new or unrelated obligation being introduced through development assessment, but reflects the intended land use and community outcomes contemplated through the preceding planning framework.

- The proposed community workshop and associated civic infrastructure serve a distinct public purpose, supporting opportunities for community participation, social interaction, recreation and community development within a rapidly growing urban area. The provision of such infrastructure is an integral component of creating a functional, inclusive and sustainable district centre, rather than simply facilitating commercial development.

- The requirement for public ownership and management provides an important means of securing the intended community function over the long term. It establishes a basis for transparent management, equitable access and programming responsive to evolving community needs, rather than leaving these matters subject to the preferences of a private landowner.

- The condition seeks to secure the planning outcome identified through the Activity Centre Plan, rather than obtain an unrelated asset for the Shire. The planning purpose is the delivery of enduring civic infrastructure for the Whitby community, with public

management proposed as the mechanism through which that outcome can be reliably achieved.

2. The condition must fairly and reasonably relate to the development being approved:

- The relationship between the condition and the proposed development is direct and identifiable. The community facility forms part of the development proposal itself, is expressly identified on the submitted development plans and is physically integrated with the proposed public open space, main street and broader District Centre activities.

- The scale of commercial, residential and community activity contemplated within the District Centre creates a corresponding requirement for accessible civic and community infrastructure. The proposed facility directly responds to the social infrastructure needs associated with the development and the growing population it is intended to serve.

- The Shire's position does not seek to introduce a new facility, impose an obligation on unrelated land, or require infrastructure beyond the community element already contemplated through the planning framework. Rather, the condition seeks to ensure that the identified public purpose component is delivered in a manner consistent with its intended role.

- The location and design of the proposed facility reinforce this relationship. Its positioning adjoining the main street and public open space establishes an integrated civic environment, where community activity, recreation and commercial uses can collectively contribute to the vibrancy and identity of the District Centre. Securing the facility for public purposes preserves this intended relationship between the built form, the public realm and the broader community.

3. The condition must be reasonable and capable of being imposed by a properly advised planning authority:

- The condition is considered proportionate to the scale, nature and strategic significance of the proposed development. It relates to a specifically identified component of the development, rather than seeking an unspecified financial contribution or the delivery of infrastructure unrelated to the development.

- The applicant has indicated a willingness to construct the facility, meaning the principal matter is not the physical requirement to provide the infrastructure, but the arrangements for its ultimate ownership and management. The Shire considers that these arrangements are fundamental to ensuring the community facility operates as genuine public infrastructure.

- Private ownership does not, of itself, prevent a facility from providing community benefits. However, without appropriate and enduring legal arrangements, there is uncertainty regarding future access, permissible activities, affordability, operational priorities and the ability of the Shire to respond to changing community needs. The condition is intended to address these legitimate planning concerns.

- The timing of ceding and vesting is proposed to correspond with the practical completion of the relevant community infrastructure, recognising that delivery of the public purpose component may occur independently of the adjoining public open space. This provides a logical and proportionate approach to implementation, avoiding any assumption that both elements must necessarily be completed and transferred simultaneously.

- The proposed Public Purpose (Community) reserve also has a different statutory and operational character from conventional recreational public open space. The

establishment of an appropriate Crown reserve, together with a Management Order and necessary leasing powers, would enable the Shire to accommodate community organisations, programmed activities and potentially third-party operators while maintaining the facility's overarching public purpose.

On this basis, Officers consider that the proposed condition is supported by a legitimate planning purpose, has a clear and demonstrable relationship to the proposed development, and represents a reasonable mechanism for securing the community infrastructure outcomes contemplated through the adopted planning framework.

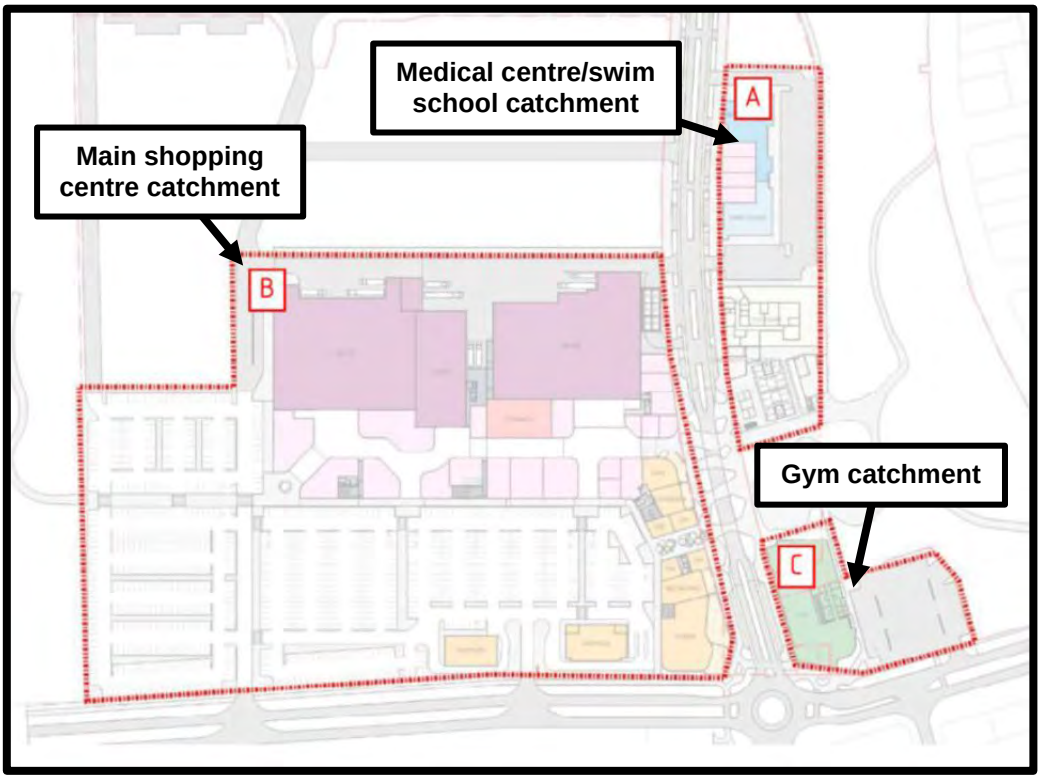
Stormwater Management

The applicant has provided a Stormwater Management Plan (SMP) to address how stormwater is to be managed for the district centre. This was prepared considering the Local Water Management Strategy (LWMS) for the Whitby ACP formerly approved by DWER, and addressing the requirements of the Shire's Local Planning Policy 2.4 - Water Sensitive Urban Design Guidelines (LPP2.4).

It is recognised that the site has minimal capacity for dealing with groundwater through infiltration due to the soils. Furthermore, there is significant hardstand proposed across the district centre. The key requirements and principles imposed by the LWMS to managing stormwater for this site include:

- Treatment of stormwater onsite at the source for small rainfall events (up to the first 15mm). Larger rainfall events are to be conveyed towards the Manjedal Brook.
- Provision of bio-retention areas to enable onsite treatment.
- Stormwater discharge from the site is not to exceed the pre-development rates.
- Design of public open space areas to incorporate basins to capture overland flow.

The SMP seeks to capture and manage stormwater through dividing the site into three catchment areas. These catchments are the main shopping centre area, the swim school/medical centre area and the gym area. These are shown below:



Catchment breakdown from SWMP

The stormwater methodology is to provide a series of basins and swales for each catchment area. Water runoff from roof and hardstand areas would be directed to these areas through a series of drains and pipes. These then direct water to the swales and basins, which would include vegetation to treat water quality before release into the broader downstream system. Ultimate outflow of stormwater would head west under the PTA's railway corridor. In reviewing the SWMP further detail is required in relation to demonstrate the following:

- Details that all impervious areas have been appropriately modelled for in the catchment area, including all roofs, car parks, loading areas, footpaths, driveways, hardstand and service areas.
- Discharge calculations for major rainfall events, given differing critical duration assumptions are provided for each catchment area.
- The major event storage and infiltration rate calculations.
- That the 0.5m clearance of finished floor levels is achieved for the flood level.
- Outlet control to manage discharge rates at pre-development flows.
- Water quality control for the commercial loading dock areas.
- Acceptable swale and basin design including detail of how biotreatment is to be implemented at swales and basins (i.e. planting of vegetation to treat nutrients and hydrocarbons prior to entering the stormwater system).
- The capacity of the systems to manage upstream catchment flows in and through the site. It only accounts for the district centre itself, without addressing

stormwater movement from upstream catchments that would enter the swale and basin systems in the district centre.

- That outgoing stormwater flows from the site meet the Public Transport Authority requirements for stormwater management at the adjoining railway corridor.

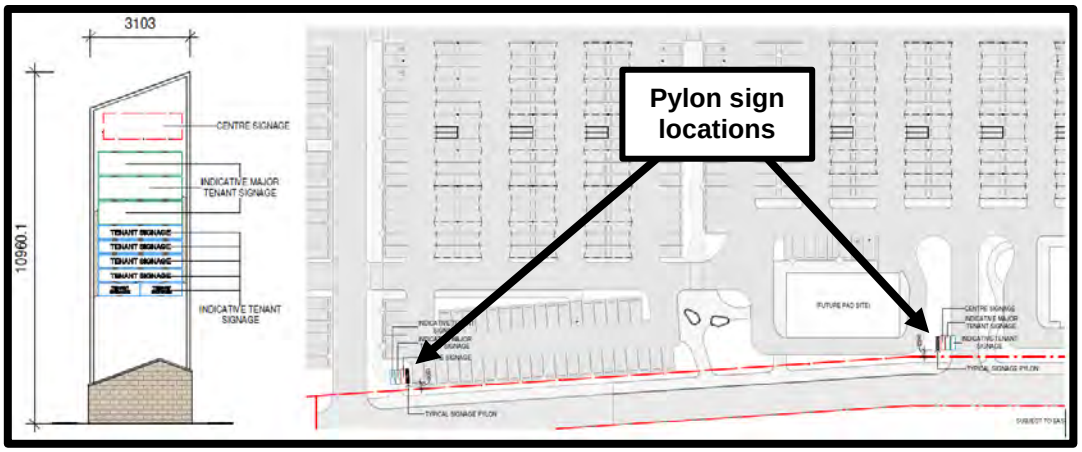
Whilst it is considered that the SMP demonstrates that stormwater can be appropriately managed, a condition is recommended to require further details to the satisfaction of the Shire and DWER.

Waste Management

A Waste Management Plan was prepared to demonstrate how waste is to be stored and collected for the proposed development. This includes measures to dispose of the commercial and solid waste generated at the site. Several built-up bin areas have been included around the shopping precinct in order to facilitate the orderly removal of waste. Detailed design of these facilities needs to be addressed including enclosing these areas with roof cover and water access to enable cleaning of bins and capture of wastewater. An appropriate condition therefore recommends an amended waste management plan to be provided and thereafter implemented for the duration of the development.

Signage

The development does not provide full details of signage design as part of the proposal. Instead, indicative signage zones are shown on the tenancy facades. These are generally located on the building facades. Two pylon signs are intended to be located near the entrance to the main shopping centre on Goodwood Boulevard to provide tenancy details for the shopping centre, as follows:



Pylon sign locations fronting Goodwood Boulevard, near the main shopping centre entrance locations

The Shire's Local Planning Policy 4.11 - Advertising (LPP4.11) states that a pylon sign is a form of signage which can be considered in district centres ('A - discretionary'). However, the assessment criteria for pylon signs requires that they are reflective of the building heights of nearby buildings. Standalone pylon signs of significant height can result in a significant visual impact on the amenity of the streetscape. The proposed pylon signs are over 10m in height and not located near other buildings or built form with a comparative height.

The Whitby ACP states that a signage strategy should be provided which addresses the following objectives:

- *Manage individual and cumulative visual impacts.*
- *Maintain and protect amenity.*
- *Ensure appropriate advertising exposure for businesses.*

The signage strategy should therefore provide further consideration of the location and design of signage (the pylon signs in particular) to ensure they will contribute well to the character of the future district centre. The inclusion of framing or consistent design elements for tenancy signage across the facades of buildings in the district centre is to be outlined. A condition of approval is required to this effect to ensure signage is delivered in a coordinated and consistent manner.

Public Art

The objectives of LPP1.6 is to establish a framework requiring major developments with a construction cost exceeding $1 million to either provide site-specific artworks or contribute to a fund dedicated to delivering public art. It is considered there are opportunities to incorporate public art in key prominent locations throughout the district centre such as near centre entrances, intersections and public open space entrances. The required value of the art would be minimum cost of 1% value of the construction, consistent with the policy guidance provided in LPP1.6.

Given the scale of the development, it is considered that instead of a single public art piece, that there is benefit in exploring a curated public art experience that threads throughout the development. In light of this, it is considered that rather than a standard per cent for art condition, that the applicant have the opportunity to develop a public art plan that can be curated across the development, particularly reflective of stages should that be the development intent. Having an overall public art plan, enables a coordinated delivery of public art, which is considered preferable in terms of the amenity of the area.

CONSULTATION:

Public Consultation

The application was advertised for public comment in the following manner:

- Landowners and occupiers within the suburb of Whitby were notified in writing of the proposed application.
- The application was made available for public inspection at the Shire's Administrative Office and published on the Shire's website.
- A sign was placed on-site at the intersection of Skyline Boulevard and Goodwood Boulevard.
- Advertising was conducted over a period of 28 days, between 5 August 2026 and 2 September 2026, in accordance with the *Planning and Development (Local Planning Scheme) Regulations 2015*.

A total of 5 submissions were received. The breakdown of the submissions can be seen below:

Type of Submission	No. Received
Support	3
Neutral (with comments)	2
Oppose	0

The submissions received raised various planning issues. These are summarised below with an officer response included. The full schedule of submissions can be seen in **Attachment 3**.

Issue Raised	Officer Comments
Parking provision	Refer to the planning assessment of car parking for further details.
Public open space provision	Refer to the 'Landscaping' section of this report. The development provides adequate public open space area, consistent with the Whitby ACP.
Providing a slip lane on Goodwood Boulevard for shopping centre carpark entry	The traffic volumes do not presently warrant such a treatment. Further consideration could be given to this when the upgrade to and extension of Goodwood Boulevard takes place, into the future. This however can only occur upon deviation of the freight rail infrastructure, which has not set date.
Building design reflective of Whitby local character	Refer to the planning assessment in the 'Built Form' section of this report for further details. It is considered that the development has appropriately addressed this through the provision of a natural colour and material palette.
District centre landscaping in road verges	A final landscaping plan will be required to ensure the suitable delivery of landscaping throughout the public realm.
Removal of existing vegetation and canopy coverage	A final landscaping plan will be required to confirm the extent of tree removal proposed and seek to ensure that as many mature existing trees are retained as possible.
Impact to Carnaby's Black Cockatoo habitat	A final landscaping plan will be required to confirm the extent of tree removal proposed and seek to ensure that as many mature existing trees are retained as possible.

Referrals/Consultation with Government/Service Agencies

The application was referred to the following Government Agencies for comment:

- Department of Planning, Lands and Heritage (DPLH) - Bush Forever Department
- Department of Fire and Emergency Services (DFES)
- Public Transport Authority (PTA)

The comments received can be viewed in full in **attachment 4**. Summaries of the comments are detailed as follows:

DPLH Bush Forever Comments
The DPLH Bush Forever Department did not object to the development. They provided comments identifying the nearby location of Bush Forever Areas 350 and 354.
Officer Comments: The Applicant has clarified that no works associated with the development will impact any Bush Forever sites.
DFES Comments
DFES provided a submission which did not object to the development, though required further information to address several matters. The key matters are seen as follows: 1. Exclusion of the POS areas on the east of Skyline Boulevard not substantiated. Therefore, the BAL ratings derived from excluding the vegetation require further justification. 2. Clearing within the POS may be required to validate the exclusion of the whole area. 3. A secondary vehicular access is not confirmed. 4. Providing a Bushfire Emergency Plan to the SPP3.7 Guidelines requirements.

Officer Comments:

1. The Applicant has advised that while there are plots of unmanaged woodland to be located within the POS, they will be less than 1 hectare in size and more than 100m from any other vegetation plots. This meets the exclusion clause 2.2.3.2 of AS 3959. Officers consider that a final landscaping plan is required to provide detailed management of the POS to manage bushfire threat and so a condition of determination is recommended to this effect. This will ensure the BAL ratings derived from excluding the POS can be substantiated.
2. Further to the above comments, a final landscaping plan is required as a condition of determination. Furthermore, exclusions suitably apply under clause 2.2.3.2 of AS 3959, which ensures that significant clearing of the POS area is not required to substantiate the BAL ratings derived in the BMP.
3. A condition is to be required that would require the extension of Skyline Boulevard to the north be completed prior to the occupation of the development. This will ensure a secondary egress route is available to the north from the site, in addition to the existing route to the south.
4. A condition is required to ensure a suitable Bushfire Emergency Plan is provided.

PTA Comments

PTA provided a submission that did not object to the development though required several conditions to be imposed on the development. These related to the following:

1. Suitable provision of bus embayment's on the main street.
2. The PTA wants to ensure appropriate management of stormwater does given the outflow of stormwater drains from the site will go under the railway corridor, which is controlled by the PTA.

Officer Comments:

1. This advice has been provided to the Applicant, who is liaising with PTA regarding suitable bus embayment locations. This is considered to be a design detail that can be captured within the final civil drawings
2. A condition for an updated stormwater management plan will ensure that the development manages stormwater to pre-development rates and meets the requirements of PTA to manage outgoing water towards the railway corridor.

Design Review Panel Advice

Not applicable.

ALTERNATIVE TO RESPONSIBLE AUTHORITY RECOMMENDATION

No alternative recommendation has been provided at this stage. The proposal is considered to align with the planning framework, and the associated elements requiring the exercise of discretion considered justifiable based on the merits of the proposal.

CONCLUSION:

The proposed Whitby District Centre development has undergone a thorough assessment in line with the relevant state and local planning framework. The development generally complies with the planning framework. The development would result in a well-designed district centre, facilitating retail and employment needs of the community and providing a vibrant built form and public spaces. However, conditions are recommended to ensure appropriate detailed design of matters including traffic and access, POS landscaping, stormwater and the final outcome of the community workshop building. As such, approval is recommended for the reasons outlined in the report subject to conditions.

ATTACHMENTS

1. Development Plans (as listed in Condition No.1)
2. Technical Document that form part of the approval (as listed in Condition No.1)
3. Summary of Public Submissions
4. Summary of State Agency Submissions
5. Full planning assessment - Clause 67

240263 - WHITBY TOWN CENTRE



SHEET NUMBER	SHEET NAME	REV
00 SERIES | OVERALL SITE DOCUMENTS		
WTC-BUC-A-DA-00000	COVER SHEET	G
01 SERIES | SITE, SURVEY & LOCATION PLANS		
WTC-BUC-A-DA-01000	INDICATIVE RE-SUBDIVISION PLAN	E
WTC-BUC-A-DA-01001	SITE PLAN	K
03 SERIES | STAGING PLANS		
WTC-BUC-A-DA-03002	STAGING PLAN - STAGE 1	F
20 SERIES | FLOOR PLANS - LARGE SCALE		
WTC-BUC-A-DA-20101	SHOPPING CENTRE GROUND FLOOR PLAN	G
WTC-BUC-A-DA-20151	SHOPPING CENTRE ROOF PLAN	H
WTC-BUC-A-DA-20301	HEALTH & WELLNESS PRECINCT PLANS	E
WTC-BUC-A-DA-20401	CHILDCARE & MULTI-PURPOSE SPACE PLANS	E
WTC-BUC-A-DA-20501	GYM PLANS	E
40 SERIES | ELEVATIONS - EXTERNAL - LARGE SCALE		
WTC-BUC-A-DA-40101	SHOPPING CENTRE ELEVATIONS 01	F
WTC-BUC-A-DA-40102	SHOPPING CENTRE ELEVATIONS 02	E
WTC-BUC-A-DA-40201	DINING PRECINCT ELEVATIONS	E
WTC-BUC-A-DA-40301	HEALTH & WELLNESS PRECINCT & CHILDCARE ELEVATIONS	E
WTC-BUC-A-DA-40501	MULTI-PURPOSE SPACE & GYM ELEVATIONS	E
70 SERIES | DA RENDERS		
WTC-BUC-A-DA-70101	SHOPPING CENTRE RENDERS	D
WTC-BUC-A-DA-70201	DINING PRECINCT RENDERS	D
WTC-BUC-A-DA-70301	HIGH STREET RENDERS	C
86 SERIES | SIGNAGE SCHEDULES		
WTC-BUC-A-DA-86100	SIGNAGE AND WAYFINDING PLAN	E

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C	28.05.2026	ISSUED FOR INFORMATION	HD	AP
D	18.06.2026	ISSUED FOR INFORMATION	HD	AP
E	23.06.2026	ISSUED FOR INFORMATION	HD	AP
F	29.06.2026	ISSUED FOR DA	HD	AP
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WHITBY TOWN CENTRE
WHITBY, WESTERN AUSTRALIA

Project Number
240263

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Drawing Title
COVER SHEET

Drawing Number
WTC-BUC-A-DA-00000

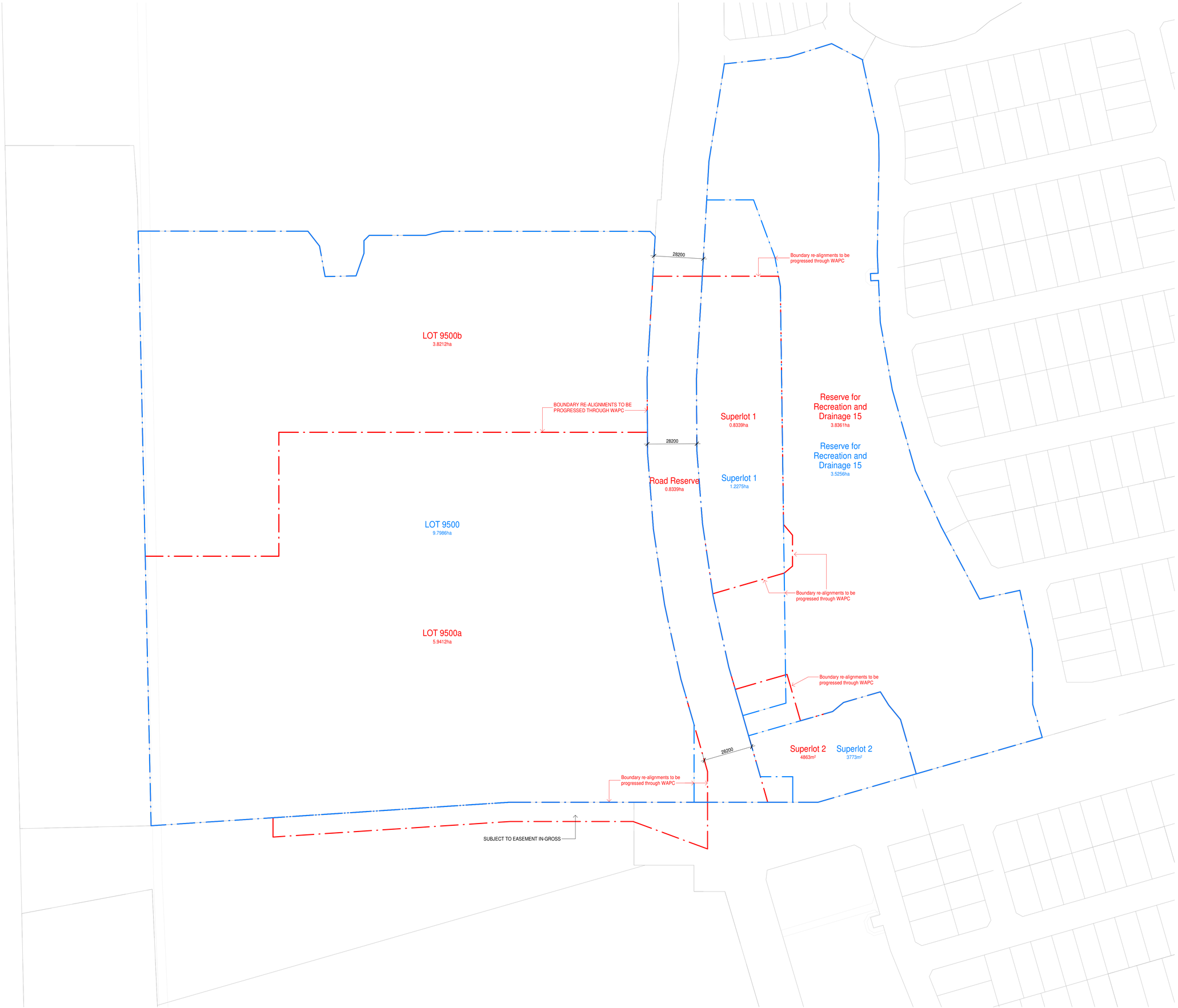
Revision
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Legend

- Existing Lot Boundaries
- Indicative Proposed Lot Boundary Changes

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WHITBY TOWN CENTRE
WHITBY, WESTERN AUSTRALIA

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Drawing Title
INDICATIVE RE-SUBDIVISION PLAN

Drawing Number
WTC-BUC-A-DA-01000

Revision
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Area Legend

- Amenities
- BOH
- Childcare
- Circulation
- Community Workshop
- Food & Beverage
- Gym
- Liquor Store
- LSA
- Major
- Medical
- Pharmacy
- Specialty
- Swim School
- Tavern

CATEGORY	AREA
Amenities	266.61 m²
BOH	797.13 m²
Childcare	1360.91 m²
Circulation	3180.39 m²
Community Workshop	188.69 m²
Food & Beverage	1987.51 m²
Gym	1926.90 m²
Liquor Store	405.27 m²
LSA	697.08 m²
Major	9496.80 m²
Medical	636.15 m²
Pharmacy	619.09 m²
Specialty	4481.92 m²
Swim School	480.57 m²
Tavern	741.90 m²
	27266.93 m²

BAY TYPE	COUNT
GYM	
ACROD - 5400x2700	2
Standard Bay - 5400x2700	72
	74
HIGH STREET	
On-Street Parallel Bay - 6600x2600	27
	27
MEDICAL CENTRE	
ACROD - 5400x2700	4
Standard Bay - 5400x2700	77
	81
SHOPPING CENTRE	
ACROD - 5400x2700	17
Electric Vehicle Bay - 2700x5400	8
Standard Bay - 5400x2700	749
	774
TOTAL: 956	956

Project

WHITBY TOWN CENTRE

WHITBY, WESTERN AUSTRALIA

Project Number
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Date Plotted 2/07/2026 5:06:49 PM

Scale 1 : 1000 @A1

Drawing Title
SITE PLAN

Drawing Number
WTC-BUC-A-DA-01001

Revision
K

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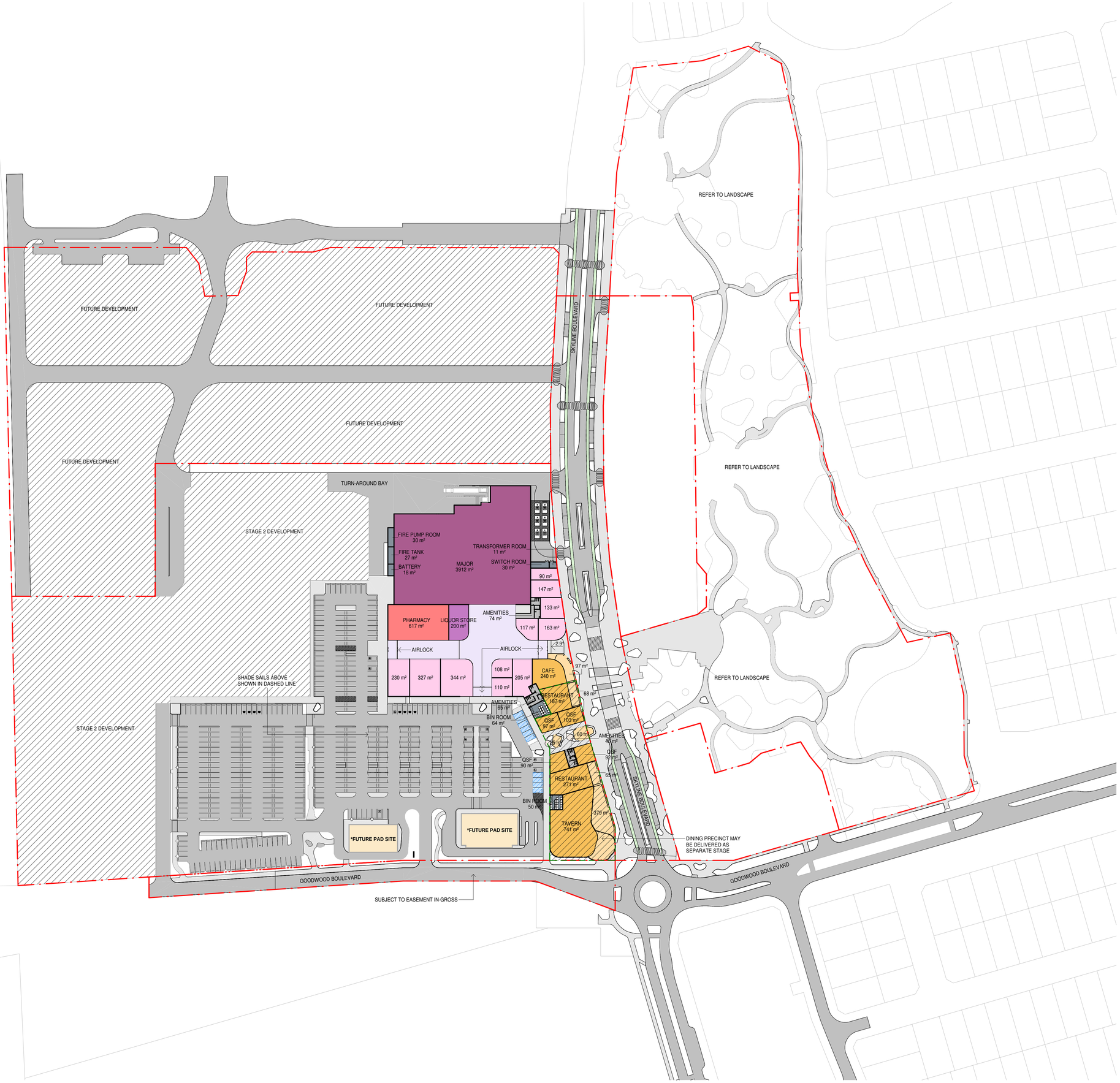
After Hours Loading Zone

NOTE: *FUTURE PAD SITE are subject to a separate DA, however are shown for reference to inform car park design

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Version: 1, Version Date: 03/07/2026

Rev.	Date	Description	Iss.	Appr.
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Area Legend

- Amenities
- BOH
- Circulation
- Food & Beverage
- Liquor Store
- LSA
- Major
- Pharmacy
- Specialty

Legend

- After Hours Loading Zone
- Dining Precinct may be delivered as separate stage

NOTE: *FUTURE PAD SITE are subject to a separate DA, however are shown for reference to inform car park design

CATEGORY	AREA
Amenities	185.38 m²
BOH	234.72 m²
Circulation	1541.36 m²
Food & Beverage	2729.42 m²
Liquor Store	200.24 m²
LSA	697.08 m²
Major	3912.76 m²
Pharmacy	617.49 m²
Specialty	1979.33 m²
	12097.78 m²

BAY TYPE	COUNT
HIGH STREET	
On-Street Parallel Bay - 6600x2600	26
	26
SHOPPING CENTRE	
ACROD - 5400x2700	10
Electric Vehicle Bay - 2700x5400	8
Standard Bay - 5400x2700	465
	483
TOTAL: 509	509

Project
WHITBY TOWN CENTRE
WHITBY, WESTERN AUSTRALIA

Project Number
240263

Status

Date Plotted 2/07/2026 5:08:15 PM

Scale 1 : 1000 @A1

Drawing Title
STAGING PLAN - STAGE 1

Drawing Number
WTC-BUC-A-DA-03002

Revision
F

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A	06.05.2026	ISSUED FOR INFORMATION	JE	AP
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Area Legend

- Amenities
- BOH
- Childcare
- Circulation
- Community Workshop
- Food & Beverage
- Gym
- Liquor Store
- LSA
- Major
- Medical
- Pharmacy
- Specialty
- Swim School
- Tavern

Legend

- After Hours Loading Zone

NOTE: *FUTURE PAD SITE are subject to a separate DA, however are shown for reference to inform car park design

Project
WHITBY TOWN CENTRE
WHITBY, WESTERN AUSTRALIA

Project Number
240263

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Drawing Title
SHOPPING CENTRE GROUND FLOOR PLAN

Drawing Number
WTC-BUC-A-DA-20101

Revision
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RL 52650
RL 52650
RL 50750
PLANT DECK INDICATIVE ONLY
100 PV PANELS INDICATIVE ONLY
PLANT DECK INDICATIVE ONLY
RL 52170.4
PLANT DECK INDICATIVE ONLY
RL 52650
RL 51650
VOID
RL 51000
PLANT DECK INDICATIVE ONLY
PLANT DECK INDICATIVE ONLY
PLANT DECK INDICATIVE ONLY
EXTENT OF LOADING DOCK ROOF / COVER
RL 53650
RL 53650
RL 53650
100 PV PANELS INDICATIVE ONLY
PLANT DECK INDICATIVE ONLY
RL 53650
PLANT DECK INDICATIVE ONLY
RL 53600
PLANT DECK INDICATIVE ONLY
RL 53743.4
RL 53000
RL 51326
RL 50600
RL 51650.1
RL 50650
RL 51256
RL 51253
RL 51256
RL 51253
RL 54600
RL 53100
PLANT DECK INDICATIVE ONLY
RL 51253
RL 54000
RL 52500
*FUTURE PAD SITE
*FUTURE PAD SITE
40101 1
40101 2
40101 3
2 40102
1 40102
7 40201
1 40201
2 40201
6 40201
3 40201
2 20301
2 20401
2 20501

NOTE: *FUTURE PAD SITE are subject to a separate DA, however are shown for reference to inform car park design

Project
WHITBY TOWN CENTRE
WHITBY, WESTERN AUSTRALIA

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240263

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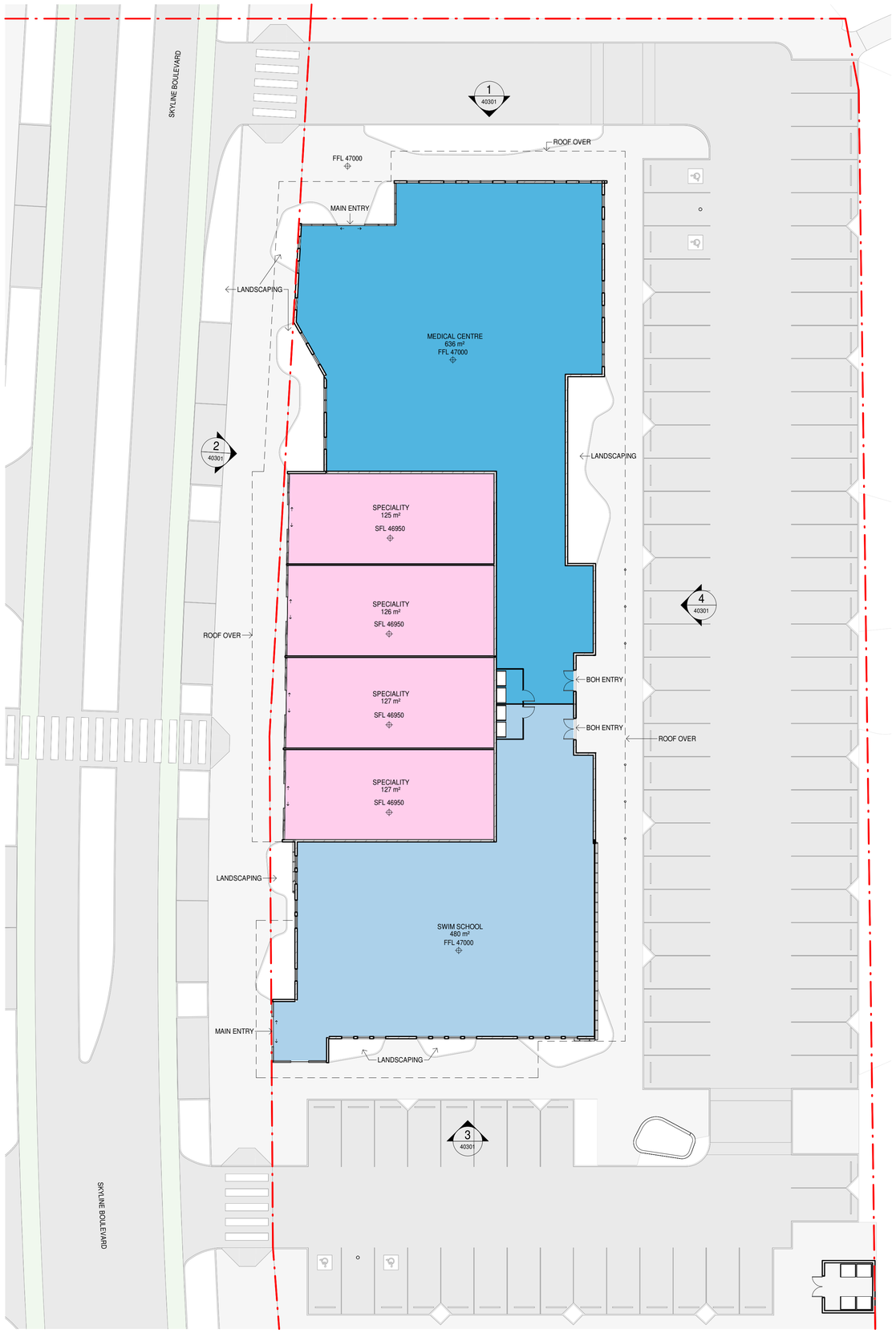
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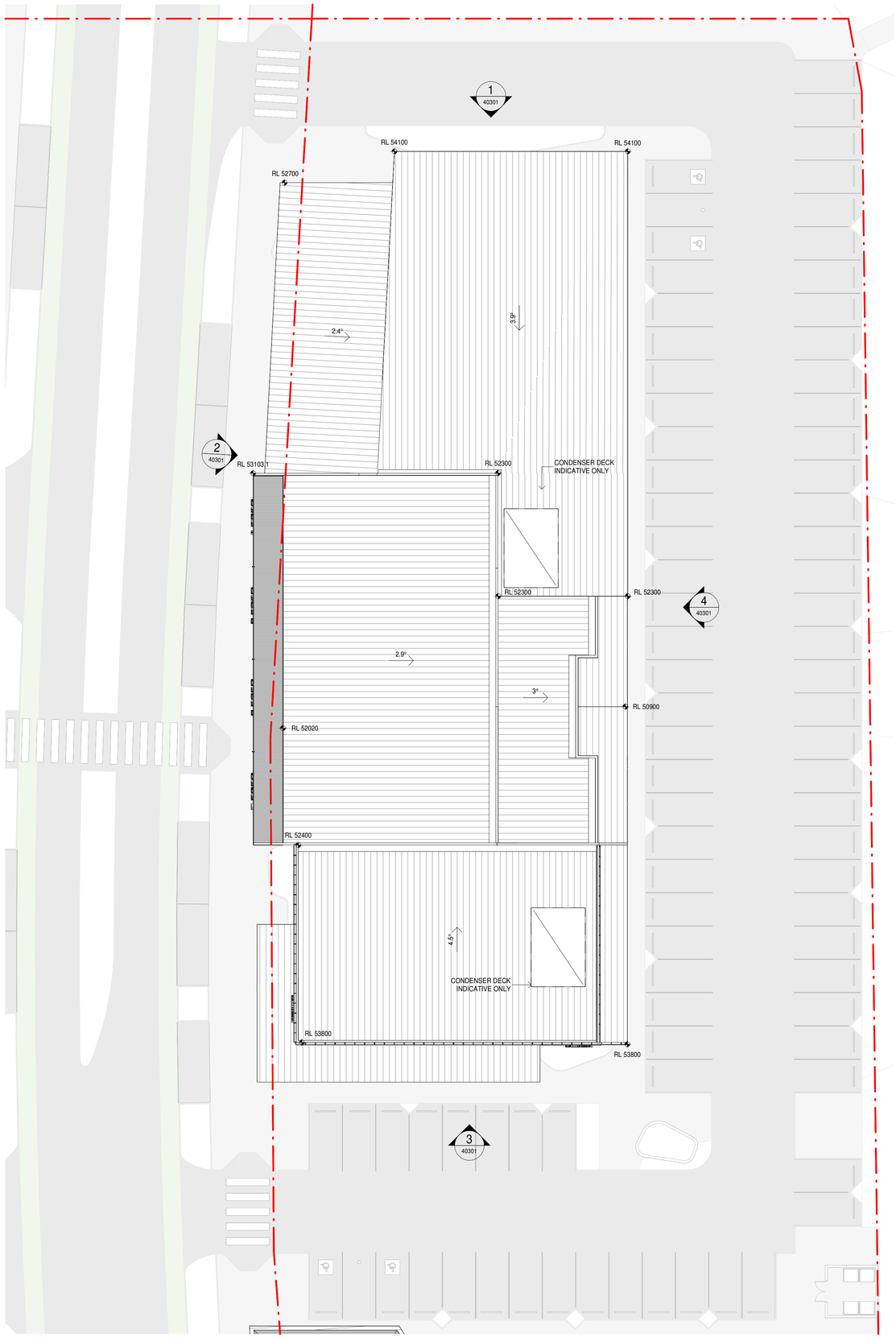
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1 / 01001 HEALTH & WELLNESS PRECINCT FLOOR PLAN
SCALE 1 : 200

2 / 20151 HEALTH & WELLNESS PRECINCT ROOF PLAN
SCALE 1 : 200

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A	06.05.2026	ISSUED FOR INFORMATION	JE	AP
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Area Legend

- Medical
- Specialty
- Swim School

Project
WHITBY TOWN CENTRE
WHITBY, WESTERN AUSTRALIA

Project Number
240263

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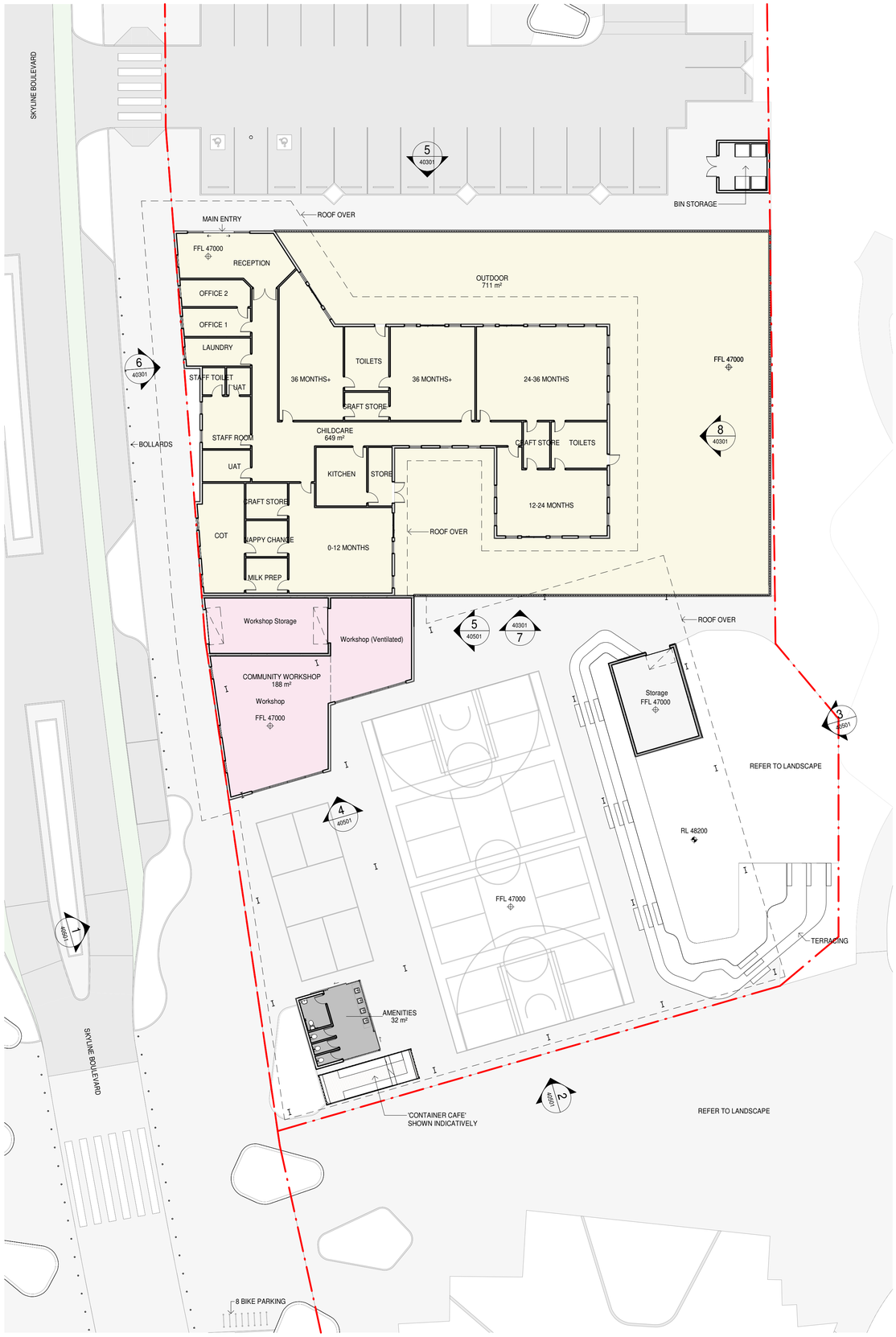
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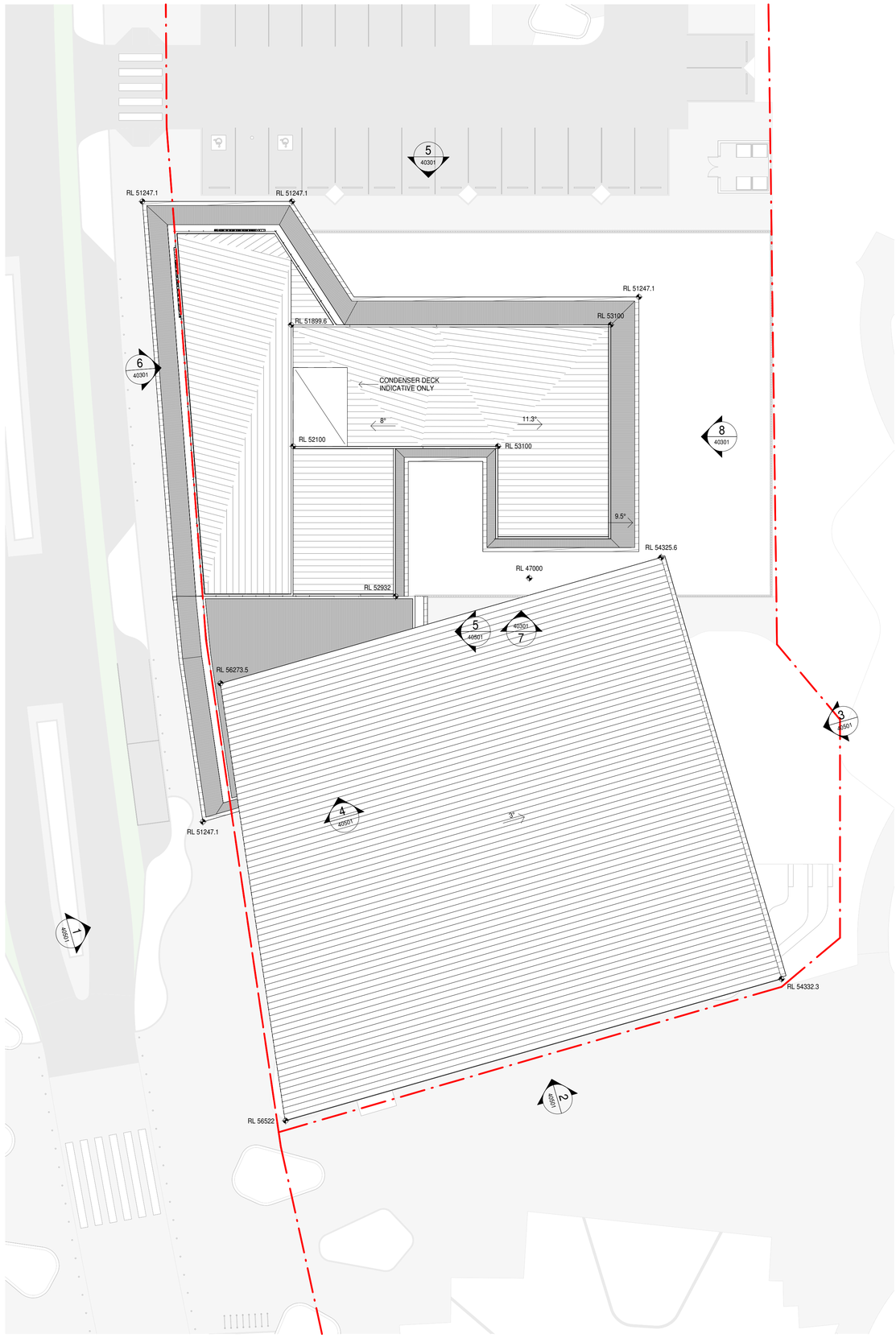
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Area Legend

- Amenities
- Childcare
- Community Workshop

1 01001 CHILDCARE, COMMUNITY WORKSHOP, & MULTIPURPOSE SPACE FLOOR PLAN
SCALE 1 : 200

2 20151 CHILDCARE, COMMUNITY WORKSHOP, & MULTIPURPOSE SPACE ROOF PLAN
SCALE 1 : 200

Project
WHITBY TOWN CENTRE
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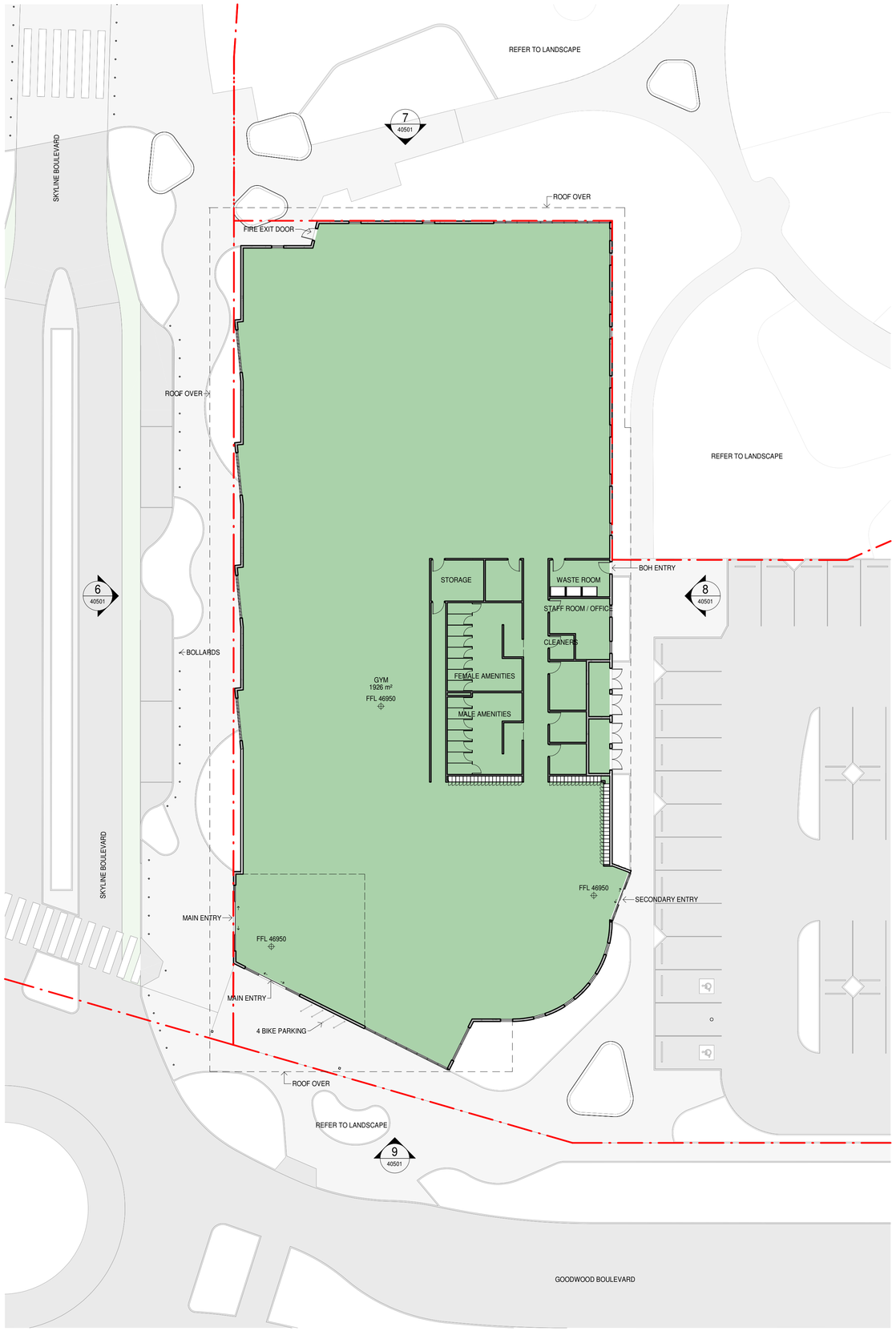
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Drawing Number **WTC-BUC-A-DA-20401** Revision **E**

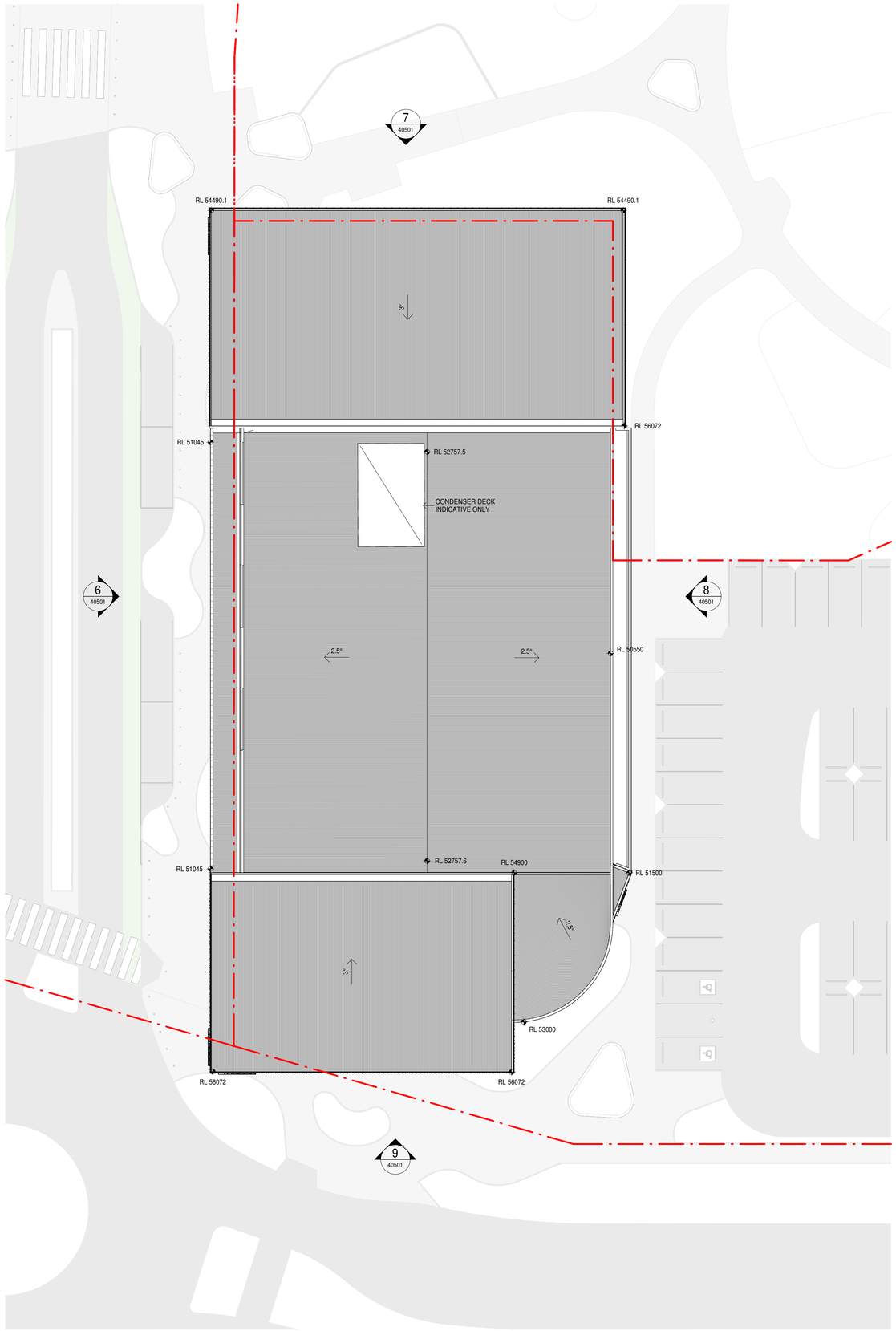
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1 01001 GYM FLOOR PLAN
SCALE 1 : 200



2 20151 GYM ROOF PLAN
SCALE 1 : 200

Rev.	Date	Description	Iss.	Appr.
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Area Legend

Gym

Project
WHITBY TOWN CENTRE
WHITBY, WESTERN AUSTRALIA

Project Number
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Status

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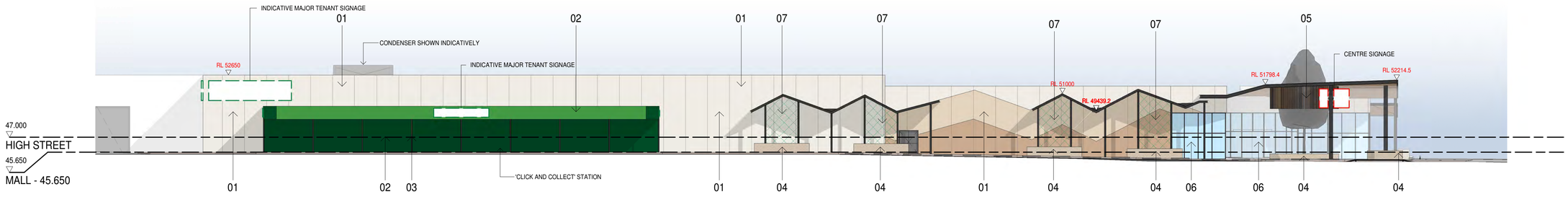
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GYM PLANS

Drawing Number **WTC-BUC-A-DA-20501** Revision **E**

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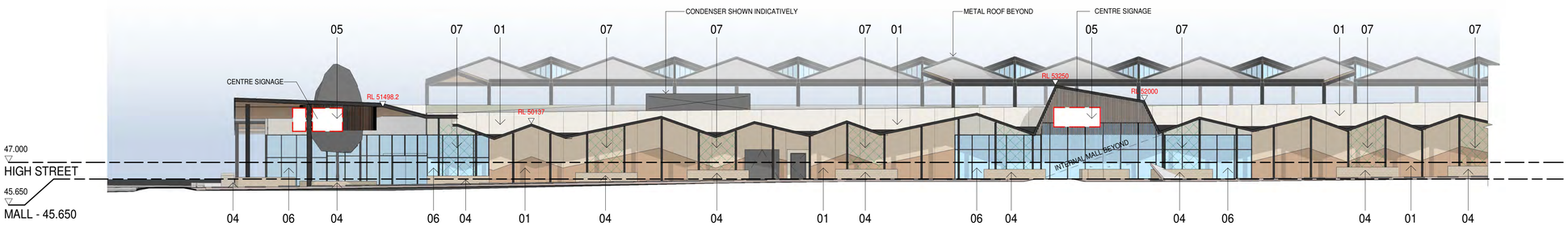
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Document Set ID: 4011886 Docs://240263-R25-Whitby-Town-Centre/WTC-BUC-ZZ-M6-A-R25-ARCHITECTURE.rvt
Version: 1, Version Date: 03/07/2026



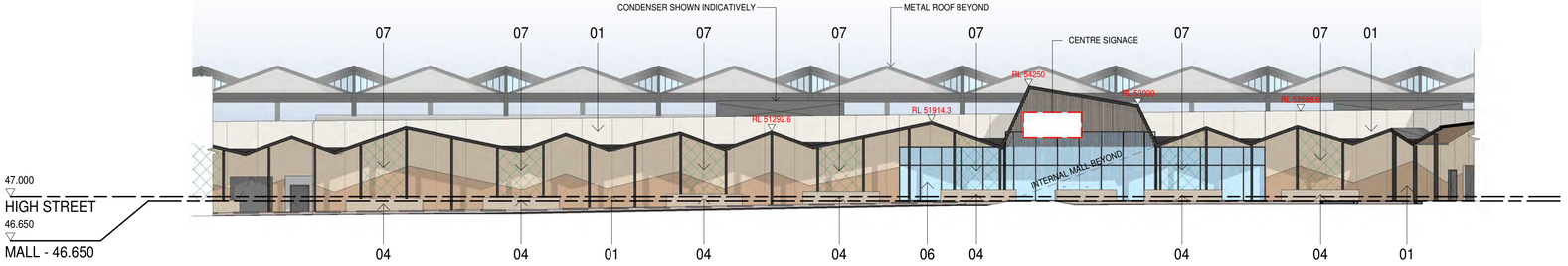
1 / 20101 WEST ELEVATION

SCALE 1 : 200



2 / 20101 SOUTH ELEVATION 01

SCALE 1 : 200



3 / 20101 SOUTH ELEVATION 02

SCALE 1 : 200

INDICATIVE MATERIALS & FINISHES



01. PAINTED CONCRETE FACADE PANELS VERTICAL ORIENTATION - BEIGE COLOUR SCHEME



02. PAINTED CONCRETE FACADE PANELS VERTICAL ORIENTATION - GREEN



03. PAINTED CONCRETE FACADE PANELS VERTICAL ORIENTATION - DARK GRAY



04. LOW PLANTER - BRICK WALL - LIGHT COLOUR



05. VERTICAL TIMBER-LOOK SLATS



06. WINDOW FRAMES POWDER-COATED - DARK FINISH



07. NATIVE VERTICAL CLIMBERS ON TRELLIS - REFER TO LANDSCAPE PACKAGE

Rev.	Date	Description	Iss.	Appr.
A	06.05.2026	ISSUED FOR INFORMATION	JE	AP
B	22.05.2026	ISSUED FOR INFORMATION	HD	AP
C	28.05.2026	ISSUED FOR INFORMATION	HD	AP
D	18.06.2026	ISSUED FOR INFORMATION	HD	AP
E	29.06.2026	ISSUED FOR DA	HD	AP
F	02.07.2026	ISSUED FOR DA	HD	AP

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SIGNAGE ZONE LEGEND

- CENTRE SIGNAGE
- MAJOR SIGNAGE
- TENANT SIGNAGE

Project

WHITBY TOWN CENTRE

WHITBY, WESTERN AUSTRALIA

Project Number 240263

Status

Date Plotted 2/07/2026 5:07:27 PM

Scale As indicated @A1

Drawing Title

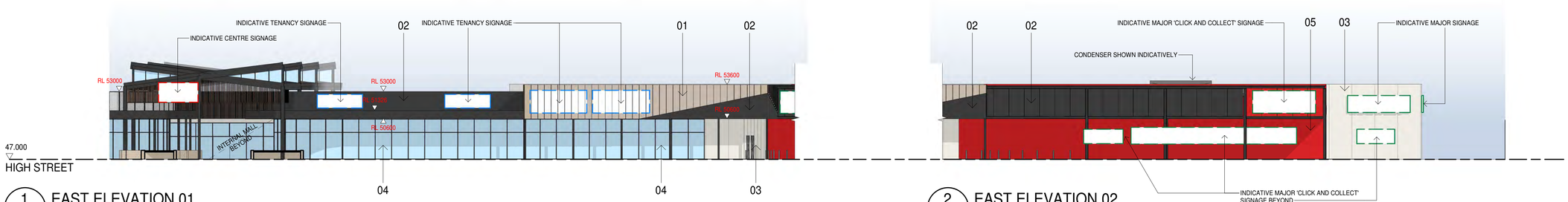
SHOPPING CENTRE ELEVATIONS 01

Drawing Number **WTC-BUC-A-DA-40101** Revision **F**

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File
Document Set ID: 4933886 Docs://240263-R25-Whitby-Town-Centre/WTC-BUC-ZZ-M6-A-R25-ARCHITECTURE.rvt
Version: 1, Version Date: 03/07/2026

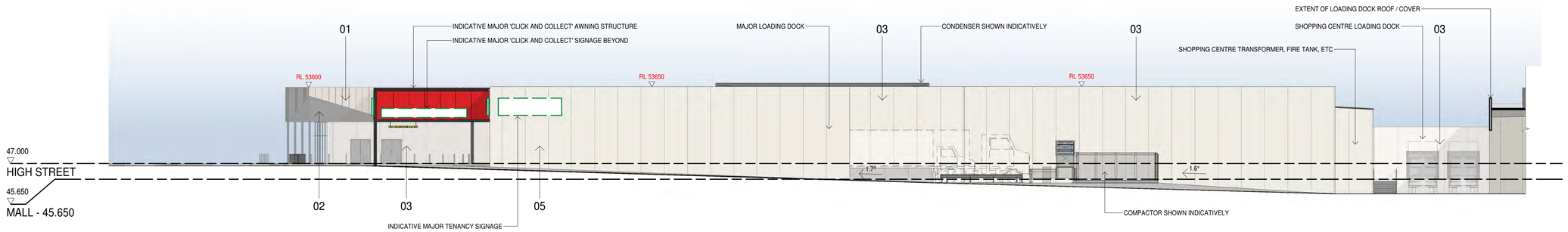


1 / 20101 EAST ELEVATION 01

SCALE 1 : 200

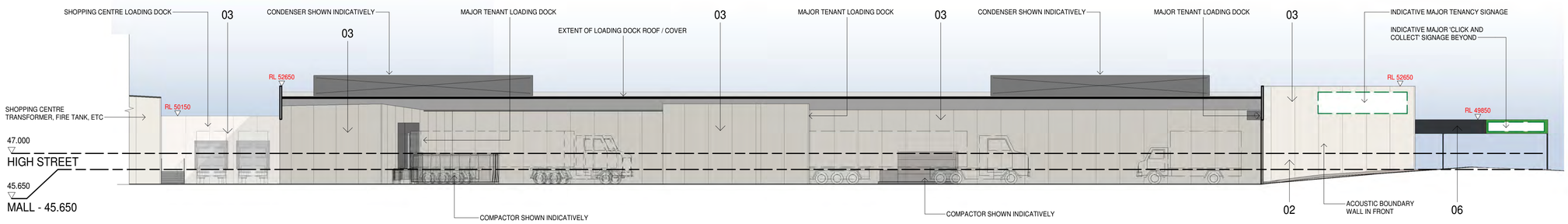
2 / 20101 EAST ELEVATION 02

SCALE 1 : 200



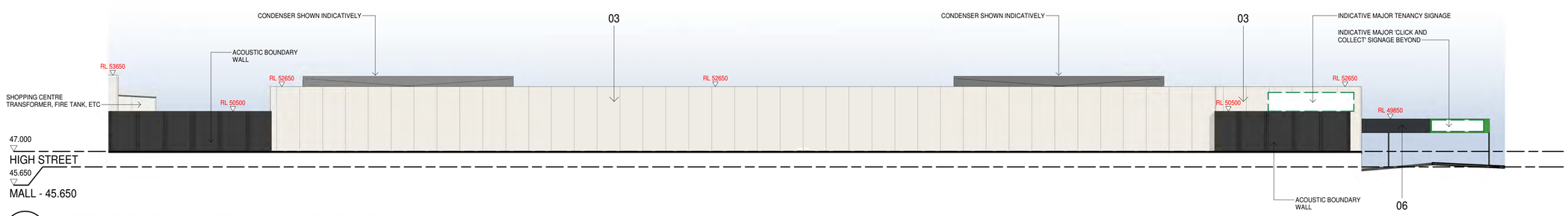
3 / 20101 NORTH ELEVATION 01

SCALE 1 : 200



4 / 20101 NORTH ELEVATION 02 (INTERNAL SERVICE YARD)

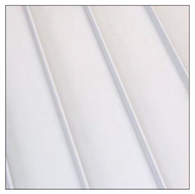
SCALE 1 : 200



5 / 20101 NORTH ELEVATION 02 (FROM ADJACENT LOT)

SCALE 1 : 200

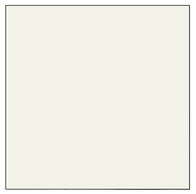
INDICATIVE MATERIALS & FINISHES



01. STANDING SEAM METAL CLADDING.



02. PAINTED COMPRESSED FIBRE CEMENT - DARK GRAY



03. PAINTED CONCRETE FACADE PANELS VERTICAL ORIENTATION - OFF-WHITE



04. WINDOW FRAMES POWDER-COATED - DARK FINISH



05. PAINTED CONCRETE FACADE PANELS VERTICAL ORIENTATION - COLES BRAND RED



06. PAINTED CONCRETE FACADE PANELS VERTICAL ORIENTATION - GREEN

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A	06.05.2026	ISSUED FOR INFORMATION	JE	AP
B	22.05.2026	ISSUED FOR INFORMATION	HD	AP
C	28.05.2026	ISSUED FOR INFORMATION	HD	AP
D	18.06.2026	ISSUED FOR INFORMATION	HD	AP
E	29.06.2026	ISSUED FOR DA	HD	AP

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SIGNAGE ZONE LEGEND

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Project

WHITBY TOWN CENTRE

WHITBY, WESTERN AUSTRALIA

Project Number: 240263

Status:

Date Plotted: 29/06/2026 5:26:01 PM

Scale: As indicated @A1

Drawing Title

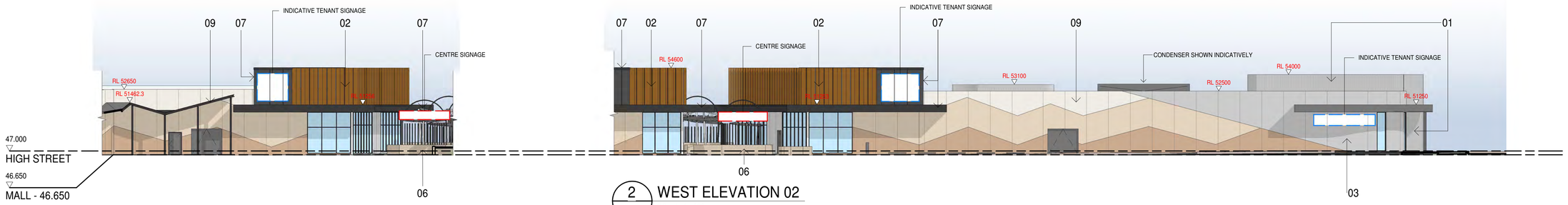
SHOPPING CENTRE ELEVATIONS 02

Drawing Number: **WTC-BUC-A-DA-40102** Revision: **E**

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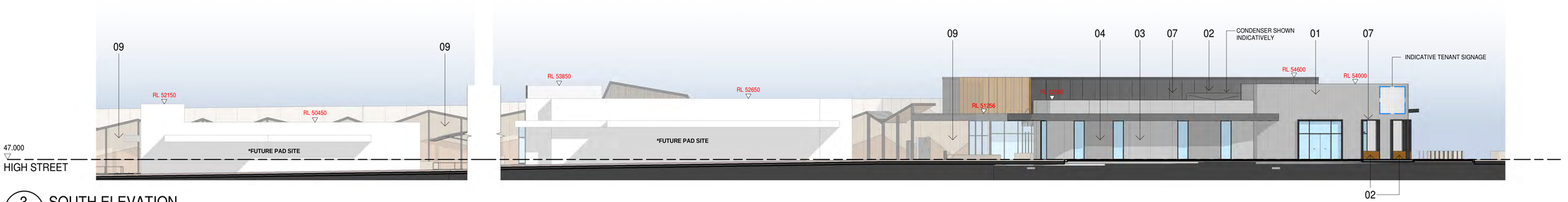
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Version: 1, Version Date: 03/07/2026



1 20101 **WEST ELEVATION 01**
SCALE 1 : 200

2 20101 **WEST ELEVATION 02**
SCALE 1 : 200

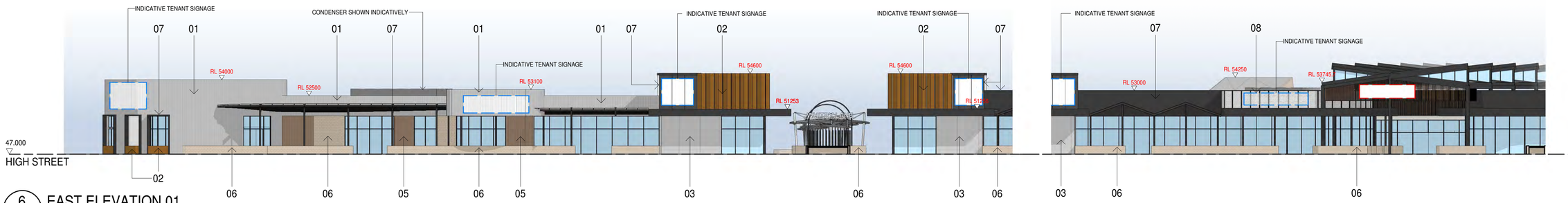


3 20101 **SOUTH ELEVATION**
SCALE 1 : 200



4 20101 **LANEWAY ELEVATION 01**
SCALE 1 : 200

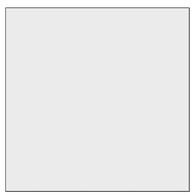
5 20101 **LANEWAY ELEVATION 02**
SCALE 1 : 200



6 20101 **EAST ELEVATION 01**
SCALE 1 : 200

7 20101 **EAST ELEVATION 02**
SCALE 1 : 200

INDICATIVE MATERIALS & FINISHES



01. STANDING SEAM METAL CLADDING - SHALE GREY



02. POWDERCOATED METAL PANELS - BRASS FINISH



03. PAINTED CONCRETE FACADE PANELS VERTICAL ORIENTATION - LIGHT GRAY



04. COLOURED CFC PANEL - TEXTURED FINISH



05. EXTERIOR SLAT WALL CLADDING PANELS - TIMBER LOOK



06. BRICK WALL - LIGHT COLOUR



07. PAINTED COMPRESSED FIBRE CEMENT - DARK GRAY



08. WINDOW FRAMES POWDER-COATED - DARK FINISH



09. PAINTED CONCRETE FACADE PANELS VERTICAL ORIENTATION - BEIGE COLOUR SCHEME

File
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Rev.	Date	Description	Iss.	Appr.
A	06.05.2026	ISSUED FOR INFORMATION	JE	AP
B	22.05.2026	ISSUED FOR INFORMATION	HD	AP
C	28.05.2026	ISSUED FOR INFORMATION	HD	AP
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SIGNAGE ZONE LEGEND

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NOTE: *FUTURE PAD SITE are subject to a separate DA, however are shown for reference to inform car park design

Project
WHITBY TOWN CENTRE
WHITBY, WESTERN AUSTRALIA

Project Number
240263

Status

Date Plotted 29/06/2026 5:25:57 PM

Scale As indicated @A1

Drawing Title
DINING PRECINCT ELEVATIONS

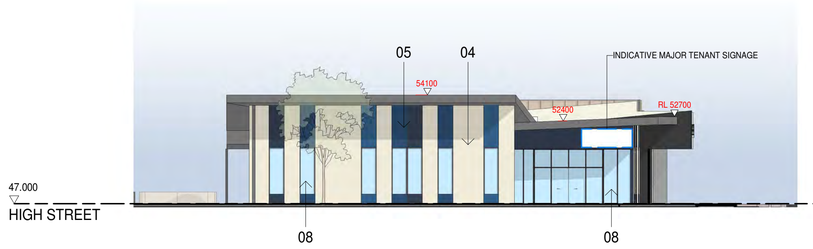
Drawing Number
WTC-BUC-A-DA-40201

Revision
E

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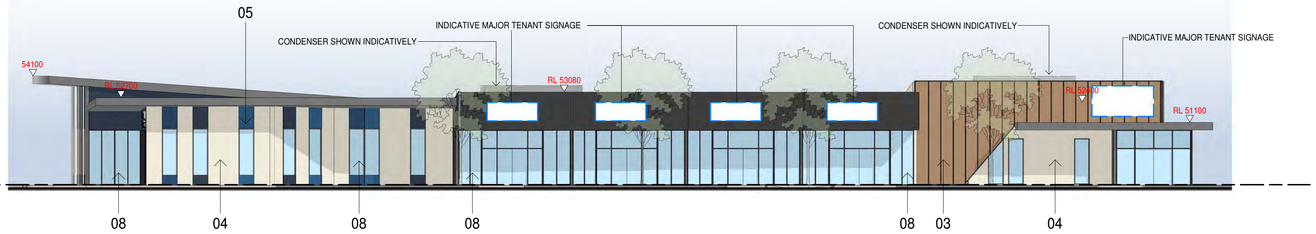
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Document Set ID: 1012808
Version: 1, Version Date: 03/07/2026



1 / 20301 MEDICAL CENTRE - NORTH ELEVATION

SCALE 1 : 200



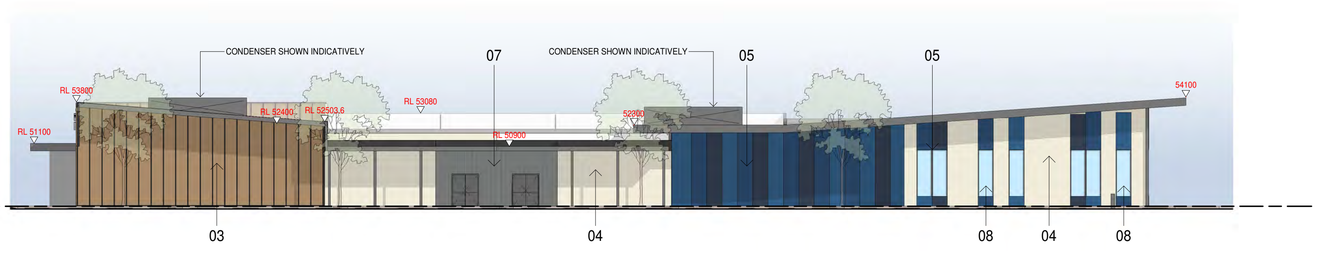
2 / 20301 MEDICAL CENTRE - WEST ELEVATION

SCALE 1 : 200



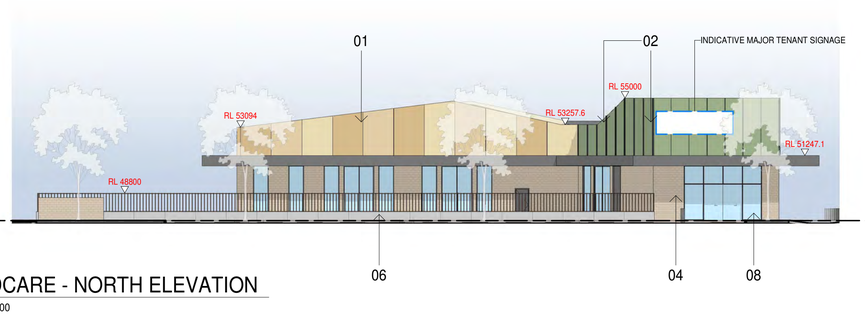
3 / 20301 MEDICAL CENTRE - SOUTH ELEVATION

SCALE 1 : 200



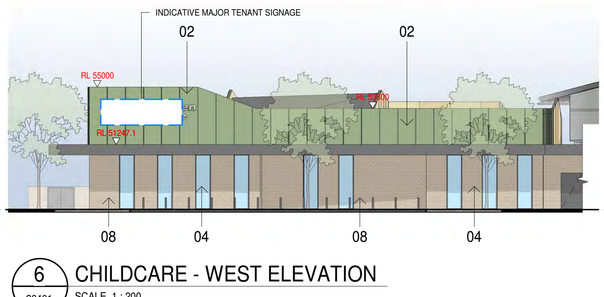
4 / 20301 MEDICAL CENTRE - EAST ELEVATION

SCALE 1 : 200



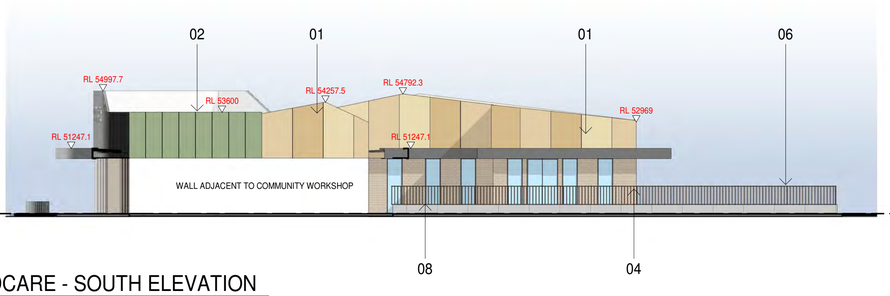
5 / 20401 CHILDCARE - NORTH ELEVATION

SCALE 1 : 200



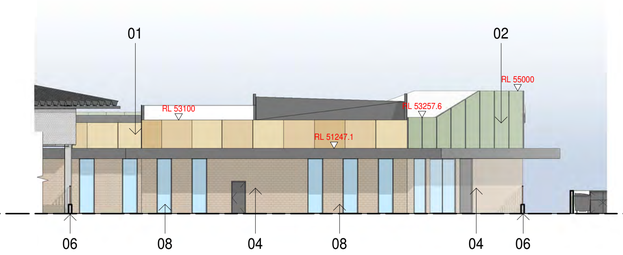
6 / 20401 CHILDCARE - WEST ELEVATION

SCALE 1 : 200



7 / 20401 CHILDCARE - SOUTH ELEVATION

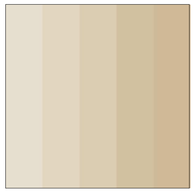
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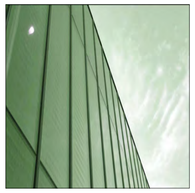
8 / 20401 CHILDCARE - EAST ELEVATION

SCALE 1 : 200

INDICATIVE MATERIALS & FINISHES



01. CFC CLADDING PANELS PAINTED - BEIGE PALETTE



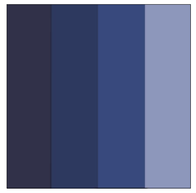
02. POWDERCOATED ALUMINIUM PANEL - GREEN COLOUR



03. TAUPE METAL PANEL WALL CLADDING



04. TEXTURED CFC PANEL - BRIGHT FINISH



05. CFC CLADDING PANELS PAINTED - BLUE PALETTE



06. POWDER COATED ALUMINIUM FENCE



07. TEXTURED CFC PANEL - DARK FINISH



08. WINDOW FRAMES POWDER-COATED - DARK FINISH

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Rev.	Date	Description	Iss.	Appr.
A	06.05.2026	ISSUED FOR INFORMATION	JE	AP
B	22.05.2026	ISSUED FOR INFORMATION	HD	AP
C	28.05.2026	ISSUED FOR INFORMATION	HD	AP
D	18.06.2026	ISSUED FOR INFORMATION	HD	AP
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SIGNAGE ZONE LEGEND

- CENTRE SIGNAGE
- MAJOR SIGNAGE
- TENANT SIGNAGE

Project
WHITBY TOWN CENTRE
WHITBY, WESTERN AUSTRALIA

Project Number
240263

Status

Date Plotted 29/06/2026 5:25:33 PM

Scale As indicated @A1

Drawing Title
HEALTH & WELLNESS PRECINCT & CHILDCARE ELEVATIONS

Drawing Number **WTC-BUC-A-DA-40301** Revision **E**

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Document Set ID: 1012808
Version: 1, Version Date: 03/07/2026



1 20401 MULTI-PURPOSE SPACE - WEST ELEVATION

SCALE 1 : 200

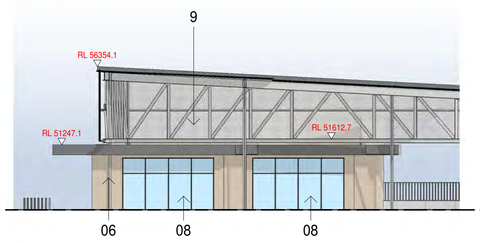
2 20401 MULTI-PURPOSE SPACE - SOUTH ELEVATION

SCALE 1 : 200



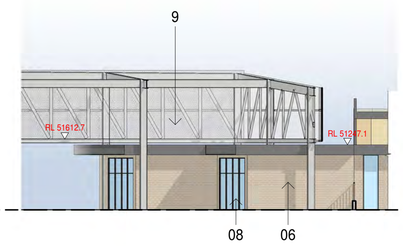
3 20401 MULTI-PURPOSE SPACE - EAST ELEVATION

SCALE 1 : 200



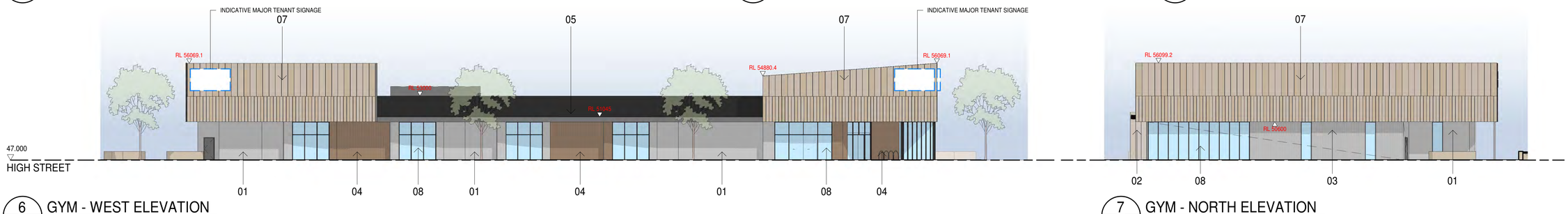
4 20401 COMMUNITY WORKSHOP - SOUTH ELEVATION

SCALE 1 : 200



5 20401 COMMUNITY WORKSHOP - EAST ELEVATION

SCALE 1 : 200

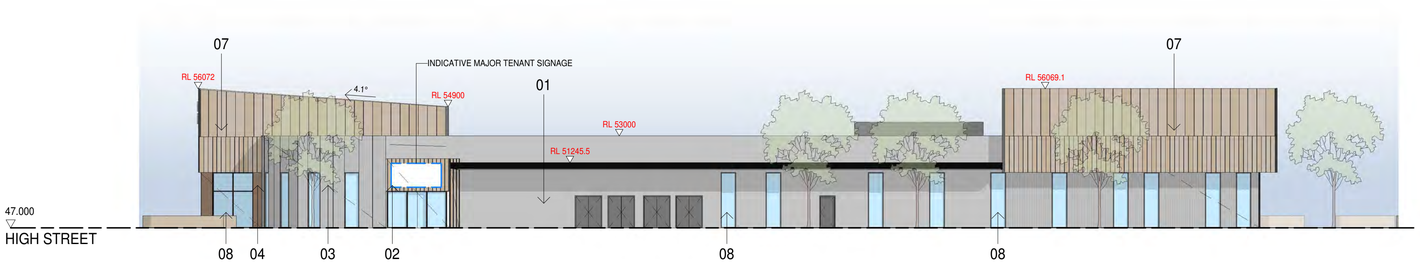


6 20501 GYM - WEST ELEVATION

SCALE 1 : 200

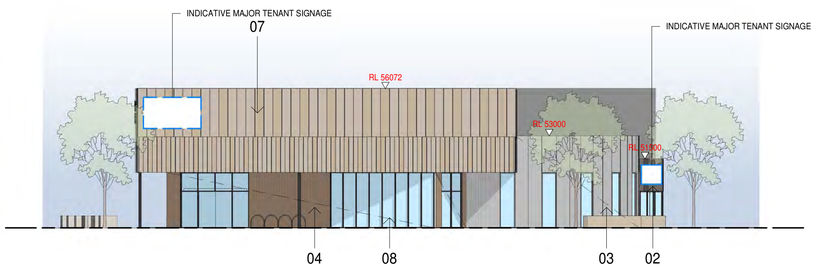
7 20501 GYM - NORTH ELEVATION

SCALE 1 : 200



8 20501 GYM - EAST ELEVATION

SCALE 1 : 200



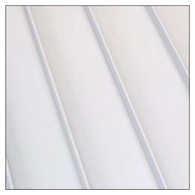
9 20501 GYM - SOUTH ELEVATION

SCALE 1 : 200

INDICATIVE MATERIALS & FINISHES



01. PAINTED CONCRETE FACADE PANELS VERTICAL ORIENTATION - LIGHT GRAY



02. STANDING SEAM METAL CLADDING - BROWN PATTERN



03. TEXTURED CFC PANEL - DARK FINISH



04. EXTERIOR SLAT WALL CLADDING PANELS - TIMBER LOOK



05. PAINTED COMPRESSED FIBRE CEMENT - DARK GRAY



06. TEXTURED CFC PANEL - BRIGHT FINISH



07. BROWN PATTERN FIBRE CEMENT PANEL WALL CLADDING



08. WINDOW FRAMES POWDER-COATED - DARK FINISH



09. METAL SCREENING PERFORATED CORRUGATED METAL

File
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A	06.05.2026	ISSUED FOR INFORMATION	JE	AP
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C	28.05.2026	ISSUED FOR INFORMATION	HD	AP
D	18.06.2026	ISSUED FOR INFORMATION	HD	AP
E	29.06.2026	ISSUED FOR DA	HD	AP

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SIGNAGE ZONE LEGEND

- CENTRE SIGNAGE
- MAJOR SIGNAGE
- TENANT SIGNAGE

Project
WHITBY TOWN CENTRE
WHITBY, WESTERN AUSTRALIA

Project Number
240263

Status

Date Plotted 29/06/2026 5:25:40 PM

Scale As indicated @A1

Drawing Title
MULTI-PURPOSE SPACE & GYM ELEVATIONS

Drawing Number **WTC-BUC-A-DA-40501** Revision **E**

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Document Set ID: 1012808
Version: 1, Version Date: 03/07/2026



01. 3D Aerial



02. Shopping Centre - South West Main Entrance



03. Shopping Centre - Typical Southern Entry



04. High Street - Shopping Centre Entrance (from High Street)

Rev.	Date	Description	Ins.	Appr.
A	28.05.2026	ISSUED FOR INFORMATION	HD	AP
B	18.06.2026	ISSUED FOR INFORMATION	HD	AP
C	23.06.2026	ISSUED FOR INFORMATION	HD	AP
D	29.06.2026	ISSUED FOR DA	HD	AP

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WHITBY TOWN CENTRE
WHITBY, WESTERN AUSTRALIA

Project Number
240263

Status

Date Plotted 29/06/2026 5:26:54 PM

Scale @A1

Drawing Title
SHOPPING CENTRE RENDERS

Drawing Number
WTC-BUC-A-DA-70101

Revision
D

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File
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Version: 1, Version Date: 03/07/2026



05. High Street - Tavern



06. High Street - Dining Laneway



07. High Street - Dining Precinct

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B	18.06.2026	ISSUED FOR INFORMATION	HD	AP
C	23.06.2026	ISSUED FOR INFORMATION	HD	AP
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08. High Street - Medical Centre



09. High Street - Swim School and Childcare



10. High Street - Multi-purpose Space



11. High Street - Gym

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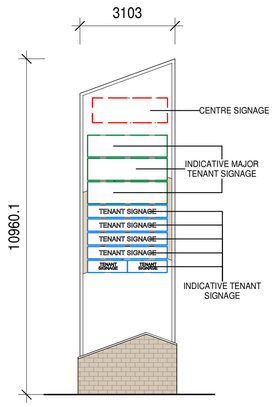
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SIGNAGE ZONE LEGEND

- CENTRE SIGNAGE
- MAJOR SIGNAGE
- TENANT SIGNAGE



TYPICAL PYLON SIGNAGE

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transport • engineering • placemaking

PJA

Golden Fusion

Transport Impact Assessment

Whitby District Centre

September 2026

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1 Introduction

1.1 Executive Summary of TIA

In accordance with WAPC *Guidelines for Transport Impact Assessment (TIA) Guidelines*, this report sets out the details of the proposed Whitby District Centre development set within the Whitby Local Structure Plan area.

This TIA report is based on the existing approved Whitby Local Structure Plan (July 2012) and supports the development application for the Whitby District Centre. This TIA includes the key transport issues and impacts related to the development of the site from a predominantly commercial and retail perspective, including the current level of accessibility by road, public transport, cycle and on foot, and sets recommendations to explore the potential for improving these to a suitable level where required and appropriate.

The key recommendations as a result of this TIA process are listed as follows:

1. **Skyline Boulevard through the District Centre:** It is recommended that Skyline Boulevard through the Whitby District Centre be delivered generally in accordance with the proposed boulevard-style cross section, including one traffic lane in each direction, 1.5m on-road cycle lanes, embayed on-street parking, a 50km/h main section and a slower speed central pedestrian-priority section through the core of the centre.
2. **Central Slow-Speed Section of Skyline Boulevard:** It is recommended that the central section of Skyline Boulevard through the heart of the Whitby District Centre be delivered as a reduced-speed shared environment (no separated bicycle lanes), including a 30km/h speed limit, raised pavement treatment and formal pedestrian crossing opportunities to support safer pedestrian cross movements between the proposed land uses on the east and west sides of Skyline Boulevard.
3. **Service Vehicle Access and Loading Dock Provision:** It is recommended that the proposed dedicated loading dock and servicing area to the rear of the major retail component be delivered as designed to accommodate service vehicles up to a 19m semi-trailer together with smaller rigid trucks, with overrun areas incorporated at the Skyline Boulevard loading access intersections as part of the detailed design process.
4. **Waste Collection Methodology:** It is recommended that waste collection for the Whitby District Centre operate as a coordinated on-site private contractor system, with the final Waste Management Plan to confirm bin sizes, collection frequencies, collection points and swept path validation for the governing rear-lift waste vehicle, so that waste servicing can occur wholly within the site in a safe and efficient manner.
5. **Pedestrian and Cycle Provision:** It is recommended that the proposed footpath network, pedestrian crossing opportunities, on-road cycle lanes on Skyline Boulevard and Goodwood Boulevard, and wider shared path connections to surrounding precincts be retained as integral elements of the development to support safe and convenient active transport access to and through the centre.
6. **Future Public Transport Provision Through the Centre:** It is recommended that the Whitby District Centre continue to safeguard for future public transport penetration through the site, including bus stands, layover arrangements and associated infrastructure on the east-west spine road / Goodwood Boulevard corridor and provision shall be made for bus stands and infrastructure on Skyline Boulevard in both directions. In addition, the development shall continue to design and safeguard for a potential connections to the future passenger rail station to the west of the centre.
7. **Detailed Design and Future Network Integration:** It is recommended that the detailed design of the Whitby District Centre continue to recognise the importance of the wider future transport framework, including the Bishop Road Extension, Goodwood Boulevard Extension, Tonkin Highway Extension and future active transport and public transport improvements, which will support the longer-term accessibility and operation of the centre.

This Transport Assessment has been prepared with sufficient detail and analysis to support a development application for the Whitby District Centre based on the proposed configuration of the site, the mixed-use commercial and retail land uses, the internal and surrounding road network, and the intended role of the site as the principal activity centre within Whitby.

This TIA also acknowledges the proposed modifications to the surrounding transport networks including local and State Government projects and initiatives such as:

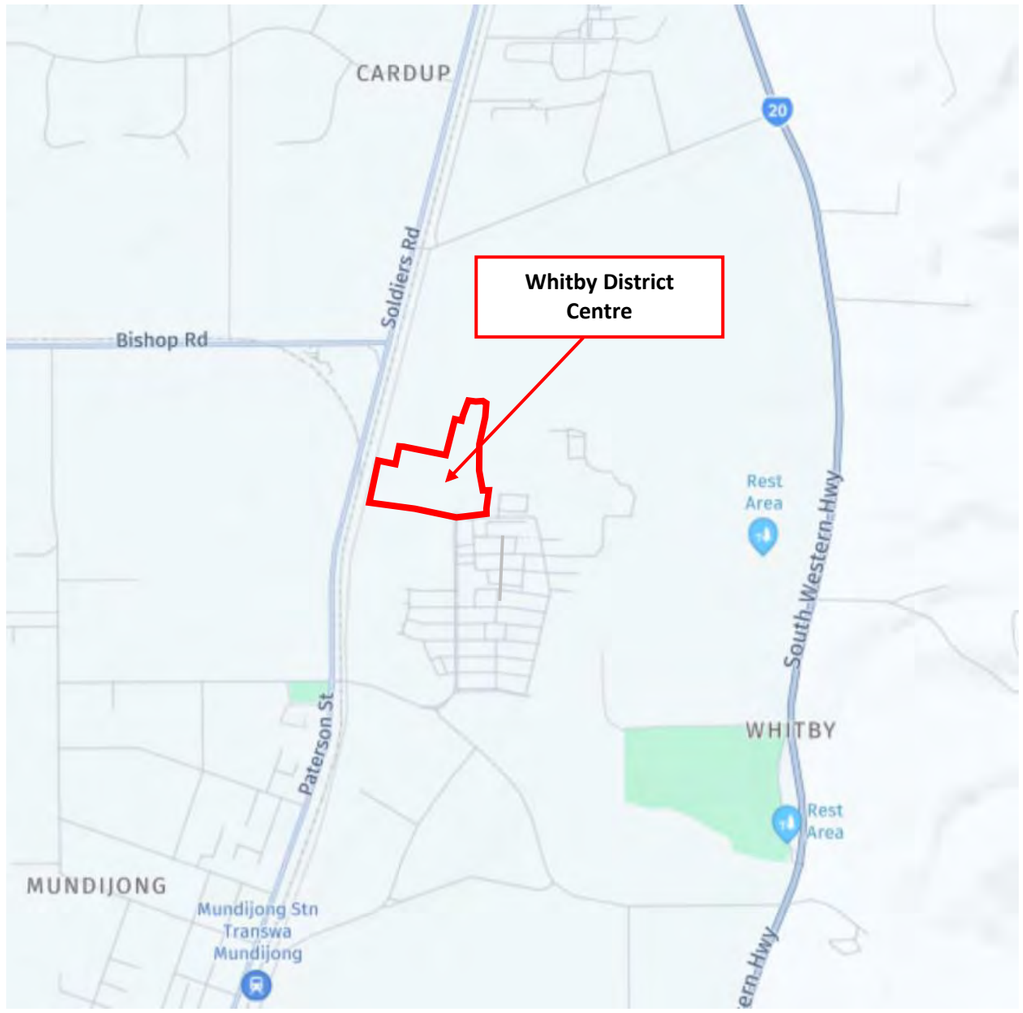
- **Tonkin Highway Extension** – 14km extension of Tonkin Highway from Thomas Road to South Western Highway as a four-lane dual carriageway
- **South Western Highway / Norman Road – T-Intersection Upgrade** – widening of South Western Highway at this intersection to incorporate a dedicated right turn lane for vehicle movement into Norman Road
- **Bishop Road Extension** – future east-west strategic connection within the Whitby area
- **Goodwood Boulevard Extension** – future east-west connector road and movement spine through Whitby.

This TIA ultimately demonstrates that the future road network and its intersections are capable of satisfactorily supporting the additional vehicular traffic expected to be generated by the proposed Whitby District Centre at the 2041 future assessment horizon, and that the proposal is appropriately planned to operate within the evolving transport framework for Whitby.

1.2 Background

PJA Australia has been commissioned by Golden Fusion Pty Ltd to prepare this Transport Impact Assessment (TIA) for the proposed 'Whitby District Centre' development within the Whitby Local Structure Plan area, located within the Shire of Serpentine Jarrahdale Local Government Area (LGA) of Western Australia. The location of the site, within the structure plan area, in relation to the wider Whitby area and the immediate surrounding road network is shown in **Figure 1-1 .**

Figure 1-1: Site Location



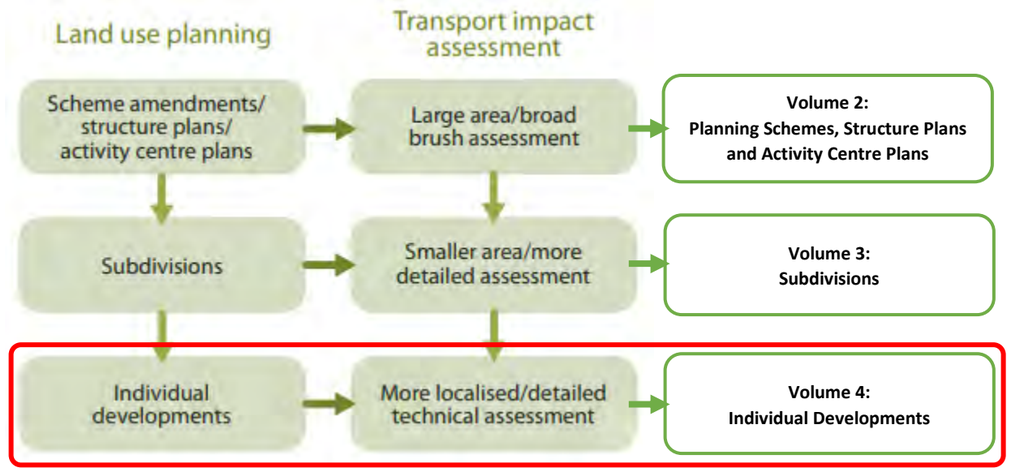
Source: Nearmap

The proposed development area is proposed to include major retail, childcare, community workshop, food & beverage, gymnasium, food retail, medical centre, swim school and pharmacy / speciality consulting services land use. The site is located approximately 50km south-east of Perth and 28km east of Rockingham.

1.3 Purpose of a Transport Impact Assessment

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

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



Source: Western Australian Planning Commission (WAPC)

The proposed development is at the individual planning stage, given the grouping of land uses across the Whitby District Centre meaning a more localised technical assessment is required. As shown in the figure above, WAPC have a series of volumes specific to each planning stage.

The intent of this TIA is to:

- demonstrate that the proposal is consistent with the overall structure and subdivision planning;
- provide a greater level of technical detail on the development and its immediate surrounds; and

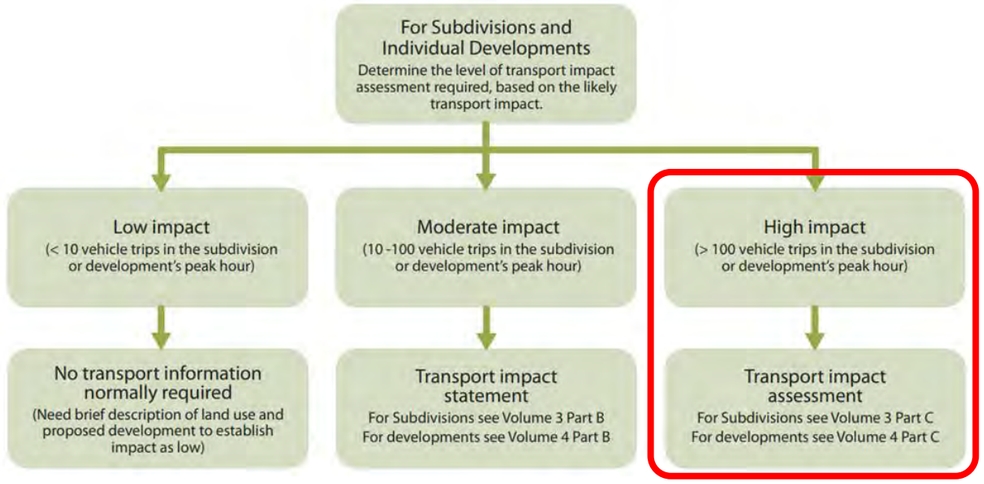
- provide details of any transport issues specific to the development not previously covered by any prior assessments.

The key components of this TIA are essentially as follows:

- Assess the proposed internal transport networks with respect to accessibility, circulation, safety and priority for all modes, i.e. vehicles, public transport, pedestrians and cyclists.
- Assess the level of transport integration between the site and the surrounding land uses.
- Determine the impacts of the traffic generated by the development on the surrounding land uses.
- Determine the impacts of the traffic generated by the development on the surrounding transport networks.

To determine the level of detail and content required, the impact of a development is separated into three group, dependent upon the forecast vehicle trips generated by the proposed development as shown in **Figure 1-3**.

Figure 1-3: Level of Transport Impact Assessment Required



Source: Western Australian Planning Commission (WAPC)

As detailed in **Section 7**, the Whitby District Centre is anticipated to generate in the order of 440vehicle trips in the AM peak hour and 1,200 vehicle trips during the PM peak hour. Therefore, the level of assessment required is in alignment with Part C of the *WAPC TIA Guidelines Volume 4*.

1.4 Current Proposal

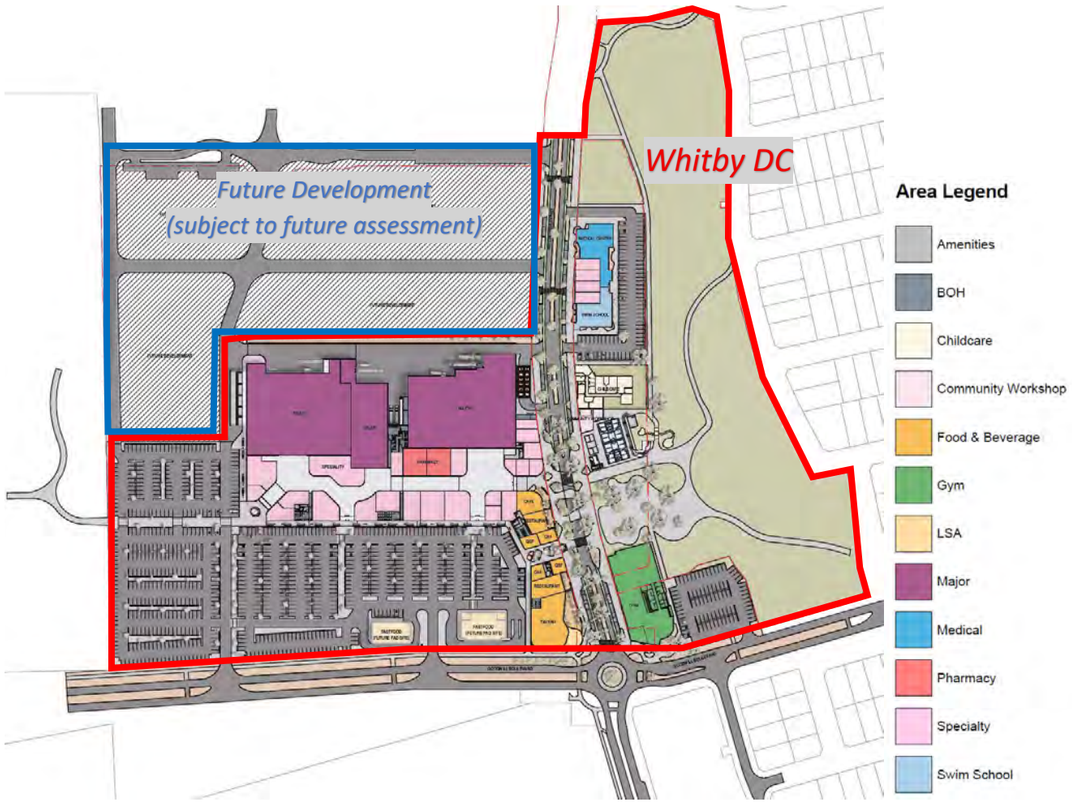
A Development Approval is currently being sought for the proposed 'Whitby District Centre' on land located within the Whitby Local Structure Plan area. The proposed development incorporates:

Figure 1-4: Proposed Lane Use Yields – Whitby District Centre

CATEGORY	AREA
Amenities	228.46 m²
BOH	709.81 m²
Childcare	1360.40 m²
Community Workshop	188.69 m²
Food & Beverage	2729.42 m²
Gym	1926.90 m²
LSA	687.59 m²
Major	9500.87 m²
Medical	636.15 m²
Pharmacy	613.32 m²
Specialty	5007.99 m²
Swim School	480.57 m²
Pad Site 1 – Fast Food	532.60 m²
Pad Site 2 – Fast Food	372.60 m²
Total	**24975.37 m²**

The Whitby District Centre layout, which is the subject of the TIA, is shown on **Figure 1-4:**

Figure 1-5: Concept Masterplan – Whitby District Centre



Source: Buchan – June 2026

For the purposes of this assessment, 'specialty' floorspace has been interpreted as small-format retail and personal service tenancies ancillary to the main centre function, and may include uses such as small shops, cafés/takeaway premises, pharmacy, hair/beauty services and similar local convenience retail uses.

1.5 Prior Traffic Report – Whitby Local Structure Plan (November 2010)

A Traffic Report was prepared by Consultant 'Transcore' in 2010 to support the existing approved Whitby Local Structure Plan (July 2012) for the Whitby area. As part of the 2010 traffic report, an assessment of the development generated traffic was undertaken. This traffic report will be referred to in this report as the 'prior TIA'. A summary of the outcomes of the prior TIA are shown in **Table 1-1**.

It is noted that this Traffic Report was undertaken at a time before the currently endorsed WAPC TIA Guidelines (August 2016). As such, the Traffic Report may not contain sufficient information to carry over to a development application.

Table 1-1: Whitby Local Structure Plan – 'Prior TIA' Report Summary

Criteria	Description (LSP area)
Land Use and Yields	• Residential = 3,800 dwellings • Retail = 22,500m2 • Office / commercial uses = 10,000m2 • x2 Primary Schools • x1 High School
Proposed Active Travel Network	• shared paths are proposed on one side of the Neighbourhood Connector roads and a footpath on the other side. • As these roads are carrying more than 3,000 vehicles per day, a 1.5m on-road cycle lanes in each direction is also proposed. • The Access Roads abutting the schools will have shared paths on one side and footpaths on the other side and all other Access Roads in the LSP area are proposed to have footpath at least on one side of the road.
Existing Trip Generation	• None (Vacant Land)
Existing Car Parking	• Not Stated
Estimated Trip Generation	• The proposed link from the LSP area to Norman Road is expected to carry about 6,500vpd. • Norman Road is expected to carry about 3,600vpd in the vicinity of the South West Highway (SWH). • Bishop road is expected to carry about 5,000vpd at the railway crossing. • The projected traffic volume on SWH is about 10,000vpd to the south of the main LSP access intersection and will increase to about 16,000vpd to the north of the main access point. It must be noted that the projected traffic volumes on SWH is highly dependent on the extension of the Tonkin Highway, which has been assumed in this study.
Proposed Public Transport Network	• Four different bus routes are likely to service the entire DSP area. • A bus transit station is proposed to the west of the District Centre within the LSP area.
Proposed Intersection Treatments	• Two roundabouts recommended for the intersections adjacent to the District Centre to provide for effective traffic circulation, bus turn around facility and control speed along the main east west spine road. Two more roundabouts are also proposed on the main east west spine road to the east side of the LSP area. • Roundabouts are also proposed for all four-way intersections around the school sites and the major four-way intersections within the LSP area. • There are several 4-way intersections within the LSP area that do not justify the provision of a roundabout. Suitable threshold treatments (such as raised red asphalt) are recommended on the minor legs of all these intersections. • Other intersection treatments such as raised red asphalt are also proposed to control speed along reasonably long stretches of LSP roads.

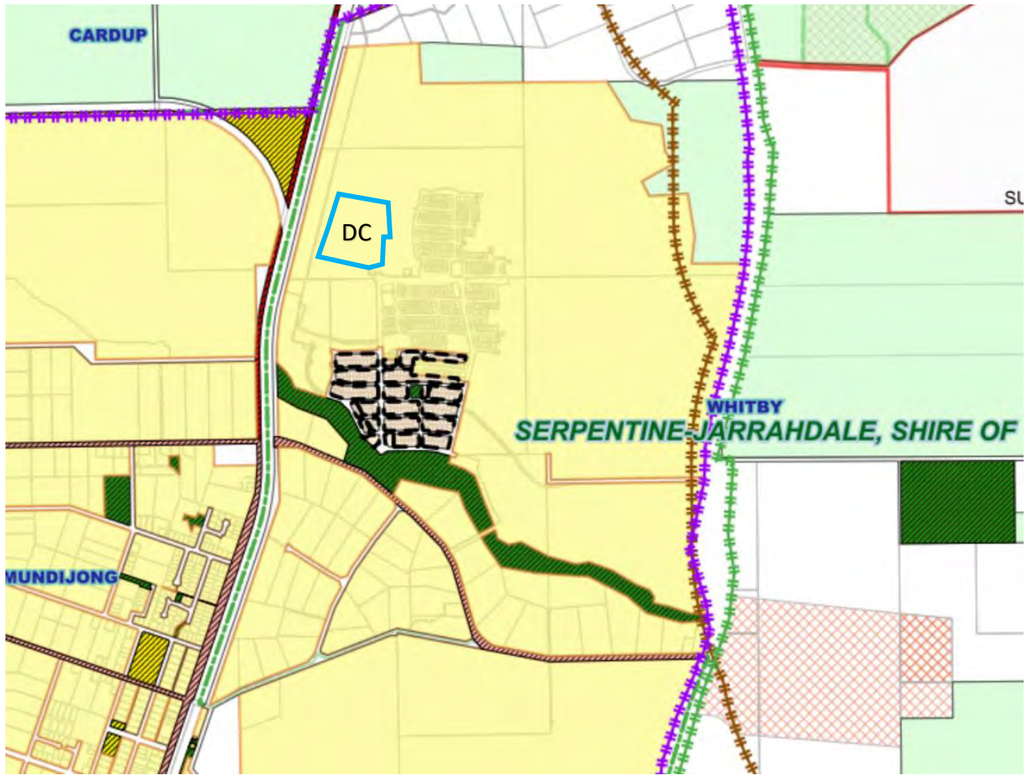
Criteria	Description (LSP area)
Assessed Intersection Performance	• SIDRA analysis indicates that the main access intersection will work satisfactorily and within the capacity as a priority T-intersection with left and right turn pockets on SWH and separate left and right turn lanes on the internal LSP road.

1.6 Land Use Planning Policy Context

1.6.1 Shire of Serpentine-Jarrahdale Local Planning Scheme No.3 (LSP3)

The proposed Whitby District Centre site is located within the approved Whitby Local Structure Plan area which is zoned 'Urban Development' under Local Planning Scheme No.3 (LPS3) (refer **Figure 1-6**). Pursuant to the requirements of a Local Planning Scheme, the Whitby Structure Plan was approved in 2012 prior to a decision maker considering subdivision or development.

Figure 1-6: Local Planning Scheme No.3 (LSP3) Site Context



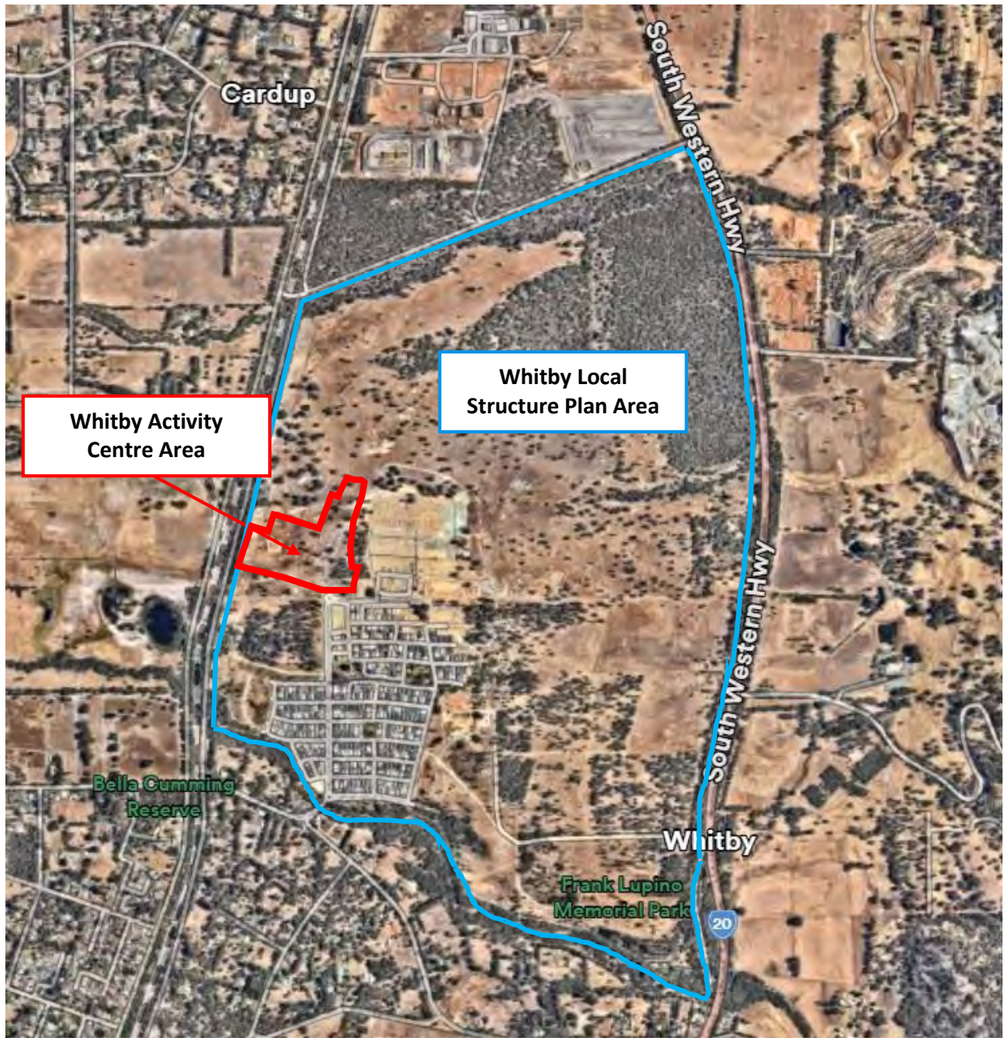
Source: Shire of Serpentine-Jarrahdale - Local Planning Scheme No.3 (LSP3)

2 Existing Situation

2.1 Existing Site Context and Land Uses

The proposed Whitby District Centre is a brownfield site, located approximately 50km south-east of Perth. The site is located on underdeveloped vacant land and surrounded by vacant bushland. Established and expanding residential development is located to the south and east of the site, which is currently accessed from Kiernan Street via Skyline Boulevard and Tinspar Avenue.

Figure 2-1: Site Location



Source: Nearmap (Jan 2026)

2.2 Existing Road Network

South Western Highway

South Western Highway functions as a Primary Distributor road and is listed as a Primary Regional Road in the Peel Region Scheme (PRS), under the care and control of Main Roads WA. It is a two-way road aligned in north-south direction and configured as a 2-lane undivided 7.5m wide carriageway set within an approximately 80-metre-wide road reserve.

South Western Highway carries in the order of 7,200 vehicles per day (Monday to Friday) to the north of the intersection of South Western Highway / Keirnan Street in 2023/2024, based on site 50620 from the Main Roads WA Traffic Map Database. It has a posted speed limit of 110km/h.

Keirnan Street

Keirnan Street functions as a Local Distributor Road under the care and control of Shire of Serpentine Jarrahdale. It is a two-way road aligned in an east-west direction with most of the sections configured as a 2-lane unmarked 5.3m - 6.0m wide sealed carriageway.

The section of the road between Soldiers Road and Evelyn Street is configured as a 2-lane marked 6m wide carriageway. There is a 2m wide footpath on the north side of Keirnan Street between the railway and the intersection to Tinspar Avenue. Keirnan Street has a posted limit of 60km/h, reduced to 50km/h when approaching Tinspar Avenue and then up to 70km/h to the east of the intersection of Keirnan Street / Tinspar Avenue.

Soldiers Road

Soldiers Road functions as a Regional Distributor Road under Main Roads WA Functional Road Hierarchy and under the care and control of Shire of Serpentine Jarrahdale. It is a two-way road aligned in a north/south direction and configured as a 2-lane undivided 7.0m wide carriageway set within an approximately 53-metre-wide road reserve. On the east side of Soldiers Road, a 2.5m wide shared path is situated close to the edge of the road. Soldiers Road has a posted speed limit of 80km/h.

Paterson Street

Paterson Street functions as a Local Distributor Road under the care and control of Shire of Serpentine Jarrahdale. It is a two-way road aligned in a north-south direction and configured as a 7.2m wide 2-lane marked single carriageway. There is a 2m wide footpath on the west side of Paterson Street and a 2.5m wide shared path on the east of the road. Paterson Street has a posted limit of 60km/hr.

Road Hierarchy:

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

Primary Distributors (light blue): Form the regional and inter-regional grid of MRWA traffic routes and carry large volumes of fast-moving traffic. Some are strategic freight routes, and all are National or State roads. They are managed by Main Roads.

Regional Distributors (red): Roads that are not Primary Distributors, but which link significant destinations and are designed for efficient movement of people and goods within and beyond regional areas. They are managed by Local Government.

Local Distributors (orange)**:** Carry traffic within a cell and link District Distributors at the boundary to access roads. The route of the Local Distributor discourages through traffic so that the cell formed by the grid of District Distributors only carries traffic belonging to or serving the area. These roads should accommodate buses but discourage trucks. They are managed by Local Government.

Access Roads (grey): Provide access to abutting properties with amenity, safety and aesthetic aspects having priority over the vehicle movement function. These roads are bicycle and pedestrian friendly. They are managed by Local Government.

Figure 2-2 shows the layout and classification of the roads surrounding the site, including the primary road network.

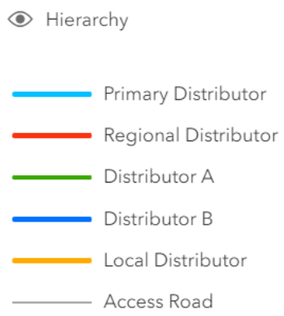
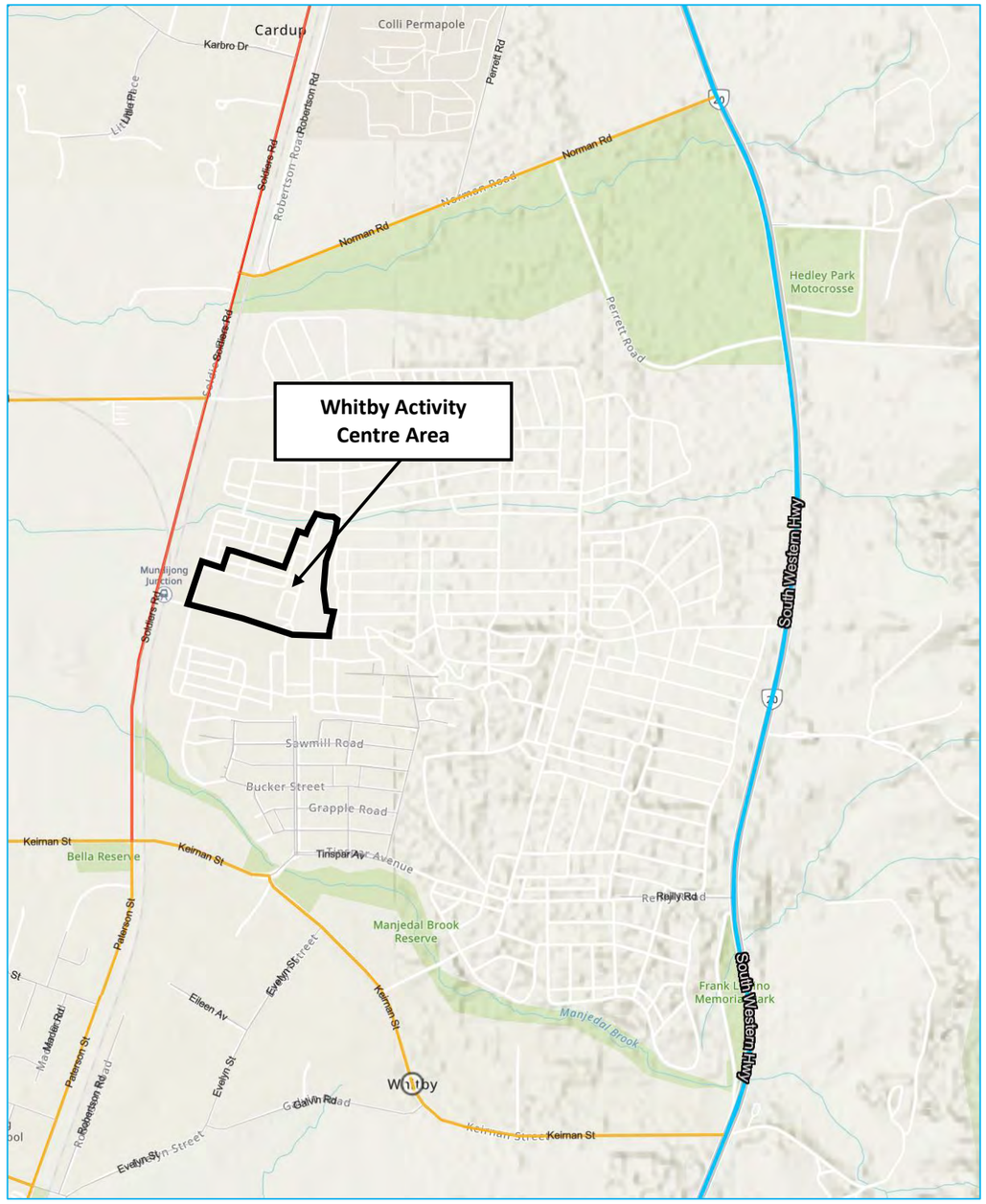


Figure 2-2: Main Roads WA Functional Road Hierarchy



Source: Main Roads WA

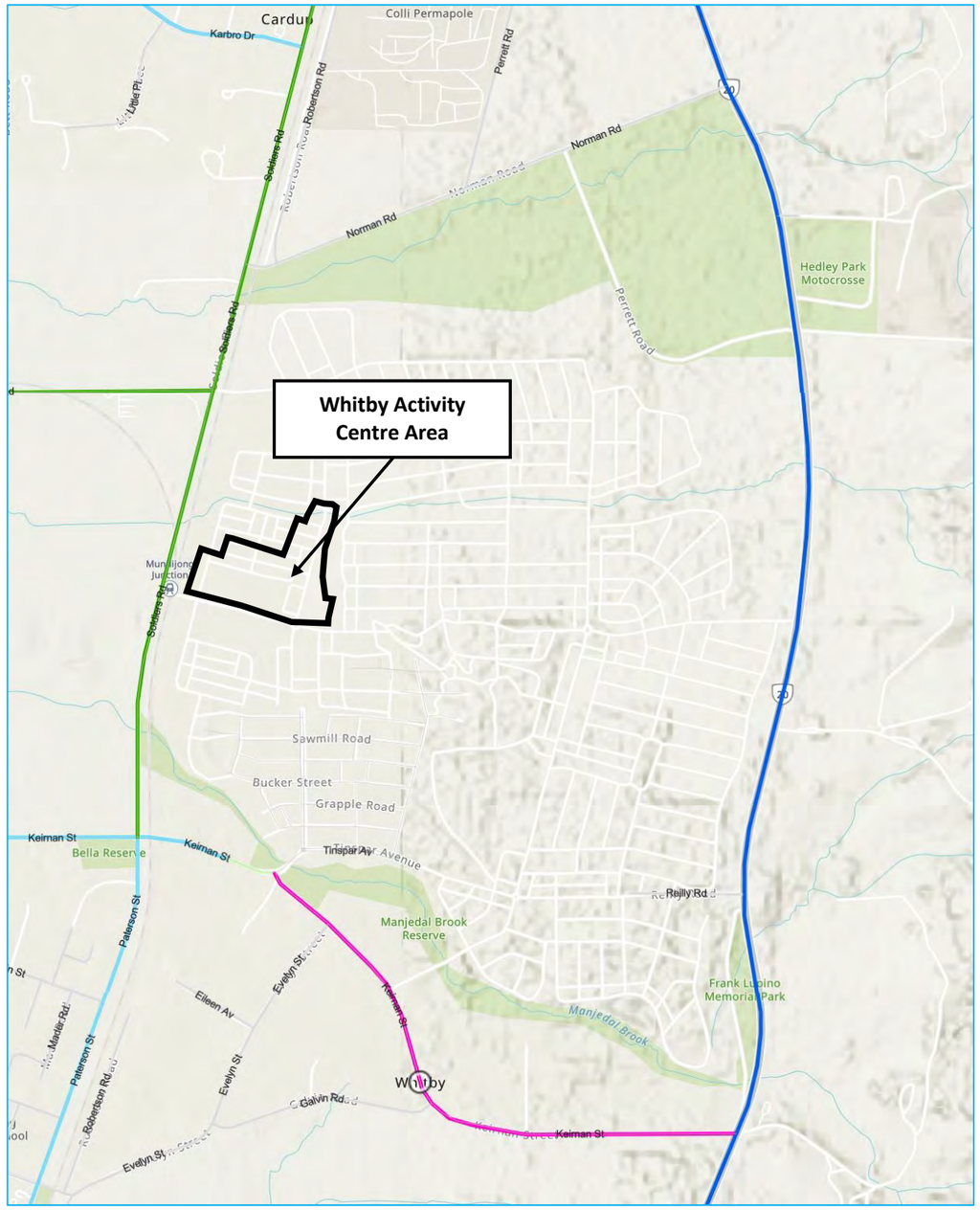
Speed Zoning:

Figure 2-3 shows the zoning of speeds on the roads surrounding the site.



The speed limits on Norman Road (110km/hr), Soldiers Road (80km/hr), South Western Highway (110km/hr) and Kiernan Street (70km/hr) are all very high, particularly for an emerging residential and major retail area with a mix of road users including those which are vulnerable (walking, cycling, e-mobility). These high prevailing speed zones potentially lead to a greater level of severity should any crashes occur on the surrounding road network.

Figure 2-3: Speed Zoning



Source: Main Roads WA

2.3 Existing RAV Network

A description of the Restricted Access Vehicle (RAV) categories as per Main Roads WA (MRWA) Heavy Vehicle Services (HVS) Tandem Drive Prime Mover, Trailer Combinations - Restricted Access Vehicle (RAV) Categories (May 2022) is shown in **Table 2-1**.

Table 2-1: RAV Categories Characteristics

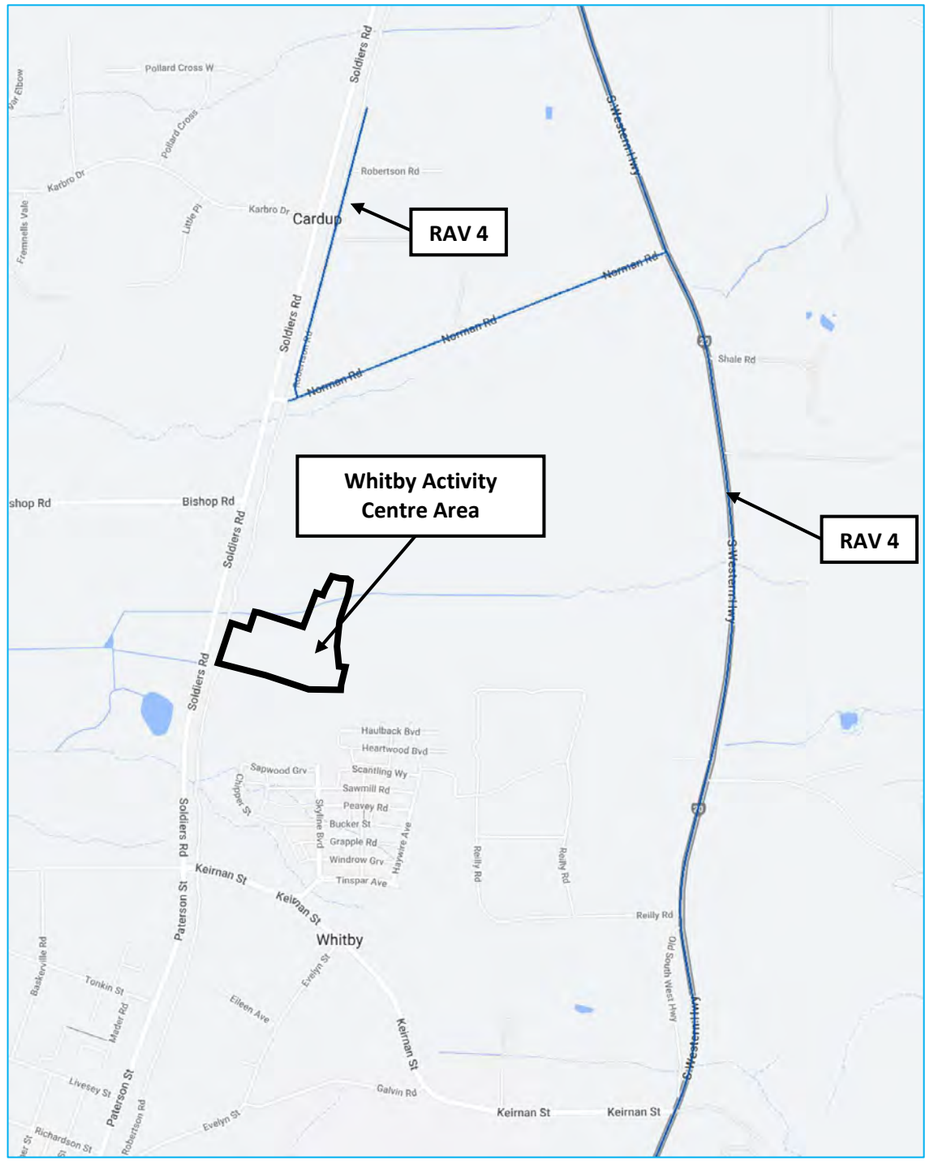
RAV Category	Sub-Categories and Vehicle Types	Max. Length	Max. Mass
1	A. Prime Mover, Semi-Trailer & Pig Trailer or Dolly B. Prime Mover & Semi-Trailer C. Short B-Double	A. 20m B. 19m C. 20m	A. 50t B. 48.5t C. 50t
2	A. Prime Mover, Semi-Trailer & Pig Trailer or Dolly B. Prime Mover & Semi-Trailer C. B-Double D. Short B-Triple E. Car Carrier	A. 27.5m B. 20m C. 27.5m D. 27.5m E. 25m	A. 66.5t B. 48.5t C. 68.5t D. 88.5t E. 45t
3	A. A-Double	A. 27.5m	A. 85t
4	A. A-Double	A. 27.5m	A. 88.5t
5	A. A-Double B. A-Double towing a Dolly C. B-Double towing a Dolly D. B-Triple	A. 36.5m B. 27.5m + Dolly C. 27.5m + Dolly D. 36.5m	A. 85t B. 85t + Dolly C. 68.5t + Dolly D. 85t
6	A. A-Double B. B-Triple C. A-Double towing a Dolly	A. 36.5m B. 36.5m C. 27.5m + Dolly	A. 88.5t B. 88.5t C. 88.5t + Dolly
7	A. AB-Triple B. BA-Triple	A. 36.5m B. 36.5m	A. 50t B. 48.5t

The existing restrictions for heavy vehicle combinations with context to the site and its surrounds is shown in **Figure 2-4**.

In terms of the roads surrounding the Site, a section of Robertson Road north of Norman Road, Norman Road and South Western Highway forms part of Main Roads WA's RAV Network up to level 4. The RAV 4 network generally permits heavy vehicles with the following specifications:

- Gross Vehicle Mass (GVM) up to 88.5 tonnes
- Overall vehicle length including any trailers is limited to 27.5 metres and maximum width of 2.5 metres (without an oversize / over mass permit).

Figure 2-4: Existing RAV Network



Source: Main Roads WA

2.4 Key Existing Intersections

The key existing intersection currently providing access to the Whitby structure plan area from the wider network is Kiernan Street / Tinspar Ave – Priority Controlled T-Intersection. This existing intersection is located approximately 950m south of the future Whitby District Centre.

The Kiernan Street / Tinspar Ave – Priority Controlled T-Intersection was surveyed on Tuesday 25th November 2025. The intersection was surveyed between the hours of 06:00 – 09:00 and 15:00 – 18:00.

The AM and PM peak traffic volumes at this intersection are shown in **Figure 2-5** and **Figure 2-6.**

Figure 2-5: Kiernan St / Tinspar Ave T-Intersection – Traffic Count AM Peak

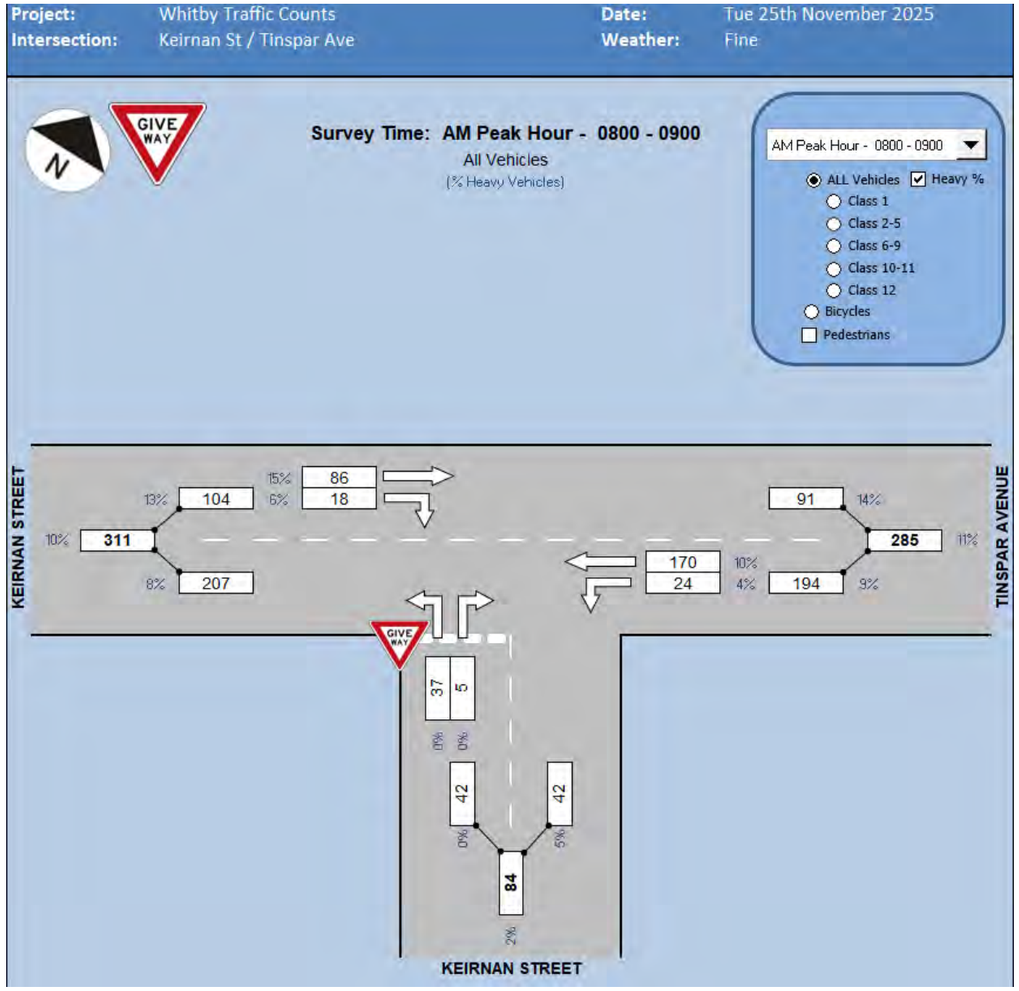
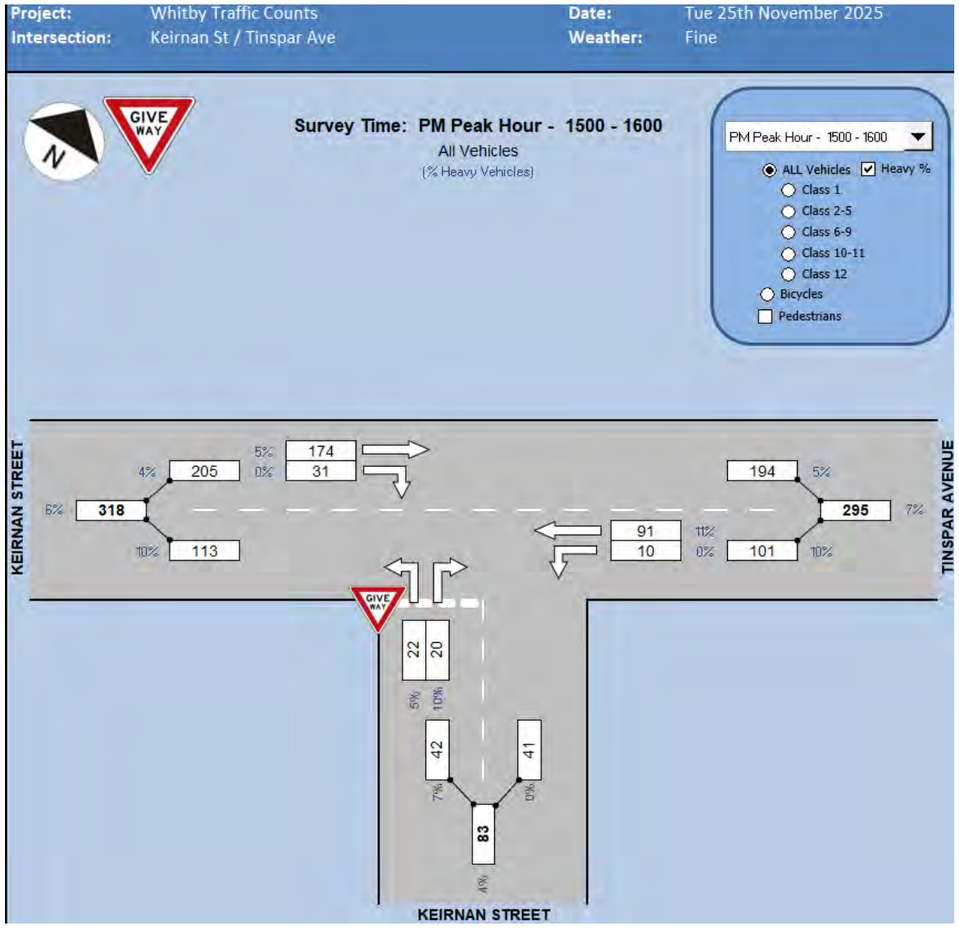


Figure 2-6: Kiernan St / Tinspar Ave T-Intersection – Traffic Count PM Peak



2.5 Existing Road Network - Traffic Modelling

SIDRA Intersection modelling of Kiernan Street / Tinspar Ave – Priority Controlled T-Intersection has been undertaken to establish a baseline of the operation of the existing road network. The results of the operation and performance of this existing intersection is summarised in the following sections.

2.5.1 Kiernan St / Tinspar Ave T-Intersection (Modelled as Two Legs).

Leg 1 – AM Peak Results:

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. Que	Eff. Stop Rate	Aver. No. of Cycles	A Sp k
South: Keirnana St															
1	L2	All MCs	39	0.0	39	0.0	0.028	6.9	LOS A	0.1	0.8	0.27	0.58	0.27	5
2	T1	All MCs	5	0.0	5	0.0	0.004	5.6	LOS A	0.0	0.1	0.27	0.54	0.27	5
Approach			44	0.0	44	0.0	0.028	6.8	LOS A	0.1	0.8	0.27	0.57	0.27	5
East: Tinspar Ave															
4	L2	All MCs	25	4.0	25	4.0	0.114	4.6	LOS A	0.0	0.0	0.00	0.07	0.00	4
5	T1	All MCs	179	10.0	179	10.0	0.114	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	4
Approach			204	9.3	204	9.3	0.114	0.6	NA	0.0	0.0	0.00	0.07	0.00	4
North: Median															
8	T1	All MCs	19	6.0	19	6.0	0.016	1.8	LOS A	0.1	0.4	0.28	0.43	0.28	4
Approach			19	6.0	19	6.0	0.016	1.8	LOS A	0.1	0.4	0.28	0.43	0.28	4
All Vehicles			267	7.5	267	7.5	0.114	1.7	NA	0.1	0.8	0.06	0.18	0.06	4

Leg 2 – AM Peak Results:

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. Que	Eff. Stop Rate	Aver. No. of Cycles	S
South: Median															
3	R2	All MCs	5	0.0	5	0.0	0.004	2.3	LOS A	0.0	0.1	0.15	0.48	0.15	
Approach			5	0.0	5	0.0	0.004	2.3	LOS A	0.0	0.1	0.15	0.48	0.15	
West: Keirnan St															
11	T1	All MCs	91	15.0	91	15.0	0.053	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	
12	R2	All MCs	19	6.0	19	6.0	0.011	4.9	LOS A	0.0	0.0	0.00	0.59	0.00	
Approach			109	13.4	109	13.4	0.053	0.9	NA	0.0	0.0	0.00	0.10	0.00	
All Vehicles			115	12.8	115	12.8	0.053	0.9	NA	0.0	0.1	0.01	0.12	0.01	

Leg 1 – PM Peak Results:

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. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Keirnana St															
1	L2	All MCs	23	5.0	23	5.0	0.016	6.7	LOS A	0.1	0.5	0.19	0.56	0.19	50.9
2	T1	All MCs	21	10.0	21	10.0	0.017	5.6	LOS A	0.1	0.5	0.21	0.54	0.21	57.4
Approach			44	7.4	44	7.4	0.017	6.2	LOS A	0.1	0.5	0.20	0.55	0.20	52.7
East: Tinspar Ave															
4	L2	All MCs	11	0.0	11	0.0	0.060	4.6	LOS A	0.0	0.0	0.00	0.05	0.00	47.4
5	T1	All MCs	96	11.0	96	11.0	0.060	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	49.4
Approach			106	9.9	106	9.9	0.060	0.5	NA	0.0	0.0	0.00	0.05	0.00	49.2
North: Median															
8	T1	All MCs	33	0.0	33	0.0	0.024	1.5	LOS A	0.1	0.6	0.19	0.40	0.19	46.5
Approach			33	0.0	33	0.0	0.024	1.5	LOS A	0.1	0.6	0.19	0.40	0.19	46.5
All Vehicles			183	7.5	183	7.5	0.060	2.0	NA	0.1	0.6	0.08	0.24	0.08	49.8

Leg 2 – PM Peak Results:

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. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Median															
3	R2	All MCs	21	10.0	21	10.0	0.018	2.7	LOS A	0.1	0.4	0.23	0.50	0.23	29.6
Approach			21	10.0	21	10.0	0.018	2.7	LOS A	0.1	0.4	0.23	0.50	0.23	29.6
West: Keirnan St															
11	T1	All MCs	183	5.0	183	5.0	0.098	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	50.0
12	R2	All MCs	33	0.0	33	0.0	0.017	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	44.2
Approach			216	4.2	216	4.2	0.098	0.8	NA	0.0	0.0	0.00	0.09	0.00	49.1
All Vehicles			237	4.8	237	4.8	0.098	0.9	NA	0.1	0.4	0.02	0.13	0.02	48.5

In the AM and PM peak periods at the Kiernan Street / Tinspar Avenue intersection, under the existing traffic volumes, this intersection is currently performing at level of service A overall. Minimal queue lengths are calculated on all approach roads and all average delays are within the prescribed WAPC threshold of acceptable performance.

2.6 Future Intersections Surrounding Whitby District Centre

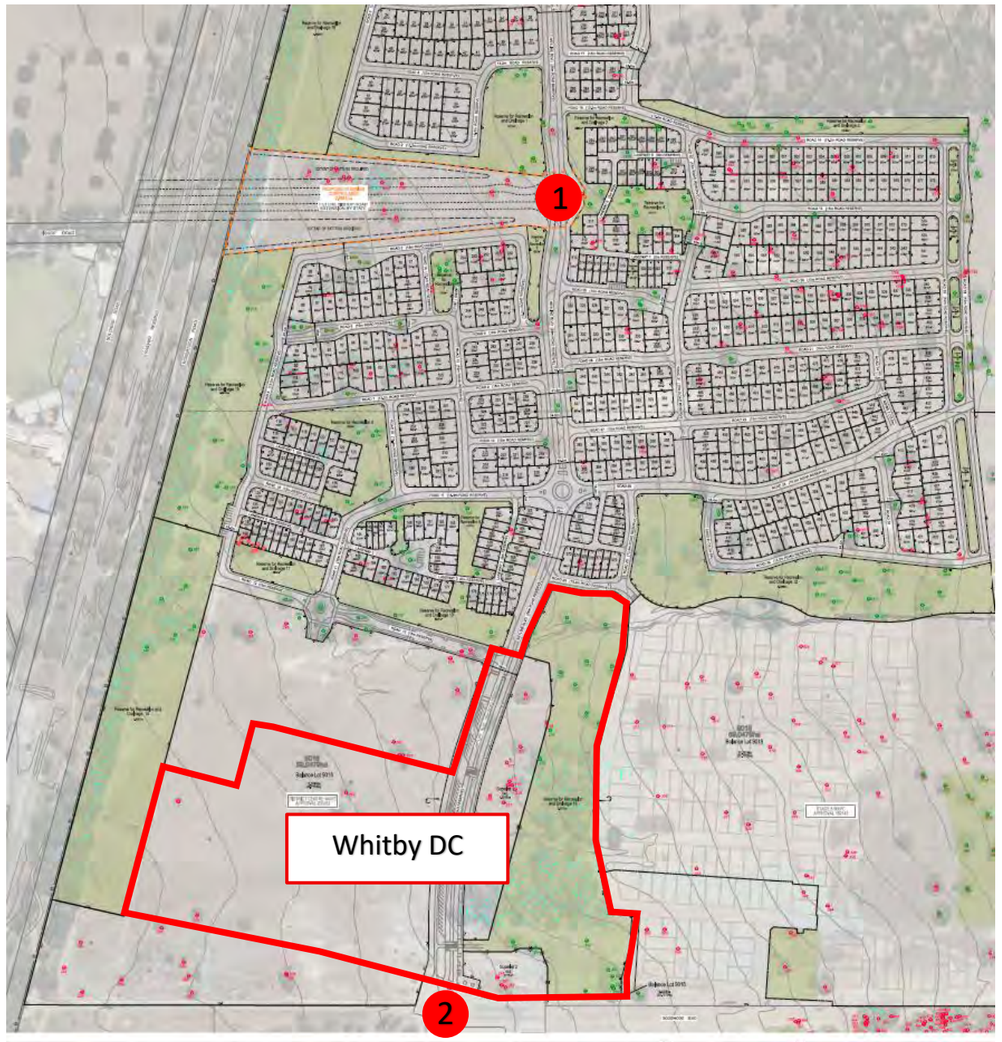
The following key intersections in the vicinity of the Whitby District Centre, will provide future access to the wider road network:

1 Skyline Boulevard / Bishop Road Extension – Future Roundabout

2 Skyline Boulevard / Goodwood Boulevard – Existing Roundabout (not fully operational)

These future intersections, together with the existing Kiernan Street / Tinspar Ave – Priority Controlled T-Intersection are tested for capacity and efficiency in the future year of 2041 assuming full build out of the Whitby District Centre and the Whitby Local Structure Plan area.

Figure 2-7: Key Intersections Surrounding Whitby District Centre



2.7 Existing Active Travel Network

The existing active travel network in Whitby and the surrounding area is currently limited to short sections of on-road cycle lanes on Tinspar Avenue and Skyline Boulevard within the existing residential development.

There is currently an approximately 2.5m wide shared path along the east side of Skyline Boulevard (south of the Whitby District Centre) and on the south side of Tinspar Avenue, and 2m wide footpath along the north of Keirnan Street terminating at the east of the railway crossing. The shared path currently terminates some 75m south of Tinspar Avenue adjacent to Kiernan Street. There is currently no pedestrian or cycle infrastructure on Kiernan Street.

There is no pedestrian or cycle crossing facilities across the railway line west of the site, and this poses a safety issue as the crossing leads to a wider shared path network along Soldiers Road and Paterson Street. This is the only pedestrian or cycle network between the Whitby Estate and Mundijong Primary School and community facilities in Mundijong, and the Court Grammar School at the corner of Soldiers Road and Bishop Road.

2.8 Existing Public Transport Provision

The nearby public transport options are essentially bus-based, with no train station in Whitby itself. The key local Transperth services are Route 259 and Route 262, and the published route map/timetable for these services shows they run through the Whitby corridor via Tinspar Avenue, Soldiers Road, Keirnan Street and Paterson Street, linking the area back to Byford Station.

Both services 259 and 262 now enter the Whitby Local Structure Plan area and turn at the Skyline Boulevard / Tinspar Avenue roundabout, providing a good link to the existing residential development the future stages of development (the subject of this TIA). The frequency of these services is good in the morning peak at every 15 – 20 minutes up to 08:55am and then at an hourly frequency for the remainder of the day, Monday to Friday.

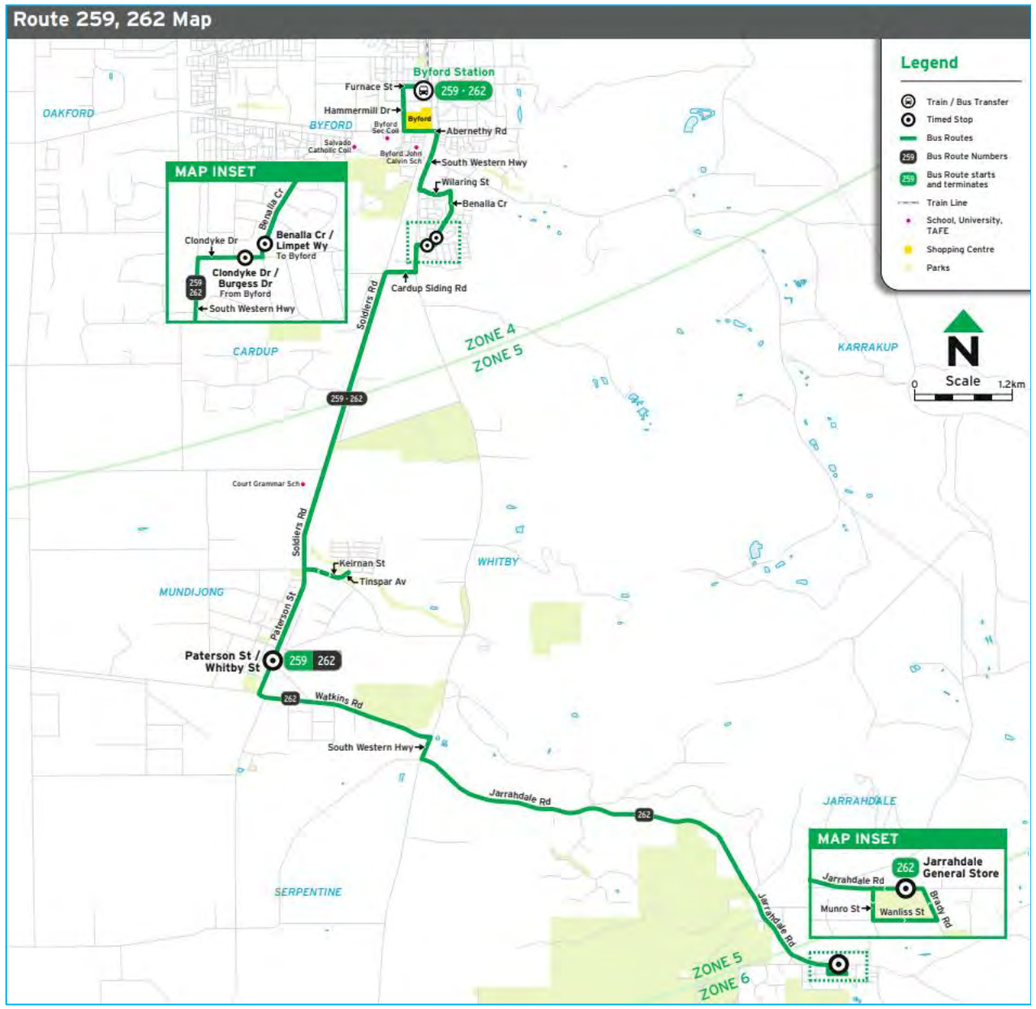
The train service Australind Perth to Bunbury operates one service per peak period in each direction and can stop at Mundijong for pre-booked journey requests. This is evidenced by the recorded traffic count at the Soldiers Road / Kiernan Street Roundabout, whereby the event log recorded two trains passing through the Kiernan Street level crossing twice on Tuesday 11th June 2024, one at 07:36 and one at 17:42 (both trains outside of the morning traffic peak period).

Routes 259, 262 - To Byford

	Timed Stops						Timed Stops					
	Stop No.		13088	23912	27650	29285 / Stand 6	Stop No.		13088	23912	27650	29285 / Stand 6
	Route No.		Jarrahdale General Store	Paterson St / Whitby St	Benalla Cr / Limpet Wy	Byford Stn	Route No.		Jarrahdale General Store	Paterson St / Whitby St	Benalla Cr / Limpet Wy	Byford Stn
Monday to Friday							**Saturday**					
am	259	-		5:40	5:51	6:01	am	259	-	5:47	5:58	6:08
	259	-		6:12	6:23	6:33		262	6:45	6:55	7:06	7:16
	262 D	6:17		6:27	6:38	6:48		259	-	7:55	8:06	8:16
	259	-		6:42	6:53	7:03		259	-	8:55	9:06	9:16
	259	-		6:57	7:08	7:18		259	-	9:55	10:06	10:16
	259	-		7:10	7:21	7:31		259	-	10:55	11:06	11:16
	262 S	7:06		7:25	7:36	7:46		259	-	11:55	12:06	12:16
	259 H	-		7:25	7:36	7:46	pm	259	-	12:55	1:06	1:16
	262 A	7:30		7:40	7:51	8:01		259	-	1:55	2:06	2:16
	259 C	-		7:40	7:51	8:01		259	-	2:55	3:06	3:16
	259	-		7:55	8:06	8:16		259	-	3:55	4:06	4:16
	262 B	7:40		8:00	8:13	8:31		259	-	4:55	5:06	5:16
	262 E	7:47		8:05	8:20	8:31		259	-	5:55	6:06	6:16
	262 B	7:55		8:15	8:28	8:46						
	259 H	-		8:25	8:36	8:46	**Sunday & Public Holidays**					
	259 F	-		8:30	8:43	9:01	am	259	-	6:55	7:06	7:16
	259	-		8:55	9:06	9:16		259	-	7:55	8:06	8:16
	259	-		9:55	10:06	10:16		259	-	8:55	9:06	9:16
	259	-		10:55	11:06	11:16		259	-	9:55	10:06	10:16
	259	-		11:55	12:06	12:16		259	-	10:55	11:06	11:16
pm	259	-		12:55	1:06	1:16		259	-	11:55	12:06	12:16
	259	-		1:55	2:06	2:16	pm	259	-	12:55	1:06	1:16
	259	-		2:55	3:06	3:16		259	-	1:55	2:06	2:16
	259 G	-		-	3:23	3:33		259	-	2:55	3:06	3:16
	259	-		3:55	4:06	4:16		259	-	3:55	4:06	4:16
	259	-		4:55	5:06	5:16		259	-	4:55	5:06	5:16
	259	-		5:40	5:51	6:01		259	-	5:55	6:06	6:16
	259	-		6:55	7:06	7:16						

Legend

A	Operates on school holidays only and departs from Kingsbury Dr before McNeil Gr in Jarrahdale at 7.28am.
B	Operates on school days only and deviates via The Chestnuts Estate, Salvado Catholic College and Byford Secondary College.
C	Operates on school days only.
D	Departs from Kingsbury Dr before McNeil Gr in Jarrahdale at 6.16am.
E	Operates on school days only and deviates via The Chestnuts Estate and Court Grammar School.
F	Operates on school days only and deviates via Salvado Catholic College and Byford Secondary College.
G	Operates on school days only and departs from Court Grammar School at 3.16pm.
H	Operates on school holidays only.
S	Operates on school days only and departs from Kingsbury Dr before McNeil Gr in Jarrahdale at 7.05am. Deviates via The Chestnuts Estate.



2.9 Crash Assessment

A search of the Main Roads WA Reporting Centre for crash data surrounding the site was undertaken. This search covered all recorded traffic accidents for the most recently available five-year reporting period between 1 January 2021 and 31 December 2025 for the following roads surrounding the Site:

- Norman Road
- Soldiers Road
- South Western Highway
- Kiernan Street.

A total of 37 crashes are recorded as occurring within the study, including seven hospitalisations, eight crashes requiring medical attention, 14 major property damage only (PDO) and three minor property damage only.

Of the seven hospitalisations which occurred, two of these crashes occurred at the intersection of South Western Highway / Kienan Street and involved right turning crash types, with the remainder of the hospitalisation crashes occurring in different locations.

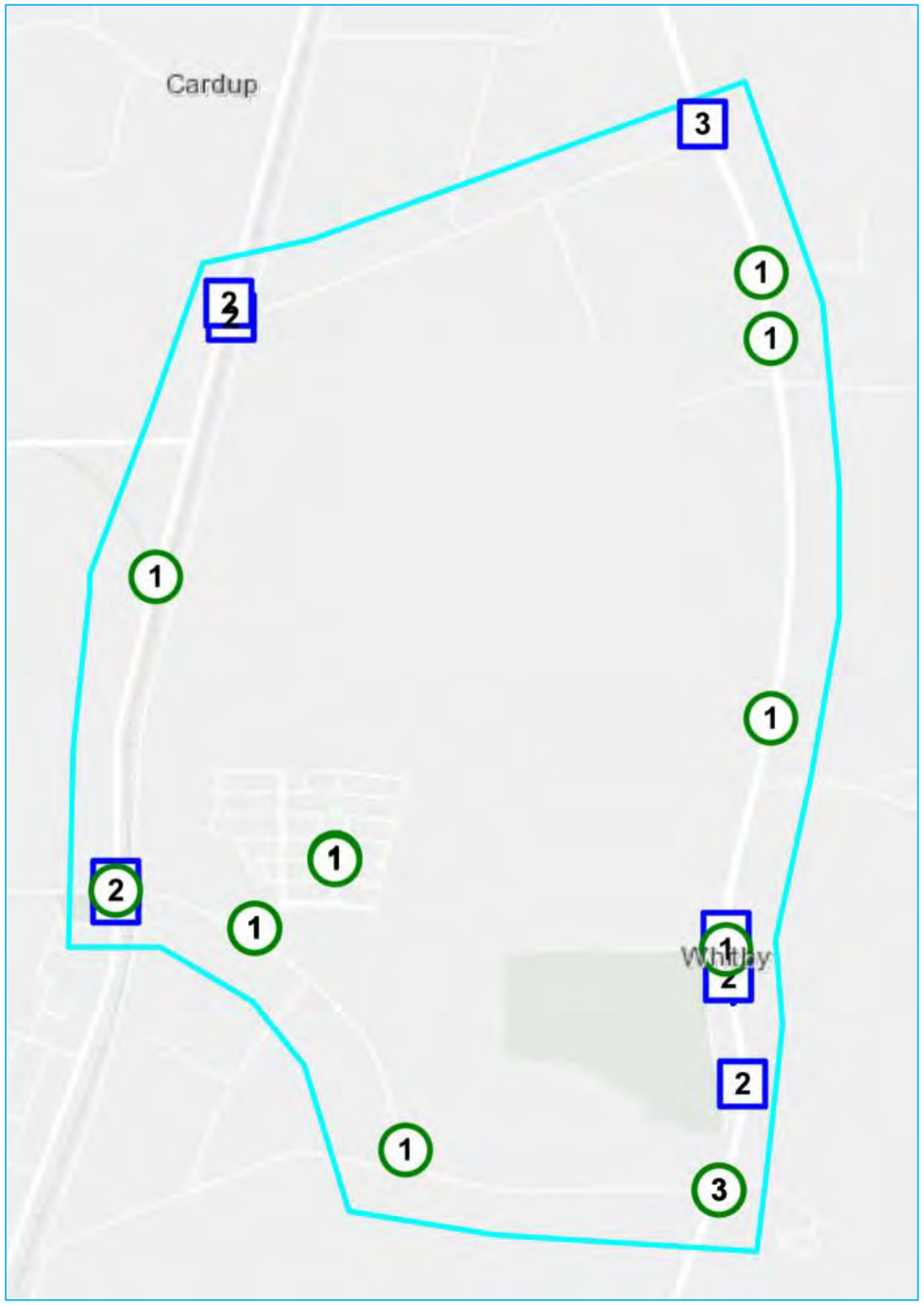
Another of the hospitalisations recorded on South Western Highway involved a driver who was distracted by vaping in the car and lost control of the vehicle and collided with a tree.

One of the other hospitalisations occurred on Soldiers Road at the intersection with Bishop Road and involved a right turning truck into Soldiers Road from Bishop Road which did not stop and collided with a northbound vehicle on Soldiers Road.

A hospitalisation which occurred on Norman Road and involved a vehicle travelling toward Soldiers Road which swerved to miss a Kangaroo, lost control, hit a tree and then the car caught fire.

There appears to be a relatively high number of hospitalisations and crashes requiring medical attention on site. This is likely to be attributed to the very high prevailing speed limit zones on Norman Road (110km/hr), Soldiers Road (80km/hr), South Western Highway (110km/hr) and Kiernan Street (70km/hr).

Figure 2-8: Historic 5-year Crash Data Extract



3 Proposed Development (Whitby District Centre)

3.1 Proposed Development Yield

The proposed Whitby District Centre site is located within the approved Whitby Local Structure Plan area which is zoned 'Urban Development' under Local Planning Scheme No.3 (LPS3).

The potential yield of the development site (the Site) in terms of developable land use is outlined in **Table 3-1** and shown in **Figure 3-1.**

Table 3-1: Whitby District Centre Proposal Land Use and Yields

CATEGORY	AREA
Amenities	228.46 m²
BOH	709.81 m²
Childcare	1360.40 m²
Community Workshop	188.69 m²
Food & Beverage	2729.42 m²
Gym	1926.90 m²
LSA	687.59 m²
Major	9500.87 m²
Medical	636.15 m²
Pharmacy	613.32 m²
Specialty	5007.99 m²
Swim School	480.57 m²
Pad Site 1 – Fast Food	532.60 m²
Pad Site 2 – Fast Food	372.60 m²
Total	**24975.37 m²**

3.2 Parking Provision

A total of 814 off-street parking spaces (including 17 DDA spaces) are proposed on the convenience centre car park on the west side of Skyline Boulevard.

A further 85 off-street spaces (including 4 DDA spaces) are proposed behind the medical centre / swim school.

A further 79 space (including 2 DDA spaces) are proposed behind the gym.

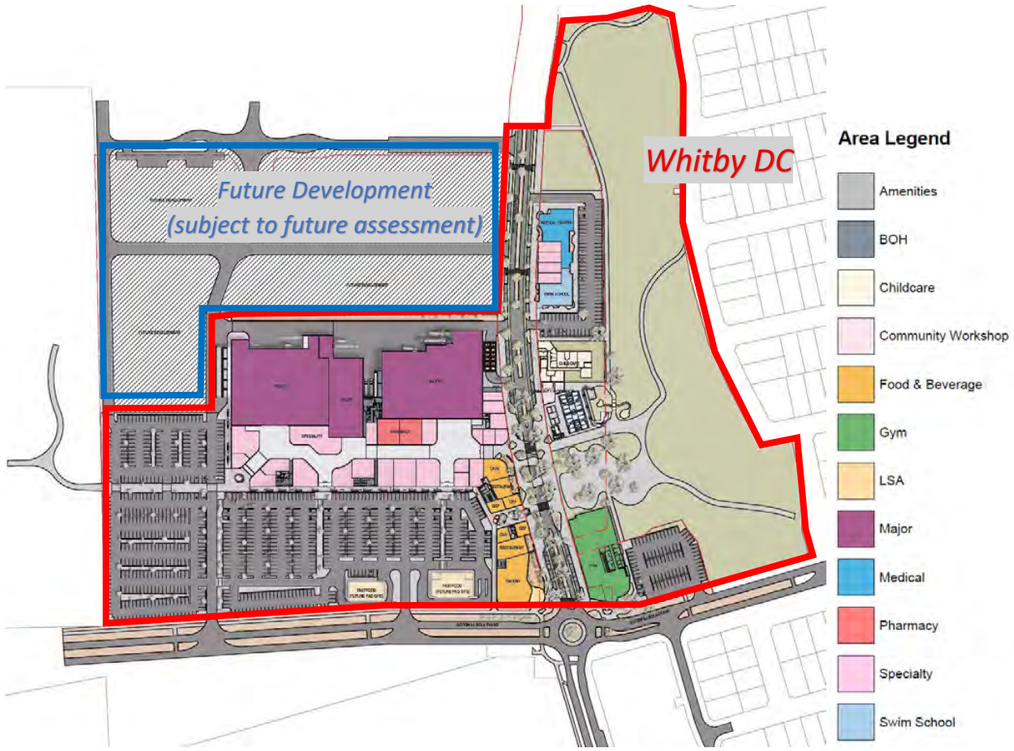
Furthermore, an additional 26 on-street spaces on Skyline Boulevard are proposed adjacent to the Whitby District Centre.

As such the total proposed parking provision is 1,004 spaces including 23 DDA spaces.

The Community Workshop forms part of the broader mixed-use Whitby District Centre and is expected to generate only a modest level of standalone parking demand. Parking associated with the workshop will be accommodated primarily within the adjacent gym car park, with overflow demand able to be absorbed within the wider District Centre parking supply. On-street parking will also be available immediately adjacent to the workshop area.

Given the scale and nature of the use, together with the substantial overall parking provision across the District Centre, the provision of a separate dedicated parking area for the Community Workshop is not considered necessary. The use is also expected to benefit from reciprocal parking and linked trips with surrounding retail, recreation and community uses, meaning a proportion of workshop users will already be parked elsewhere within the District Centre as part of a broader visit.

Figure 3-1: Concept Masterplan – Whitby District Centre



For the purposes of this assessment, 'specialty' floorspace has been interpreted as small-format retail and personal service tenancies ancillary to the main centre function, and may include uses such as small shops, cafés/takeaway premises, pharmacy, hair/beauty services and similar local convenience retail uses.

3.3 Staging of Development

It is noted that the Whitby District Centre is proposed to be developed in stages with the initial **Stage 1** site summarised in **Table 3-2.**

Table 3-2:]Whitby District Centre – Stage 1 Proposal Land Use and Yields

Precinct	Land-use Type	Yield
Shopping Centre	Combined Major Retial, Pharmacy, Specialty, F & B	8,340 sqm
Pad Site 1	Food Retail	532.6m2
Pad Site 2	Food Retail	372.6m2

A total of 407 off-street parking spaces (including 9 DDA spaces) is proposed at Stage 1 which equates to a provision of 4.88 spaces per 100sqm. Furthermore, an additional 15 on-street spaces on Skyline Boulevard are proposed adjacent to the Stage 1A area which brings the total available provision to 5.06 spaces per 100sqm. Stage 1 development will require a "temporary entry" in the south eastern corner of the car-park.

3.4 Proposed Access Arrangements

The proposed Whitby District Centre comprises the following access points to the surrounding road network:

- 2 full-turning movement car park access points to Goodwood Boulevard
- A one-way click-and-collect access via Skyline Boulevard
- Two left-in / left-out vehicle connections to Skyline Boulevard to the north that will also service future development to the north
- Loading vehicle access via Skyline Boulevard and the internal road network.
- A left-in / left-out access to the medical centre / swim school car park via Skyline Boulevard
- A full turning movement access to the medical centre / swim school car park via Skyline Boulevard
- A left-in / left-out access to the gym car park via Goodwood Boulevard

3.5 Vehicle Access Sight Distance

Sight distance at the proposed vehicle access points has been considered with reference to AS/NZS 2890.1:2004 *Parking Facilities – Part 1: Off-street car parking*. Figure 3.2 of AS/NZS 2890.1 sets out the minimum sight distance requirements along a frontage road for non-domestic access driveways as follows:

- For a frontage road speed of 50km/h, a minimum stopping sight distance of 45m is required,
- Reducing to 35m for a 40km/h frontage road speed.
- Interpolating the above for 30km/h, 25m stopping sight distance may be considered or the higher minimum of 35m should be applied in accordance with the Standard.

A preliminary desktop review of the proposed vehicle crossovers indicates that the applicable minimum sight distance requirements can be achieved at the relevant access locations shown on the current development plan. Particular consideration has been given to the relationship between the crossovers and adjoining on-street parking bays, as parked vehicles have the potential to restrict a driver's view of approaching traffic where parking is located too close to an access.

The available sight lines should be confirmed again as part of the detailed design process using the final road geometry, crossover locations, parking bay layout, landscaping and confirmed frontage road speed environment. The detailed design should maintain the required sight triangles free of permanent obstructions and ensure that on-street parking does not unacceptably restrict visibility from the access points. Where necessary, minor adjustments to the location or length of adjoining parking bays, landscaping, street furniture or crossover geometry can be made to maintain the required sight distance. On this basis, no fundamental sight distance constraint has been identified with the proposed access arrangements.

3.6 Skyline Boulevard Service Area / Swim School Intersection

The four-way intersection arrangement on Skyline Boulevard adjacent to the service area and swim school has been reviewed from an operational and road safety perspective. Although the layout appears as a conventional four-way intersection in plan form, the intended operation is materially different from a typical four-way intersection because the opposing access movements are unlikely to occur.

The service area access is expected to operate predominantly as an inbound movement for service vehicles accessing the rear loading and servicing area. Similarly, the adjoining click-and-collect facility is proposed to operate as a one-way arrangement, with vehicles entering through the Skyline Boulevard intersection and circulating internally and exiting to the south. Service vehicles accessing the main loading area are expected to exit the site via the internal service road network to Goodwood Boulevard rather than returning to Skyline Boulevard at this location.

The intersection is not expected to generate the range of opposing and crossing vehicle movements normally associated with a conventional four-way intersection. The movements at this intersection will comprise vehicles entering the site from Skyline Boulevard, together with movements to and from the swim school / medical centre side of the intersection. This substantially reduces the potential for conflicting turning movements through the centre of the intersection.

To reinforce the intended operation, it is recommended that the service area / click-and-collect access be formalised at detailed design as an inbound-only access, with appropriate regulatory signage and pavement markings such as "No Exit" controls where required. The final detailed design should also ensure that the geometry clearly communicates the intended one-way operation to drivers and avoids creating an apparent opportunity for outbound movements onto Skyline Boulevard.

On this basis, no particular road safety issue is anticipated at this location. The constrained movement pattern means the intersection will not function as a conventional four-way intersection, and the proposed one-way servicing and click-and-collect arrangements are expected to provide a controlled and legible operating environment. The final arrangement should nevertheless be confirmed at detailed design stage, including signage, line marking, sight distance and swept path requirements.

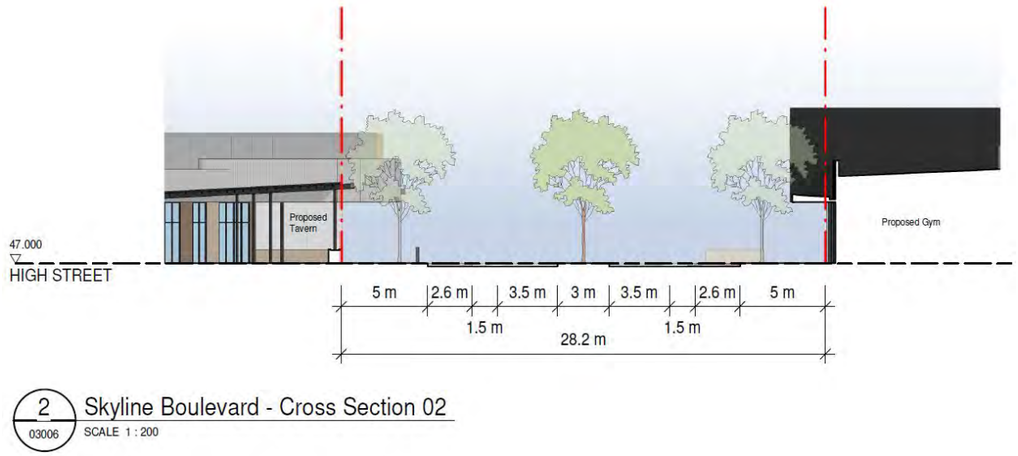
3.7 Skyline Boulevard Cross-Section & Design

Skyline Boulevard will pass through the Whitby District Centre site in a north/south alignment. The road reserve is approximately 28m wide and will feature the following design criteria:

Main Section of Skyline Boulevard:

- 3.5m wide traffic lanes (one lane each direction)
- 2.0m median island
- 1.5m on-road cycle lanes (each direction)
- 2.6m wide embayed on-street parking bays
- 50km/hr speed limit

Figure 3-2: Typical Cross-Section - Main Section of Skyline Boulevard:

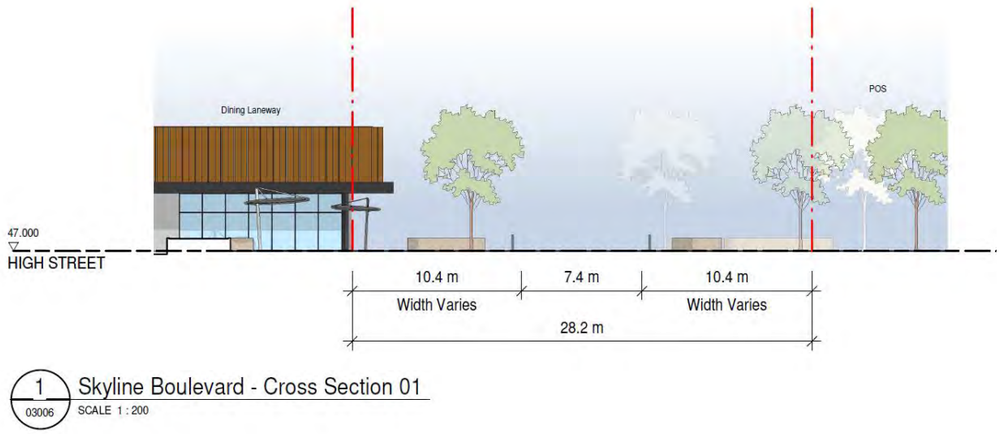


Central (Slow Speed) Section of Skyline Boulevard:

The proposal includes a narrowing of Skyline Boulevard through the central section of the Whitby District Centre to promote reduced vehicle speeds and enhance safety for pedestrians and cyclists crossing Skyline Boulevard between the land uses. It is noted that the Whitby District Centre forms a destination in its own right for pedestrians and cyclists both form the surrounding area and arriving by car. The design criteria of the central includes:

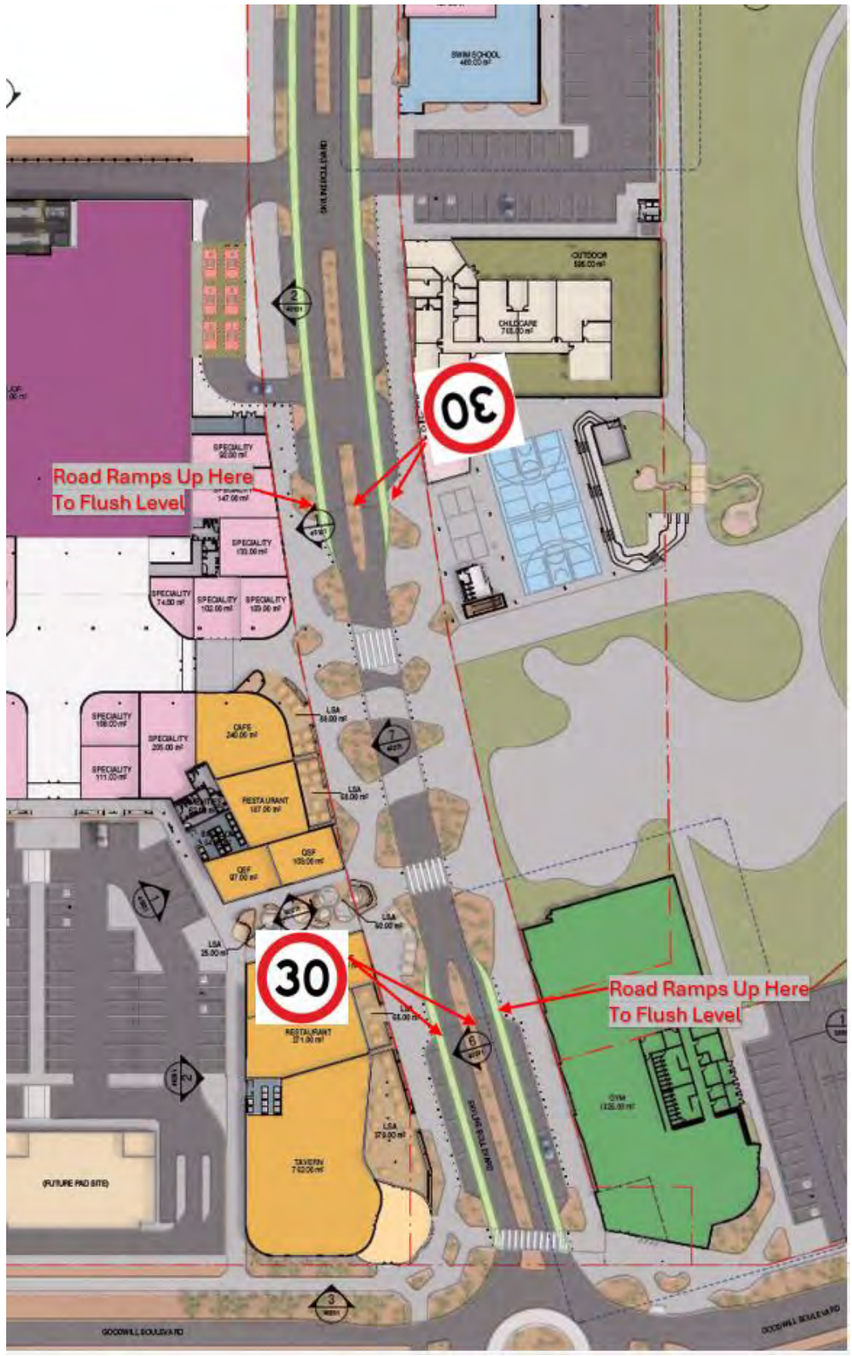
- 28.2m wide road reserve
- 7.4m wide pavement with no median separation (one traffic lane each direction)
- Road level raised and flush with footpath level
- Shared and slow speed space for vehicles and cyclists
- Pedestrian crossing provisions
- 30km/hr speed limit.

Figure 3-3: Typical Cross-Section - Central (Slow Speed) Section of Skyline Boulevard



Source: Buchan Architects – June 2026

Figure 3-4: Proposed Skyline Boulevard Through Whitby District Centre



Source: Buchan Architects – June 2026

3.8 Operation of Skyline Boulevard Through the District Centre

The Shire of Serpentine Jarrahdale has requested an assessment of the efficacy of traffic flow through Skyline Boulevard, considering peak hour future residential traffic and pedestrian movement/behaviour/safety.

Skyline Boulevard will perform an important dual function within Whitby. It will provide a north-south road connection between the existing and future residential precincts, while through the Whitby District Centre it will also function as the main street and an important pedestrian, cyclist and future public transport corridor. The design of Skyline Boulevard through the centre therefore needs to balance the movement of through traffic with pedestrian activity and place function expected within the District Centre.

The future traffic assessment undertaken for this TIA indicates that Skyline Boulevard is forecast to carry approximately 7,900 vehicles per day south of the future Bishop Road Extension at the 2041 design horizon. This represents a moderate level of traffic for a two-lane urban distributor and can be accommodated within the proposed single traffic lane in each direction. This level of traffic does not require a multi-lane road environment and is compatible with the proposed two-lane main street configuration.

Importantly, the approximately 8,000 vehicle per day forecast represents the future network condition assessed in the TIA and is not considered excessive for a town centre main street. There are a number of established Perth activity centre streets which successfully accommodate comparable or higher traffic demands while also supporting substantial pedestrian activity, on-street activity and, in some cases, frequent bus movements.

By way of comparison the following examples are provided:

- **Albany Highway Precinct - East Victoria Park:**
  - 11,000 vehicles per day
  - bus movements
  - pedestrian activity

- **Oxford Street Precinct - Leederville**
  - approximately 5,000 to 6,000 vehicles per day,
  - pedestrian activity

- **Beaufort Street Precinct - Highgate**
  - approximately 12,000 vehicles per day
  - bus movements
  - pedestrian activity

- **South Terrace Café Strip - Fremantle**
  - approximately 6,000 to 7,000 vehicles per day.
  - bus movements
  - pedestrian activity

These are some of the most popular locations for day time and night time and these examples demonstrate that the movement function of a road can coexist with a strong pedestrian and activity centre function where vehicle speeds, street design and pedestrian crossing arrangements are appropriately managed.

The proposed design of Skyline Boulevard responds directly to this requirement. Outside the central main street section, Skyline Boulevard provides one 3.5m traffic lane in each direction, a median, on-road cycle lanes and embayed parking within a 50 km/h environment. Through the central portion of the District Centre, the carriageway reduces to a 7.4m wide two-way pavement with no median separation, the road surface is raised generally flush with the adjoining pedestrian environment and the design speed reduces to 30 km/h. The change in geometry and streetscape therefore provides a clear visual and physical transition from a distributor road environment to a town centre main street environment.

The 30 km/h central section is particularly important in managing the interaction between vehicles and pedestrians. Pedestrian movements are expected to occur between the major retail and commercial uses to the west of Skyline Boulevard and the medical, recreational, community and other uses to the east. Rather than attempting to prevent these movements, the design recognises them as an inherent part of the District Centre and seeks to accommodate them within a low-speed environment. Lower vehicle speeds provide drivers with greater opportunity to observe and respond to pedestrians and significantly reduce the consequences and severity of any vehicle-pedestrian conflict. The use of a raised pavement treatment also reinforces the change in road environment and discourages higher through-speeds.

The proposed arrangement is also considered compatible with future bus operation. Buses would continue to operate within the general traffic lane through the centre similar to other centres. This is consistent with the function of a town centre main street, where a degree of reduced vehicle speed and occasional short delay associated with pedestrian activity is expected and appropriate. The

objective through this section of Skyline Boulevard should not be to maximise vehicle speed or uninterrupted traffic flow, but to maintain a reasonable level of traffic progression while providing safe and convenient access between the different parts of the centre.

It is acknowledged that, as the Whitby Local Structure Plan area progressively develops, both residential traffic using Skyline Boulevard and pedestrian activity within the District Centre will increase. At the forecast traffic levels, there is no current basis to conclude that the proposed pedestrian activity would result in unacceptable interruption to traffic flow. Pedestrian demand is also unlikely to be continuous throughout the peak hour, with crossing movements generally occurring in groups and with natural gaps forming between pedestrian movements. The relatively low 30 km/h vehicle speed further assists drivers in responding smoothly to these movements without the abrupt braking conditions that can arise where uncontrolled pedestrian activity occurs on higher speed roads.

Nevertheless, the interaction between pedestrian demand and through traffic should be monitored by the Shire of Serpentine Jarrahdale as the Whitby residential catchment and District Centre progressively build out. Monitoring should consider actual daily and peak-hour traffic volumes on Skyline Boulevard, vehicle operating speeds, pedestrian crossing volumes and behaviour and any vehicle delay through the central section. This would allow consideration of any future crossing treatments to respond to actual operating conditions rather than assumptions made several years before full development of Whitby.

Should monitoring ultimately identify periods where very high pedestrian crossing demand results in frequent or near-continuous interruption to north-south traffic, a more controlled pedestrian crossing treatment could then be investigated. This could include consolidation of pedestrian movements at a formal priority crossing or, if justified by the observed traffic and pedestrian warrants, a signal-controlled pedestrian crossing. A signalised treatment would allow pedestrian movements to be grouped into defined phases and could therefore provide greater certainty for both pedestrians and through traffic during the busiest periods. The current design does not preclude such a future treatment if it becomes warranted.

On this basis, the proposed 30 km/h main street treatment is considered an appropriate response to the forecast role of Skyline Boulevard. It maintains a clear north-south vehicle function while recognising that the road passes directly through the activity centre for Whitby. The forecast traffic demand of approximately 8,000 vehicles per day can be accommodated within the proposed single-lane-per-direction arrangement, while the reduced-speed central section provides an appropriate environment for the higher pedestrian activity expected within the District Centre. Continued monitoring as Whitby develops provides a suitable mechanism for determining whether any further pedestrian control measures are required in the longer term.

3.9 Provision for Service Vehicles

The current Whitby District Centre proposal makes clear provision for service vehicles through the inclusion of a substantial dedicated loading dock and back-of-house servicing area located to the rear of the major retail component. This servicing area is specifically intended to accommodate the loading and unloading requirements of the centre's larger retail and commercial uses, which is appropriate having regard to the district-level role of the development and the scale of commercial floorspace proposed.

Importantly, the current layout provides for service access by vehicles up to a 19 metre semi-trailer, together with smaller rigid trucks and other commercial service vehicles. This represents a robust servicing outcome for the major retail uses and demonstrates that the proposal has specifically responded to the operational requirements of the development, rather than relying on informal frontage loading or ad hoc servicing from customer parking and circulation areas.

From a transport planning and urban design perspective, the concentration of servicing activity within a dedicated rear loading environment is a positive feature of the proposal. It enables delivery and servicing functions to occur separately from the main street, active frontages and key pedestrian areas, thereby supporting the intended walkable town centre character while still providing an appropriate level of service vehicle accommodation for the development.

Figure 3-3 shows swept path analysis of a 19m prime-mover & semi-trailer vehicle accessing and exiting the loading area to the rear of the major retail units. Whilst the swept paths generally comply within the available road infrastructure as designed, the intersections with Skyline Boulevard (**Figure 3-6)** and Goodwood Boulevard **(Figure 3-7**) are required to include overrun areas for heavy vehicle turning movements, which are recommended to be incorporated at the detailed design stage.

Figure 3-5: Swept Path Analysis of 19m Vehicle Entering and Existing the Loading Area

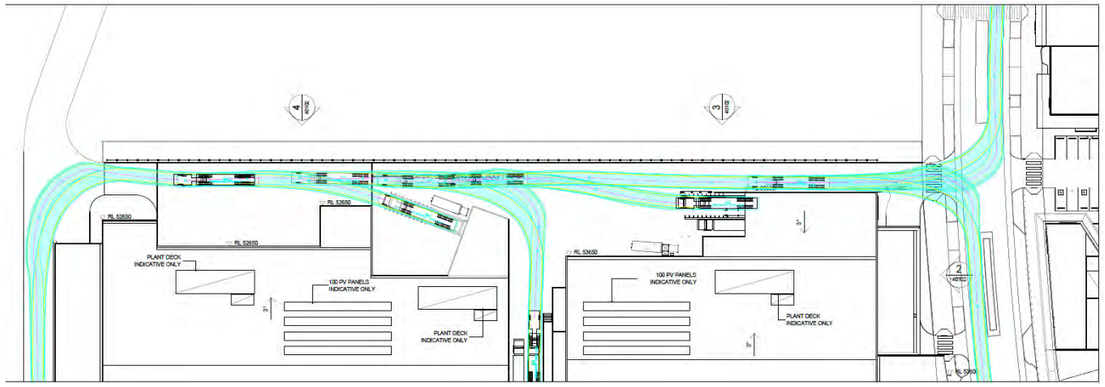
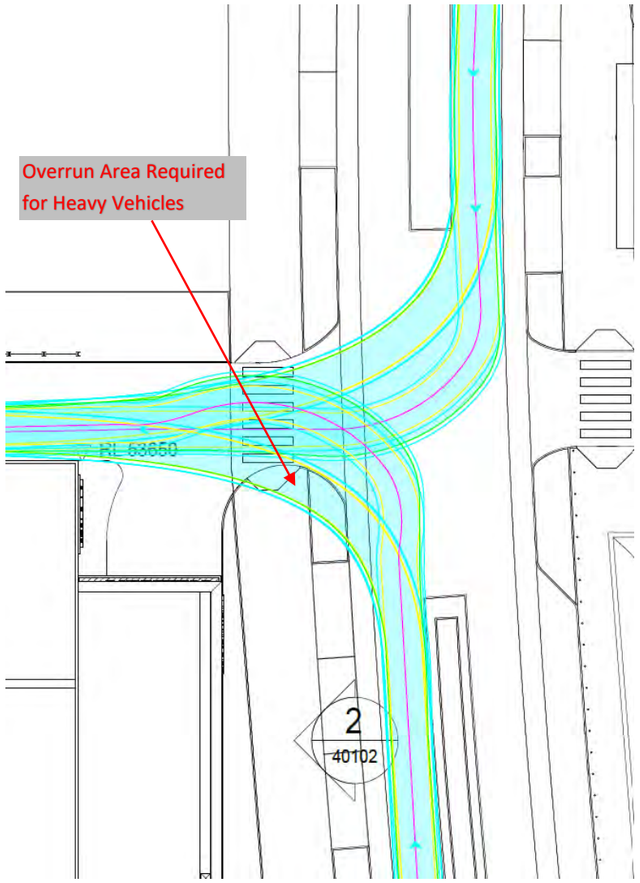


Figure 3-6: Skyline Boulevard / Loading Dock Entry Intersection



The Architect has since updated the plan of the intersection geometry to allow for the swept path of a 19m semi-trailer heavy vehicle as shown below.

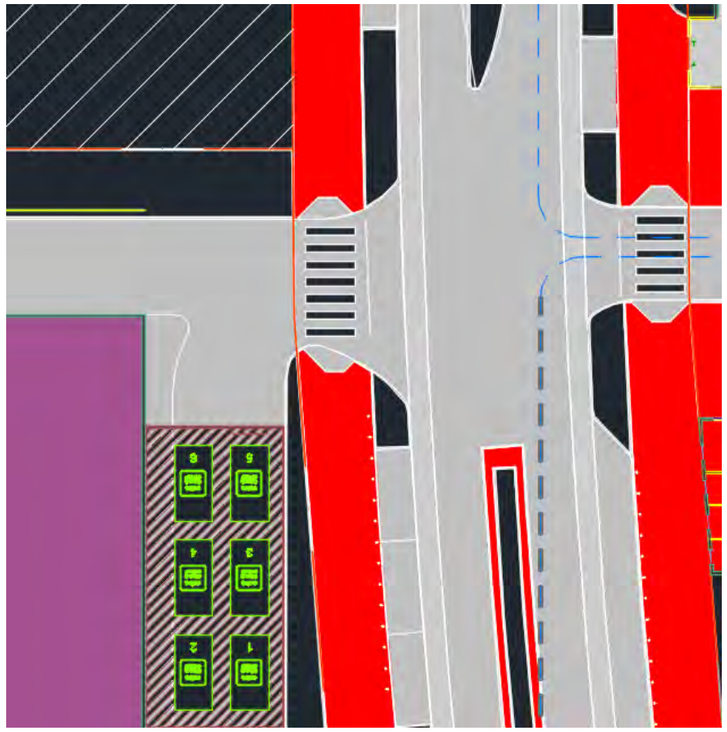
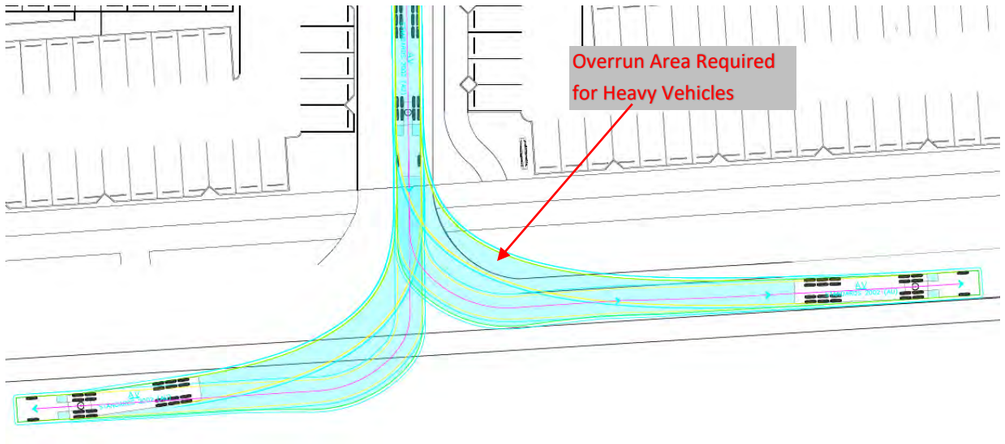
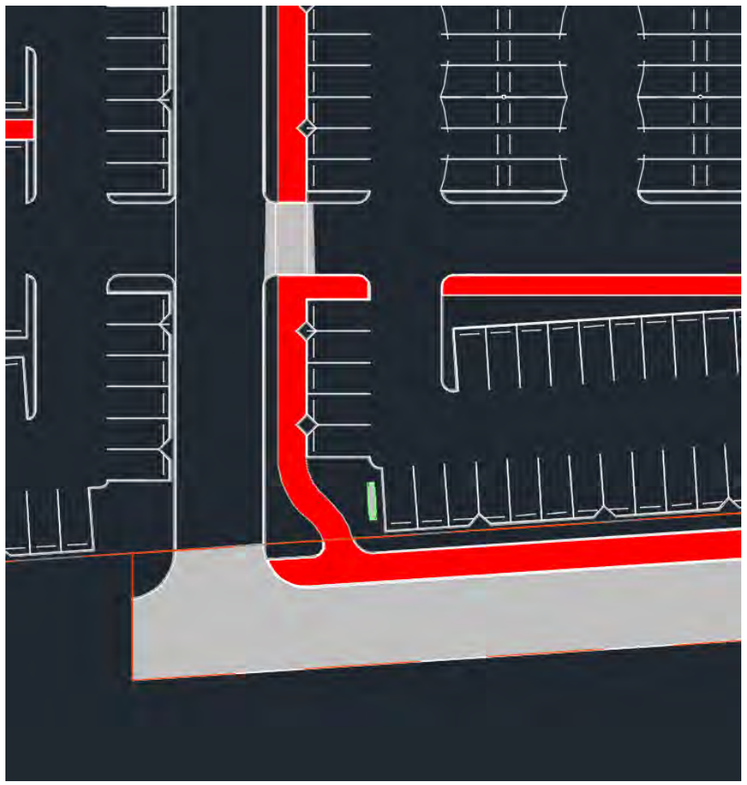


Figure 3-7: 19m Vehicle Exiting onto Goodwood Boulevard (single lane each direction)



The Architect has since updated the plan of the intersection geometry to allow for the swept path of a 19m semi-trailer heavy vehicle, based on the interim layout of Goodwood Boulevard as shown below.



In addition to the major rear loading dock serving the principal retail component, the proposal also provides for servicing to the land uses located on the eastern side of Skyline Boulevard. These uses, which include smaller commercial and community-oriented tenancies such as childcare, medical and gym-related development, are not expected to rely on the large-format loading arrangements required for the major retail uses. Instead, they can be appropriately serviced by smaller rigid trucks, vans, waste collection vehicles and other light commercial service vehicles using the internal access and parking / servicing areas associated with those eastern-side tenancies. This represents an appropriate servicing hierarchy, whereby high-intensity retail loading is concentrated within the dedicated rear loading dock, while lower-intensity land uses on the eastern side of Skyline Boulevard are serviced by smaller vehicles in a manner commensurate with their scale and operational needs.

3.10 Waste Collection

From a transport perspective, the waste collection methodology for Whitby District Centre is intended to operate as a coordinated on-site private collection system rather than a conventional local government kerbside arrangement. This is appropriate having regard to the scale, mixed-use nature and staged format of the development. The Waste Consultant, Talis, confirms that due to the size of the centre, a private waste contractor is anticipated to undertake collections, with collection times able to be flexibly arranged to suit the needs of the development. This provides an efficient operational outcome for a district-level activity centre, as it allows waste collection activity to be scheduled around tenant requirements, centre operations and site access constraints.

The current waste planning framework for the centre is based around a distributed system of bin storage areas serving the various tenancy clusters across the site. Talis identifies nine separate bin storage areas and calculates required refuse, recycling and, in some cases, FOGO bin volumes based on tenancy type, floorspace and collection frequency. In transport terms, this means the final site layout must enable a waste collection vehicle to safely access the nominated collection point or points serving these storage areas and undertake servicing without unreasonable conflict with customer traffic, pedestrians or general servicing activity. Talis also considers that, under the private contractor model, the contractor may ferry bins between the bin storage areas and the waste vehicle, thereby reducing the need for the collection vehicle itself to directly access every tenancy interface or loading location.

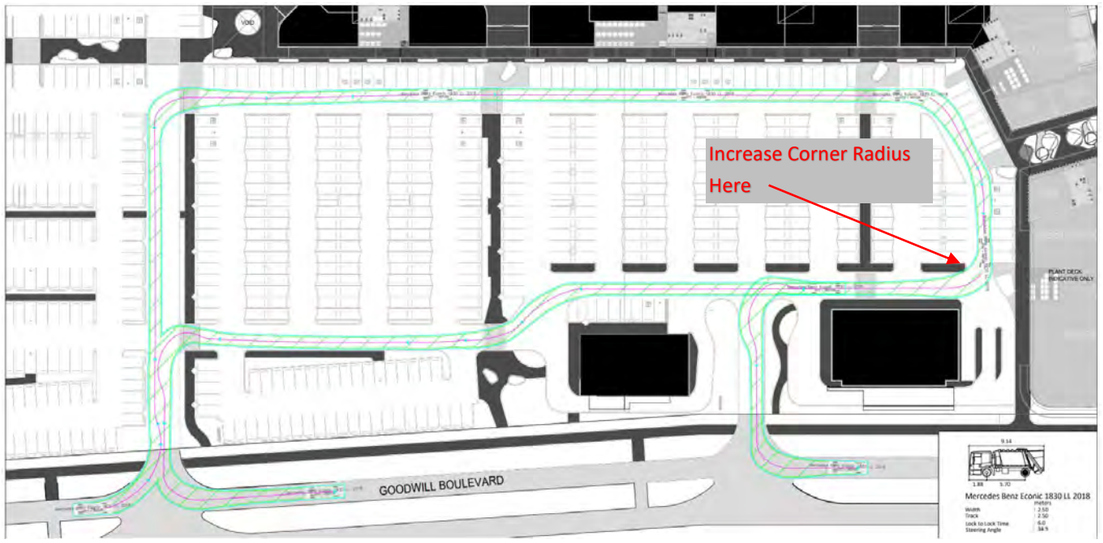
Rear-lift collection vehicles are identified as the appropriate design vehicle for servicing bin volumes between 240L and 1,100L, and these should therefore be treated as the governing waste collection vehicle for the purposes of detailed transport design.

Overall, the proposed waste collection methodology for Whitby District Centre is considered appropriate from a transport perspective, subject to detailed design. The private contractor model, distributed bin storage system, rear-lift collection vehicle assumptions provide a sound basis for a

practical and efficient waste servicing outcome. The final Waste Management Plan should confirm the preferred bin sizes, collection frequencies, collection points.

Buchan Architects has confirmed that car bays in the proximity of bin rooms will be allocated as “after hours loading bay”. Refuse vehicles are more likely to park in the aisles, but may use the loading bays particularly as early morning collections are the norm. Swept paths of the rear collection vehicle are provided below for reference: Some minor modifications to corner radii and car park layout are required and the subsequent changes to the designs are noted below.

Figure 3-8: Swept Path of Rear Loader Refuse Vehicle – Main Car Park



The Architect has since updated the plan of the main car park to allow for more manoeuvring space for the refuse vehicle swept path and an improved loading area adjacent to the restaurant and bin store as shown below.

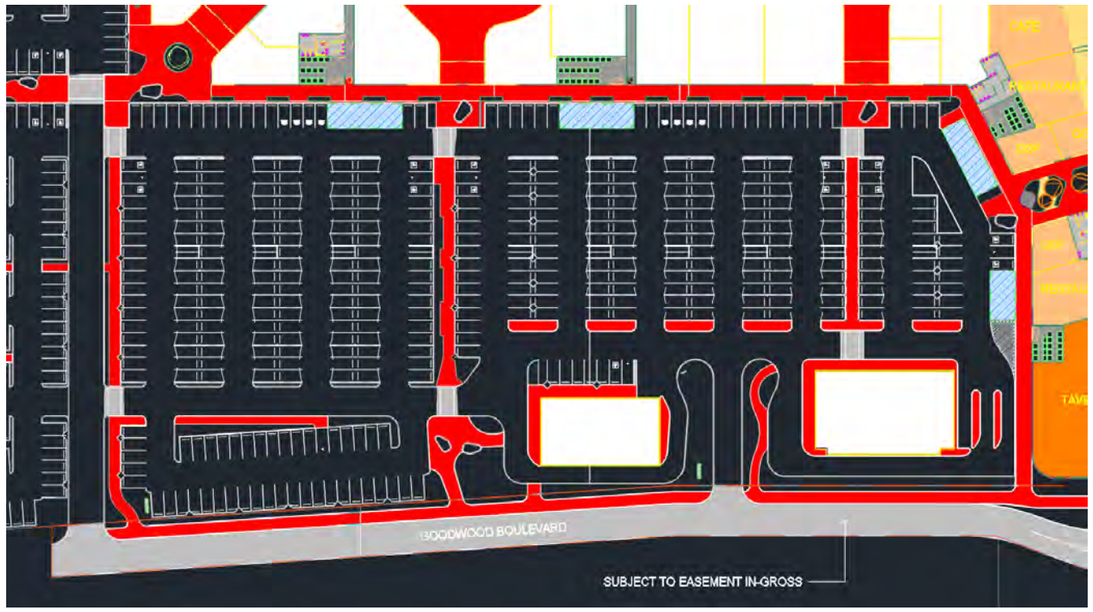
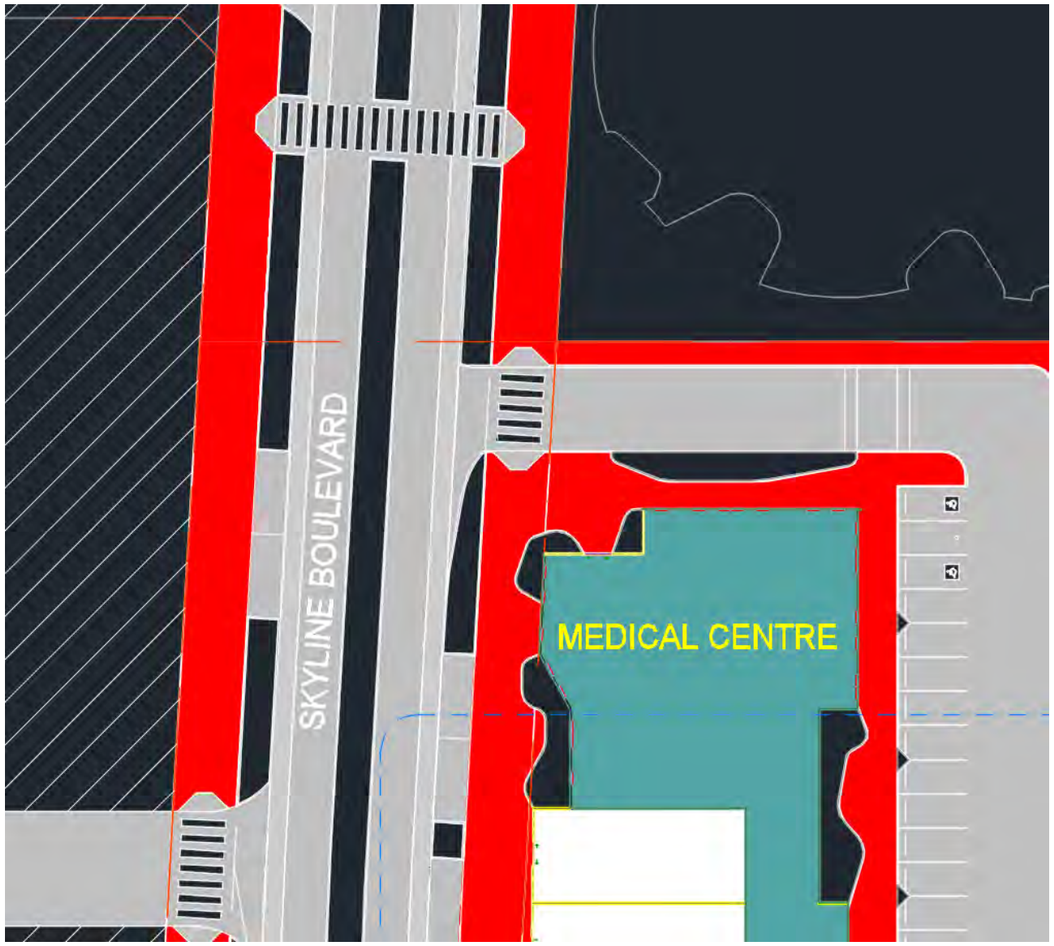


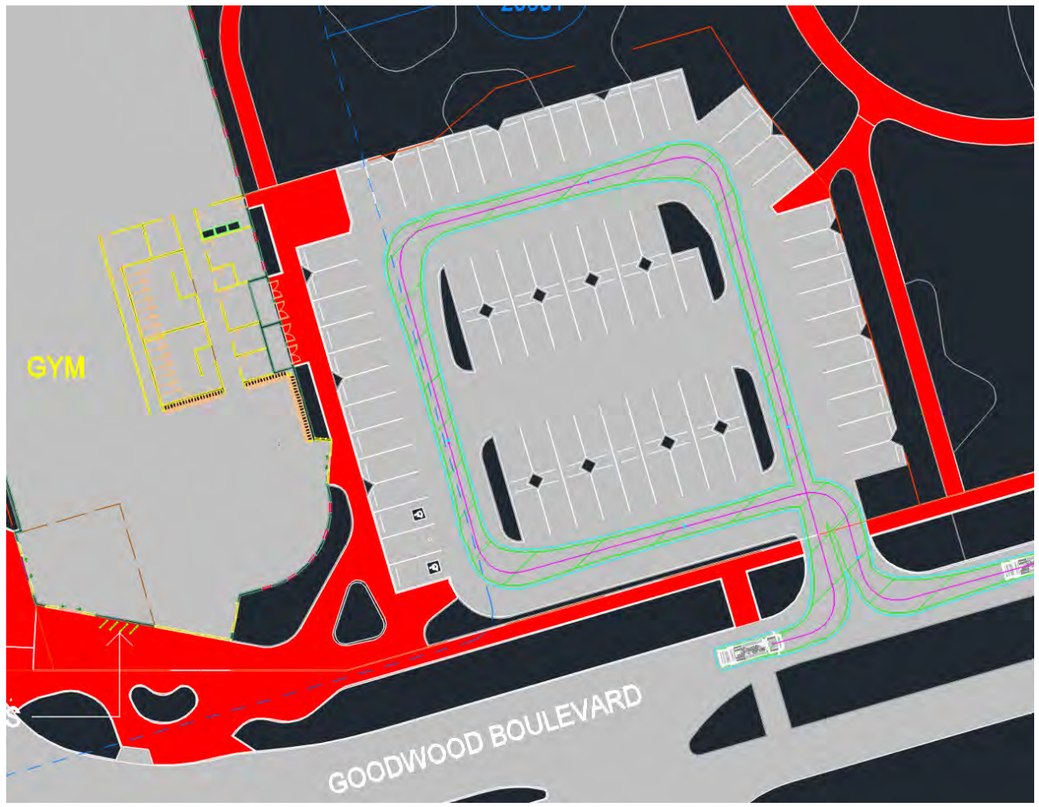
Figure 3-9: Swept Path of Rear Loader Refuse Vehicle – Medical Centre Car Park





The Architect has since updated the plan of this access intersection to allow for more manoeuvring space for the refuse vehicle swept path as shown below.

Figure 3-10: Swept Path of Rear Loader Refuse Vehicle – Gym Car Park



3.11 Pedestrian and Cycle Access

The Whitby District Centre proposal is intended to provide a high level of pedestrian and cycle accessibility, consistent with its function as the principal activity centre for the broader Mundijong–Whitby district cell. In contrast to the current surrounding semi-rural transport context, where active transport infrastructure remains limited and fragmented, the District Centre is planned as a walkable and cycle-friendly destination with a significantly more urban and people-oriented movement environment. The proposal is therefore expected to become the focal point of local walking and cycling activity within Whitby as the surrounding neighbourhoods continue to develop.

Cycling is intended to be accommodated on Skyline Boulevard with on-street cycle lanes in both directions and a slower speed 30km/hr area within the Whitby District Centre to provide for pedestrian cross movements between the proposed land uses on the east and west sides of Skyline Boulevard.

To the north and south of the Whitby District Centre, on-street cycle lanes are proposed as a continuation of the cycling infrastructure already approved to the north and delivered to the south within the Whitby estate. On-street cycle lanes will also be included in both directions on Goodwood Boulevard running east/west past the site.

This represents an appropriate district centre treatment in a more urban main street environment. Beyond the centre core, these facilities are intended to transition to more conventional on-street cycle lanes and / or generous shared path facilities.

In addition to on-street facilities, the Whitby District Centre is intended to be connected by a broader network of shared paths and recreational path links, linking residential precincts to the north and south with the commercial and retail land uses within the centre. The current landscape concept further reinforces this approach by showing strong pedestrian connections west and south, together with public realm and open space interfaces that are intended to draw walking and cycling movements into the centre.

Figure 3-11: Whitby District Centre – Pedestrian Desire lines Between Uses



Source: Emerge Associates – Landscape Concept

From an integration perspective, the pedestrian and cycle access strategy for the District Centre is strengthened by the surrounding subdivision planning already undertaken for nearby Whitby precincts. As the surrounding precincts develop, the District Centre will progressively become more accessible by active modes from the surrounding residential catchment. In this respect, the current proposal is not relying solely on existing external infrastructure but is instead positioned to form the central hub of an emerging wider active transport network.

Overall, the Whitby District Centre proposal provides an appropriate and well-considered framework for pedestrian and cycle access. The combination of dual-sided footpaths, pedestrian crossing opportunities, reduced internal traffic speeds, on-street cycling facilities, shared path connections and integration with surrounding subdivision infrastructure is considered to provide a suitable active transport outcome for a district-level activity centre. Subject to detailed design, these measures will support convenient internal circulation, improve accessibility from the surrounding catchment and reinforce the intended walkable, mixed-use and people-focused character of the centre.

3.12 Public Transport Provision Through Whitby District Centre

Public transport provision through Whitby District Centre is intended to evolve over time in line with the broader development of the Whitby catchment and the surrounding Mundijong–Whitby district cell. At present, the nearby public transport options are essentially bus-based, with no train station located in Whitby itself. The key local Transperth services are Route 259 and Route 262, which currently operate via Tinspar Avenue, Soldiers Road, Kiernan Street and Paterson Street, but do not currently enter further into the Whitby area near to the District Centre.

In the shorter to medium term, public transport access to the District Centre is expected to remain predominantly bus-based. However, the approved planning and transport framework for the centre specifically anticipates that future bus services will penetrate and operate through the District Centre on Skyline Boulevard and Goodwood Boulevard as development of Whitby progresses. The Whitby Local Structure Plan identifies that two bus services would be likely to access the centre, subject to future funding and service planning by the Public Transport Authority. The centre may function as a terminal location for at least one service in the interim period, particularly prior to delivery of the ultimate rail crossing and full east-west connector arrangement, while in the longer term both services are expected to through-run across the centre.

The likely future bus routing is east-west via Goodwood Boulevard, with onward travel north to Byford via South Western Highway. In support of this outcome, the centre layout makes provision for one active bus stops in each direction along Goodwood Boulevard, each sized to suit timed stops and articulated buses if required, together with an additional layover stand in an accessible nearby location. This is a requirement from within the Whitby Activity Centre Plan. The centre layout also allows for the provision of bus embayments and associated infrastructure on Skyline Boulevard north/south (both sides of the road). This represents an appropriate level of public transport planning for a district-level centre of this scale.

Importantly, the Whitby District Centre is also planned to integrate with a potential future commuter rail station located adjacent to the centre to the west, associated with the rail corridor and the future east-west connector crossing (Goodwood Boulevard). At present, the only rail service operating in the vicinity is the TransWA Australind Perth to Bunbury service, which operates one service in each peak period direction and may stop at Mundijong for pre-booked journeys. Accordingly, the current proposal should be understood as safeguarding for a higher-order future public transport outcome, whereby the District Centre could ultimately function as both a bus-served town centre and a rail-linked activity node, while in the foreseeable future remaining primarily reliant on local bus services.

4 Whitby Activity Centre Plan

4.1 Introduction

The Whitby District Centre is planned to be a place for the Mundijong-Whitby community, a place of shared experiences, a place supporting local employment, businesses and economic development. Overall, a place for people to connect.

The vision for the centre, which underpins the design of the centre and the approach to the Whitby Activity Centre Plan (ACP) is as follows:

Healthy, instinctive and welcoming; the Whitby Town Centre reflects its natural foothill landscape and evolving into an enterprising residential and employment hub for the Serpentine-Jarrahdale community.

It has a distinct civic-minded 'country town' atmosphere.

Its well-designed streets, amenities and public spaces that put people first facilitating a diverse friendly community, lively street encounters and locally unique experiences. The desire to generate a "country town" atmosphere with genuine community connection is particularly important.

In addition, the development of the centre, guided by the ACP, seeks to:

- Provide opportunity for the establishment of local businesses (and therefore local employment), particularly by lowering planning and bureaucratic barriers to establish businesses in this location.
- Recognise and retain vegetation, such as bushland identified as a local natural area identified by the Shire, which provides ecological and social value to the community.
- Ensure shops and businesses in the centre are easy and appealing to walk or cycle to, by creating a pleasant environment.
- Provide a diverse range of housing, appropriately located near activity, and complementing housing choice offered elsewhere in the Whitby estate.
- Enable easy accommodation of a future passenger train station, should one be established in the future.
- Accommodating future widening of the main street to accommodate large traffic volumes, while seeking to ensure that the main street remains a low-speed environment and does not become a hostile barrier for the centre.
- Recognising that the Cardup precinct (2km to the north) is likely to contain a range of uses, including service commercial and larger format retail, and avoiding direct competition for these uses (to the detriment of both Cardup and Whitby).

Key features of the ACP include:

- Approximately 22,000sqm net lettable shop retail space
- Approximately 31,000sqm total net lettable commercial space
- Employment for approximately 1000 people
- At least 592 dwellings proposed over 377 lots in a robust design that can accommodate additional density if justified by demand
- Over 12 hectares of open space, including retention of local bushland
- Space for public transport services as part of a connected street network
- Substantial tree planting on pedestrian-friendly streets, to reinforce the country town atmosphere of the centre.

4.2 Parking Requirements

The Whitby Activity Centre Plan sets out the car parking standards for the ACP area as follows:

Table 12:Car Parking Standards

LAND USE(S)	MINIMUM CAR PARKING REQUIREMENT
Amusement Parlour, Club Premises, Convenience Store, Corner Store, Fast Food/Takeaway, Market, Nightclub, Plant Nursery, Private Recreation, Public Amusement, Shop, Shopping Centre, Restaurant, Small Bar, Tavern	One bay per 20sqm net lettable area
Consulting Rooms, Medical Centre, Veterinary Establishment	6 spaces for 1 practitioner plus 4 for each additional practitioner
Residential (Single House, Grouped Dwelling, Multiple Dwelling, Ancillary Accommodation), Aged and Dependent Persons Accommodation	As per the Residential Design Codes and/or Apartment Design Guide, as applicable
Office	One space per 40sqm net lettable area
Showroom	One space per 60sqm net lettable area
Child Minding Centre	One space per five children accommodated
Radio, TV and Communication Installation, Home Business, Home Office, Industry: Cottage, Car Park	Nil
Caravan or Trailer Hire, Civic Buildings, Commercial Vehicle Parking, Display Home, Display Home Centre, Educational Establishment, Public Worship - Place of, Dry Cleaning Premises, Health Studio, Industry: Cottage, Reception Centre, Recreation Public, Residential Building, Residential Sales Office, Service Station, Warehouse	To be determined by Council

b. In calculating parking requirements, the following additional factors shall be considered:
   i. On-street parking shall be credited to adjacent or nearby land uses
   ii. Parking bays may be credited to more than one land use where those land uses are complementary, or where hours of operation will not result in undue conflicting demand for parking

The vast majority of uses within the Whitby District Centre have parking requirement of 1 bay per 20sqm of net lettable area (5 spaces per 100sqm). It is noted that parking bays may be credited to more than one land uses where those land uses are complementary, or where hours of operation will not result in undue conflicting demand for car parking.

4.2.1 Main Centre

The main shopping centre on the west side of Skyline Boulevard provides parking at 4.7 spaces per 100sqm while Stages 1A and 1B provide parking at just over 5 spaces per 100sqm.

The provision of 4.7 spaces per 100sqm for the main shopping centre is considered appropriate noting there will be an element of complementary uses with the tavern and restaurants having peak parking demand during the evening while the specialty uses have peak demand during the day.

Furthermore, the initial stages of development provide parking at a rate greater than those specified in the Whitby Activity Centre Plan.

4.2.2 Gym

The proposed gym has a 79-space car park which based on a floor area of 1926sqm equates to a provision of 4.1 spaces per 100sqm. Gym demand peaks during early mornings and evenings and ample additional overflow car parking within the centre is expected to be available at these times.

4.2.3 Medical Clinic / Swim School / Childcare / Specialty Retail

The medical clinic / swim school / childcare centre and 4 small specialty shops have a separate car park with 85 spaces in additional to good proximity to the further 26 on-street parking on Skyline Boulevard.

Assuming the childcare centre accommodates 120 children, it has a requirement for 24 spaces. Typically approximately 50% of this demand is staff parking while the other 50% comprises drop-off / pick-up activity at the start and end of the day. As such, the parking requirement for the majority of the day is expected to be 12 spaces.

The medical clinic has an area of 636sqm so assuming 10 practitioners operating at any one time (1 practitioner per 60sqm) equates to a parking requirement of 42 spaces.

The specialty retail with a combined floor area of 605sqm would have a parking requirement of 30 spaces.

Adopting the standard 5 spaces per 100sqm for the swim school (480sqm) would equate to 24 spaces.

Given the above, the medical clinic, swim school, childcare, specialty retail precinct on the east side of Skyline Boulevard is considered to generate a peak parking requirement of 108 spaces conservatively assuming all uses peak simultaneously. The provision of 85 on-site spaces and 26 on-street spaces is adequate to cater for this conservative peak demand.

4.2.4 Parking Summary

Given the above, the proposed parking provision is considered appropriate. Naturally, parking demands can continue to be assessed as development proceeds in stages to ensure that adequate parking is provided and avoid an over provision of unused parking.

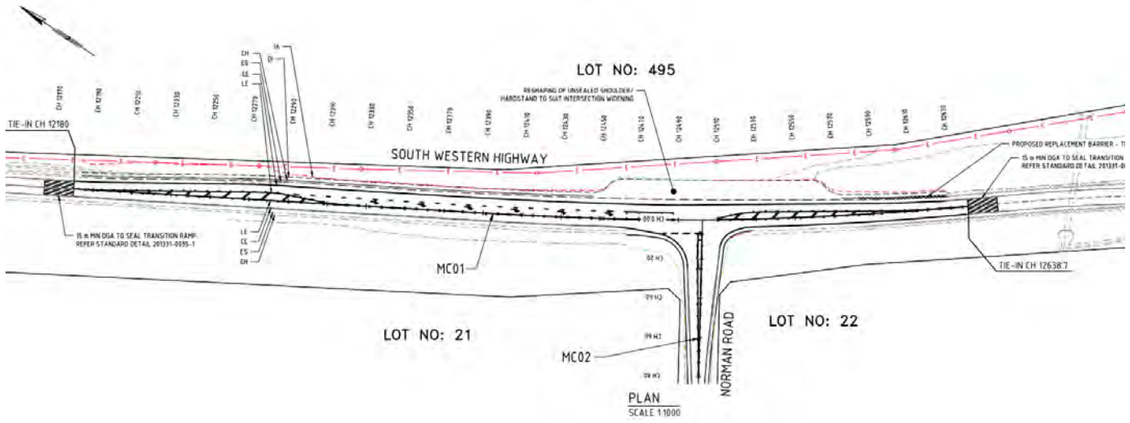
The car parking layout in the main shopping centre area and other individual uses to the east of Skyline Boulevard, as provided on the Architect's plan, proposes parking bay dimensions of 2.6m wide x 5.4m long and with parking aisle widths of at least 6.2m. This is in accordance with the requirements of a User Class 3A (Shopping Centre) in AS/NZS 2890.1:2004 Parking Facilities – Off-Street Parking', Therefore, the proposed parking layout is complaint with Australian Standard.

5 Changes to the External Transport Network

5.1 South Western Highway / Norman Road – T-Intersection Upgrade

The Shire of Serpentine-Jarrahdale has provided information relating to a proposed road upgrade to the intersection of South Western Highway / Norman Road. This project is the responsibility of Main Roads WA and it is understood that the design shown below is endorsed for delivery in the future, however the current timeframe is not published and should be confirmed with Main Roads WA.

This upgraded intersection layout will be incorporated into this TIA within the assessment of the surrounding intersections under the future year traffic demands resulting from the proposed development.



5.2 Bishop Road and Goodwood Boulevard Extensions (Whitby Local Structure Plan area)

The Bishop Road Extension is a proposed future east-west regional road connection initiated by the Department of Planning, Lands and Heritage (DPLH). As currently conceived, the road is intended to form a key strategic component of the future regional transport network within the Whitby area. The concept design, as received from DPLH, indicates that the Bishop Road Extension would act as a continuation and upgrade of the existing Bishop Road corridor and extend eastward into the Whitby Local Structure Plan area, with the alignment terminating within the Precinct 6 subdivision area, to the north of the Whitby District Centre.

One of the most critical features of the proposed extension is the inclusion of a grade-separated overpass across Soldiers Road, which seeks to enhance east-west connectivity, mitigate delays caused by potential rail interactions, and promote uninterrupted regional movement. The intent is for the Bishop Road Extension to interface with Skyline Boulevard within the approved Precinct 6 subdivision, creating a direct through-link between the subdivision and the broader regional network, including the future Tonkin Highway Extension, which is a State Government funded project.

The Bishop Road extension is expected to play a significant role in providing alternate access to and from the Whitby precinct, reducing dependency on Norman Road and relieving pressure on existing intersections such as Norman Road / Soldiers Road and Kiernan Street / Soldiers Road. DPLH's proposal includes the identification of a Planning Control Area (PCA), covering approximately 2.6846 hectares, to safeguard the corridor for future road planning and ensure that land is reserved for transport purposes.

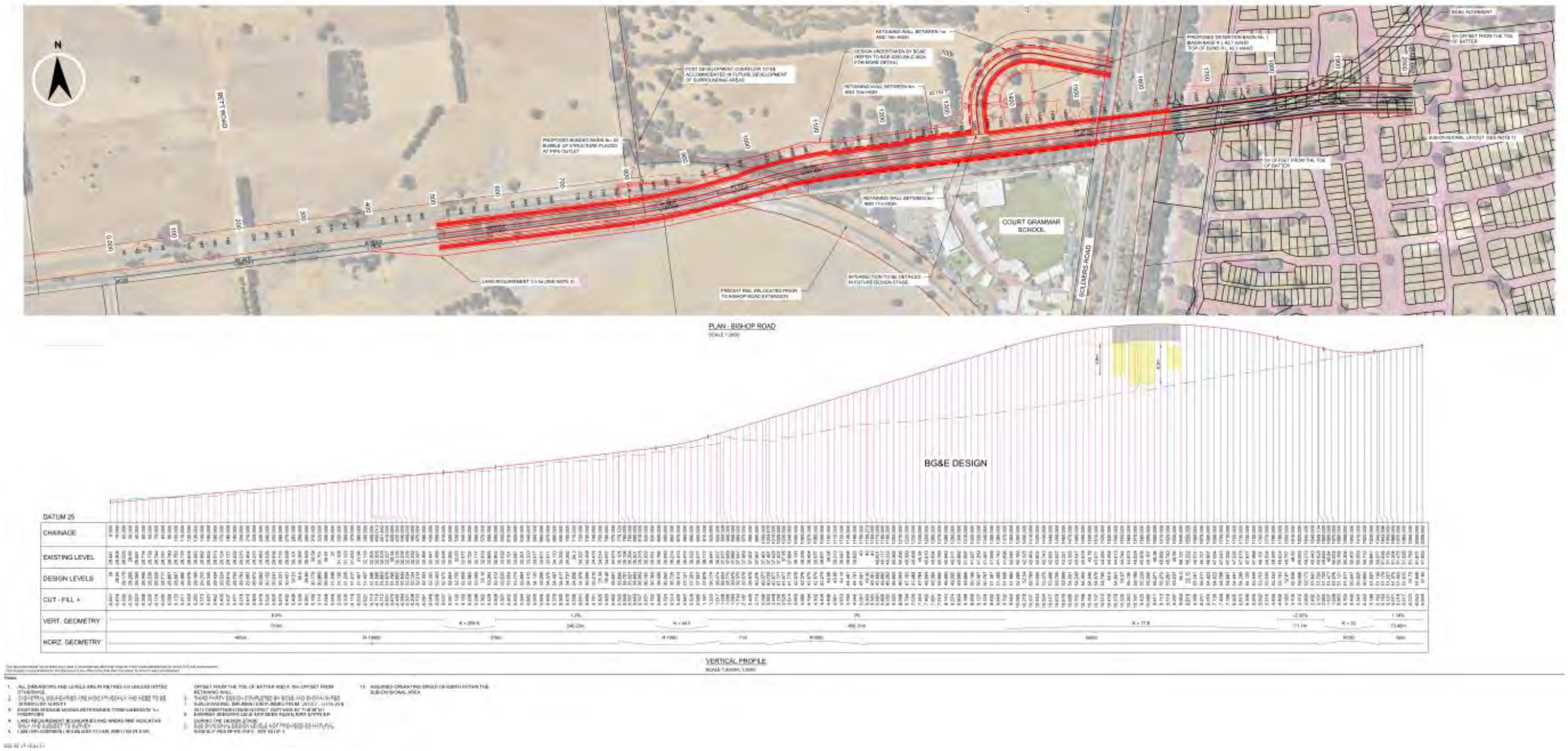
The Bishop Road Extension forms part of a broader regional transport concept, which also includes a future Goodwood Boulevard Extension connecting South Western Highway and Taylor Road via an overpass of Soldiers Road. Together, these strategic connections are envisioned to provide a high-capacity east-west movement spine capable of supporting the anticipated growth across the Whitby, Mundijong, and Cardup precincts.

It is important to note that, while the alignment has been identified by DPLH, there is no confirmed delivery timeframe for construction or operation of the Bishop Road Extension. Furthermore, DPLH has not conducted any traffic modelling to support the design and has instead referred project stakeholders to Main Roads WA (MRWA) to obtain projected volumes via the ROM24 regional traffic model.

The significance of this road from a planning perspective cannot be understated. Once delivered, it is expected to redistribute regional traffic flows and support public transport movement.

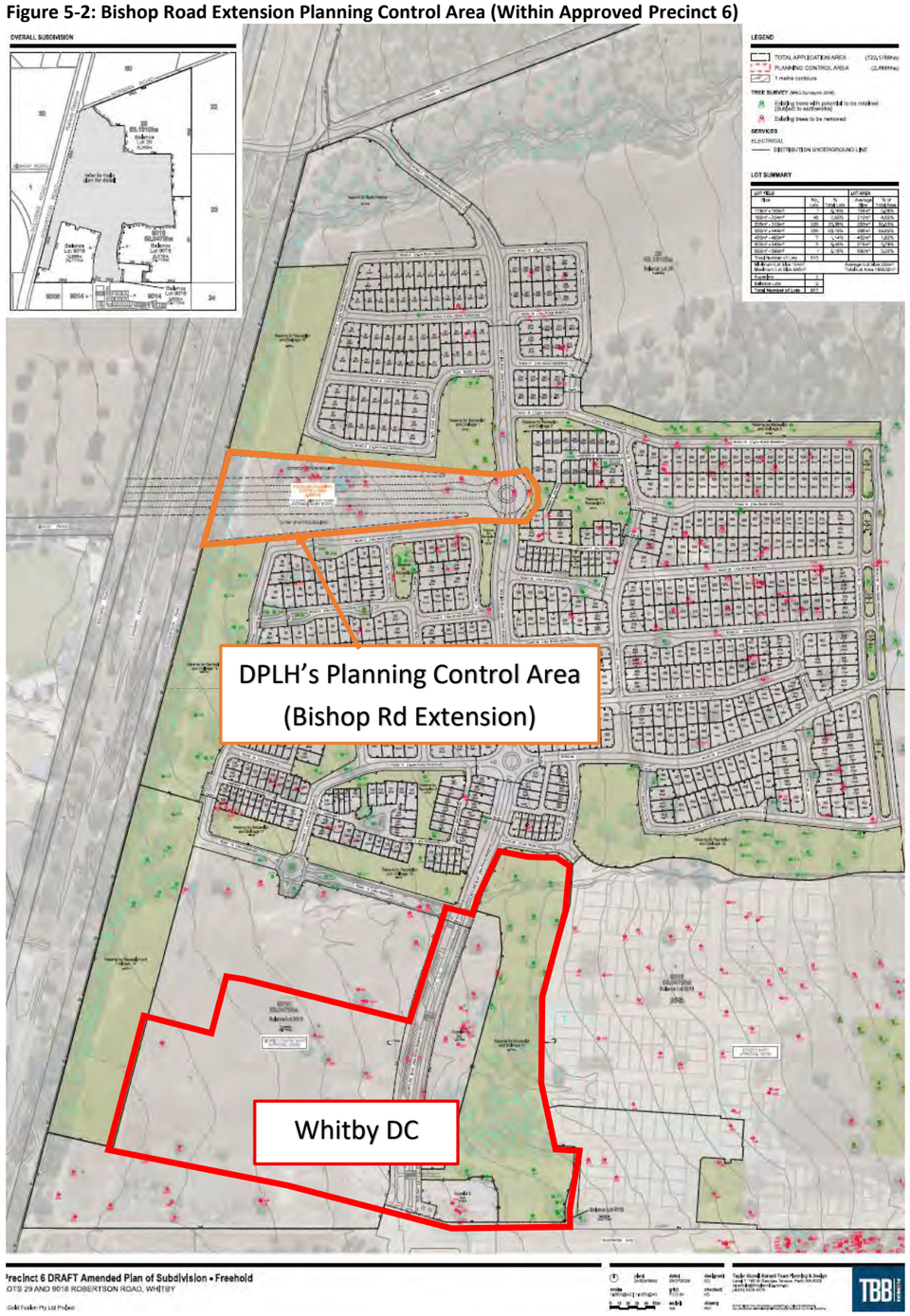
For the purpose of this assessment, it is considered that the extensions of Bishop Road and Goodwood Boulevard will not be constructed by 2031 but will however be constructed by 2041 even though the timescale for the Bishop Road extension is likely to be longer than this.

Figure 5-1: Proposed Bishop Road Extension – Department of Planning, Lands and Heritage Design



Source: Department of Lands and Heritage (DPLH)

Figure 5-2: Bishop Road Extension Planning Control Area (Within Approved Precinct 6)



5.3 Goodwood Boulevard Extension (Integrator B) construction between Taylor Road and South Western Highway

This future road project makes up part of the Shire of Serpentine-Jarrahdale's Mundijong-Whitby Urban Traditional Infrastructure Development Contribution Plan. It is intended that this road upgrade take place on a timeframe after 2031.

The road, which does not currently exist, is intended to cross the current Whitby Structure Plan area and will be required to support the development envisaged under the Mundijong District Structure Plan. The road reserve width of Goodwood Boulevard is expected to be in the order of 30 to 35 metres depending on detailed design. The following items are included in the Development Contribution Plan for Goodwood Boulevard:

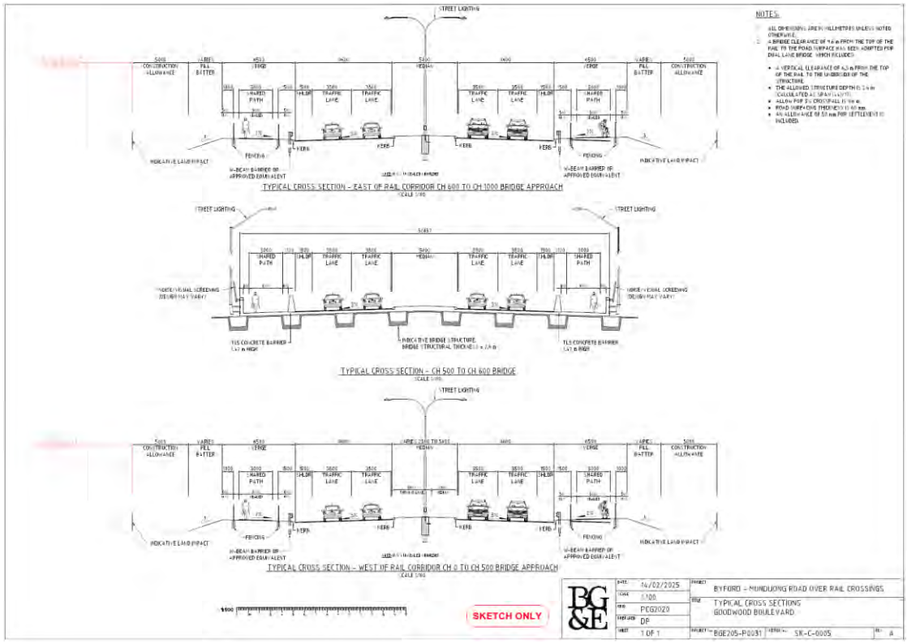
- Land required in excess of a standard 20m reserve, to achieve a 30 to 35 wide road reserve, plus additional land where necessary to accommodate channelisation, batters and/or roundabout construction at the following intersections;
  - Taylor Road (Roundabout)
  - Soldiers Road (Roundabout)
  - South Western Highway (Channelised Intersection)
- Earthworks for the whole road reserve;
- Complete road construction based on the Liveable Neighbourhoods Integrator B standard;
- Associated drainage works including water sensitive urban design measures;
- Traffic control devices including intersection treatments and associated works;
- Construction of one at-grade rail crossing;
- Costs associated with one rail crossing closure (Keirnan Street);
- Shared paths;
- Utility removal, relocation and insertion; and
- Associated costs including design, administration and management.

The construction of the at-grade crossing is subject to agreement between the Shire's Road Manager and Rail Infrastructure Manager

Interim Solution:

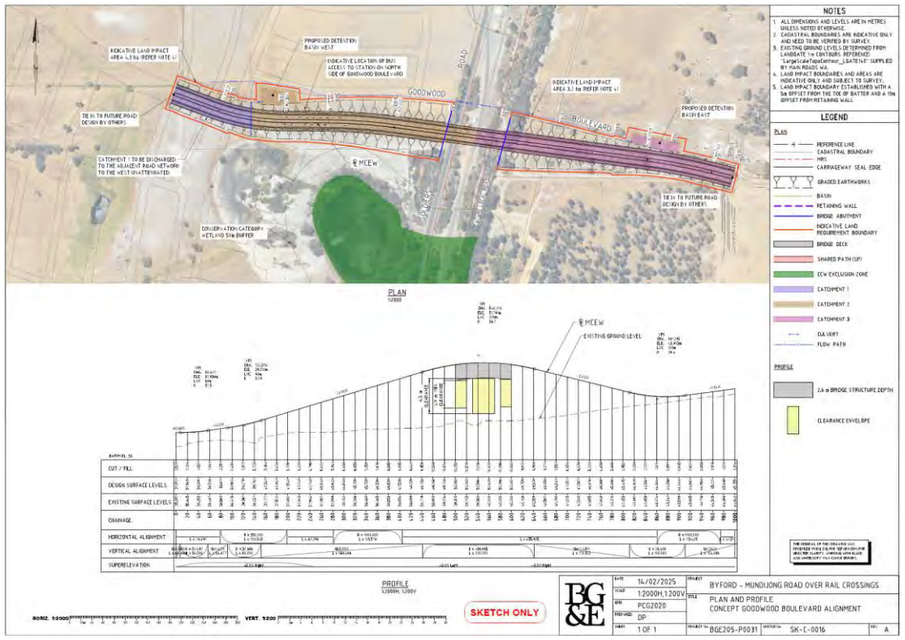
Prior to the final form of the Goodwood Boulevard Extension being completed, an interim solution will feature a single lane each direction format (connecting to the Skyline Boulevard roundabout), with central median island and staged right turn movements at the access point to the Whiby District Centre, as shown on the development plans.

Figure 5-3: Typical Cross-Section – Goodwood Boulevard Extension (Final Form)



Source: Department of Lands and Heritage

Figure 5-4: Typical Long-Section – Goodwood Boulevard Extension (Final Form)



Source: Department of Lands and Heritage

5.4 Goodwood Boulevard – Interim and Ultimate Design

Goodwood Boulevard is intended to form an important east-west connection through the Whitby District Centre and wider Whitby Local Structure Plan area. Through and immediately adjoining the District Centre, Goodwood Boulevard is to be designed generally to a Neighbourhood Connector A standard, consistent with the section of Goodwood Boulevard already constructed to the east of Skyline Boulevard.

The proposed cross-section is to include appropriate pedestrian and cycle infrastructure, including a shared pedestrian path with a minimum width of 2.0 metres and on-street cycle provision, providing continuity with the existing facilities east of Skyline Boulevard and supporting safe and convenient active transport access through the District Centre. Maintaining a consistent road and active transport treatment along Goodwood Boulevard will provide a clear and legible connection between the existing and future parts of the Whitby movement network.

Until the ultimate westward extension of Goodwood Boulevard across the railway corridor is delivered, the road will operate as a temporary no-through connection to the west of the District Centre. A suitable temporary vehicle turnaround area is therefore to be provided at the western extent of the constructed road. This arrangement will allow vehicles, including service and emergency vehicles where required, to safely turn around during the interim development period and will remain in place until the future connection across the railway is constructed. The temporary turnaround should be designed so that it does not prejudice delivery of the ultimate Goodwood Boulevard alignment or the future east-west connection across the rail corridor.

5.5 Norman Road / Skyline Boulevard Intersection and Skyline Boulevard Completion

The future completion of Skyline Boulevard to Norman Road, including construction of the Norman Road / Skyline Boulevard intersection will be completed as part of the approved Whitby Precinct 6 development. This northern section of Skyline Boulevard forms an important part of the ultimate access and movement framework for the Whitby Local Structure Plan area. This connection will provide a direct northern link between the Whitby District Centre, surrounding residential precincts and Norman Road, and will strengthen the north-south distributing function of Skyline Boulevard as development of Whitby progresses.

To ensure that the District Centre is appropriately connected to the surrounding road network at the time it becomes operational, it is recommended that a condition of development approval be imposed on the Whitby District Centre requiring completion of Skyline Boulevard, including the Norman Road / Skyline Boulevard intersection, prior to occupation of the Whitby District Centre development.

This timing requirement will ensure that the District Centre does not rely solely on the existing southern access routes during its operational phase and that the planned northern connection is available when the centre begins generating traffic. The Norman Road / Skyline Boulevard intersection and associated road connection should therefore be treated as a planned future change to the external road network and delivered before occupation of the development.

5.6 Tonkin Highway Extension and Thomas Road Upgrade (Thomas Road to South Western Highway)

The $1.045 billion Tonkin Highway Extension and Thomas Road Upgrade is jointly funded by the Australian ($755 million) and Western Australian ($290 million) Governments. The extension of Tonkin Highway will provide an efficient, direct connection to South Western Highway, improving access, safety and travel times for commuters and freight. It will attract heavy traffic away from local roads, creating safer and quieter local communities.

This project is currently under construction and is expected to be completed in late 2028.

These projects are being delivered together due to the timing of development and delivery, overlap of stakeholders and geographical location.

Tonkin Highway Extension:

This project involves a new 14 km four-lane dual carriageway between Thomas Road and South Western Highway. It includes:

- Principal Shared Path (PSP) along the eastern side of the highway for the full 14 km, with connections to Thomas Road, Orton Road, Bishop Road, Mundijong Road and South Western Highway
- Five underpasses and a footbridge at Orton Road for safe crossing by pedestrians, cyclists
- Grade-separated interchange at Bishop Road to improve traffic flow and safety
- Roundabouts at Orton Road, Mundijong Road and South Western Highway
- Underpasses at Abernethy Road and Shanley Road to support vehicle, pedestrian, cyclist, and horse movements
- Underpass at Gossage Road to support pedestrian, cyclist and horse movements
- Rail bridges at Bishop Road and Wright Road
- Noise and visual screening walls, lighting throughout, and improved local road access including emergency egress
- The project also caters for recreational needs by supporting the region's equestrian network with several dedicated horse underpasses and connections.

Thomas Road Upgrade

This upgrade covers the duplication of 4.5 km of Thomas Road between Kargotich Road and South Western Highway, and includes:

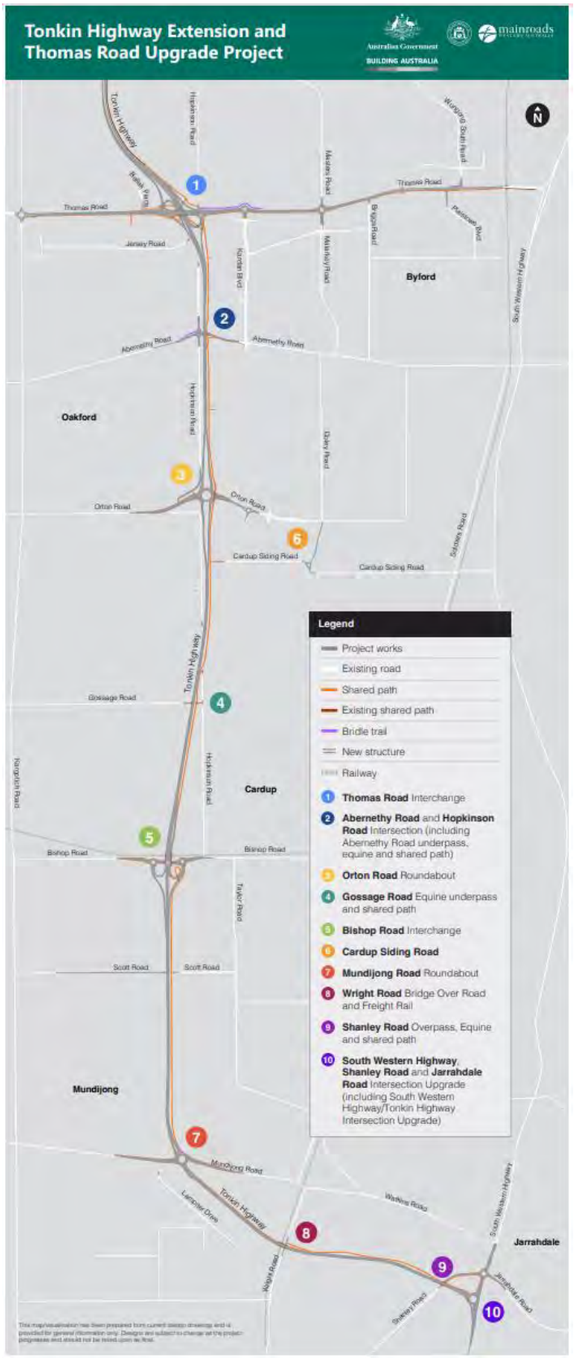
- A new grade-separated interchange with Tonkin Highway to improve traffic flow
- A new 4.5 km shared path on the southern side
- A signalised equine crossing connecting Byford and Darling Downs bridle paths
- Intersection upgrades, including:
  - New roundabouts at Kardan Boulevard and Masters Road/Malarkey Road
  - Left-in/left-out access at Ballak Place and Briggs Road
  - Cul-de-sacs at Hopkinson Road (north and south of Thomas Road)
  - New traffic signals at Plaistowe Boulevard
  - Reconstructed intersection at Wungong South Road
- Realignment of the equine path network north of Thomas Road to maintain connectivity

Figure 5-5: Thomas Road Upgrade Layout



Source: Main Road Western Australia

Figure 5-6: Overall Tonkin Highway Extension and Thomas Road Upgrade Project



5.7 Changes to Active Transport Network

The main changes to active transport infrastructure in the area will be the significant network of shared paths proposed as part of the approved Whitby Precinct 6 subdivision to the north of Whitby District Centre. Elsewhere, outside of the Whitby District Centre, the Whitby Local Structure Plan defines an overarching structure of on-road cycles lanes and off-road shared paths.

The proposed facilities for pedestrians and cyclists across the entire Whitby Local Structure Plan area are established at a high-level on **Figure 5-7**. In accordance with Liveable Neighbourhoods, shared paths are proposed on one side of the Neighbourhood Connector roads and a footpath on the other side. As these roads are predicted to carry more than 3,000 vehicles per day, a 1.5m wide on-road cycle lane is noted to be provided in each direction on these roads.

A number of features in the Whitby Local Structure Plan aim to encourage and achieve a higher level of active transport mode split, these being the connected road network proving a clear and legible road hierarchy, the extensive series of pocket parks, the focus on walkability to local nodes, the concentration of density around the district centre, key attractors and area of amenity, and the incorporation of linear parks into pedestrian routes to improve the quality and safety of the pedestrian and cycling environment. In addition, other measures may be employed within other areas of the LSP to promote non-motorised transport such as walking school buses, high quality end of trip facilities including bicycle lockers (activity centre), improved signage or major pedestrian and cycle routes, and encouragement to develop local nodes as a community focus.

Through the District Centre site, there will be on road cycle lanes along Skyline Boulevard and Goodwood Boulevard and a network of shared paths through the surrounding precincts. These active transport facilities will connect in with the wider on-road cycle lanes and shared path network as shown in **Figure 5-7**. The Whitby District Centre site is well placed to take advantage of the above future active transport provisions.

Figure 5-7: Whitby Local Structure Plan – Proposed Pedestrian & Cycle Network



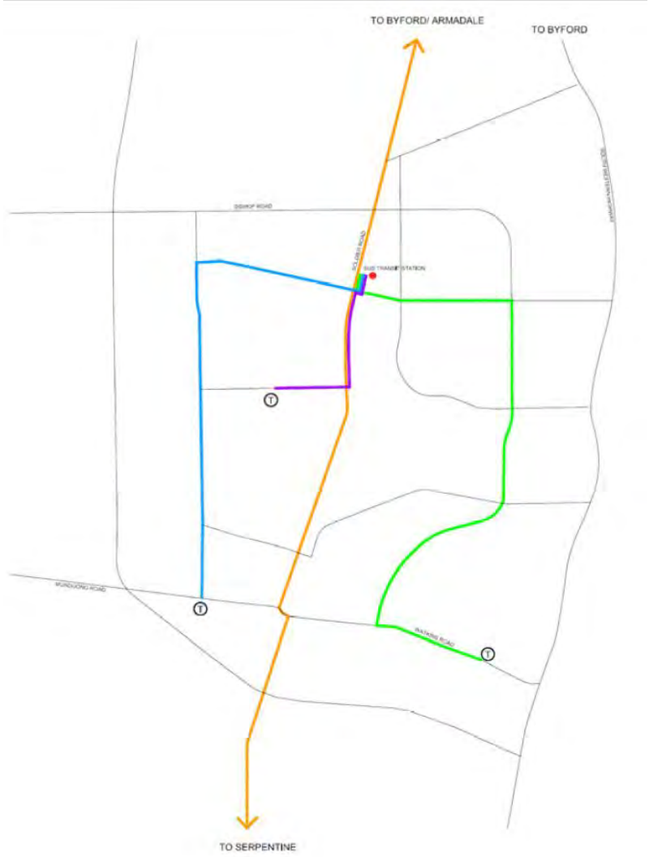
Source: Whitby Local Structure Plan

5.8 Changes to Public Transport Network

Information contained within the Whitby Local Structure Plan states that according to the information provided by the Public Transport Authority (PTA), four different bus routes are likely to service the entire District Structure Plan (DSP) area and the surrounding developments. **Figure 5-8** illustrates the different bus routes proposed.

It is expected that the green and the blue routes serve the DSP area. The purple route is expected to operate as Byford feeder. The orange route, which is planned to be a spine route, is supposed to connect the Byford/ Armadale Area to the DSP and Serpentine Jarrahdale to the south. A bus transit station and future rail station is proposed to the west of the future Whitby Activity Centre within the Whitby Local Structure Plan area. This transit station would need to be a dual system with turn around facility for buses. Each facility should entail two stands and one layover area with approximate dimension of 60m x 8m.

Figure 5-8: Proposed District Structure Plan Bus Routes



6 Integration with Surrounding Area

6.1 Surrounding Attractors / Generators

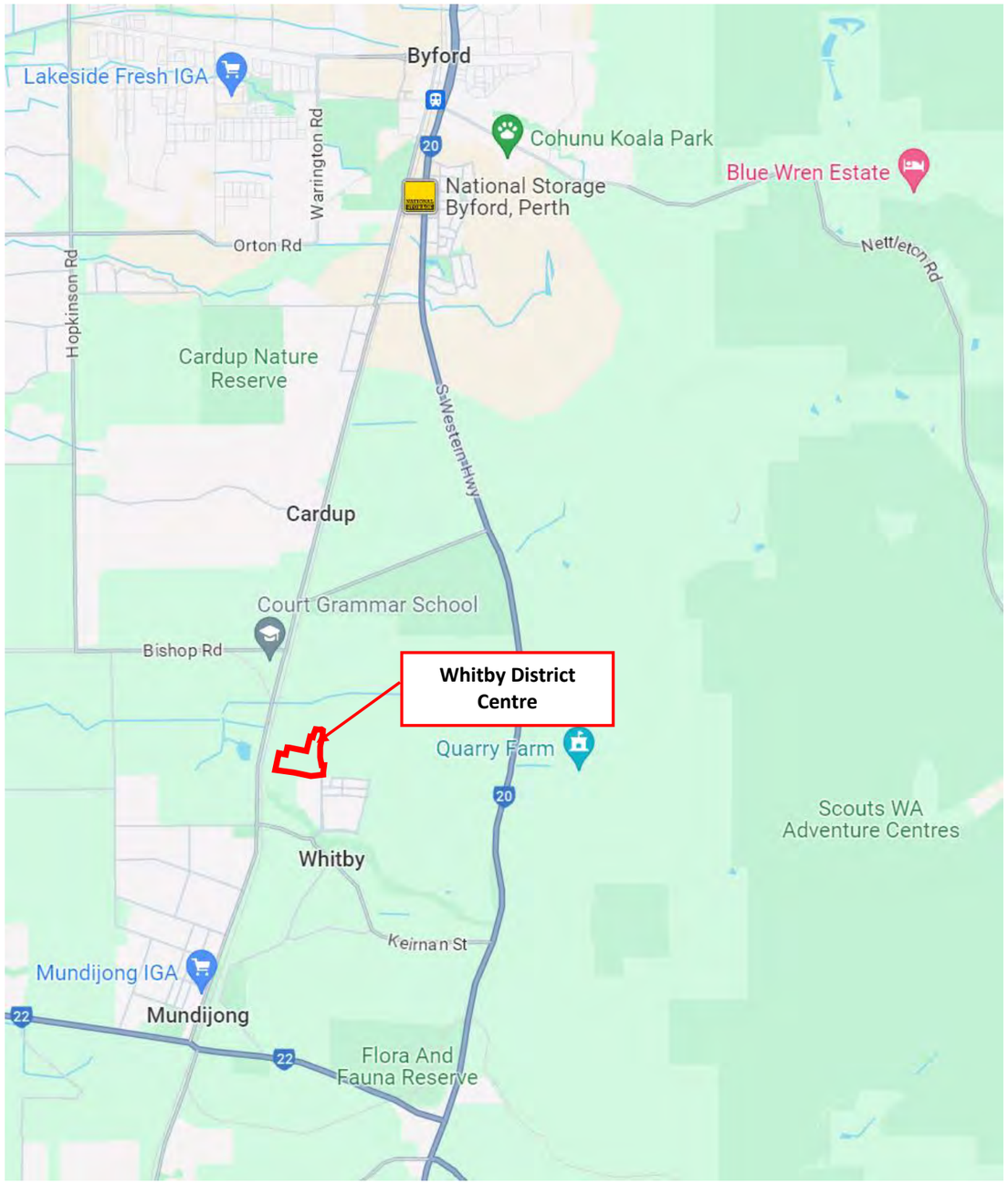
The Whitby District Centre site is located within the approved Whitby Local Structure Plan area and is intended to function as the primary activity centre for the broader Mundijong–Whitby district cell. In contrast to a typical residential subdivision site, the District Centre is itself intended to become a principal attractor, accommodating a mix of retail, commercial, residential, civic and community-based activity within a central mixed-use node.

The site is located generally east of Soldiers Road and the freight rail corridor, south of Bishop Road and west of South Western Highway within the Whitby growth area. The surrounding locality is currently transitioning from a largely undeveloped setting to an urbanised structure plan area, with residential subdivision already occurring to the south and south-east, including the surrounding Whitby precincts assessed in recent subdivision TIAs.

Key surrounding attractors and generators relevant to the District Centre include the emerging residential neighbourhoods within Whitby, the future mixed-use and higher-density residential development within and around the centre, the potential future passenger rail station identified adjacent to the centre, and the surrounding education and community uses contemplated by the Whitby planning framework, including school sites and a potential future TAFE site. The existing centres of Mundijong to the south and Byford to the north also remain relevant higher-order service destinations in the broader district context.

These key areas surrounding the proposed subdivision site are shown in **Figure 6-1**.

Figure 6-1: Existing Surrounding Land Uses



Source: Google (July 2024)

6.2 Proposed Changes to Surrounding Land Uses

The Whitby District Centre site is located within the approved Whitby Local Structure Plan area, which is zoned Urban Development under the Shire of Serpentine-Jarrahdale local planning framework. More specifically, the site is also subject to the approved Whitby Activity Centre Plan, which was approved by the WAPC on 30 July 2021 and establishes the detailed land use and built form framework for the centre.

The Activity Centre Plan overall provides for a centre area of approximately 40.1 hectares, including a mixed-use and commercial core, residential development, public realm / open space elements and retained natural areas. The approved framework contemplates approximately 31,000m² of non-residential floorspace, including around 22,000m² of shop retail floorspace, together with a minimum of 592 dwellings.

Surrounding land uses are therefore expected to change substantially over time as the broader Whitby structure plan area develops. In broad terms, land surrounding the District Centre is intended to transition to urban residential neighbourhoods and associated open space, while the centre itself is planned to accommodate the greatest concentration of retail, commercial, mixed-use and medium-density residential activity within Whitby. Future strategic transport corridors, including the proposed Bishop Road Extension and Goodwood Boulevard Extension, will also influence the long-term accessibility and function of land surrounding the centre.

6.3 Whitby Local Structure Plan

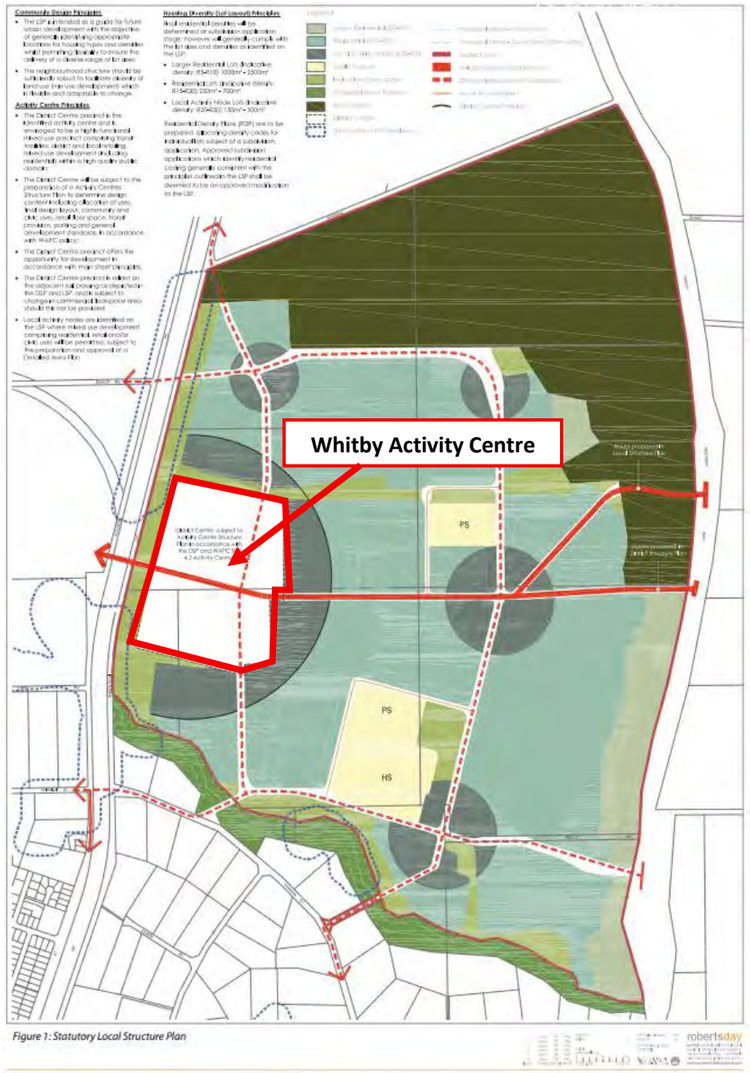
The Whitby Local Structure Plan establishes the broader planning basis for the Whitby community and identifies the District Centre as the principal activity node for the structure plan area. The planning intent is for Whitby to develop as an integrated urban community within the wider Mundijong–Whitby district structure plan area, with the District Centre providing a focus for employment, retail, services, housing diversity and community activity.

The Whitby Local Structure Plan and Activity Centre Plan together provide for a number of key elements directly relevant to the District Centre, including:

- a mixed-use district centre with a distinct country town atmosphere
- a precinct-based structure comprising Main Street, Commercial, Transitional, Centre Living and Residential precincts
- a range of residential densities and housing choice associated with and surrounding the centre
- provision for a potential future passenger rail station adjacent to the centre
- a future east-west main street / connector function through the centre and across the rail corridor
- allowance for a potential future TAFE site adjacent to the centre
- retention of natural landscape, drainage and vegetation features as part of the wider centre structure.

More recent subdivision development of Precinct 6 and Precinct 9 further confirm the evolving transport context surrounding the District Centre, including the importance of Skyline Boulevard, Norman Road, Kiernan Street, Soldiers Road and the future strategic regional road extensions.

Figure 6-2: Illustrative Whitby Local Structure Plan & Activity Centre



Source: Fig 1 – Whitby Local Structure Plan

6.4 Travel Desire Lines

Pedestrian / Cycling

The Whitby District Centre is intended to become the focal point of local walking and cycling movement within the Whitby structure plan area. While active transport infrastructure in the immediate locality is still emerging, the approved planning framework and surrounding subdivision development establish the basis for strong future pedestrian and cyclist desire lines converging on the centre from surrounding residential precincts.

The existing built-out development in the Whitby area already incorporate footpaths, shared paths and on-road cycling infrastructure, including along Skyline Boulevard, with additional facilities proposed as further precincts develop such as on Goodwood Boulevard. Over time, these are expected to connect progressively into the District Centre. The Activity Centre Plan also places clear emphasis on a people-focused public realm and a walkable main street environment. In the longer term, pedestrian and cycle desire lines are expected to extend north-south between surrounding neighbourhoods and the centre, east-west through the centre spine, westward across the rail corridor subject to future crossing arrangements, and toward future public transport nodes.

Motor Vehicle

The District Centre will ultimately be served by a more developed road network than currently exists. At present, the surrounding network is defined principally by Soldiers Road, Bishop Road, South Western Highway, Norman Road, Kiernan Street and the internal Whitby subdivision roads already delivered or approved. Skyline Boulevard is of particular relevance, given its existing and future role in distributing movement through the Whitby precincts and in supporting access to the centre.

The approved planning framework anticipates that the District Centre will connect into the surrounding network via its internal main street and future connector roads, with additional strategic accessibility benefits expected over time from the Bishop Road Extension, Goodwood Boulevard Extension and broader regional network changes including the Tonkin Highway Extension. These future links are expected to improve east-west connectivity, better distribute traffic and strengthen long-term accessibility to and from the centre.

Public Transport

Public transport accessibility to the Whitby District Centre is presently limited but is intended to improve as development proceeds. Existing bus services operate along Soldiers Road, linking the broader area with Mundijong, Byford and Armadale, although direct penetration into the centre is not yet established.

The Whitby Local Structure Plan and Activity Centre Plan both recognise the strategic importance of the centre in future public transport planning. This includes the potential for future bus services to operate through the centre, the likelihood that the centre may function as a terminal or through-route location for local bus services on Skyline Boulevard and Goodwood Boulevard, provision for a potential future passenger rail station adjacent to the centre, and the need for the internal street layout to accommodate bus stops and associated passenger movement. As the surrounding catchment develops, the District Centre is expected to become the logical focal point for local public transport service penetration into Whitby.

6.5 Level of Overall Accessibility and Integration

At present, the Whitby District Centre sits within an area of emerging rather than fully established urban accessibility. The surrounding movement network remains incomplete compared with the ultimate planning intent, and the current external road pattern still reflects the semi-rural origins of the area. However, this is typical of an emerging greenfield district centre and does not detract from the site's long-term strategic role.

Importantly, the District Centre is centrally positioned within the approved Whitby planning framework and is intended to become the primary mixed-use and community focus for the wider district cell. It is therefore well placed to integrate with the future residential catchment, local schools and community facilities, active transport corridors, future bus routes and the longer-term strategic road network.

The surrounding subdivision TIAs also reinforce that the broader Whitby transport network is progressively being planned and delivered in a manner that will support the centre over time, particularly through the development of Skyline Boulevard, improvements to Norman Road and Kiernan Street interfaces, and the longer-term influence of the Bishop Road and Goodwood Boulevard extensions.

Overall, while the present-day level of accessibility remains emerging, the Whitby District Centre is well positioned in strategic planning terms to integrate with the future Whitby community and the wider Mundijong–Whitby movement network, and to function as the principal local destination as development of the structure plan area continues.

7 Analysis of Transport Networks – Assessment Parameters

7.1 Whitby District Centre Development Scale

The proposed Whitby District Centre development land is currently undeveloped and does not currently generate traffic onto the existing road network in its own right. The roundabout of Skyline Boulevard / Goodwood Boulevard is currently constructed and this forms the extent of the currently evolving road network (as of April 2026).

This TIA report undertakes an analysis of the impact of the currently proposed Whitby District Centre development scale, specifically the impact of the generated traffic on the immediate and surrounding

7.2 Whitby District Centre Traffic Generation

The traffic generation rates in **Table 7-1** have been sourced from the ITE Trip Generation Manual – 9th Edition and applied to the proposed Whitby District Centre floor areas. For the purposes of this assessment, the Food & Beverage area has been combined with the LSA area, while the Major and Specialty retail areas have been combined and assessed using the Shopping Centre 820' rate. Amenities and BOH floorspace are considered ancillary internal areas and have not been assigned separate external trip generation to avoid double counting.

Table 7-1: ITE Trip Generation Rates – Whitby District Centre

Proposed Land Use	ITE Land Use / Code	Units	AM Peak Hour Trip Rate (2-way)	PM Peak Hour Trip Rate (2-way)
Childcare	Daycare Centre 565	KSF	12.18	12.34
Community Workshop	Recreational Com. Centre 495	KSF	2.05	2.74
Food & Beverage + LSA	Quality Restaurant 931	KSF	0.81	7.49
Gym	Health/Fitness Club 492	KSF	1.41	3.53
Major + Specialty	Shopping Centre 820	KSF	0.96	3.71
Medical	Medical Dental Office 720	KSF	2.39	3.57
Pharmacy	Pharmacy/Drug. w/o Drive-Thru 880	KSF	2.94	8.40
Swim School	Recreational Com. Centre 495	KSF	2.05	2.74
Pad Site 1				
Pad Site 2				

Notes: Most ITE rates are expressed per 1,000 square feet (KSF) and have been converted from m² using 1 KSF = 92.903 m².

Table 7-2 summarises the resultant traffic generation of each proposed land use and the overall total trips expected to be generated by the Whitby District Centre proposal.

Table 7-2: Estimated Peak Hour Traffic Generation – Whitby District Centre

Proposed Land Use	Area (m²)	Applicable Rate Units (KSF)	AM Peak Hour Trips		PM Peak Hour Trips	
			IN	OUT	IN	OUT
Childcare	1,360.40	14.64	95	83	85	96
Community Workshop	188.69	2.03	3	1	3	3
Food & Beverage + LSA	3,417.01	36.78	15	15	185	90
Gym	1,926.90	20.74	15	14	42	31
Major + Specialty	14,508.86	156.17	93	57	278	301
Medical	636.15	6.85	13	3	7	17
Pharmacy	613.32	6.60	13	6	27	28
Swim School	480.57	5.17	7	4	7	7
Total Peak Hour Trips	-	-	**252**	**186**	**633**	**575**
Pad Site 1	532.6	5.73	151	101	76	73
Pad Site 2	372.6	4.01	106	70	53	51
Total Pad Site Trips	-	-	**257**	**171**	**129**	**124**

In regard to the traffic generation figures given in **Table 7-2,** the following shall be noted:

- **Note:** For Food & Beverage + LSA, the ITE Quality Restaurant (931) AM directional split is not published in the source spreadsheet. A 50/50 IN/OUT split has therefore been assumed for the AM peak hour.
- **Note:** The WAPC TIA Volume 5 notes that fast food restaurants are heavily influenced by passing trade and says the former NSW Roads and Traffic Authority suggested at least 50% of trade may be from passing / linked traffic trips, thereby reducing total traffic generation attributable to these uses.

7.3 Whitby District Centre Traffic Distribution

From **Table 7-2** above, the major retail, majority of specialty, food & beverage & LSA and pharmacy land uses are expected to generate a total of approximately 900 two-way vehicle movements in the busier PM peak hour period. This is expected to be distributed across the two main site access intersections at Goodwood Boulevard and the site access intersection to the north of the Whitby DC area. Assuming an even distribution between the three access points, this would equate to approximately 300 two-way vehicle movements in the PM peak hour period at each site access point / route, or approximately 150 vehicle movements per inbound and outbound direction.

The Fast Food Pad Sites may attribute another 125 two-way vehicle movements in the PM Peak hour period, spread across the two main access points at Goodwood Boulevard, equating to approximately another 60 to 65 two-way trips at each access point, or another one vehicle per minute in the PM peak hour, i.e. 365 two-way vehicle movements at each of the Goodwood Boulevard access points.

The land uses proposed on the eastern side of Skyline Boulevard are expected to generate relatively modest levels of traffic movements in the busier PM peak hour period, with the Gym expected to generate approximately 70 two-way movements and the Childcare expected to generate 180 two-way movements. These volumes are expected to be easily accommodated within their respective car parks and reciprocal arrangements between complementary uses.

7.4 Assessment Year

This assessment analyses the impact of the transport component of the development 10 years following full development completion, which is expected to be 2041. The 2041 traffic volumes used in this assessment also include the future residential background traffic that will be present in 2041 generated by the entire Whitby Local Structure Plan area.

At this future year it is considered and assumed, for the purposes of this assessment, that the Bishop Road Extension, north of the Whitby District Centre, and the Goodwood Boulevard Extension to the west will be constructed and open to traffic.

7.5 Assessment Time Periods

The assessment time periods will be consistent with the identified morning and evening peak periods on the surrounding road network, taken from the traffic counts undertaken in the area, which are generally 08:00 – 09:00 and 15:00 – 16:00.

To be conservative and provide a robust assessment of traffic volumes on the road network, the PM peak traffic generation from the Whitby District Centre site will be combined with the road network peak of 15:00 – 16:00.

Traffic modelling has been undertaken later in this report (**Section 8**) for the key intersections of Skyline Boulevard / Bishop Road Extension (roundabout) and Skyline Boulevard / Goodwood Boulevard (roundabout) to understand the potential impact of the expected generated traffic on the future road network.

7.6 ROM 24 Traffic Model Assumptions

2041 Future Scenario – With Bishop Road & Goodwood Boulevard Extension:

This scenario uses outputs supplied by Main Roads WA from their ROM24 traffic model derived from the proposed regional road links, including Bishop Road, Goodwood Boulevard and Skyline Boulevard. These volumes were adjusted where necessary using observed counts and in line with MRWA modelling guidelines and further detail is provided below:

Peak hour traffic volumes at the 2041 horizon have been derived using the methodology taken from Section C.5 and C.5.2.1 of *Appendix C Future Traffic Demand Calculations for Operational Modelling – Version 1.2*.

Existing all-day traffic counts on South Western Highway (north of Kiernan Street), count site 50620 available from the MRWA Traffic Map have been interrogated to determine the current ratio of all day flows to peak hour flows in this area. The calculated peak hour ratio results are shown in **Table 7-1**, which have been applied to the 2041 link plots to derive peak hour traffic volumes for assessment.

Table 7-7-3: Existing All Day Traffic Volumes and Peak Hour Ratios

Traffic Count Site	Road Name	All Day Vehicles	Peak Hour Vehicles	Peak Hour Ratio
50620	South Western Hwy (north of Kiernan St)	7,184 (two-way)	AM = 523 (two-way)	AM = 7.3%
			PM = 587 (two-way)	PM = 8.2%

Figure 7-1 below shows the adjusted peak hour 2041 traffic volumes predicted on Bishop Road, Skyline Boulevard and Goodwood Boulevard using the above method. **Figure 7-2** shows the daily traffic volumes on Bishop Road, Skyline Boulevard and Goodwood Boulevard, with a total of **7,900** vehicles per day (two-way) predicted on Skyline Boulevard, south of the Bishop Road extension. The Bishop Road Extension is predicted to relieve traffic volume pressure on Kiernan Street to the south and Norman Road to the north.

Figure 7-1: Predicted 2041 Peak Hour Traffic Volumes – Bishop Rd, Skyline Blvd, Goodwood Blvd

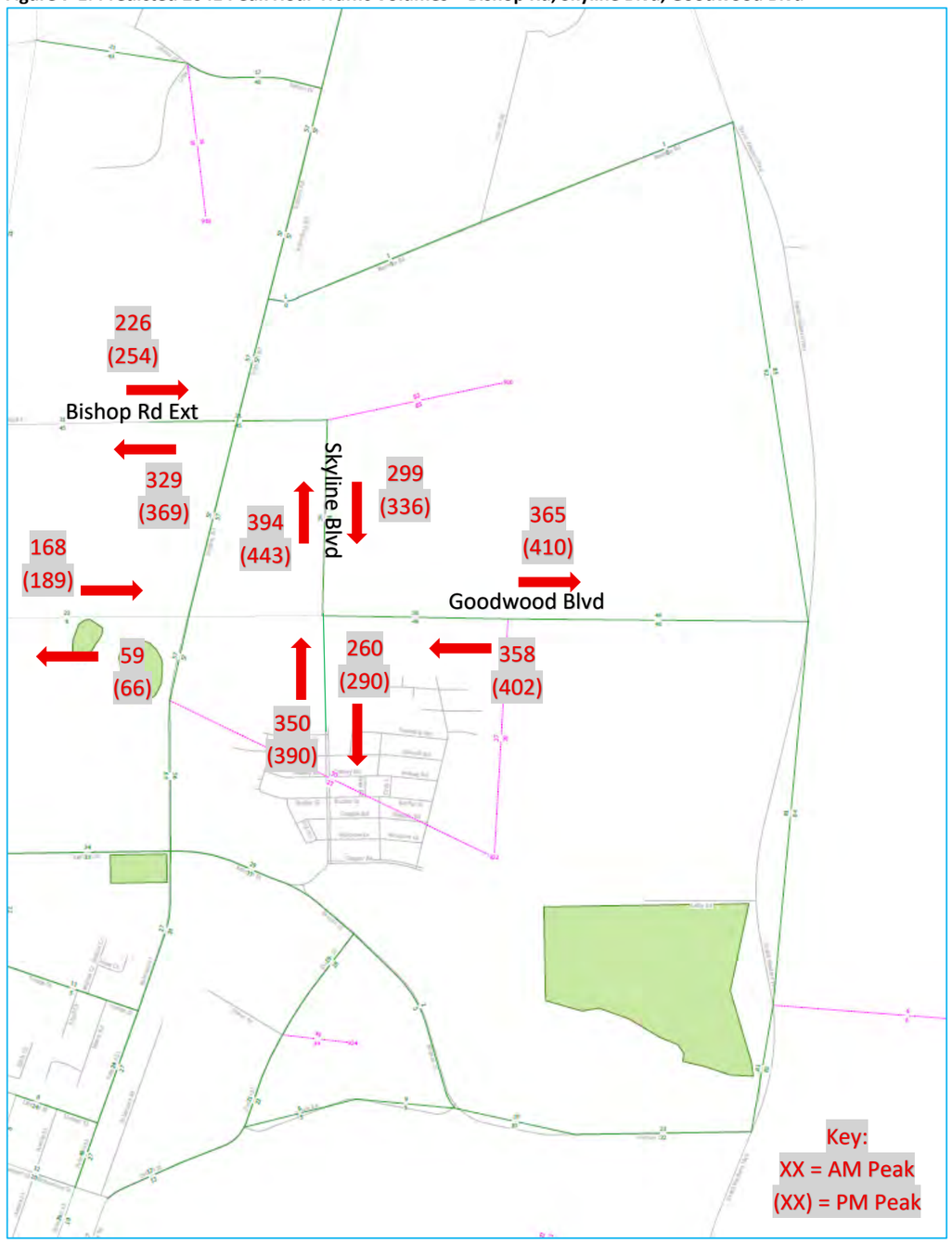
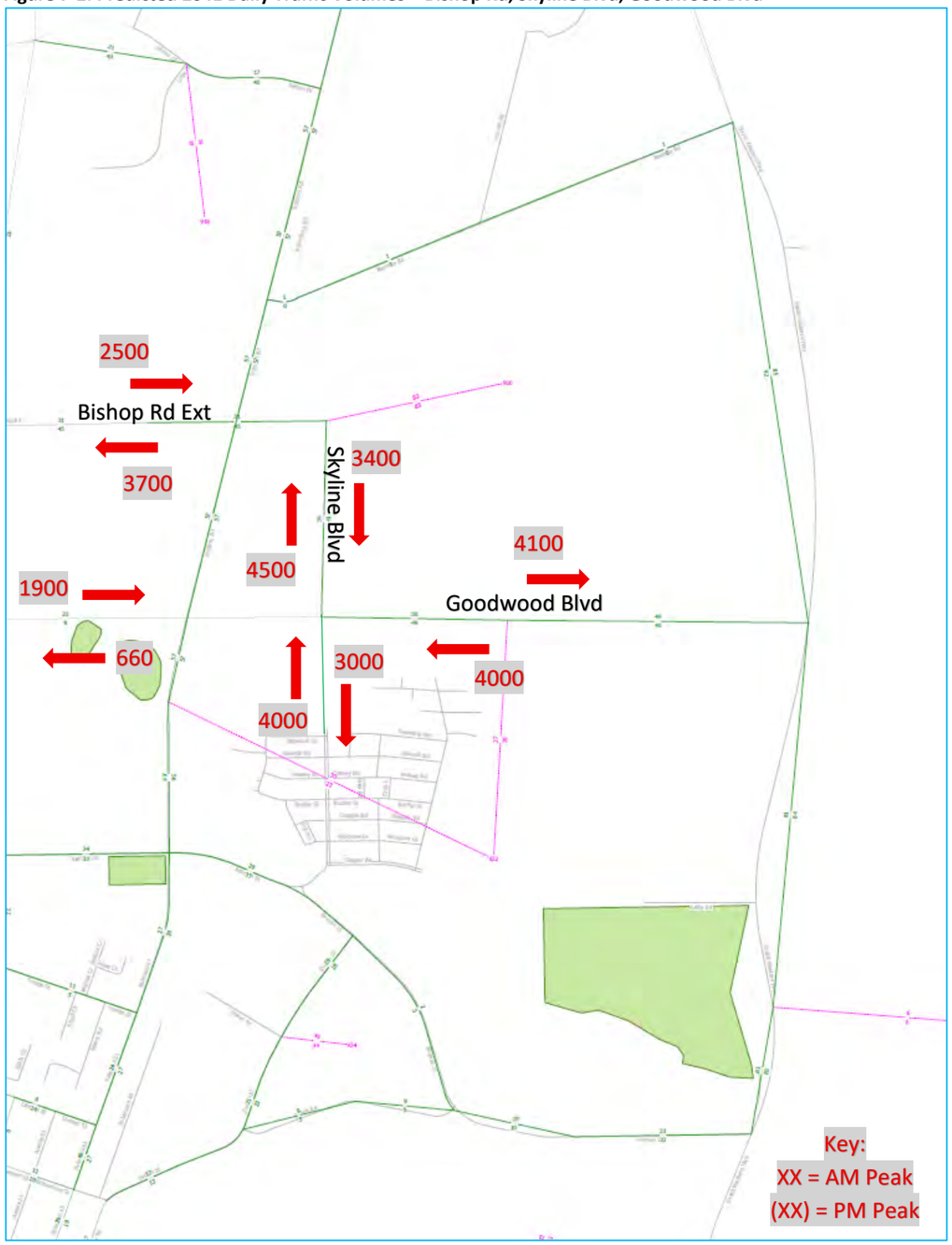


Figure 7-2: Predicted 2041 Daily Traffic Volumes – Bishop Rd, Skyline Blvd, Goodwood Blvd



8 Analysis of External Transport Networks – Intersection Assessments

8.1 Introduction

This section of the TIA presents the analysis of the transport network in particular the key intersections identified on the surrounding road network. **Section 7** of this TIA report previously sets outs in detail the assessment parameters assumed for each of the following traffic scenarios tested.

The intersections included within the Sidra intersection traffic modelling are:

1 Skyline Boulevard / Bishop Road Extension – Future Roundabout

2 Skyline Boulevard / Goodwood Boulevard – Existing Roundabout (completed as part of Whitby District Centre)

3 Kiernan Street / Tinspar Ave – Existing Priority Controlled T-Intersection

8.2 Extent of Intersection Analysis – 2041 Future Year Scenario

For the purposes of this Transport Impact Assessment, a future 2041 scenario has been analysed in order to establish the relative impact of the proposed Whitby District Centre on the operation of the surrounding road infrastructure.

Section 7 of this report details the assumptions and inclusions of each scenario in terms of traffic generation and composition for the future scenario.

For clarity the 2041 traffic volumes used in this assessment also include the future residential background traffic that will be present in 2041 generated by the entire Whitby Local Structure Plan area. At this future year it is considered and assumed, for the purposes of this assessment, that the Bishop Road Extension, north of the Whitby District Centre, and the Goodwood Boulevard Extension to the west (rail over road extension) will be constructed and open to traffic.

8.3 Impact on Intersections

Across each of the following four assessment scenarios, the SIDRA Intersection capacity results for each approach are presented in the form of Degree of Saturation (DOS), Average Delay, Level of Service (LOS) and 95th Percentile Queue. These characteristics are defined as follows:

- **Degree of Saturation (DOS)**: is the ratio of the arrival traffic flow to the capacity of the approach during the same period. The theoretical intersection capacity is exceeded for an un-signalised intersection where DOS > 0.80; or up to 1.0 for a signal-controlled intersection at a +10 year design horizon.
- **95% Queue:** is the statistical estimate of the queue length up to or below which 95% of all observed queues would be expected.
- **Average Delay:** is the average of all travel time delays for vehicles through the intersection. An unsignalised intersection is considered to be operated at capacity where the average delay exceeds 45 seconds for any individual movement; and
- **Level of Service (LOS)**: is the qualitative measure describing operational conditions within a traffic stream and the perception by motorists and/or passengers.

8.4 Intersection Assessment Results - 2041 Future Year Scenario:

8.4.1 Skyline Boulevard / Bishop Road Extension – Future Roundabout

By using the information on **Figures 7-1** and **Figure 7-2,** and by considering the calculated traffic generation of the Whitby District Centre**,** an estimate of the turning traffic volumes at the future roundabout of Skyline Boulevard / Bishop Road Extension and at existing roundabout layout of Skyline Boulevard / Goodwood Boulevard. The resultant traffic volumes have been run through a SIDRA intersection model of each roundabout to determine AM and PM peak operational results, as follows:

AM Peak Results:

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Skyline Blvd															
Lane 1[d]	347	3.0	347	3.0	1377	0.252	100	3.2	LOS A	1.7	13.0	Full	500	0.0	0.0
Approach	347	3.0	347	3.0		0.252		3.2	LOS A	1.7	13.0				
North: Skyline Blvd															
Lane 1[d]	145	3.0	145	3.0	1144	0.127	100	6.0	LOS A	0.7	5.4	Full	500	0.0	0.0
Approach	145	3.0	145	3.0		0.127		6.0	LOS A	0.7	5.4				
West: Bishop Rd Ext															
Lane 1	59	3.0	59	3.0	1109	0.053	100	3.5	LOS A	0.3	2.2	Full	500	0.0	0.0
Lane 2[d]	179	3.0	179	3.0	1544	0.116	100	7.6	LOS A	0.7	5.1	Full	500	0.0	0.0
Approach	238	3.0	238	3.0		0.116		6.6	LOS A	0.7	5.1				
All Vehicles	731	3.0	731	3.0		0.252		4.9	LOS A	1.7	13.0				

PM Peak Results:

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Prob. Adj. %	Block. %
South: Skyline Blvd															
Lane 1[d]	407	3.0	407	3.0	1412	0.289	100	3.2	LOS A	2.1	15.7	Full	500	0.0	0.0
Approach	407	3.0	407	3.0		0.289		3.2	LOS A	2.1	15.7				
North: Skyline Blvd															
Lane 1[d]	127	3.0	127	3.0	1121	0.114	100	6.1	LOS A	0.6	4.8	Full	500	0.0	0.0
Approach	127	3.0	127	3.0		0.114		6.1	LOS A	0.6	4.8				
West: Bishop Rd Ext															
Lane 1	67	3.0	67	3.0	1105	0.061	100	3.6	LOS A	0.3	2.5	Full	500	0.0	0.0
Lane 2[d]	200	3.0	200	3.0	1531	0.131	100	7.6	LOS A	0.8	5.8	Full	500	0.0	0.0
Approach	267	3.0	267	3.0		0.131		6.6	LOS A	0.8	5.8				
All Vehicles	802	3.0	802	3.0		0.289		4.8	LOS A	2.1	15.7				

In the AM and PM peak periods at the proposed future roundabout of Skyline Boulevard / Bishop Road Extension (once the Bishop Road Extension is constructed), this intersection is predicted to perform at level of service A and within acceptable operational threshold. Minimal queue lengths are predicted on all approach roads and all average delays are within the prescribed WAPC thresholds of acceptable performance. These results are based on the assumed 2041 traffic volumes taken from the information provided by MRWA's ROM traffic model and the roundabout is likely to support future traffic growth into the future beyond 2041.

8.4.2 Skyline Boulevard / Goodwood Boulevard Extension – Existing Roundabout Intersection.

AM Peak Results:

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Prob. Adj. %	Block. %
South: Skyline															
Lane 1[d]	316	2.0	316	2.0	904	0.349	100	8.0	LOS A	2.3	16.2	Full	500	0.0	0.0
Approach	316	2.0	316	2.0		0.349		8.0	LOS A	2.3	16.2				
East: Goodwood															
Lane 1[d]	368	2.0	368	2.0	1039	0.355	100	6.9	LOS A	2.3	16.4	Full	500	0.0	0.0
Approach	368	2.0	368	2.0		0.355		6.9	LOS A	2.3	16.4				
North: Skyline															
Lane 1[d]	316	2.0	316	2.0	1146	0.276	100	7.6	LOS A	1.7	12.0	Full	500	0.0	0.0
Approach	316	2.0	316	2.0		0.276		7.6	LOS A	1.7	12.0				
West: Goodwood															
Lane 1[d]	211	2.0	211	2.0	1063	0.198	100	6.7	LOS A	1.2	8.3	Full	500	0.0	0.0
Approach	211	2.0	211	2.0		0.198		6.7	LOS A	1.2	8.3				
All Vehicles	1211	2.0	1211	2.0		0.355		7.3	LOS A	2.3	16.4				

PM Peak Results:

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Prob. Adj. %	Block. %
South: Skyline															
Lane 1[d]	368	2.0	368	2.0	873	0.422	100	8.3	LOS A	2.9	20.9	Full	500	0.0	0.0
Approach	368	2.0	368	2.0		0.422		8.3	LOS A	2.9	20.9				
East: Goodwood															
Lane 1[d]	421	2.0	421	2.0	1012	0.416	100	7.0	LOS A	2.9	20.3	Full	500	0.0	0.0
Approach	421	2.0	421	2.0		0.416		7.0	LOS A	2.9	20.3				
North: Skyline															
Lane 1[d]	347	2.0	347	2.0	1166	0.298	100	7.2	LOS A	1.9	13.3	Full	500	0.0	0.0
Approach	347	2.0	347	2.0		0.298		7.2	LOS A	1.9	13.3				
West: Goodwood															
Lane 1[d]	211	2.0	211	2.0	1068	0.197	100	6.4	LOS A	1.2	8.4	Full	500	0.0	0.0
Approach	211	2.0	211	2.0		0.197		6.4	LOS A	1.2	8.4				
All Vehicles	1347	2.0	1347	2.0		0.422		7.3	LOS A	2.9	20.9				

In the AM and PM peak periods at the roundabout of Skyline Boulevard / Goodwood Boulevard (once the Goodwood Boulevard extension is constructed), is predicted to perform at level of service A and within acceptable operational threshold. Minimal queue lengths are predicted on all approach roads and all average delays are within the prescribed WAPC thresholds of acceptable performance. These results are based on the assumed 2041 traffic volumes taken from the information provided by MRWA's ROM traffic model and the roundabout is likely to support future traffic growth into the future beyond 2041.

8.4.3 Kiernan St / Tinspar Ave T-Intersection (Modelled as Two Legs).

Leg 1 – AM Peak Results:

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Keirnana St															
Lane 1	60	3.0	60	3.0	1246	0.048	100	7.4	LOS A	0.2	1.4	Short	50	0.0	NA
Lane 2	16	13.0	16	13.0	835	0.019	100	7.4	LOS A	0.1	0.5	Full	500	0.0	0.0
Approach	76	5.1	76	5.1		0.048		7.4	LOS A	0.2	1.4				
East: Tinspar Ave															
Lane 1	329	3.4	329	3.4	1886	0.175	100	0.8	LOS A	0.0	0.0	Full	95	0.0	0.0
Approach	329	3.4	329	3.4		0.175		0.8	NA	0.0	0.0				
North: Median															
Lane 1	242	0.0	242	0.0	1113	0.218	100	2.5	LOS A	0.9	6.3	Full	12	0.0	0.0
Approach	242	0.0	242	0.0		0.218		2.5	LOS A	0.9	6.3				
All Vehicles	647	2.3	647	2.3		0.218		2.2	NA	0.9	6.3				

Leg 2 – AM Peak Results:

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Median															
Lane 1	16	13.0	16	13.0	1226	0.013	100	2.5	LOS A	0.0	0.3	Full	12	0.0	0.0
Approach	16	13.0	16	13.0		0.013		2.5	LOS A	0.0	0.3				
West: Keirnan St															
Lane 1	116	8.0	116	8.0	1824	0.063	100	0.0	LOS A	0.0	0.0	Full	500	0.0	0.0
Lane 2	242	0.0	242	0.0	1876	0.129	100	4.9	LOS A	0.0	0.0	Short	14	0.0	NA
Approach	358	2.6	358	2.6		0.129		3.3	NA	0.0	0.0				
All Vehicles	374	3.0	374	3.0		0.129		3.3	NA	0.0	0.3				

Leg 1 – PM Peak Results:

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Keirnana St															
Lane 1	207	0.0	207	0.0	1457	0.142	100	6.8	LOS A	0.6	4.5	Short	50	0.0	NA
Lane 2	48	4.0	48	4.0	1249	0.039	100	5.7	LOS A	0.1	1.1	Full	500	0.0	0.0
Approach	256	0.8	256	0.8		0.142		6.6	LOS A	0.6	4.5				
East: Tinspar Ave															
Lane 1	138	11.3	138	11.3	1766	0.078	100	0.3	LOS A	0.0	0.0	Full	95	0.0	0.0
Approach	138	11.3	138	11.3		0.078		0.3	NA	0.0	0.0				
North: Median															
Lane 1	53	4.0	53	4.0	1300	0.040	100	1.6	LOS A	0.1	1.1	Full	12	0.0	0.0
Approach	53	4.0	53	4.0		0.040		1.6	LOS A	0.1	1.1				
All Vehicles	446	4.4	446	4.4		0.142		4.1	NA	0.6	4.5				

Leg 2 – PM Peak Results:

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Median															
Lane 1	48	4.0	48	4.0	1062	0.046	100	3.2	LOS A	0.1	1.1	Full	12	0.0	0.0
Approach	48	4.0	48	4.0		0.046		3.2	LOS A	0.1	1.1				
West: Keirnan St															
Lane 1	332	4.0	332	4.0	1895	0.175	100	0.1	LOS A	0.0	0.0	Full	500	0.0	0.0
Lane 2	53	4.0	53	4.0	1799	0.029	100	4.9	LOS A	0.0	0.0	Short	14	0.0	NA
Approach	384	4.0	384	4.0		0.175		0.7	NA	0.0	0.0				
All Vehicles	433	4.0	433	4.0		0.175		1.0	NA	0.1	1.1				

In the AM and PM peak periods at the Kiernan Street / Tinspar Avenue intersection, under the 2041 traffic volumes (including the Whitby District Centre traffic), this intersection is predicted to continue performing at level of service A. Minimal queue lengths are predicted on all approach roads and all average delays are within the prescribed WAPC threshold of acceptable performance.

8.5 Summary of 2041 Road Network Performance

Overall, the road network modelled is predicted to operate within recognised WAPC thresholds for acceptable intersection operation in the 2041 Design Year Horizon.

9 Safety Issues

9.1 Existing Safety Issues

A search of the Main Roads WA Reporting Centre for crash data surrounding the site was undertaken. This search covered all recorded traffic accidents for the most recently available five-year reporting period between 1 January 2021 and 31 December 2025 for the following roads surrounding the Site:

- Norman Road
- Soldiers Road
- South Western Highway
- Kiernan Street.

A total of 37 crashes are recorded as occurring within the study, including seven hospitalisations, eight crashes requiring medical attention, 14 major property damage only (PDO) and three minor property damage only.

Of the hospitalisation crashes recorded, two occurred at the South Western Highway / Kiernan Street intersection and involved right-turn crash types. The remaining hospitalisation crashes were more dispersed across the surrounding road network, including a loss-of-control crash on South Western Highway, a right-turn truck crash at Bishop Road / Soldiers Road, and a crash on Norman Road involving a driver swerving to avoid a kangaroo before striking a tree. These incidents suggest that crash severity within the study area is influenced by both intersection turning conflicts and the broader high-speed rural road environment.

Overall, the crash history indicates a relatively high severity profile across the surrounding network, which is likely to be influenced by the prevailing higher speed limits on Norman Road, Soldiers Road, South Western Highway and Kiernan Street. The recorded crash pattern does not identify a single localised safety deficiency directly attributable to the Whitby District Centre site itself, but instead reflects the broader operating environment of the existing external road network.

9.2 Impact of the Whitby District Centre Development on Safety Issues

Based on the crash history summarised above, the principal existing safety issues in the area are associated with the surrounding higher speed external road network rather than the Whitby District Centre proposal itself. The development is not expected to generate the same type or severity of crash pattern, as it will operate within a more urban, lower-speed internal environment with formalised intersections, defined access arrangements and improved provision for pedestrians and cyclists.

The Whitby District Centre will increase movement activity in the locality, including additional vehicle turning movements and pedestrian activity. However, these movements will occur within a transport environment intended to be more controlled and inherently safer than the current surrounding rural road context. In this regard, the development has the potential to improve local safety outcomes by supporting a more urbanised road environment with lower operating speeds, clearer road hierarchy and better multimodal infrastructure.

While the development will modestly increase exposure to crash risk on the surrounding network, this is not considered to represent an unacceptable safety impact in its own right, provided the surrounding access, intersection and movement network is delivered in accordance with the approved planning framework and the recommendations of the TIA. Overall, the Whitby District Centre is expected to operate within a safer internal movement environment and is not expected to materially exacerbate the principal existing safety issues identified in the crash history.

10 Conclusions

In accordance with the WAPC *Transport Impact Assessment Guidelines*, this report sets out the details of the proposed Whitby District Centre development within the approved Whitby Local Structure Plan area in Whitby, Western Australia. PJA Australia has been commissioned by Golden Fusion Pty Ltd to prepare this Transport Impact Assessment in support of a Development Approval application for the proposed district centre.

This TIA report is based on the proposed development of the Whitby District Centre as a mixed-use activity centre comprising major retail, specialty retail, food and beverage uses, childcare, community workshop, gymnasium, medical centre, swim school, pharmacy and associated ancillary development. The report addresses the key transport issues and impacts associated with the proposal, including existing and future accessibility by road, public transport, cycling and walking, the operation of the proposed access and servicing arrangements, the performance of the surrounding road network and intersections, and the likely road safety implications of the development. The assessment also identifies a series of recommendations and design outcomes to ensure the development can operate safely and efficiently within its emerging district centre context.

The key recommendations and outcomes arising from this TIA process are listed as follows:

1 **Skyline Boulevard Design Through the Centre**
Skyline Boulevard through the Whitby District Centre should be delivered generally in accordance with the proposed boulevard-style cross section, including one traffic lane in each direction, on-road cycle lanes, embayed on-street parking, reduced speed environment and a central slow-speed pedestrian-focused section through the core of the centre.

2 **Low Speed District Centre Environment**
The narrowed central section of Skyline Boulevard through the heart of the centre should operate as a lower speed environment, including a 30 km/h design treatment and a raised, pedestrian-priority shared movement space to support safe cross movements between the western and eastern land uses.

3 **Pedestrian and Cycle Infrastructure**
Dual-sided footpaths, pedestrian crossing opportunities, on-road cycle lanes on Skyline Boulevard and Goodwood Boulevard, and wider shared path connections to surrounding precincts should be retained as integral elements of the development, as these are important in supporting walkability, cycling access and the overall town centre function.

4 **Service Vehicle Provision**
The proposed dedicated rear loading dock and servicing area to the rear of the major retail component should be retained, together with access arrangements capable of accommodating vehicles up to a 19 metre semi-trailer and smaller rigid service vehicles, so that servicing can occur efficiently without unnecessary conflict with the pedestrian-oriented areas of the centre.

5 **Waste Collection Arrangements**
Waste collection should occur as a coordinated private contractor operation within the site, based on the proposed distributed bin storage system and designated waste collection points. Detailed design should confirm the final collection methodology, including swept path validation for the governing rear-lift waste vehicle.

6 **Public Transport Provision**
The centre should retain provision for future bus penetration through the district centre on Skyline Boulevard and Goodwood Boulvard, including active bus stands and associated public transport infrastructure, and should continue to safeguard for a potential future passenger rail station west of the centre in accordance with the Whitby Activity Centre planning framework.

7 **External Network and Detailed Design Measures**
The future external road network and movement framework, including the longer-term Bishop Road Extension, Goodwood Boulevard Extension and associated surrounding upgrades, should continue to be recognised as important strategic infrastructure supporting the ultimate accessibility and operation of the Whitby District Centre.

This Transport Impact Assessment has been prepared with sufficient detail and analysis to support the proposed Whitby District Centre development, having regard to the site's activity centre role, the proposed internal street and access arrangements, the future operation of Skyline Boulevard through the centre, the proposed servicing and parking layout, and the function of the surrounding road network.

This TIA also acknowledges the planned and emerging changes to the surrounding transport network and movement environment, including:

- South Western Highway / Norman Road intersection upgrade
- Bishop Road Extension
- Goodwood Boulevard Extension
- Tonkin Highway Extension and Thomas Road Upgrade

- future shared path, cycle lane and public transport network improvements across the Whitby Local Structure Plan area.

This TIA ultimately demonstrates that the Whitby District Centre is appropriately located and planned to operate as the principal mixed-use activity centre within Whitby, and that the surrounding and future transport networks are capable of supporting the development subject to the implementation of the design measures and recommendations identified in the report.

The following conclusions and recommendations have been made regarding the proposed Whitby District Centre development with respect to this TIA.

10.1 Overall Integration with Surrounding Attractors / Generators

The Whitby District Centre is well integrated with the broader approved planning framework for Whitby and is intended to function as the primary activity centre for the wider Mundijong–Whitby district cell. Unlike a conventional standalone development, the centre is itself intended to become a principal attractor, accommodating a mix of retail, commercial, community, health and lifestyle uses within a central mixed-use node.

The site is strategically located within the Whitby growth area, generally east of Soldiers Road and the freight rail corridor, south of Bishop Road and west of South Western Highway. It is surrounded by emerging residential neighbourhoods and is intended to serve both the existing Whitby development to the south and the substantial future residential catchment planned around it. The centre also benefits from its relationship to future higher density residential areas, public transport infrastructure, and potential future community and education uses identified within the Whitby planning framework.

Overall, the proposed development is very well placed to take advantage of the existing and planned movement opportunities within the surrounding precinct and to operate as the principal local destination for retail, services, employment and community activity within Whitby.

10.2 Road Network Accessibility

The Whitby District Centre will be accessed principally via Skyline Boulevard and Goodwood Boulevard, with multiple vehicle access points proposed to serve the major retail component, click-and-collect area, eastern-side land uses, loading areas and associated car parks. The proposed access strategy reflects the district centre role of the site and provides a practical hierarchy between customer access, service vehicle access and internal circulation.

Skyline Boulevard is of particular importance to the proposal, as it will pass directly through the centre in a north-south alignment and function not only as a traffic route, but also as a defining public street within the centre. Its proposed design, including one traffic lane in each direction, on-road cycle lanes, embayed parking and a central slow-speed pedestrian-priority section, is considered appropriate to the intended town centre environment. Goodwood Boulevard will provide the main east-west distributor function through the centre and will also play an important longer-term role in the broader Whitby movement network.

The surrounding road network is presently still emerging, but the approved planning framework anticipates that the District Centre will become progressively better connected over time through the extension of Skyline Boulevard, delivery of Goodwood Boulevard, and the longer-term influence of the Bishop Road Extension, Tonkin Highway Extension and other regional road improvements. In this respect, the District Centre is appropriately positioned within the future network structure.

10.3 Pedestrian and Cycle Accessibility

The Whitby District Centre proposal provides a strong framework for pedestrian and cycle accessibility, consistent with its intended role as a walkable mixed-use town centre. The development includes dual-sided footpaths, pedestrian crossing opportunities, on-road cycle lanes on Skyline Boulevard and Goodwood Boulevard, and a central slow-speed section of Skyline Boulevard intended to support safe pedestrian cross movements between the land uses on either side of the street.

These features will be particularly important given the District Centre is expected to become the focal point of local walking and cycling activity within Whitby as surrounding precincts continue to develop. The proposal is also intended to connect with the wider network of shared paths, on-road cycle lanes and pedestrian links progressively being delivered through surrounding Whitby subdivisions and the broader Local Structure Plan area.

Overall, the active transport framework proposed for the District Centre is appropriate for a district-level centre and is consistent with the broader planning intent to create a more people-focused, lower-speed and walkable activity centre environment.

10.4 Public Transport Accessibility

Public transport accessibility to the Whitby District Centre is presently limited but is intended to improve substantially as development proceeds. At present, nearby public transport is essentially bus-based, with local Transperth Routes 259 and 262 operating through the Whitby corridor and linking the broader area back to Byford Station. While these services do not yet penetrate through the District Centre itself, they provide an existing basis for public transport access to Whitby.

The approved planning framework for the centre specifically anticipates future bus penetration through the District Centre as the Whitby catchment develops. Provision is made for future bus operation through the centre, including active bus stands and associated facilities, and the centre may operate as either a terminal location or through-route location for future services depending on staging and broader network delivery.

Importantly, the Whitby District Centre is also planned to integrate with a potential future passenger rail station located to the west of the centre adjacent to the rail corridor. While no such station currently exists, the current proposal safeguards for that longer-term outcome. Accordingly, the development is appropriately planned to operate as a bus-served district centre in the shorter to medium term, while retaining the potential to become a rail-linked activity node in the future.

10.5 Road Safety Considerations

The crash assessment undertaken for the roads surrounding the site indicates that the main existing safety issues relate to the broader higher-speed external road environment, rather than to the Whitby District Centre site itself. A total of 37 crashes were recorded within the study area over the five-year period from 1 January 2021 to 31 December 2025, including seven hospitalisation crashes and eight crashes requiring medical attention. The crash pattern includes right-turn conflicts, loss-of-control incidents and other crash types more typical of the surrounding rural and semi-rural road environment.

In contrast, the Whitby District Centre is proposed to operate within a much more urban, lower-speed and controlled internal movement environment. The proposal includes reduced operating speeds, formalised access arrangements, pedestrian and cycle infrastructure, dedicated service vehicle areas and a more legible road hierarchy. These design features are expected to provide a safer internal environment than currently exists on the surrounding external network.

While the development will increase movement activity within the locality, it is not expected to materially worsen the principal existing safety issues identified in the surrounding crash history. Subject to detailed design and implementation of the recommendations of this report, the District Centre is expected to operate within an appropriately safe transport environment for a mixed-use activity centre.

10.6 Analysis of the External Transport Network

The Whitby District Centre has been assessed in the context of both the existing and future surrounding transport network, including the evolving Whitby Local Structure Plan road hierarchy, future strategic road projects and the broader urbanisation of the precinct. The proposal is not occurring in isolation, but rather as part of a planned district centre and wider residential catchment that is intended to be progressively delivered over time.

The surrounding external network is expected to be strengthened by a number of key future projects and initiatives, including the South Western Highway / Norman Road upgrade, the Bishop Road Extension, the Goodwood Boulevard Extension, and the Tonkin Highway Extension and Thomas Road Upgrade. These projects will improve regional accessibility, redistribute movements and support the long-term operation of the District Centre within the broader network.

Overall, the Whitby District Centre is considered capable of being satisfactorily accommodated within the surrounding and future road network framework, subject to the implementation of the proposed internal design measures and the broader strategic network improvements contemplated by the approved planning framework. The proposal is therefore considered supportable from a transport perspective and appropriate to proceed in accordance with the findings and recommendations of this TIA.

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Appendix A

TIA Checklist

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Appendix A TIA Checklist

Item	Provided	Comments/Proposals
Summary	Y	
Introduction / Background	Y	
Structure Plan Proposal	Y	
Regional context	Y	
Proposed land uses	Y	
Table of land uses and quantities	Y	
Major attractors / generators	Y	
Specific issues	Y	
Existing Situation	Y	
Existing land uses within structure plan	Y	
Existing land uses within 800m of structure plan area	Y	
Existing road network within structure plan area	Y	
Existing pedestrian / cycle network within structure plan area	Y	
Existing public transport services within structure plan area	Y	
Existing road network within 2 (or 5) km of structure plan area	Y	
Traffic flows on roads within structure plan area (PM and/or AM peak hours)	Y	
Existing pedestrian / cycle networks within 800m of structure plan area.	Y	
Existing public transport services within 800m of structure plan area.	Y	
Proposed Internal Transport Networks	Y	
Changes / additions to existing road network or proposed new road network	Y	
Road reservation widths	Y	
Road cross-sections & speed limits	Y	
Intersection controls	Y	
Pedestrian / cycle networks and crossing facilities	Y	
Changes to External Transport Networks	Y	
Road network	Y	
Intersection controls	Y	
Pedestrian/cycle networks and crossing facilities	Y	
Public transport services	Y	
Integration with surrounding area	Y	
Trip attractors / generators within 800 metres	Y	
proposed changes to land uses within 800 metres	Y	
travel desire lines from development to these attractors/ generators	Y	
adequacy of external transport networks	Y	
deficiencies in external transport networks	Y	
remedial measures to address deficiencies	Y	
Analysis of internal transport networks	Y	
assessment years	Y	
time periods	Y	
Structure plan generated traffic	Y	
Extraneous (through) traffic	Y	
Design traffic flows (that is, total traffic)	Y	
Road cross-sections	Y	
Intersection controls	Y	
Access strategy	Y	
Pedestrian / cycle networks	Y	
Safe routes to schools	Y	
Pedestrian permeability & efficiency	Y	
Access to public transport	Y	
Analysis of external transport networks	Y	
Extent of analysis	Y	
Base flows for assessment year(s)	Y	
Total traffic flows	Y	
Road cross-sections	Y	
Intersection layouts and controls	Y	
Pedestrian / cycle networks	Y	
Conclusions	Y	

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Appendix B

Proposed Site Layout

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Rev.	Date	Description	Iss.	Appr.
A	04.05.2026	ISSUED FOR INFORMATION		
B	06.05.2026	ISSUED FOR INFORMATION	JE	AP
C	07.05.2026	ISSUED FOR INFORMATION	JE	AP
D	22.05.2026	ISSUED FOR INFORMATION	HD	AP
E	28.05.2026	ISSUED FOR INFORMATION	HD	AP
F	09.06.2026	ISSUED FOR INFORMATION	HD	
G	12.06.2026	ISSUED FOR INFORMATION	HD	AP
H	18.06.2026	ISSUED FOR INFORMATION	HD	AP
J	29.06.2026	ISSUED FOR DA	HD	AP
K	02.07.2026	ISSUED FOR DA	HD	AP

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Area Legend

- Amenities
- BOH
- Childcare
- Circulation
- Community Workshop
- Food & Beverage
- Gym
- Liquor Store
- LSA
- Major
- Medical
- Pharmacy
- Specialty
- Swim School
- Tavern

CATEGORY	AREA
Amenities	266.61 m²
BOH	797.13 m²
Childcare	1360.91 m²
Circulation	3180.39 m²
Community Workshop	188.69 m²
Food & Beverage	1987.51 m²
Gym	1926.90 m²
Liquor Store	405.27 m²
LSA	697.08 m²
Major	9496.80 m²
Medical	636.15 m²
Pharmacy	619.09 m²
Specialty	4481.92 m²
Swim School	480.57 m²
Tavern	741.90 m²
	27266.93 m²

BAY TYPE	COUNT
GYM	
ACROD - 5400x2700	2
Standard Bay - 5400x2700	72
	74
HIGH STREET	
On-Street Parallel Bay - 6600x2600	27
	27
MEDICAL CENTRE	
ACROD - 5400x2700	4
Standard Bay - 5400x2700	77
	81
SHOPPING CENTRE	
ACROD - 5400x2700	17
Electric Vehicle Bay - 2700x5400	8
Standard Bay - 5400x2700	749
	774
TOTAL: 956	956

Project

WHITBY TOWN CENTRE

WHITBY, WESTERN AUSTRALIA

Project Number
240263

Status

Date Plotted 2/07/2026 5:06:49 PM

Scale 1 : 1000 @A1

Drawing Title
SITE PLAN

Drawing Number
WTC-BUC-A-DA-01001

Revision
K

Legend

After Hours Loading Zone

NOTE: *FUTURE PAD SITE are subject to a separate DA, however are shown for reference to inform car park design

File
Autodesk Docs://240263-R25-Whitby-Town-Centre/WTC-BUC-ZZ-M6-A-R25-ARCHITECTURE.rvt

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Appendix C

SIDRA Intersection Assessment Results

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LANE SUMMARY

Site: 101 [Skyline / Goodwood PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

2041 PM Peak
Site Category: Future Conditions 1
Roundabout

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Skyline															
Lane 1[d]	368	2.0	368	2.0	873	0.422	100	8.3	LOS A	2.9	20.9	Full	500	0.0	0.0
Approach	368	2.0	368	2.0		0.422		8.3	LOS A	2.9	20.9				
East: Goodwood															
Lane 1[d]	421	2.0	421	2.0	1012	0.416	100	7.0	LOS A	2.9	20.3	Full	500	0.0	0.0
Approach	421	2.0	421	2.0		0.416		7.0	LOS A	2.9	20.3				
North: Skyline															
Lane 1[d]	347	2.0	347	2.0	1166	0.298	100	7.2	LOS A	1.9	13.3	Full	500	0.0	0.0
Approach	347	2.0	347	2.0		0.298		7.2	LOS A	1.9	13.3				
West: Goodwood															
Lane 1[d]	211	2.0	211	2.0	1068	0.197	100	6.4	LOS A	1.2	8.4	Full	500	0.0	0.0
Approach	211	2.0	211	2.0		0.197		6.4	LOS A	1.2	8.4				
All Vehicles	1347	2.0	1347	2.0		0.422		7.3	LOS A	2.9	20.9				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Skyline

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	158	158	53	368	2.0	873	0.422	100	NA	NA
Approach	158	158	53	368	2.0		0.422			

East: Goodwood

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	53	316	53	421	2.0	1012	0.416	100	NA	NA
Approach	53	316	53	421	2.0		0.416			

North: Skyline

Mov.	L2	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.

From N To Exit:	E	S	W			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	42	158	147	347	2.0	1166	0.298	100	NA	NA
Approach	42	158	147	347	2.0		0.298			
West: Goodwood										
Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	63	105	42	211	2.0	1068	0.197	100	NA	NA
Approach	63	105	42	211	2.0		0.197			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	1347	2.0	0.422

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.											

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Skyline				
Lane 1	0.0	0.0	0.0	0.0
East: Goodwood				
Lane 1	0.0	0.0	0.0	0.0
North: Skyline				
Lane 1	0.0	0.0	0.0	0.0
West: Goodwood				
Lane 1	0.0	0.0	0.0	0.0

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LANE SUMMARY

Site: 101 [Skyline / Goodwood AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

2041 AM Peak
Site Category: Future Conditions 1
Roundabout

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Skyline															
Lane 1[d]	316	2.0	316	2.0	904	0.349	100	8.0	LOS A	2.3	16.2	Full	500	0.0	0.0
Approach	316	2.0	316	2.0		0.349		8.0	LOS A	2.3	16.2				
East: Goodwood															
Lane 1[d]	368	2.0	368	2.0	1039	0.355	100	6.9	LOS A	2.3	16.4	Full	500	0.0	0.0
Approach	368	2.0	368	2.0		0.355		6.9	LOS A	2.3	16.4				
North: Skyline															
Lane 1[d]	316	2.0	316	2.0	1146	0.276	100	7.6	LOS A	1.7	12.0	Full	500	0.0	0.0
Approach	316	2.0	316	2.0		0.276		7.6	LOS A	1.7	12.0				
West: Goodwood															
Lane 1[d]	211	2.0	211	2.0	1063	0.198	100	6.7	LOS A	1.2	8.3	Full	500	0.0	0.0
Approach	211	2.0	211	2.0		0.198		6.7	LOS A	1.2	8.3				
All Vehicles	1211	2.0	1211	2.0		0.355		7.3	LOS A	2.3	16.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Skyline

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	105	158	53	316	2.0	904	0.349	100	NA	NA
Approach	105	158	53	316	2.0		0.349			

East: Goodwood

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	42	263	63	368	2.0	1039	0.355	100	NA	NA
Approach	42	263	63	368	2.0		0.355			

North: Skyline

Mov.	L2	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.

From N To Exit:	E	S	W			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	53	105	158	316	2.0	1146	0.276	100	NA	NA
Approach	53	105	158	316	2.0		0.276			
West: Goodwood										
Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	53	105	53	211	2.0	1063	0.198	100	NA	NA
Approach	53	105	53	211	2.0		0.198			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	1211	2.0	0.355

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.											

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Skyline				
Lane 1	0.0	0.0	0.0	0.0
East: Goodwood				
Lane 1	0.0	0.0	0.0	0.0
North: Skyline				
Lane 1	0.0	0.0	0.0	0.0
West: Goodwood				
Lane 1	0.0	0.0	0.0	0.0

LANE SUMMARY

Site: [1v (2)] 2041 AM - Skyline Blvd/Bishop Rd (2041)
Output produced by SIDRA INTERSECTION Version: 10.0.9.250

New Site
Site Category: (None)
Roundabout
Site Scenario: 1 | Local Volumes

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Skyline Blvd															
Lane 1[d]	347	3.0	347	3.0	1377	0.252	100	3.2	LOS A	1.7	13.0	Full	500	0.0	0.0
Approach	347	3.0	347	3.0		0.252		3.2	LOS A	1.7	13.0				
North: Skyline Blvd															
Lane 1[d]	145	3.0	145	3.0	1144	0.127	100	6.0	LOS A	0.7	5.4	Full	500	0.0	0.0
Approach	145	3.0	145	3.0		0.127		6.0	LOS A	0.7	5.4				
West: Bishop Rd Ext															
Lane 1	59	3.0	59	3.0	1109	0.053	100	3.5	LOS A	0.3	2.2	Full	500	0.0	0.0
Lane 2[d]	179	3.0	179	3.0	1544	0.116	100	7.6	LOS A	0.7	5.1	Full	500	0.0	0.0
Approach	238	3.0	238	3.0		0.116		6.6	LOS A	0.7	5.1				
All Vehicles	731	3.0	731	3.0		0.252		4.9	LOS A	1.7	13.0				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Skyline Blvd

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	279	68	347	3.0	1377	0.252	100	NA	NA
Approach	279	68	347	3.0		0.252			

North: Skyline Blvd

Mov. From N To Exit:	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	78	67	145	3.0	1144	0.127	100	NA	NA
Approach	78	67	145	3.0		0.127			

West: Bishop Rd Ext									
Mov. From W To Exit:	L2 N	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	59	-	59	3.0	1109	0.053	100	NA	NA
Lane 2	-	179	179	3.0	1544	0.116	100	NA	NA
Approach	59	179	238	3.0		0.116			
	Total	%HV	Deg.Satn (v/c)						
All Vehicles	731	3.0		0.252					

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	Merge [Veh	Queue Dist] m
There are no Exit Short Lanes for Merge Analysis at this Site.														

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Skyline Blvd				
Lane 1	0.0	0.0	0.0	0.0
North: Skyline Blvd				
Lane 1	0.0	0.0	0.0	0.0
West: Bishop Rd Ext				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0

LANE SUMMARY

Site: [1v (3)] 2041 PM - Skyline Blvd/Bishop Rd (2041)

Output produced by SIDRA INTERSECTION Version: 10.0.9.250

New Site
Site Category: (None)
Roundabout
Site Scenario: 1 | Local Volumes

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Skyline Blvd															
Lane 1[d]	407	3.0	407	3.0	1412	0.289	100	3.2	LOS A	2.1	15.7	Full	500	0.0	0.0
Approach	407	3.0	407	3.0		0.289		3.2	LOS A	2.1	15.7				
North: Skyline Blvd															
Lane 1[d]	127	3.0	127	3.0	1121	0.114	100	6.1	LOS A	0.6	4.8	Full	500	0.0	0.0
Approach	127	3.0	127	3.0		0.114		6.1	LOS A	0.6	4.8				
West: Bishop Rd Ext															
Lane 1	67	3.0	67	3.0	1105	0.061	100	3.6	LOS A	0.3	2.5	Full	500	0.0	0.0
Lane 2[d]	200	3.0	200	3.0	1531	0.131	100	7.6	LOS A	0.8	5.8	Full	500	0.0	0.0
Approach	267	3.0	267	3.0		0.131		6.6	LOS A	0.8	5.8				
All Vehicles	802	3.0	802	3.0		0.289		4.8	LOS A	2.1	15.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Skyline Blvd

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	329	78	407	3.0	1412	0.289	100	NA	NA
Approach	329	78	407	3.0		0.289			

North: Skyline Blvd

Mov. From N To Exit:	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	68	59	127	3.0	1121	0.114	100	NA	NA
Approach	68	59	127	3.0		0.114			

West: Bishop Rd Ext									
Mov. From W To Exit:	L2 N	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	67	-	67	3.0	1105	0.061	100	NA	NA
Lane 2	-	200	200	3.0	1531	0.131	100	NA	NA
Approach	67	200	267	3.0		0.131			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	802	3.0	0.289

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	Merge [Veh	Queue Dist] m
There are no Exit Short Lanes for Merge Analysis at this Site.														

Variable Demand Analysis

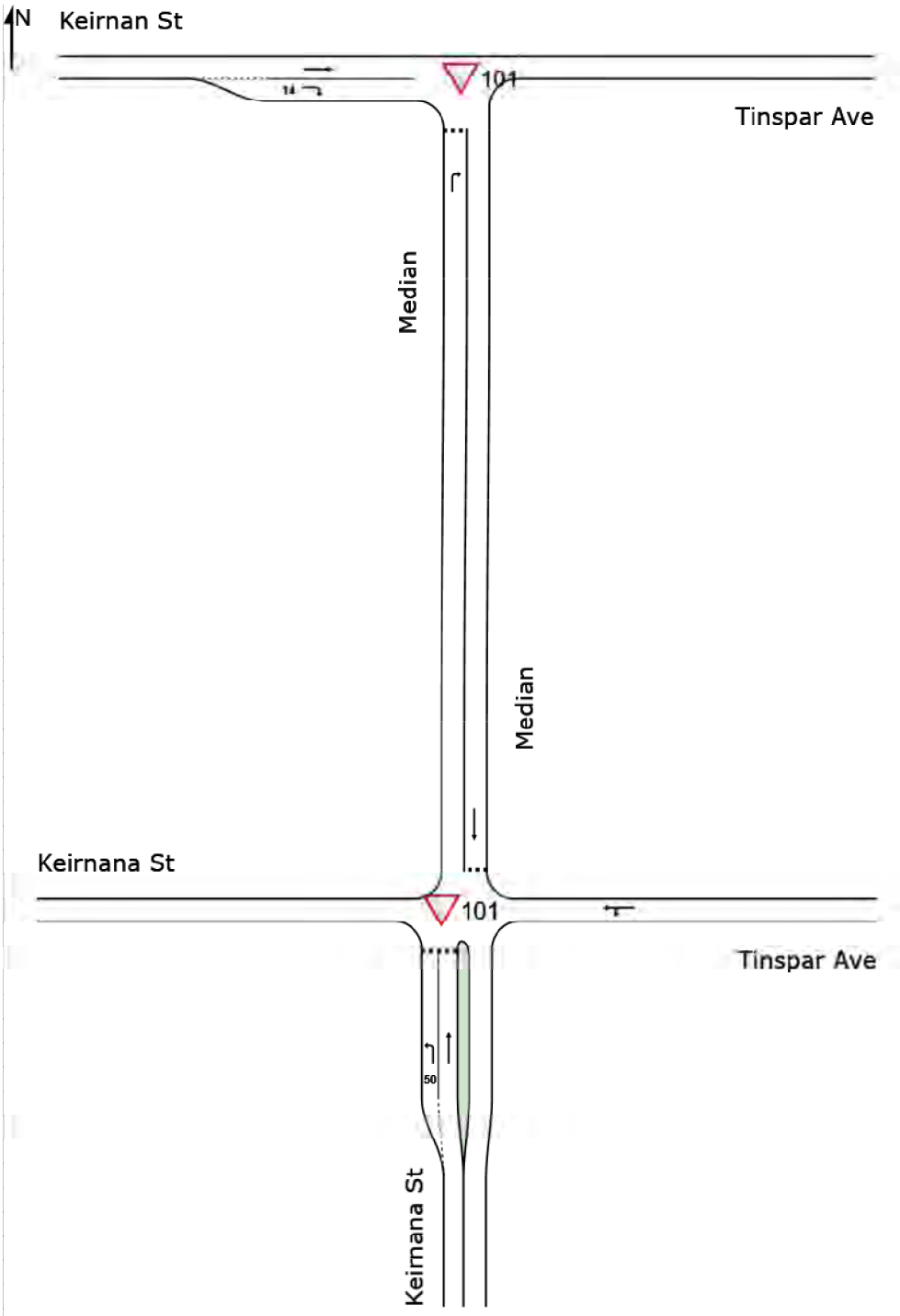
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Skyline Blvd				
Lane 1	0.0	0.0	0.0	0.0
North: Skyline Blvd				
Lane 1	0.0	0.0	0.0	0.0
West: Bishop Rd Ext				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0

NETWORK LAYOUT

Network: N101 [2025 AM - Kerinan St & Tinspar Ave (Network Folder: Whitby 9)]

New Network
Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
▽101	NA	2025 AM - Keirnan St & Tinspar Ave Leg 2
▽101	NA	2025 AM - Keirnan St & Tinspar Ave Leg 1

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MOVEMENT SUMMARY

Site: 101 [2025 AM - Keirnan St & Tinspar Ave Leg 2 (Site Folder: 2025 - Existing for Whitby 9)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2025 AM - Kerinan St & Tinspar Ave (Network Folder: Whitby 9)]

New Site
Site Category: (None)
Give-Way (Two-Way)

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. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Median															
3	R2	All MCs	5	0.0	5	0.0	0.004	2.3	LOS A	0.0	0.1	0.15	0.48	0.15	31.9
Approach			5	0.0	5	0.0	0.004	2.3	LOS A	0.0	0.1	0.15	0.48	0.15	31.9
West: Keirnan St															
11	T1	All MCs	91	15.0	91	15.0	0.053	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	50.0
12	R2	All MCs	19	6.0	19	6.0	0.011	4.9	LOS A	0.0	0.0	0.00	0.59	0.00	44.2
Approach			109	13.4	109	13.4	0.053	0.9	NA	0.0	0.0	0.00	0.10	0.00	49.0
All Vehicles			115	12.8	115	12.8	0.053	0.9	NA	0.0	0.1	0.01	0.12	0.01	48.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [2025 AM - Keirnan St & Tinspar Ave Leg 1 (Site Folder: 2025 - Existing for Whitby 9)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2025 AM - Kerinan St & Tinspar Ave (Network Folder: Whitby 9)]

New Site
Site Category: (None)
Give-Way (Two-Way)

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. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Keirnana St															
1	L2	All MCs	39	0.0	39	0.0	0.028	6.9	LOS A	0.1	0.8	0.27	0.58	0.27	50.9
2	T1	All MCs	5	0.0	5	0.0	0.004	5.6	LOS A	0.0	0.1	0.27	0.54	0.27	57.0
Approach			44	0.0	44	0.0	0.028	6.8	LOS A	0.1	0.8	0.27	0.57	0.27	51.2
East: Tinspar Ave															
4	L2	All MCs	25	4.0	25	4.0	0.114	4.6	LOS A	0.0	0.0	0.00	0.07	0.00	47.0
5	T1	All MCs	179	10.0	179	10.0	0.114	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	49.3
Approach			204	9.3	204	9.3	0.114	0.6	NA	0.0	0.0	0.00	0.07	0.00	49.0
North: Median															
8	T1	All MCs	19	6.0	19	6.0	0.016	1.8	LOS A	0.1	0.4	0.28	0.43	0.28	45.7
Approach			19	6.0	19	6.0	0.016	1.8	LOS A	0.1	0.4	0.28	0.43	0.28	45.7
All Vehicles			267	7.5	267	7.5	0.114	1.7	NA	0.1	0.8	0.06	0.18	0.06	49.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [2025 PM - Keirnan St & Tinspar Ave Leg 2 (Site Folder: 2025 - Existing for Whitby 9)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2025 PM - Kerinan St & Tinspar Ave (Network Folder: Whitby 9)]

New Site
Site Category: (None)
Give-Way (Two-Way)

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. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Median															
3	R2	All MCs	21	10.0	21	10.0	0.018	2.7	LOS A	0.1	0.4	0.23	0.50	0.23	29.6
Approach			21	10.0	21	10.0	0.018	2.7	LOS A	0.1	0.4	0.23	0.50	0.23	29.6
West: Keirnan St															
11	T1	All MCs	183	5.0	183	5.0	0.098	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	50.0
12	R2	All MCs	33	0.0	33	0.0	0.017	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	44.2
Approach			216	4.2	216	4.2	0.098	0.8	NA	0.0	0.0	0.00	0.09	0.00	49.1
All Vehicles			237	4.8	237	4.8	0.098	0.9	NA	0.1	0.4	0.02	0.13	0.02	48.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [2025 PM - Keirnan St & Tinspar Ave Leg 1 (Site Folder: 2025 - Existing for Whitby 9)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2025 PM - Kerinan St & Tinspar Ave (Network Folder: Whitby 9)]

New Site
Site Category: (None)
Give-Way (Two-Way)

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. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Keirnana St															
1	L2	All MCs	23	5.0	23	5.0	0.016	6.7	LOS A	0.1	0.5	0.19	0.56	0.19	50.9
2	T1	All MCs	21	10.0	21	10.0	0.017	5.6	LOS A	0.1	0.5	0.21	0.54	0.21	57.4
Approach			44	7.4	44	7.4	0.017	6.2	LOS A	0.1	0.5	0.20	0.55	0.20	52.7
East: Tinspar Ave															
4	L2	All MCs	11	0.0	11	0.0	0.060	4.6	LOS A	0.0	0.0	0.00	0.05	0.00	47.4
5	T1	All MCs	96	11.0	96	11.0	0.060	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	49.4
Approach			106	9.9	106	9.9	0.060	0.5	NA	0.0	0.0	0.00	0.05	0.00	49.2
North: Median															
8	T1	All MCs	33	0.0	33	0.0	0.024	1.5	LOS A	0.1	0.6	0.19	0.40	0.19	46.5
Approach			33	0.0	33	0.0	0.024	1.5	LOS A	0.1	0.6	0.19	0.40	0.19	46.5
All Vehicles			183	7.5	183	7.5	0.060	2.0	NA	0.1	0.6	0.08	0.24	0.08	49.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Whitby District Centre

Letter

PC26207
17/07/2026

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17/07/2026

Luiz Rocha
Level 15 – 32 St Georges Terrace
Perth, WA 6000

RE: PC26207 – WHITBY DISTRICT CENTRE

CONCEPT STORMWATER MANAGEMENT PLAN

Dear Luiz,

We can confirm that the preliminary stormwater system designed for the Whitby District Centre has been designed to accommodate runoff from the proposed site for catchments as shown on Figure 1 .The design is in accordance with Australian Rainfall and Runoff (ARR), Shire of Serpentine Jarrahdale frameworks and LWMS Addendum – Whitby Estate Activity Centre Plan.

Peritas Consulting sketches for each catchment can be reviewed in Appendix A, namely:

- PC26207-CI.SK.001-RevB,
- PC26207-CI.SK.002-RevB,
- PC26207-CI.SK.003-RevB

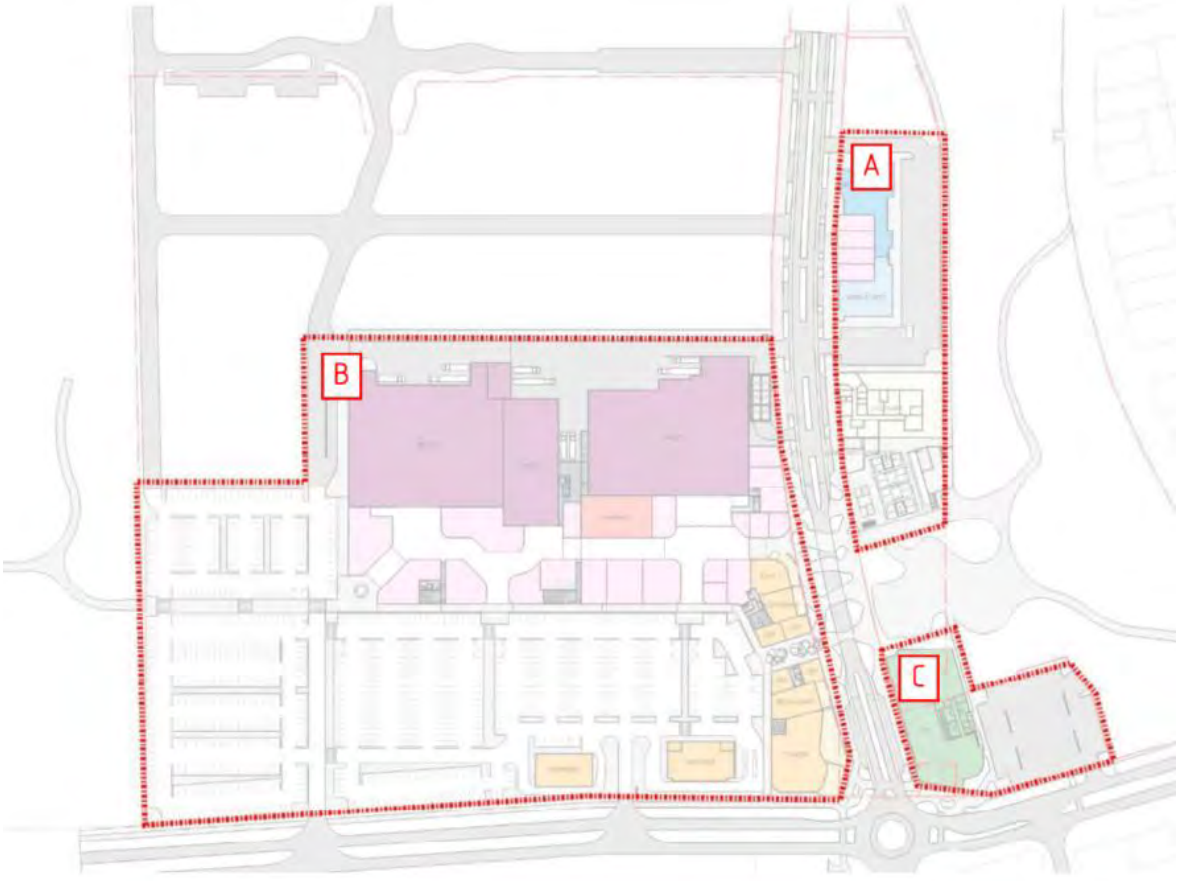


Figure 1 : Catchment Areas

Conditions from the LWMS Addendum – Whitby Estate Activity Centre Plan (ACP) impose the following requirements for the proposed works:

1. The small rainfall event (15mm) should be treated as close to source as possible and minor and major rainfall events conveyed towards Manjedal Brook.
2. The following design criteria should be followed (UWMP Addendum – Whitby Estate Precinct 3 and Surrounds (Emerge Associates 2018))
    a. **SW1**: All lots will treat rainfall event within the lot.
    b. **SW2**: The small rainfall event will be treated in bio-retention areas (BRAs)
    c. **SW7**: The minor and major post-development peak flow within Manjedal Brook (at railway crossing) will not exceed pre-development peak flow rate.
    d. **SW8**: Post-development peak flow rates for catchments which do not discharge to Manjedal Brook will not exceed pre-development peak flow rates.
3. On Lot scale treatment of small rainfall event may occur within vegetated BRAs, landscaped areas, retention tanks and soakwells/subsurface soakage with sufficient groundwater clearance
4. Overland flow beyond capacity of in lot vegetated areas shall overflow downstream to BRAs in public open space (POS) areas.
5. The following groundwater design criteria considered for design (UWMP Addendum – Whitby Estate Precinct 3 and Surrounds (Emerge Associates 2018)).
    a. **GW1**: Lots should have clearance to the MGL of at least 1.2m.
    b. **GW3**: BRAs, FSAs and drainage inverts should provide a clearance of 300mm from the MGL
6. BRAs have maximum water depths of 500mm and varying side slopes. Swales to take a 1:3 side slope up to 0.6m and 1:6 slop thereafter, with a maximum water depth of 1.2m and velocities of major events between 0.3 and 0.7m/s. Thus, for preliminary design, BRA slopes are taken at a conservative 1:6 batter with depths between 0.3-0.5m.
7. All carparks and road pavements ~~will be graded and~~ service~~d~~s by ~~a~~ pit and pipe network to ensure runoff is conveyed appropriately away from infrastructure.
8. Arterial drainage pipe is proposed to convey ACP flows beneath the main street median swale towards the conveyance swales west of ACP.

Conditions from the Shire of Serpentine Jarrahdale Local Planning Policy 2.4: Water Sensitive Urban Design Guidelines and communication with the Department of Water and Environmental Regulation (DWER) impose the following requirements for the proposed works:

1. The area is affected by major flooding with the 1% AEP flood levels varying.
2. A minimum habitable floor level of 0.5m above adjacent 1% AEP flood level is recommended to ensure adequate flood protection.
3. DWER may assess a proposal based on its merits and factors.

Results from flood assessment identify the site to be in a flood plain prone area, as indicated in Appendix B, and thus detailed design levels and FFLs of buildings should adhere to DWER guidelines above accordingly.

Geotechnical reports by Douglas Partners identify the design permeability rate for the ACP to be low, at 0.864m^3/day, thus this rate will be considered in swale and BRA design.

Via discussion with Emerge Associates, groundwater levels obtained in 2025 for the site, observed in appendix C, illustrate groundwater levels to be consistently high across the site. This makes extensive onsite subsurface infiltration an unrealistic method of stormwater management.

Design has used IFD table for the location as provided by AR&R, found in appendix D. Where a time of concentration lies between two values on the table; the next lowest value has been assumed to remain conservative.

The basis of design below identifies the site stormwater discharge criteria with Figure 2 below indicating the available stormwater discharge 3 under Soldiers Rd as not exceeding pre-development limits for each respective catchment.

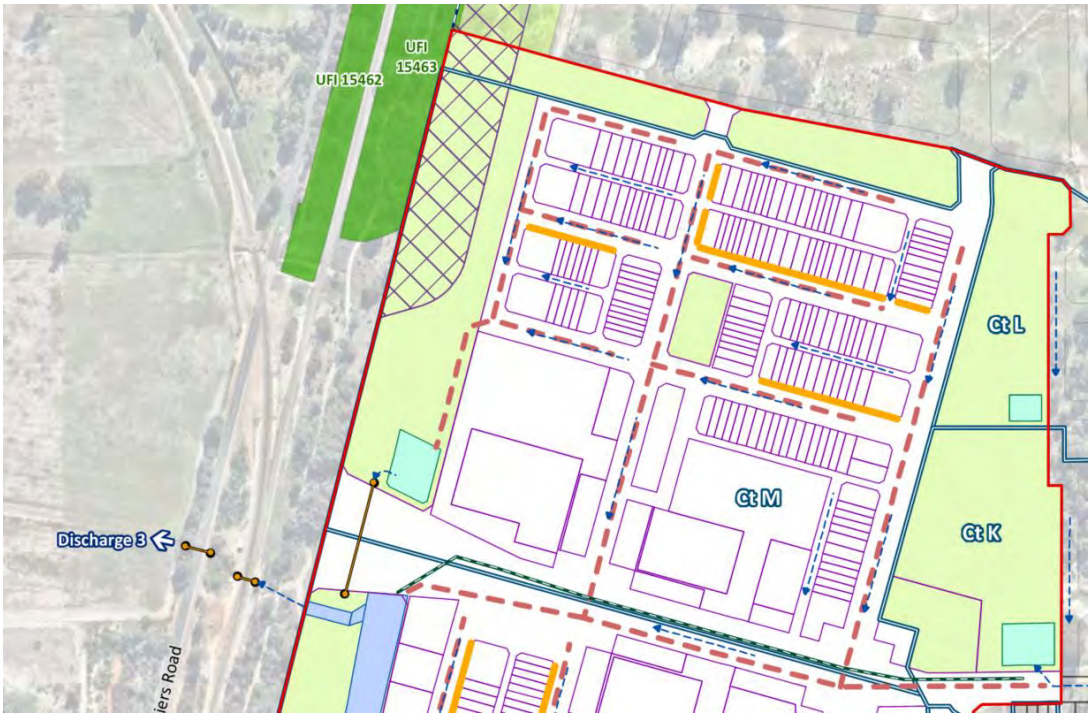


Figure 2 : Proposed Discharge point 3 as pre-development rate

1. BASIS OF STORMWATER DESIGN

Whitby Estate ACO LWMS requires the following:

- 15mm detention/treatment on site
- Minor (20% AEP) and Major (1% AEP) event runoff conveyed through public open space (POS) and wetland buffer areas into discharge 3 and Manjedal Brook (Discharge 4 and 5)
- Ensure post-development discharge does not exceed peak pre-development flow rates
- Permeability rate of 0.864m^3/s

The following catchment areas and flows have been allocated and assessed.

1.1 Catchment A

Catchment A proposed preliminary SWMP is found in appendix A on PC26207-CI.SK.001-RevB, with the catchment broken into A-1 and A-2.

1.1.1 Catchment A-1

Catchment A-1,Figure 3, includes the Roof Area 1 (medical centre and swim school), major catchment carpark, childcare and community workshop.



Figure 3 : Proposed Catchment A-1

The basis of the calculation of the allowable outflows are as follows:

Total Catchment Area, A	= 8100m^2
Calculated Runoff Coefficient, C	= 20%
Fraction Impervious	= 0%

Based on the calculated runoff coefficient, the peak flow can be determined by using the Rational Method.

Using a time of concentration of 30 mins (from overland sheet flow on existing conditions) (Toc 30 mins = Intensity $_{100\ yr}$ 70.90mm/hr).

$Q_{Allowable}$ = 2.78 x C x I x A

= 2.78 x 0.201 x 70.90 x (8100 / 10000) = 32.09 L/s = 0.032 m^3/s

The LWMS requires the allowable post-development outflow to ACP conveyance swales, arterial pipes and discharge must be held to the above pre-development flow, thus 32 Litres per second is adopted as allowable outflow for the calculation of detention volume required to discharge the major event on site.

The LWMS requires the onsite treatment of the small rainfall event (15mm) for surface flow with overflow into BRAs in neighbouring POS areas. The total storage volume required to adhere to this requirement is found as below.

Post-development Pavement Area = 3270m^2

Small rainfall event volume = 3270 x 0.015 = 49.05m^3

The required BRA volume north of the site is thus 50.0m^3.

To ensure the pre-development outflow is held, the 15mm retention basin overflows into swale A1 designed for the major 1% AEP event, which connects to existing northern ACP Swale via Culvert/Swale Continuation.

During the major rainfall event, the required storage for catchment A-1 is 250m^3, thus the required swale A1 storage to maintain discharge at peak pre-development flow rate is found as following.

Swale A1 storage = Minimum storage required – BRA storage
= 250 – 50 = 200m^3

Note The above storage may reduce upon detailed design of the swale surface area, depth and applicable infiltration area consideration, and infiltration into soil reduces overall required storage volume. Future detailed design of basin footprint should provide sufficient infiltration that the swale volume exceeds the required storage volume.

1.1.2 Catchment A-2

Catchment A-2, Figure 4, includes the Roof Area 2 (Recreation area) and outdoor space.



Figure 4 : Proposed Catchment A-2

Due to the relatively small size of this catchment and large percentage of garden space (permeable areas), we propose the 15mm event and the 1% AEP volume to be contained within the proposed

BRA with no allowable outflow, thus, this area has been designed for a 1% AEP volume. Future design stages may connect this catchment A-2 to northern catchment A-1 network or southern catchment C network, allowing for no storage in this catchment beyond the garden space and connection to pre-development discharge points.

The LWMS requires the onsite treatment of the small rainfall event (15mm) for surface flow with overflow into BRAs in neighbouring POS areas. The total storage volume required to adhere to this requirement is found as below.

Post-development Pavement Area = 1980m^2

Small rainfall event volume = 1980 x 0.015 = 29.07m^3

The garden space volume required in catchment is thus 30.00m^3. Assuming a garden area depth of 0.1m the following volume is found to meet above requirement.

Total garden space volume = 590 x 0.1 = 59m^3

Based on accommodating the 1% AEP event, the BRA storage volume required is 120m^3.

Note The above storage may reduce upon detailed design of the swale surface area, depth and applicable infiltration area consideration, and infiltration into soil reduces overall required storage volume. Future detailed design of basin footprint should provide sufficient infiltration that the swale volume exceeds the required storage volume.*

1.2 Catchment B

Catchment B proposed preliminary SWMP is found in appendix A on PC26207-CI.SK.002-RevB, with the catchment broken into B-1 and B-2

1.2.1 Catchment B-1

Catchment B-1, Figure 5, includes the Major Roof Area and loading dock area.



Figure 5 : Proposed Catchment B-1

The basis of the calculation of the allowable outflows are as follows:

Total Catchment Area, A	= 16393m^2
Calculated Runoff Coefficient, C	= 20%
Fraction Impervious	= 0%

Based on the calculated runoff coefficient, the peak flow can be determined by using the Rational Method.

Using a time of concentration of 25 mins (from overland sheet flow on existing conditions) (Toc 25 mins = Intensity $_{100\ yr}$ 79.50mm/hr).

$Q_{Allowable}$ = 2.78 x C x I x A

= 2.78 x 0.201 x 79.50 x (16393 / 10000) = 75.25 L/s = 0.075 m^3/s

The LWMS requires the allowable post-development outflow to ACP conveyance swales, arterial pipes and discharge must be held to the above pre-development flow, thus 75.25 Litres per second is adopted as allowable outflow for the calculation of detention volume required to discharge the major event on site.

The LWMS requires the onsite treatment of the small rainfall event (15mm) for surface flow with overflow into BRAs. The Lot Bio Swale 1 along the northern boundary of this catchment is utilised to meet this requirement. The total storage volume required to adhere to this is found as below.

Post-development Pavement Area = 5738m^2

Small rainfall event volume = 5738 x 0.015 = 86.10m^3

Assuming depth Bio Swale 1 depth of 0.5m, the provided swale volume achieve is 491.50m^3.

To ensure the pre-development outflow is held, the 15mm Lot Bio Swale 1 is designed for the major 1% AEP event and overflows to adjacent road drainage system at pre-development flow rate. The storage volume required to meet the 1% AEP event in Bio Swale 1, considering the pre-development outflow is 0.075m^3/s is 425.12m^3. The provided storage in Bio Swale 1 as above is 491.50m^3, thus meeting this requirement.

1.2.2 Catchment B-2

Catchment B-2, Figure 6,includes the Minor Roof Area and carpark.

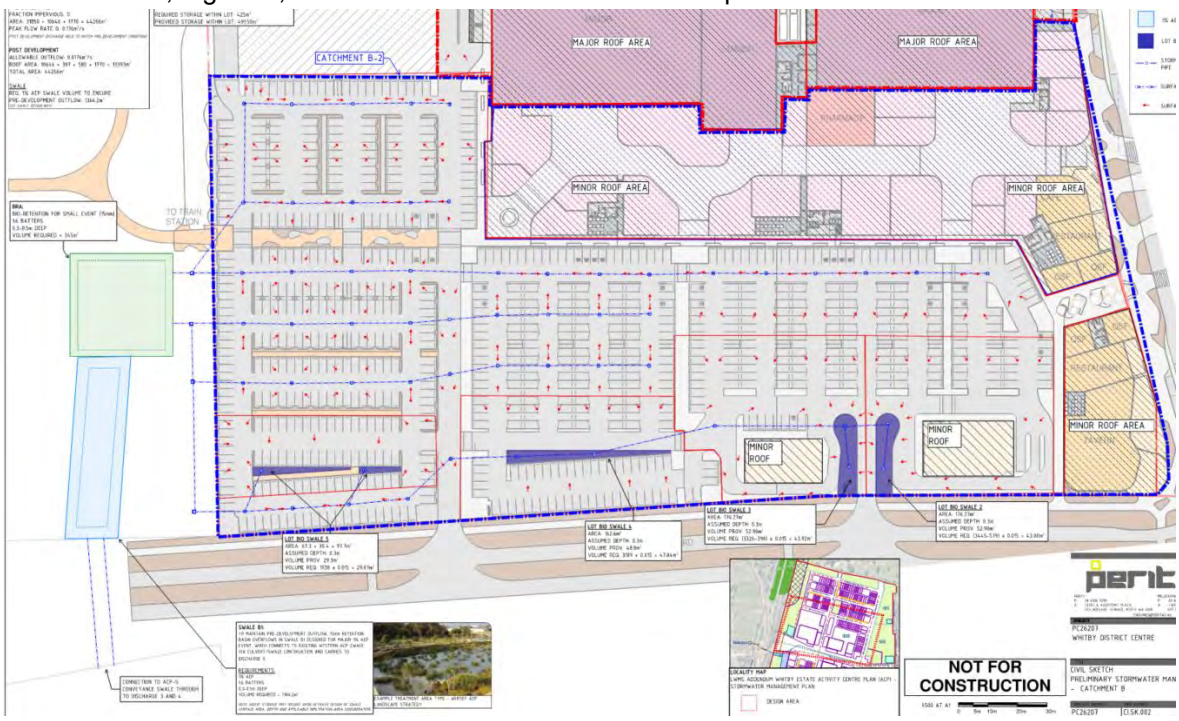


Figure 6 : Proposed Catchment B-2

The basis of the calculation of the allowable outflows are as follows:

Total Catchment Area, A	= 44266m^2
Calculated Runoff Coefficient, C	= 20%
Fraction Impervious	= 0%

Based on the calculated runoff coefficient, the peak flow can be determined by using the Rational Method.

Using a time of concentration of 39 mins (from overland sheet flow on existing conditions) (Toc 30 mins = Intensity $_{100\ yr}$ 70.90mm/hr).

$Q_{Allowable}$ = 2.78 x C x I x A

= 2.78 x 0.201 x 70.90 x (44266 / 10000) = 175.5 L/s = 0.176 m^3/s

The LWMS requires the allowable post-development outflow to ACP conveyance swales, arterial pipes and discharge must be held to the above pre-development flow, thus 175.5 Litres per second is adopted as allowable outflow for the calculation of detention volume required to discharge the major event on site.

The LWMS requires the onsite treatment of the small rainfall event (15mm) for surface flow with overflow into BRAs in neighbouring POS areas. The total storage volume required to adhere to this requirement is found as below. To accommodate this requirement, first flush is contained both in Lot Bio Swales 2, 3, 4 and 5 and in the POS BRA. Thus, the below calculations have been separated into respective treatment areas.

First flush: Lot Bio Swales 2, 3, 4 and 5

The following relates to the area of pavement flushing into the bio swales.

Post-development Pavement Area = 8984m^2

Small rainfall event volume = 8984 x 0.015 = 135m^3

The required in-lot bio swale volume is 135m^3. Assuming an in-lot bio swale depth of 0.3m the following bio swale volume is found to meet above requirement.

Provided in-lot bio swale volume = 184.4m^3.

First flush: POS BRA

The following relates to the area of pavement flushing into the POS BRA.

Total paved catchment area = 31850m^2

Remaining Pavement Area = 31850 – 8984 = 22866m^2

Small rainfall event volume = 22866 x 0.015 = 345m^3

The required POS BRA volume is 345m^3

To ensure discharge is held to peak pre-development flow rate the 15mm retention in the lot bio swales and POS BRA overflow into swale B1 designed for the major 1% AEP event, which connects to the western ACP Swale via Culvert/Swale Continuation and carries to discharge 3.

During the major rainfall event, the required storage for catchment B-2 is 1366m^3, thus the required swale A1 storage to maintain pre-development outflow conditions is found as following.

Swale storage = Minimum storage required – BRA storage – Lot Bio Swale Storage
= 1366 – 345 – 184 = 837m^3

Note The above storage may reduce upon detailed design of the swale surface area, depth and applicable infiltration area consideration, and infiltration into soil reduces overall required storage volume. Future detailed design of basin footprint should provide sufficient infiltration that the swale volume exceeds the required storage volume.

1.3 Catchment C

Catchment C proposed preliminary SWMP is found in appendix A on PC26207-CI.SK.003-RevB and Figure 7, which includes the gym roof area and the gym carpark.



Figure 7 : Proposed Catchment C

The basis of the calculation of the allowable outflows are as follows:

Total Catchment Area, A	= 4950m^2
Calculated Runoff Coefficient, C	= 20%
Fraction Impervious	= 0%

Based on the calculated runoff coefficient, the peak flow can be determined by using the Rational Method.

Using a time of concentration of 16 mins (from overland sheet flow on existing conditions) (Toc 15 mins = Intensity $_{100\ yr}$ 70.90mm/hr).

$Q_{Allowable}$ = 2.78 x C x I x A

= 2.78 x 0.201 x 108 x (4950 / 10000) = 29.90 L/s = 0.030 m^3/s

The LWMS requires the allowable post-development outflow to ACP conveyance swales, arterial pipes and discharge must be held to the above pre-development flow, thus 29.9 Litres per second is adopted as allowable outflow for the calculation of detention volume required to discharge the major event on site.

The LWMS requires the onsite treatment of the small rainfall event (15mm) for surface flow with overflow into BRAs in neighbouring POS areas. The total storage volume required to adhere to this requirement is found as below.

Post-development Pavement Area = 2418m^2
Small rainfall event volume = 2418 x 0.015 = 36.27m^3

The required BRA volume north of the site is 37m^3.

To ensure discharge is held to peak pre-development flow rate the 15mm retention basin overflows into swale C1 designed for the major 1% AEP event, which connects to existing road drainage via pipe.

During the major rainfall event, the required storage for catchment C is 120.0m^3, thus the required swale C1 storage to maintain pre-development outflow conditions is found as following.

Swale storage = Minimum storage required – BRA storage
= 120 – 36.27 = 84m^3

Note The above storage may reduce upon detailed design of the swale surface area, depth and applicable infiltration area consideration, and infiltration into soil reduces overall required storage volume. Future detailed design of basin footprint should provide sufficient infiltration that the swale volume exceeds the required storage volume.

2. CONCLUSION

Based on the data available, our investigations and assessment of the site runoff and stormwater we can conclude that the site has adequately catered for onsite disposal of stormwater to meet expected ACP stormwater management criteria.

Should you require any further information please do not hesitate to contact the undersigned.

Yours faithfully,

Pascal Heekeng
Civil Engineering Manager
for **Peritas Consulting Pty. Ltd.**

peritas
BEYONDCONVENTION

APPENDIX A

Concept Design Sketches

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CATCHMENT A-1: ROOF AREA 1+2 + MAJOR CARPARK

SMALL EVENT (15mm):
PAVED AREA: 3270m²
FIRST FLUSH VOLUME (15mm): 3270 x 0.015 = 49.05m³
SMALL EVENT (15mm) TO BE CONTAINED/TREATED IN BIO-RETENTION AREA (BRA) IN POS

BRA:
1:6 BATTER
0.3-0.5m DEEP
BASIN VOLUME REQ: 50.0m³

MAJOR STORM: 1% AEP
ASSUMED PERMEABILITY: 2m/DAY

PRE-DEVELOPMENT:
FRACTION IMPERVIOUS: 0
AREA: 8100m²
PEAK FLOW RATE Q: 0.032m³/s
POST DEVELOPMENT DISCHARGE HELD TO MATCH PRE-DEVELOPMENT CONDITIONS

POST DEVELOPMENT
ALLOWABLE OUTFLOW: 0.032m³/s
ROOF AREA: 1832 + 962 = 2794m²
TOTAL AREA: 8100m²

REQUIRED STORAGE WITHIN LOT: 250.00m3

SWALE
REQ. 1% AEP SWALE VOLUME TO ENSURE PRE-DEVELOPMENT OUTFLOW: 200.00m³
SEE SWALE DESIGN NOTE

CATCHMENT A-2: ROOF AREA 3 + OUTDOOR SPACE

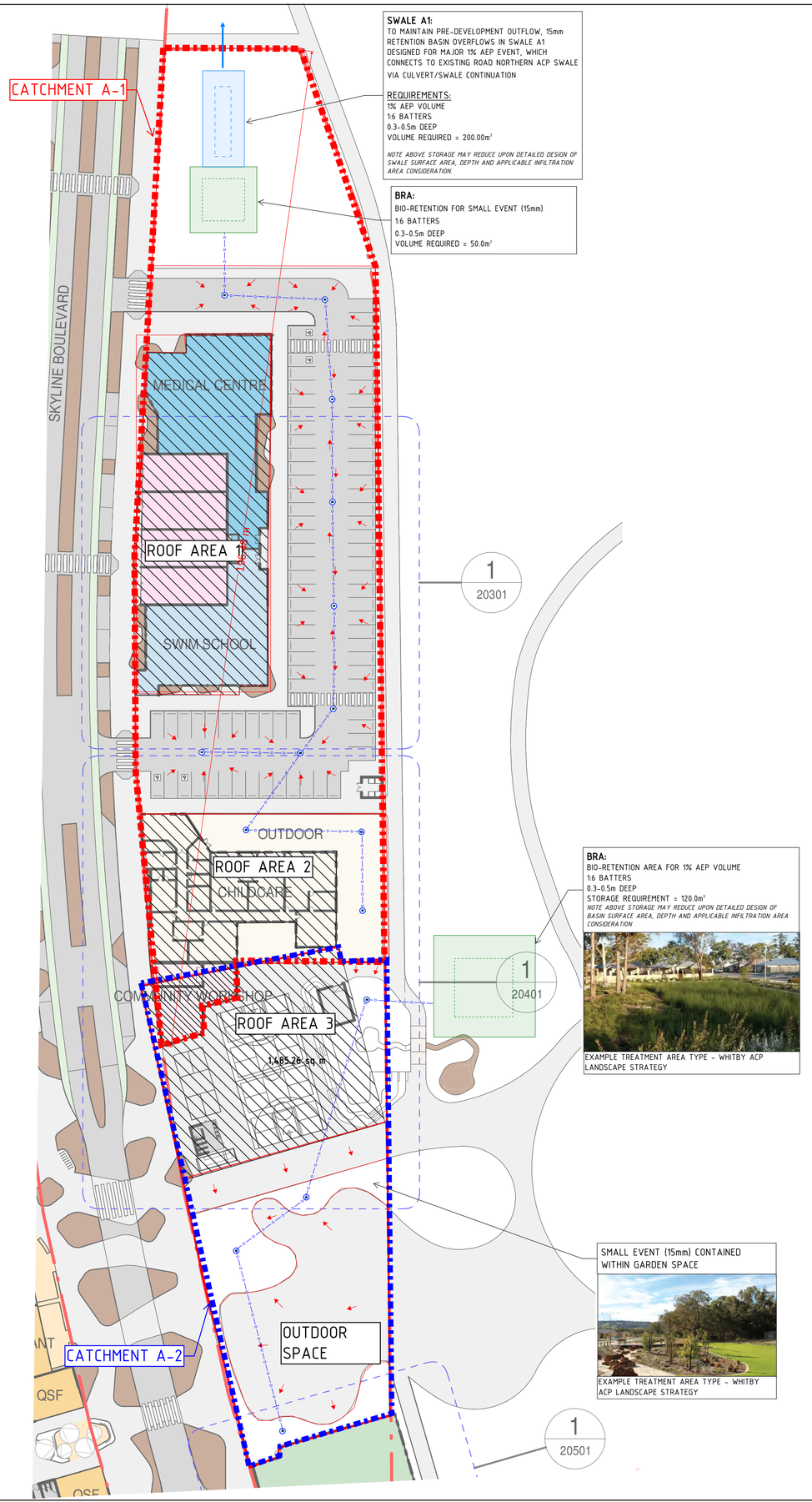
SMALL EVENT (15mm):
PAVED AREA: 1980m²
FIRST FLUSH VOLUME (15mm): 1980 x 0.015 = 29.7m³
FIRST FLUSH CONTAINED WITHIN OPEN SPACE GARDEN
INFILTRATION AREA PROV. BY GARDEN SPACE: 590m2

MAJOR STORM: 1% AEP
ASSUMED PERMEABILITY: 1m/DAY

PRE-DEVELOPMENT:
FRACTION IMPERVIOUS: 0
AREA: 3700m²
PEAK FLOW RATE Q: 0.028m³/s
DISCHARGE RATE TAKEN AS 0 TO REDUCE PIPING/SWALE REQUIREMENTS TO NORTHERN/SOUTHERN BRA

POST DEVELOPMENT:
ROOF AREA: 1720m²
TOTAL AREA: 3700m²

BRA:
DESIGN TO RETAIN 1% AEP VOLUME
1:6 BATTER
0.3-0.5m DEEP
BASIN VOLUME REQ. FOR 1%: 120.00m³
IN FUTURE DESIGN THIS MAY CONNECT TO POS BRA TO ONLY CONTAIN 15mm EVENT



SWALE A1:
TO MAINTAIN PRE-DEVELOPMENT OUTFLOW, 15mm RETENTION BASIN OVERFLOWS IN SWALE A1 DESIGNED FOR MAJOR 1% AEP EVENT, WHICH CONNECTS TO EXISTING ROAD NORTHERN ACP SWALE VIA CULVERT/SWALE CONTINUATION

REQUIREMENTS:
1% AEP VOLUME
1:6 BATTERS
0.3-0.5m DEEP
VOLUME REQUIRED = 200.00m³

NOTE ABOVE STORAGE MAY REDUCE UPON DETAILED DESIGN OF SWALE SURFACE AREA, DEPTH AND APPLICABLE INFILTRATION AREA CONSIDERATION.

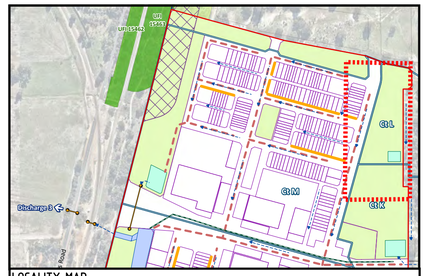
BRA:
BIO-RETENTION FOR SMALL EVENT (15mm)
1:6 BATTERS
0.3-0.5m DEEP
VOLUME REQUIRED = 50.0m³

BRA:
BIO-RETENTION AREA FOR 1% AEP VOLUME
1:6 BATTERS
0.3-0.5m DEEP
STORAGE REQUIREMENT = 120.0m³
NOTE ABOVE STORAGE MAY REDUCE UPON DETAILED DESIGN OF BASIN SURFACE AREA, DEPTH AND APPLICABLE INFILTRATION AREA CONSIDERATION

EXAMPLE TREATMENT AREA TYPE - WHITBY ACP LANDSCAPE STRATEGY

SMALL EVENT (15mm) CONTAINED WITHIN GARDEN SPACE

EXAMPLE TREATMENT AREA TYPE - WHITBY ACP LANDSCAPE STRATEGY



LOCALITY MAP
LWMS ADDENDUM WHITBY ESTATE ACTIVITY CENTRE PLAN (ACP) - STORMWATER MANAGEMENT PLAN

DESIGN AREA

LEGEND

- PIT
- BIO-RETENTION AREA (BRA)
- 1% AEP DETENTION SWALE
- LOT BIO SWALE
- D — STORMWATER DRAINAGE PIPE
- SURFACE FLOW
- SURFACE GRADING 1% TYP.

NOT FOR CONSTRUCTION

1:500 AT A1
0 5m 10m 20m 30m

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MELBOURNE
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A: TWO MELBOURNE QUARTER, SUITE 307, 697 COLLINS ST, DOCKLANDS, VIC 3008

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PROJECT:
PC26207
WHITBY DISTRICT CENTRE

TITLE:
CIVIL SKETCH
PRELIMINARY STORMWATER MANAGEMENT PLAN - CATCHMENT A

PROJECT NUMBER:	DRG NUMBER:	REV:
PC26207	CI.SK.001	B

CATCHMENT B-2: MAJOR CARPARK + MINOR ROOF

FIRST FLUSH (15mm):
PAVED AREA CONTAINED IN LOT BIO SWALES: 3190 + 5793.7 = 8984m²
REQUIRED FLUSH VOLUME: 8984 x 0.015 = 135m³
PROVIDED SWALE VOLUME: 184.4m³
SMALL EVENT (15mm) NOT CONTAINED WITHIN LOT TO BE CONTAINED/TREATED IN BIO-RETENTION AREA (BRA) IN POS

PAVED AREA: 31850m²
REM. FLUSH AREA REQ IN BRA: 31850 - 8984 = 22866m²
FLUSH BRA VOLUME (15mm): 22866 x 0.015 = 345m³

BRA:
1:6 BATTER
0.3-0.5m DEEP
BASIN VOLUME REQ: 345m³

MAJOR STORM: 1% AEP
ASSUMED PERMEABILITY: 2m/DAY

PRE-DEVELOPMENT:
FRACTION IMPERVIOUS: 0
AREA: 31850 + 10646 + 1770 = 44266m²
PEAK FLOW RATE Q: 0.176m³/s
POST DEVELOPMENT DISCHARGE HELD TO MATCH PRE-DEVELOPMENT CONDITIONS

POST DEVELOPMENT
ALLOWABLE OUTFLOW: 0.0176m³/s
ROOF AREA: 10646 + 397 + 580 + 1770 = 13393m²
TOTAL AREA: 44266m²

REQUIRED STORAGE WITHIN LOT: 1366.2m³

SWALE
REQ. 1% AEP SWALE VOLUME TO ENSURE PRE-DEVELOPMENT OUTFLOW: 837m³
SEE SWALE DESIGN NOTE

CATCHMENT B-1: LOADING DOCK + MAJOR ROOF

FIRST FLUSH (15mm):
PAVED AREA CONTAINED IN LOT BIO SWALES: 5738m²
REQUIRED FLUSH VOLUME: 86.10m³
PROVIDED SWALE VOLUME: 491.50m³
SMALL EVENT (15mm) CONTAINED ENTIRELY WITHIN LOT THUS NO BRA REQ.

MAJOR STORM: 1% AEP
ASSUMED PERMEABILITY: 2m/DAY

PRE-DEVELOPMENT:
FRACTION IMPERVIOUS: 0
AREA: 5738 + 984 + 10217 = 16939m²
PEAK FLOW RATE Q: 0.075m³/s
POST DEVELOPMENT DISCHARGE HELD TO MATCH PRE-DEVELOPMENT CONDITIONS

POST DEVELOPMENT
ALLOWABLE OUTFLOW: 0.075m³/s
ROOF AREA: 10217m²
TOTAL AREA: 16939m²

REQUIRED STORAGE WITHIN LOT: 425m³
PROVIDED STORAGE WITHIN LOT: 491.50m³

BRA:
BIO-RETENTION FOR SMALL EVENT (15mm)
1:6 BATTERS
0.3-0.5m DEEP
VOLUME REQUIRED = 345m³

CATCHMENT B-1

CATCHMENT B-2

FUTURE DEVELOPMENT

MAJOR ROOF AREA

MAJOR ROOF AREA

MINOR ROOF AREA

MINOR ROOF AREA

MINOR ROOF AREA

MINOR ROOF

MINOR ROOF

PHARMACY

CAFE

RESTAURANT

OSF

OSF

OSF

TAVERN

TO TRAIN STATION

SKYLINE BOULEVARD

CONNECTION TO EXISTING ROAD DRAINAGE SYSTEM AT PRE-DEVELOPMENT RATE

LOT BIO SWALE 1
AREA: 983m²
REQUIRED DEPTH: 0.5m
VOLUME PROV. 491.5m³
VOLUME REQ. 5738 x 0.015 = 86.07m³

LOT BIO SWALE 5
AREA: 67.3 + 30.4 = 97.7m²
ASSUMED DEPTH: 0.3m
VOLUME PROV. 29.3m³
VOLUME REQ: 1938 x 0.015 = 29.07m³

LOT BIO SWALE 4
AREA: 162.6m²
ASSUMED DEPTH: 0.3m
VOLUME PROV. 48.8m³
VOLUME REQ: 3189 x 0.015 = 47.84m³

LOT BIO SWALE 3
AREA: 176.27m²
ASSUMED DEPTH: 0.3m
VOLUME PROV. 52.90m³
VOLUME REQ: (3326-398) x 0.015 = 43.92m²

LOT BIO SWALE 2
AREA: 176.27m²
ASSUMED DEPTH: 0.3m
VOLUME PROV. 52.90m³
VOLUME REQ: (3445-579) x 0.015 = 43.00m³

CONNECTION TO ACP-S CONVEYANCE SWALE THROUGH TO DISCHARGE 3 AND 4

SWALE B1:
TO MAINTAIN PRE-DEVELOPMENT OUTFLOW, 15mm RETENTION BASIN OVERFLOWS IN SWALE B1 DESIGNED FOR MAJOR 1% AEP EVENT, WHICH CONNECTS TO EXISTING WESTERN ACP SWALE VIA CULVERT/SWALE CONTINUATION AND CARRIES TO DISCHARGE 3.

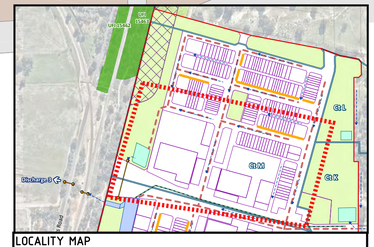
REQUIREMENTS:
1% AEP
1:6 BATTERS
0.3-0.5m DEEP
VOLUME REQUIRED = 837.00m³

NOTE ABOVE STORAGE MAY REDUCE UPON DETAILED DESIGN OF SWALE SURFACE AREA, DEPTH AND APPLICABLE INFILTRATION AREA CONSIDERATION.



EXAMPLE TREATMENT AREA TYPE - WHITBY ACP LANDSCAPE STRATEGY

LEGEND
- PIT
- BIO-RETENTION AREA (BRA)
- 1% AEP DETENTION SWALE
- LOT BIO SWALE
- STORMWATER DRAINAGE PIPE
- SURFACE FLOW
- SURFACE GRADING 1% TYP.



LOCALITY MAP
LWMS ADDENDUM WHITBY ESTATE ACTIVITY CENTRE PLAN (ACP) - STORMWATER MANAGEMENT PLAN

DESIGN AREA

NOT FOR CONSTRUCTION

1:500 AT A1
0 5m 10m 20m 30m

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PERTH
P: 08 6336 9299
A: LEVEL 6, EASTPOINT PLAZA, 233 ADELAIDE TERRACE, PERTH WA 6000

MELBOURNE
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A: TWO MELBOURNE QUARTER, SUITE 307, 697 COLLINS ST, DOCKLANDS, VIC 3008

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PROJECT:
PC26207
WHITBY DISTRICT CENTRE

TITLE:
CIVIL SKETCH
PRELIMINARY STORMWATER MANAGEMENT PLAN - CATCHMENT B

PROJECT NUMBER:	ORG NUMBER:	REV:
PC26207	CI.SK.002	B



BRA:
BIO-RETENTION FOR SMALL EVENT (15mm)
1:6 BATTERS
0.3-0.5m DEEP
VOLUME REQUIRED = 36.27m³

CATCHMENT C
FIRST FLUSH (15mm):
CARPARK AREA: 2418m²
FIRST FLUSH VOLUME (15mm): 2418 x 0.015 = 36.27m³
SMALL EVENT (15mm) TO BE CONTAINED/TREATED IN BIO-RETENTION AREA (BRA) IN POS

BASIN VOLUME REQ. : 36.27m3

MAJOR STORM: 1% AEP
ASSUMED PERMEABILITY: 2m/DAY

PRE-DEVELOPMENT:
FRACTION IMPERVIOUS: 0
AREA: 4905m²
PEAK FLOW RATE Q: 0.03m³/s
POST DEVELOPMENT DISCHARGE HELD TO MATCH PRE-DEVELOPMENT CONDITIONS

POST DEVELOPMENT:
ALLOWABLE OUTFLOW: 0.03m³/s
ROOF AREA: 2532m²
TOTAL AREA: 4950m²

REQUIRED STORAGE WITHIN LOT: 120.00m3

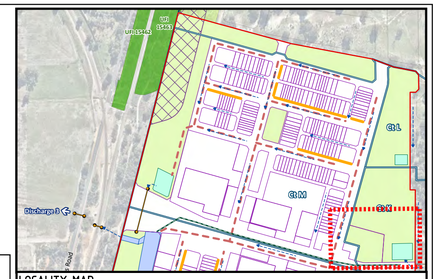
REQ. 1% AEP SWALE VOLUME TO ENSURE PRE-DEVELOPMENT OUTFLOW: 85.00m³
SEE SWALE DESIGN NOTE

SWALE C1:
TO MAINTAIN PRE-DEVELOPMENT OUTFLOW, 15mm RETENTION BASIN OVERFLOWS IN SWALE C1 DESIGNED FOR MAJOR 1% AEP EVENT, WHICH CONNECTS TO EXISTING ROAD DRAINAGE VIA PIPE

REQUIREMENTS:
1% AEP
1:6 BATTERS
0.3-0.5m DEEP
VOLUME REQUIRED = 84.00m³

NOTE ABOVE STORAGE MAY REDUCE UPON DETAILED DESIGN OF SWALE SURFACE AREA, DEPTH AND APPLICABLE INFILTRATION AREA CONSIDERATION.

CONNECTION TO EXISTING PIPE ALONG ROAD AT 1% AEP PRE-DEVELOPMENT RATE



LOCALITY MAP
LWMS ADDENDUM WHITBY ESTATE ACTIVITY CENTRE PLAN (ACP) - STORMWATER MANAGEMENT PLAN

DESIGN AREA

LEGEND

- PIT
- BIO-RETENTION AREA (BRA)
- 1% AEP DETENTION SWALE
- LOT BIO SWALE
- D — STORMWATER DRAINAGE PIPE
- SURFACE FLOW
- SURFACE GRADING 1% TYP.

NOT FOR CONSTRUCTION

1:200 AT A1
0 2m 4m 8m 12m

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MELBOURNE
P: 03 8657 9292
A: TWO MELBOURNE QUARTER, SUITE 307, 697 COLLINS ST, DOCKLANDS, VIC 3008
ENQUIRIES@PERITAS.AU

PROJECT:
PC26207
WHITBY DISTRICT CENTRE

TITLE:
CIVIL SKETCH
PRELIMINARY STORMWATER MANAGEMENT PLAN
- CATCHMENT C

PROJECT NUMBER:	ORG NUMBER:	REV:
PC26207	CI.SK.003	A

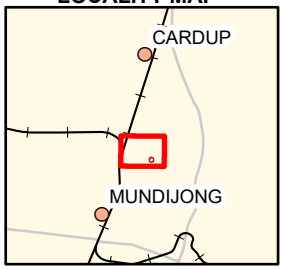
APPENDIX B

Flood Plain Map

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Lot 9021 Skyline Bvd
WHITBY

LOCALITY MAP



LEGEND

- Lot 9021 Skyline Bvd Cadastre
- Cadastre (LGATE_218) - SLIP
- Extent of 1 in 100 (1%) AEP flooding
- 1 in 100 (1%) AEP floodplain
- Extent of 1 in 100 (1%) AEP flooding
- Roads (LGATE_012) - SLIP
- 1 in 100 (1%) AEP flood level contour

0 25 50 75 100 125
Metres

N

Datum and Projection Information
Vertical Datum: AHD71
Horizontal Datum: GDA2020
Projection: MGA Zone 50
Spheroid: GRS80

Project Information
Client: Dominic Davies
Map Author: Van Nguyen
Task ID: 3531
Compilation date: 25/06/2026
Edition: Version 1

SOURCES

The Department of Water and Environmental Regulation acknowledges the following datasets and their custodians in the production of this map:

Railways - Landgate - 09/02/2010
Road Centrelines, DLI - Landgate - 01/02/2016
Spatial Cadastral Database - Landgate - 218
Swan Coast Plain Central 15cm Orthomosaic - Landgate20

Government of Western Australia
Department of Water and Environmental Regulation

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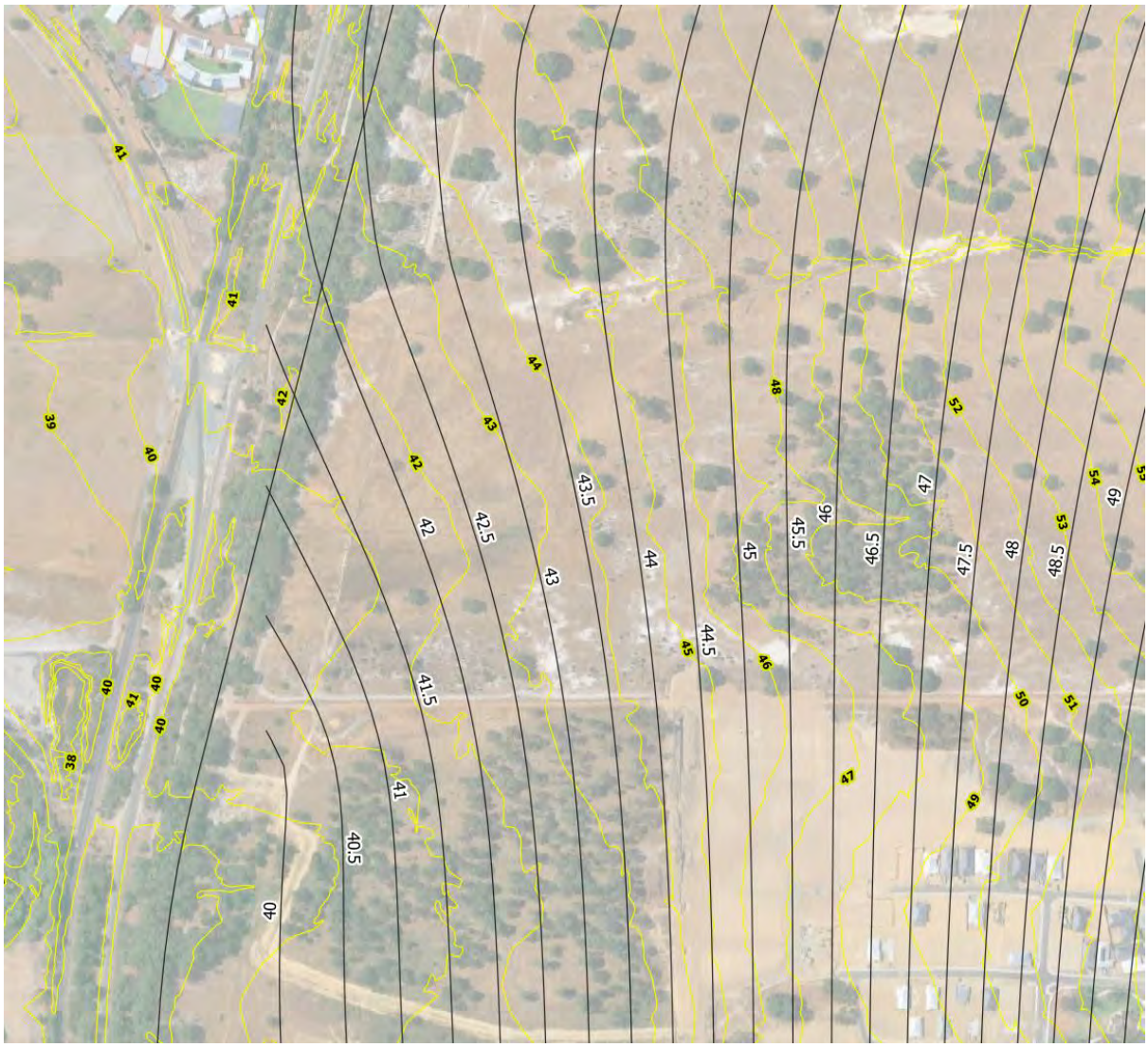
This map was produced with the intent that it be used for display purposes at the scale of 1:2,000 when printing at A4.

While the Department of Water and Environmental Regulation has made all reasonable efforts to ensure the accuracy of this data, the department accepts no responsibility for any inaccuracies and persons relying on this data do so at their own risk.



APPENDIX C

Groundwater Levels



APPENDIX D

IFD Table (mm/hr)

	Annual Exceedance Probability (AEP)						
Duration	**63.2%**	**50%#**	**20%***	**10%**	**5%**	**2%**	**1%**
1 min	111	123	161	188	215	253	283
2 min	98.0	107	137	159	181	210	234
3 min	87.3	95.8	123	143	163	190	212
4 min	78.9	86.8	113	131	150	175	195
5 min	72.2	79.6	104	121	138	162	181
10 min	52.1	57.7	76.0	88.9	102	120	134
15 min	41.8	46.4	61.1	71.5	82.0	96.5	108
20 min	35.5	39.3	51.6	60.4	69.3	81.5	91.2
25 min	31.1	34.4	45.1	52.7	60.4	71.1	79.5
30 min	27.8	30.8	40.3	47.0	53.9	63.4	70.9
45 min	21.7	23.9	31.1	36.3	41.5	48.8	54.7
1 hour	18.1	19.9	25.8	30.1	34.5	40.5	45.5
1.5 hour	14.1	15.4	19.8	23.1	26.5	31.2	35.1
2 hour	11.7	12.8	16.5	19.2	22.0	26.0	29.4
3 hour	9.07	9.89	12.7	14.8	17.0	20.2	22.9
4.5 hour	7.00	7.62	9.75	11.4	13.1	15.7	17.9
6 hour	5.81	6.32	8.10	9.47	10.9	13.2	15.1
9 hour	4.45	4.85	6.22	7.28	8.43	10.2	11.7
12 hour	3.67	4.00	5.14	6.02	6.97	8.42	9.67
18 hour	2.78	3.03	3.90	4.56	5.28	6.37	7.29
24 hour	2.27	2.48	3.18	3.72	4.30	5.16	5.89
30 hour	1.94	2.11	2.71	3.17	3.64	4.35	4.95
36 hour	1.70	1.85	2.38	2.77	3.17	3.78	4.27
48 hour	1.38	1.51	1.93	2.23	2.55	3.00	3.37
72 hour	1.04	1.14	1.44	1.65	1.86	2.16	2.40
96 hour	0.861	0.938	1.18	1.35	1.51	1.73	1.91
120 hour	0.751	0.818	1.02	1.16	1.29	1.48	1.62
144 hour	0.678	0.739	0.922	1.04	1.15	1.32	1.44
168 hour	0.628	0.684	0.852	0.960	1.06	1.21	1.33

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Environmental Noise Assessment - Mixed Commercial

Whitby District Centre, Whitby

Reference: 260311390-01 Draft

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Date	Rev	Description	Author	Verified
25-Jun-26	0	Issued to Client	Matt Moyle	Terry George

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EXECUTIVE SUMMARY

Lloyd George Acoustics was engaged by Golden Group to undertake an environmental noise assessment for a Development Application (DA) of a proposed mixed commercial development, to be located at Whitby District Centre, Whitby - refer *Figure 1-1*. The development is to be comprised of the following notable elements:

- Two 24/7 Supermarkets with rear loading docks;
- One Major Retail with rear loading dock;
- 24/7 Gym tenancy;
- Tavern with outdoor dining;
- Medical Centre;
- Swim school;
- Two fast food outlets with drive-through lanes;
- Multiple Showroom retail tenancies;
- Single storey Childcare Centre;
- Café and restaurant tenancies.

The assessment was undertaken by way of computer noise modelling, which demonstrated the potential for compliance with all operational scenarios. Exceedences are to be expected in some cases and, detailed designs of some tenancies will need to be reviewed at the appropriate time, with outcomes also dependent on future residential development in the area.

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1. INTRODUCTION

Lloyd George Acoustics was engaged by Golden Group to undertake an environmental noise assessment for a Development Application (DA) for a proposed mixed commercial development, to be located at Whitby District Centre, Whitby - refer *Figure 1-1*. The development is to be comprised of the following notable elements:

- Two 24/7 Supermarkets with rear loading docks;
- One Major Retail with rear loading dock;
- 24/7 Gym tenancy;
- Tavern with outdoor dining;
- Medical Centre;
- Swim school;
- Two fast food outlets with drive-through lanes;
- Multiple Showroom retail tenancies;
- Single storey Childcare Centre;
- Café and restaurant tenancies.



Figure 1-1: Subject Site Location (Source: PlanWA Maps)

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With regard to noise emissions, consideration is given to noise from mechanical services, delivery areas, patron noise, gym activities, outdoor child play and closing car doors at neighbouring properties, against the prescribed standards of the *Environmental Protection (Noise) Regulations 1997*. A site plan of the development is shown in *Figure 1-2*.



Figure 1-2: Proposed Site Plan (Source: Buchan)

Appendix C contains a description of some of the terminology used throughout this report.

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2. CRITERIA

Environmental noise in Western Australia is governed by the *Environmental Protection Act 1986*, through the *Environmental Protection (Noise) Regulations 1997* (the Regulations).

2.1. Regulations 7, 8 & 9

This group of regulations provide the prescribed standard for noise as follows:

*"**7. Prescribed standard for noise emissions***

(1) Noise emitted from any premises or public place when received at other premises –

(a) must not cause, or significantly contribute to, a level of noise which exceeds the assigned level in respect of noise received at premises of that kind; and

(b) must be free of –

(i) tonality; and

(ii) impulsiveness; and

(iii) modulation,

when assessed under regulation 9.

(2) For the purposes of subregulation (1)(a), a noise emission is taken to significantly contribute to a level of noise if the noise emission … exceeds a value which is 5 dB below the assigned level at the point of reception."

Tonality, impulsiveness and modulation are defined in regulation 9 (refer *Appendix C*). Under regulation 9(3), *"Noise is taken to be free of the characteristics of tonality, impulsiveness and modulation if -*

(a) the characteristics cannot be reasonably and practicably removed by techniques other than attenuating the overall level of noise emission; and

(b) the noise emission complies with the standard prescribed under regulation 7(1)(a) after the adjustments in the table [Table 2-1] … are made to the noise emission as measured at the point of reception."

Table 2-1: Adjustments Where Characteristics Cannot Be Removed

Where Noise Emission is Not Music*			Where Noise Emission is Music	
Tonality	Modulation	Impulsiveness	No Impulsiveness	Impulsiveness
+ 5 dB	+ 5 dB	+ 10 dB	+ 10 dB	+ 15 dB

* These adjustments are cumulative to a maximum of 15 dB.

The assigned levels (prescribed standards) for all premises are specified in regulation 8(3) and are shown in *Table 2-2*. The L_{A10} assigned level is applicable to noises present for more than 10% of a representative assessment period, generally applicable to "steady-state" noise sources. The L_{A1} is for short-term noise sources present for less than 10% and more than 1% of the time. The L_{Amax} assigned level is applicable for incidental noise sources, present for less than 1% of the time.

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Table 2-2: Baseline Assigned Levels

Premises Receiving Noise	Time Of Day	Assigned Level (dB)		
		L_{A10}	L_{A1}	L_{Amax}
Noise sensitive premises: highly sensitive area[1]	0700 to 1900 hours Monday to Saturday (Day)	45 + influencing factor	55 + influencing factor	65 + influencing factor
	0900 to 1900 hours Sunday and public holidays (Sunday)	40 + influencing factor	50 + influencing factor	65 + influencing factor
	1900 to 2200 hours all days (Evening)	40 + influencing factor	50 + influencing factor	55 + influencing factor
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night)	35 + influencing factor	45 + influencing factor	55 + influencing factor
Noise sensitive premises: any area other than highly sensitive area	All hours	60	75	80
Commercial Premises	All hours	60	75	80
Industrial and Utility Premises	All hours	65	80	90

1. ***highly sensitive area*** means that area (if any) of noise sensitive premises comprising —
   (a) a building, or a part of a building, on the premises that is used for a noise sensitive purpose; and
   (b) any other part of the premises within 15 metres of that building or that part of the building.

The influencing factor (IF), in relation to noise received at noise sensitive premises, has been calculated as between 1 dB and 5 dB, as determined in *Appendix B*. *Table 2-3* shows the assigned levels including the influencing factor at the receiving locations.

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Table 2-3: Assigned Levels

Premises Receiving Noise	Time Of Day	Assigned Level (dB)		
		L_{A10}	L_{A1}	L_{Amax}
+5 dB IF Future Residential North, North West	0700 to 1900 hours Monday to Saturday (Day)	50	60	70
	0900 to 1900 hours Sunday and public holidays (Sunday)	45	55	70
	1900 to 2200 hours all days (Evening)	45	55	60
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night)	40	50	60
+1 dB IF East Residences	0700 to 1900 hours Monday to Saturday (Day)	46	56	66
	0900 to 1900 hours Sunday and public holidays (Sunday)	41	51	66
	1900 to 2200 hours all days (Evening)	41	51	56
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night)	36	46	56
+2 dB IF South East Residences	0700 to 1900 hours Monday to Saturday (Day)	47	57	67
	0900 to 1900 hours Sunday and public holidays (Sunday)	42	52	67
	1900 to 2200 hours all days (Evening)	42	52	57
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night)	37	47	57
+3 dB IF South Residences	0700 to 1900 hours Monday to Saturday (Day)	48	58	68
	0900 to 1900 hours Sunday and public holidays (Sunday)	43	53	68
	1900 to 2200 hours all days (Evening)	43	53	58
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night)	38	48	58
Noise sensitive premises: any area other than highly sensitive area	All hours	60	75	80

It must be noted the assigned levels above apply outside the receiving premises and at a point at least 3 metres away from any substantial reflecting surfaces.

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The assigned levels are statistical levels and therefore the period over which they are determined is important. The Regulations define the Representative Assessment Period (RAP) as "*a period of time of not less than 15 minutes, and not exceeding 4 hours, determined by* an *inspector* or *authorised person to be appropriate for the assessment of a noise emission, having regard to the type and nature of the noise emission"*. An inspector or authorised person is a person appointed under Sections 87 & 88 of the *Environmental Protection Act 1986* and include Local Government Environmental Health Officers and Officers from the Department of Water Environmental Regulation. Acoustic consultants or other environmental consultants are not appointed as an inspector or authorised person. Therefore, whilst this assessment is based on a 4-hour RAP, which is assumed to be appropriate given the nature of the operations, this is to be used for guidance only.

2.2. Regulation 3

"3. Regulations do not apply to certain noise emissions

(1) Nothing in these regulations applies to the following noise emissions –

(a) Noise emissions from the propulsion and braking systems of motor vehicles operating on a road;"

The car park is considered a road and therefore vehicle noise (propulsion and braking) is not assessed. Noise from vehicle car doors however are assessed, since these are not part of the propulsion or braking system. Similarly, the refrigeration condensers of delivery vehicles are subject to noise assessment. Where vehicles are idling in drive-through lanes, these are not considered to be on a road and engine idling noise is assessed.

2.3. Regulation 14A

"14A. Waste Collection and Other Works

(2) Regulation 7 does not apply to noise emitted in the course of carrying out class 1 works if –

(a) The works are carried out in the quietest reasonable and practicable manner; and

(b) The equipment used to carry out the works is the quietest reasonably available;

class 1 works means specified works carried out between -

(a) 0700 hours and 1900 hours on any day that is not a Sunday or a public holiday; or

(b) 0900 hours and 1900 hours on a Sunday or public holiday.

specified works means -

(a) The collection of waste; or

(b) The cleaning of a road or the drains for a road; or

(c) The cleaning of public places, including footpaths, cycle paths, car parks and beaches;"

In the case where specified works are to be carried out outside of class 1, a noise management plan is to be prepared and approved by the CEO.

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3. METHODOLOGY

Computer modelling has been used to predict the noise emissions from the development to all nearby receivers. The software used was *SoundPLAN 9.1* with the ISO 9613:2024 algorithms, as they include the influence of meteorological conditions. Input data required in the model are listed below and discussed in *Section 3.1* to *Section 3.4*:

- Meteorological Information;
- Topographical data;
- Ground Absorption; and
- Source sound power levels.

3.1. Meteorological Conditions

Meteorological information utilised is provided in *Table 3-1* and is considered to represent worst-case conditions for noise propagation. At wind speeds greater than those shown, sound propagation may be further enhanced, however background noise from the wind itself and from local vegetation is likely to be elevated and dominate the ambient noise levels.

Table 3-1: Modelling Meteorological Conditions

Parameter	Day (7.00am to 7.00pm)	Night (7.00pm to 7.00am)
Temperature (°C)	20	15
Humidity (%)	50	50
Wind Speed (m/s)	Up to 5	Up to 5
Wind Direction*	All	All

* The modelling package allows for all wind directions to be modelled simultaneously.

Alternatives to the above default conditions can be used where one year of weather data is available and the analysis considers the worst 2% of the day and night for the month of the year in which the worst-case weather conditions prevail (source: *Draft Guideline on Environmental Noise for Prescribed Premises*, May 2016). In most cases, the default conditions occur for more than 2% of the time and therefore must be satisfied.

3.2. Topographical Data

Topographical data was assumed flat as the site will be levelled.

Surrounding existing buildings were also incorporated in the noise model, as these can provide noise shielding as well as reflection paths. Single storey buildings are modelled with a height of 3.5 metres and any proposed commercial were modelled based on Elevations Drawings provided, being between 5 and 8 metres high.

The area is likely to be developed as a combination of residential and commercial uses, with minimal solid fencing expected between the subject site and surrounding premises. A 3.5m high solid wall is included adjacent to the Supermarket Delivery area, along the northern edge of the loading road. Future residences to the East

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and South are assumed single storey while those to the north and north west of the supermarkets may be multi-storey (three levels or more).

Figure 3-1 shows a 2D overview of the noise model with the location of all relevant receivers identified.



Figure 3-1: Overview of Noise Model

3.3. Ground Absorption

The ground absorption has been assumed to be 0.0 (0%) for the roads and car park and 0.5 (50%) elsewhere, noting that 0.0 represents hard reflective surfaces such as water and 1.0 represents absorptive surfaces such as grass.

3.4. Source Sound Levels

The source sound power levels used in the modelling are provided in *Table 3-2*.

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Table 3-2: Source Sound Power Levels, dB

Description	Octave Band Centre Frequency (Hz)								Overall dB(A)
	63	125	250	500	1k	2k	4k	8k	
Supermarkets (Major)									
Supermarkets – Refrigerated Truck, L_1	86	79	92	90	92	91	85	76	**96**
Supermarkets – Refrigeration Plant, L_{10}	-	90	85	83	83	78	71	68	**87**
Supermarket – A/C (6 off), L_{10}	91	91	80	77	75	72	65	62	**81**
Delivery impacts, dB L_{Amax}	111	109	105	99	97	96	95	92	**104**
Other Retail & Gym									
Typical A/C Package, L_{10}	88	76	75	74	71	66	61	56	**76**
Gym Noise (internal) including Background Music, L_p	94	81	70	69	69	65	62	56	**75**
Restaurant Precinct & Tavern									
Tavern/Restaurant Patrons Outdoor 300 – L_{10}	68	73	87	92	89	84	78	74	**93**
Generic Kitchen Exhaust, L_{10}	50	64	61	70	69	66	62	47	**73**
Childcare Centre									
Babies Play Aged 0-2 Years (10 kids), L_{10}	54	60	66	72	74	71	67	64	**78**
Toddler Play Aged 2-3 Years (10 kids), L_{10}	61	67	73	79	81	78	74	70	**85**
Kindy Play Aged 3+ Years (10 kids), L_{10}	64	70	75	81	83	80	76	72	**87**
Typical A/C Package, L_{10}	88	76	75	74	71	66	61	56	**76**
Swimming School & Medical Centre									
Swimming Centre Plant, L_{10}	91	91	80	77	75	72	65	62	**81**
Medical Centre Plant AC, L_{10}	88	76	75	74	71	66	61	56	**76**
Fast Food Outlets									
Fast Food Plant AC	88	76	75	74	71	66	61	56	**76**
Fast food Plant Refrigeration	80	79	77	73	68	62	56	51	**74**
Generic Kitchen Exhaust, L_{10}	50	64	61	70	69	66	62	47	**73**
Small Refrigerated Truck delivery – L_{A1}	100	91	87	88	83	81	79	75	**90**
Cars moving slowly/Idling in Drive-Thru, L_{10}	81	78	74	72	74	74	67	64	**79**
All - Miscellaneous									
Car Doors Closing, dB L_{max}	71	74	77	81	80	78	72	61	**84**

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The following is noted in relation to *Table 3-2*:

- All sources are based on those used on similar projects;
- All mechanical (HVAC) plant have been modelled at 1.0m above roof top level;
- Gym noise is based on a measured internal sound pressure level during an average period of gym use, includes sounds of weights dropping, background music and machine/treadmills running.
- Gym is assumed to have approximately 50% of walls glazed with 10.38mm thick glazing and a combined roof and ceiling performance of R_w 36 dB.
- It is assumed up to 300 people will be present in the Tavern's Alfresco area. Of these, a worst-case of 1 in 3 patrons will be talking simultaneously at a sound pressure level of 65 dB(A) at 1 metre per person. These patrons are at a height of 1.3 metres.
- The tavern is not yet designed in detail, and as such no modelling has been done of internal noise at this stage, only noise from external patrons.
- A 1.2m parapet has been assumed surrounding each tenancy's rooftop;
- Refrigeration units on Supermarket delivery trucks modelled 2.6 metres above ground. A conservative estimate of 3 trucks has been assumed loading in the designated area simultaneously;
- Car door noise is modelled as 1 metre above ground and positioned in each car bay.;
- All fast food plant are assumed to be mounted on rooftops;
- Where plant decks are indicated on plans, these are assumed to have acoustically open louvres at this stage.
- Child play source levels are based on *Guideline for Childcare Centre Acoustic Assessments Version 3.0* produced by the Association of Australasian Acoustical Consultants (AAAC) published September 2020. Where the number of children for individual play areas is specified in the plans, these have been adjusted from the reference source levels using appropriate acoustical calculations. Outdoor child play was modelled as area sources at 1.0-metre above ground level. For the purposes of the DA assessment, 80 children were assumed for the centre. As such, the sound power levels used in the model were scaled as follows:
  - 20 children aged 0-2 years = 81 dB(A);
  - 30 children aged 2-3 years = 90 dB(A);
  - 30 children aged 3+ years = 92 dB(A).

3.5. Noise Modelling Scenarios

The noise modelling considers various scenarios and these are based on assumptions of what will be operating at different times of the day, as well as the duration of the noise.

The following worst case scenarios are assumed and modelled:

1. Sunday/Evening L_{A10} – All plant operating for all tenancies except the CCC. Includes delivery truck noise in the supermarket loading bay area. Includes Drive Through Vehicles.
2. Day L_{A10} – All plant operating at all tenancies, child play noise from CCC.
3. Night L_{A10} – Refrigeration Plant for supermarket, all fast food outlets operating, tavern noise, and gym noise.
4. Night Deliveries L_{A1} – Delivery truck noise from refrigerated deliveries in the designated supermarket loading area and smaller rigid trucks to the fast food outlets.
5. Night L_{Amax} – Car park door closing noise and delivery area impact noises.

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4. RESULTS & ASSESSMENT

4.1. Scenario 1: Sunday/Evening L_{A10}

The results for the Sunday/Evening Operations Scenario are provided in *Table 4-1*. A noise contour plot is also provided in *Figure 4-1* showing noise levels at ground floor. The most dominant source groups for a given receiver location are highlighted in the table.

Table 4-1: Scenario 1 Sunday/Evening Predicted Levels, dB L_{A10}

Receiver*	Drive-through Vehicles	Gym	AC/Refrig Plant	Outdoor Tavern Patrons	Total	Assigned Level	Exceedence
East Residences	19	12	35	32	**37**	**41**	*Complies*
South Residences	44	22	45	46	**49**	**43**	*+6*
South East Residences	31	23	37	41	**43**	**42**	*+1*
North Residences GF	12	7	42	16	**42**	**45**	*Complies*
North Residences 1F	13	9	49	12	**49**	**45**	*+4*
North West Residences GF	11	7	39	12	**39**	**45**	*Complies*
North West Residences 1F	12	9	43	13	**43**	**45**	*Complies*
North West Residences 2F	20	13	48	21	**48**	**45**	*+3*

*Results are worst case of a group of receivers in this area

It is demonstrated that compliance is achieved at sensitive receptors to the East. It should be noted that refrigerated truck deliveries are generally the greatest noise contributors and the proposed 3m high tilt-up concrete wall is effective in achieving compliance in the Evening/Sunday period.

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Figure 4-1



Noise levels
L_{A10}, dB

= 35
= 40
= 45
= 50
= 55
= 60
= 65

Legend

- Plant/Vehicle Source
- Noise Wall
- Roof area
- Patron Noise Area
- Delivery truck body

N

Length Scale 1:3500

0 20 40 80 120 160 m

Whitby District Centre

L_{A10} Noise Contour Plot - Scenario 1 Noise Evening/Sunday
Ground Floor Level
Winds in All Direction

SoundPLAN v9.1
ISO 9613 Algorithms

Job No. 260311390

22 June 2026

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4.2. Scenario 2: Day L_{A10}

The results for the Day Operations Scenario are provided in *Table 4-2.* A noise contour plot is also provided in *Figure 4-2* showing noise levels at ground floor. The most dominant source groups for a given receiver location are highlighted in the table.

Table 4-2: Scenario 2 Daytime Predicted Levels, dB L_{A10}

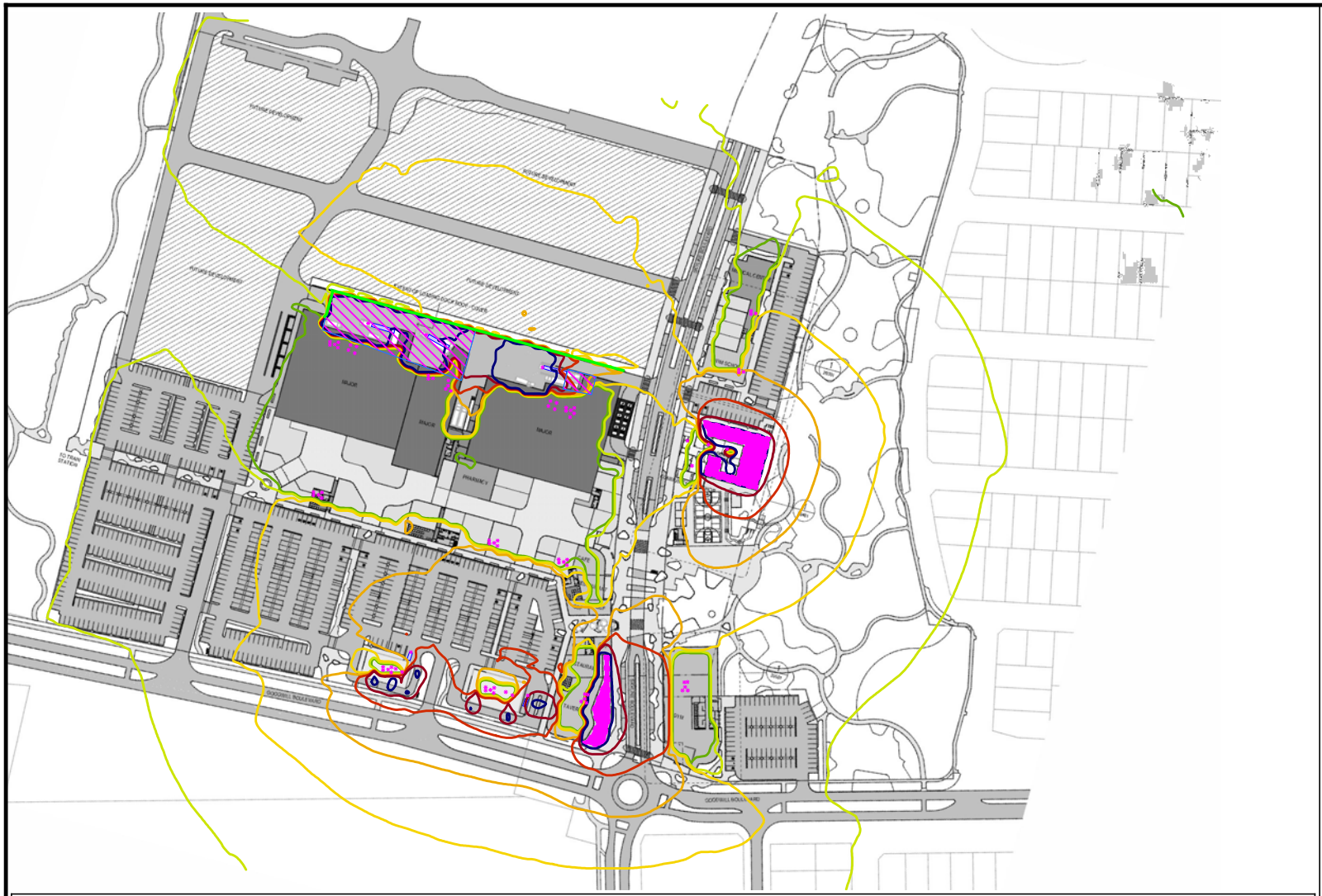
Receiver*	Drive-through Vehicles	Gym	CCC	AC/Refrig Plant	Delivery Trucks	Outdoor Tavern Patrons	Total	Assigned Level	Exceedence
East Residences	19	12	41	35	32	32	**43**	**46**	*Complies*
South Residences	44	22	32	47	17	46	**49**	**48**	*+1*
South East Residences	31	23	36	37	15	41	**43**	**47**	*Complies*
North Residences GF	12	7	37	43	49	16	**50**	**50**	*Complies*
North Residences 1F	13	9	36	49	57	12	**58**	**50**	*+8*
North West Residences GF	11	7	14	40	33	12	**40**	**50**	*Complies*
North West Residences 1F	12	9	14	43	37	13	**44**	**50**	*Complies*
North West Residences 2F	20	13	16	47	40	21	**48**	**50**	*Complies*

*Results are worst case of a group of receivers in this area

It is demonstrated that compliance is achieved at all receptors except future residential to the upper floor of any buildings to the north – should these overlook the supermarket loading bay. Where levels are dominated by patron noise, additional review of the tavern is warranted, such that barriers or other control measures can be determined by a suitably qualified acoustic consultant but will likely require a solid wall around.

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Figure 4-2



Noise levels
L_{A10}, dB

= 35
= 40
= 45
= 50
= 55
= 60
= 65

Legend

- Plant/Vehicle Source
- Noise Wall
- Roof area
- Patron/Childplay Noise
- Delivery truck body

N

Length Scale 1:3500

0 20 40 80 120 160 m

Whitby District Centre

L_{A10} Noise Contour Plot - Scenario 2 Noise Day Time
Ground Floor Level
Winds in All Direction

SoundPLAN v9.1
ISO 9613 Algorithms

Job No. 260311390

22 June 2026

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4.3. Scenario 3: Night L_{A10}

The results for the Night Operations Scenario are provided in *Table 4-3.* A noise contour plot is also provided in *Figure 4-3* showing noise levels at ground floor. The most dominant source groups for a given receiver location are highlighted in the table.

Table 4-3: Scenario 3 Night Predicted Levels, dB L_{A10}

Receiver*	Drive-through Vehicles	Gym	AC/Refrig Plant	Outdoor Patrons	Combined	Assigned Level	Exceedence
East Residences	19	12	34	32	**36**	**36**	*Complies*
South Residences	44	22	45	46	**49**	**38**	*+11*
South East Residences	31	23	35	41	**43**	**37**	*+6*
North Residences GF	12	7	41	16	**41**	**40**	*+1*
North Residences 1F	13	9	48	12	**48**	**40**	*+8*
North West Residences GF	11	7	38	12	**38**	**40**	*Complies*
North West Residences 1F	12	9	42	13	**42**	**40**	*+2*
North West Residences 2F	20	13	47	21	**47**	**40**	*+7*

*Results are worst case of a group of receivers in this area

It is demonstrated that exceedences are expected at receivers to the south and north. Should the noise be characterised as tonal, thereby attracting a +5 dB adjustment, exceedences are expected at all locations. The greatest contributor for future south residences is generally outdoor patron noise from the tavern. Mitigation and additional review should be considered at detailed design of this tenancy and may include the use of solid barriers around the alfresco areas. The impacts of rooftop plant are also expected to be significant to future upper floors of any residential development to the north and north west. It is recommended that plant be co-located within enclosed plant rooms. Noise from Drive through vehicles to the south should be reviewed and subject to the opening hours of those outlets and design of residential lots, additional mitigation may be required at detailed design.

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Figure 4-3



Noise levels
L_{A10}, dB

= 35
= 40
= 45
= 50
= 55
= 60
= 65

Legend
- Plant/Vehicle Source
- Noise Wall
- Roof area
- Patron Noise

N

Length Scale 1:3500

0 20 40 80 120 160 m

Whitby District Centre

L_{A10} Noise Contour Plot - Scenario 3 Noise Night-Time
Ground Floor Level
Winds in All Direction

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ISO 9613 Algorithms

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4.4. Scenario 4: Deliveries Night L_{A1}

The results for the Night Operations Scenario are provided in *Table 4-4.* A noise contour plot is also provided in *Figure 4-4* showing noise levels at ground floor.

Table 4-4: Scenario 4 Night Predicted Levels, dB L_{A1}

Receiver*	Delivery Trucks	Assigned Level	Exceedence
East Residences	**35**	**46**	*Complies*
South Residences	**48**	**48**	*Complies*
South East Residences	**27**	**47**	*Complies*
North Residences GF	**49**	**50**	*Complies*
North Residences 1F	**57**	**50**	+7
North West Residences GF	**33**	**50**	*Complies*
North West Residences 1F	**37**	**50**	*Complies*
North West Residences 2F	**41**	**50**	*Complies*

*Results are worst case of a group of receivers in this area

It is demonstrated that compliance is achieved at all receptors except upper highly sensitive floors (should they eventuate) of buildings to the immediate north. Additional noise management may be required should this be the outcome such as delivery restrictions. It is also recommended that any such upper floors of future residences be designed so that only non-sensitive or non-habitable rooms (e.g. bathrooms, laundry, kitchen etc.) face south towards the loading bays. Appropriate façade upgrades and notifications on titles should also be applied to future noise sensitive development.

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Figure 4-4



Noise levels
L_{A1}, dB

= 35
= 40
= 45
= 50
= 55
= 60
= 65

Legend

- Plant/Vehicle Source
- Noise Wall
- Roof area
- Delivery Truck

N

Length Scale 1:3500

0 20 40 80 120 160 m

Whitby District Centre

L_{A1} Noise Contour Plot - Scenario 4 Delivery Noise Night-Time
Ground Floor Level
Winds in All Direction

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4.5. Scenario 5: Deliveries and Carpark Night L_{AMax}

The results for the Night Operations Scenario (L_{max}) are provided in *Table 4-5*. These are representative of events that are intermittent in nature in the car park (doors) and delivery areas. A noise contour plot is also provided in *Figure 4-5* showing noise levels at ground floor (not cumulative). The most dominant source groups for a given receiver location are highlighted in the table.

Table 4-5: Scenario 5 Night Predicted Levels, dB L_{AMax}

Receiver*	Car Doors	Delivery Impacts	Max Adjusted	Assigned Level	Exceedence
East Residences	34	42	**52**	**56**	*Complies*
South Residences	40	28	**50**	**58**	*Complies*
South East Residences	42	36	**52**	**57**	*Complies*
North Residences GF	35	57	**67**	**60**	*+7*
North Residences 1F	35	63	**73**	**60**	+13
North West Residences GF	60	43	**70**	**60**	*+10*
North West Residences 1F	59	44	**69**	**60**	*+9*
North West Residences 2F	55	47	**65**	**60**	*+5*

*Results are worst case of a group of receivers in this area

The noise sources in this scenario may be characterised as impulsive, attracting a +10 dB adjustment. It is demonstrated that compliance is achieved at east and south receivers. If future residential development occurs to the north and north west, exceedences are to be expected such that the design of such development take into account the noise impacts. In addition to loading bay restrictions, car park use could also be limited at night in some areas.

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Figure 4-5



Noise levels
L_{Amax}, dB

= 45
= 50
= 55
= 60
= 65
= 70
= 75

Legend
- Delivery Impact Source
- Noise Wall
- Roof area
- Carpark Area

N

Length Scale 1:3500

0 20 40 80 120 160 m

Whitby District Centre

L_{Amax} Noise Contour Plot - Scenario 5 Delivery and Carpark Noise Night-Time
Ground Floor Level
Winds in All Direction

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ISO 9613 Algorithms

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5. RECOMMENDATIONS

As the assessment is for DA approval only at this stage, the following recommendations are indicative only:

- All tenancies:
  - Mechanical plant to be selected to be as quiet as reasonably available with detailed design including low speed mode at night and including attenuators fitted in ductwork of fan systems such as the kitchen supply/exhaust.
  - Sound levels to be in line with those assumed in *Table 3-2*.
  - Where determined by detailed design review, solid screens and/or fully enclosed plant yards may be required.
  - Car park drainage grates or similar to be plastic or metal with rubber gasket and secured to avoid excess banging.
  - Waste collection to occur during daytime hours, defined as:
    - 07:00 to 19:00 Monday to Saturday (excluding public holiday), or
    - 09:00 to 19:00 on a Sunday or public holiday
- Supermarkets:
  - Sound levels of plant to be in line with those assumed in *Table 3-2* including selecting plant that has a low speed option for night operations and/or acoustic screening installed to night plant such as refrigeration condensers;
  - Rooftop plant to be located close to high parapet walls or within an enclosed plant deck.
  - Plant to be mounted using vibration isolators.
  - Loading Dock area to incorporate a noise barrier as shown on DA plans located on the east side of the dock to effectively screen refrigeration units of large cold delivery trucks. The barrier and roller door(s) should be designed in consultation with a qualified acoustical consultant prior to building permit issue when more details are available.
  - Refrigerated deliveries are ideally to occur between the hours of 7.00am – 10.00pm Monday to Saturday, and 9.00am to 10.00pm Sundays.
  - Where possible normal (non-refrigerated) delivery trucks to turn engines off whilst unloading;
  - Refrigeration unit on trucks may need to be turned off if unloading for long durations at night (more than 24-minutes in a 4-hour period);
  - Delivery companies are to be advised of the above requirements.
- Gym:
  - Where the gym wishes to have high levels of music (e.g. spin or aerobic classes), the gym operator is to undertake their own acoustic assessment. Where high levels of music are not intended, additional assessment would not be warranted.
  - Gym operator to control impact noise from dropping of weights;
  - All external glass to be minimum 6.38mm thick laminated and achieve minimum R_w 30. Note where higher internal sound levels are desired, consider 10.38mm thick laminated;
  - Roof construction assumed to be minimum Rw 36 dB.
- CCC:
  - The behaviour and 'style of play' of children should be monitored to prevent particularly loud activity e.g. loud banging/crashing of objects, 'group' shouts/yelling;
  - Favour soft finishes in the outdoor play area to minimise impact noise (e.g. soft grass, sand pit(s), rubber mats) over timber or plastic;

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  - Favour soft balls and rubber wheeled toys;
  - Child play to be staggered where practicable;
  - No amplified music to be played outside;
- Medical/Swim School:
  - Pool plant to be verified at detailed design, additional mitigation may be required.
  - All external glass to be minimum 6.38mm thick laminated and achieve minimum R_w 30. Note where higher internal sound levels are desired, consider 10.38mm thick laminated;
- Tavern:
  - A noise management plan should be prepared by the operator to ensure aspects such as functions, live music, outside speakers and like are appropriately controlled such that noise levels are compliant on an ongoing basis.
  - All external glass to be minimum 6.38mm thick laminated and achieve minimum R_w 30. Note where higher internal sound levels are desired, consider 10.38mm thick laminated;
  - Roof is to be metal deck with *Anticon 60* below roof sheeting and above purlins. Ceiling is to be minimum 13mm thick sound-rated plasterboard with R4 fibrous insulation above. Underside of ceiling to consist of minimum 50% acoustic absorption coverage of a material having minimum NRC 0.70. Note where higher internal sound levels are desired, ceiling to be 2 x 13mm thick sound-rated plasterboard;
  - All music is to be played through an in-house system, to be kept at low levels appropriate for background music levels. Changing of settings shall be kept within a locked cabinet. Location of speakers shall be such that they are directed inwards, away from the noise sensitive premises. There shall be no subwoofers.
  - Outside the venue is to be patrolled by venue personnel, particularly near closing to ensure no loitering or the like. Patrons exiting the venue will, where necessary, be politely asked to consider neighbours and leave quietly.
  - Design of any Alfresco Dining/Beer Garden areas may need to incorporate full or partial enclosure or sound barriers, to be reviewed and determined at detail design stage.
  - Bottle emptying shall occur within internally if at night-time, otherwise can occur externally during the daytime.
- Future North and North East Development:
  - Where multi storey development occurs involving noise sensitive land use on upper floors. These will require the following, subject to review:
    - Notifications on titles to advise buyers of noise from commercial land use;
    - Upgraded facades (glazing) facing towards the loading bay and supermarket tenancies;
    - Design considerations to improve acoustic impacts.

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Appendix A – Development Plans

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Appendix B – Influencing Factor Calculation

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The assigned levels combine a baseline assigned level with an influencing factor, with the latter increasing the assigned level on the basis of the existence of significant roads and commercial or industrial zoned land within an inner circle (100 metre radius) and an outer circle (450 metre radius) of the noise sensitive premises. The calculation for the influencing factor is:

$$= \frac{1}{10}(\%\ \text{Type A}_{100} + \%\ \text{Type A}_{450}) + \frac{1}{20}(\%\ \text{Type B}_{100} + \%\ \text{Type B}_{450})$$

where:

$\%\ \text{Type A}_{100}$ = the percentage of industrial land within a100m radius of the premises receiving the noise

$\%\text{TypeA}_{450}$ = the percentage of industrial land within a 450m radius of the premises receiving the noise

$\%\ \text{Type B}_{100}$ = the percentage of commercial land within a100m radius of the premises receiving the noise

$\%\text{TypeB}_{450}$ = the percentage of commercial land within a 450m radius of the premises receiving the noise

+ Transport Factor (maximum of 6 dB)

= 2 for each secondary road (6,000 to 15,000 vpd) within 100m

= 2 for a major road (>15,000 vpd) within 450m

= 6 for a major road within 100m

The nearest noise sensitive premises are identified as:

- Future East Residences
- Future South Residences
- Future South East Residences
- Future North & North West Residences

Table B-1 shows the percentage of industrial and commercial land (including the subject proposal) within the inner (100 metre radius) and outer (450 metre radius) circles of the noise sensitive premises. There are no major or minor roads within 450 metres of the development.

Table B-1: Percentage of Land Types within 100m and 450m Radii

Receiver	Land Type	Within 100m	Within 450m
East Residences	Type A - Industrial and Utility	0	0
	Type B – Commercial	8	16
South Residences	Type A - Industrial and Utility	0	0
	Type B – Commercial	35	16
South East Residences	Type A - Industrial and Utility	0	0
	Type B – Commercial	15	16
North/NE Residences	Type A - Industrial and Utility	0	0
	Type B – Commercial	95	16

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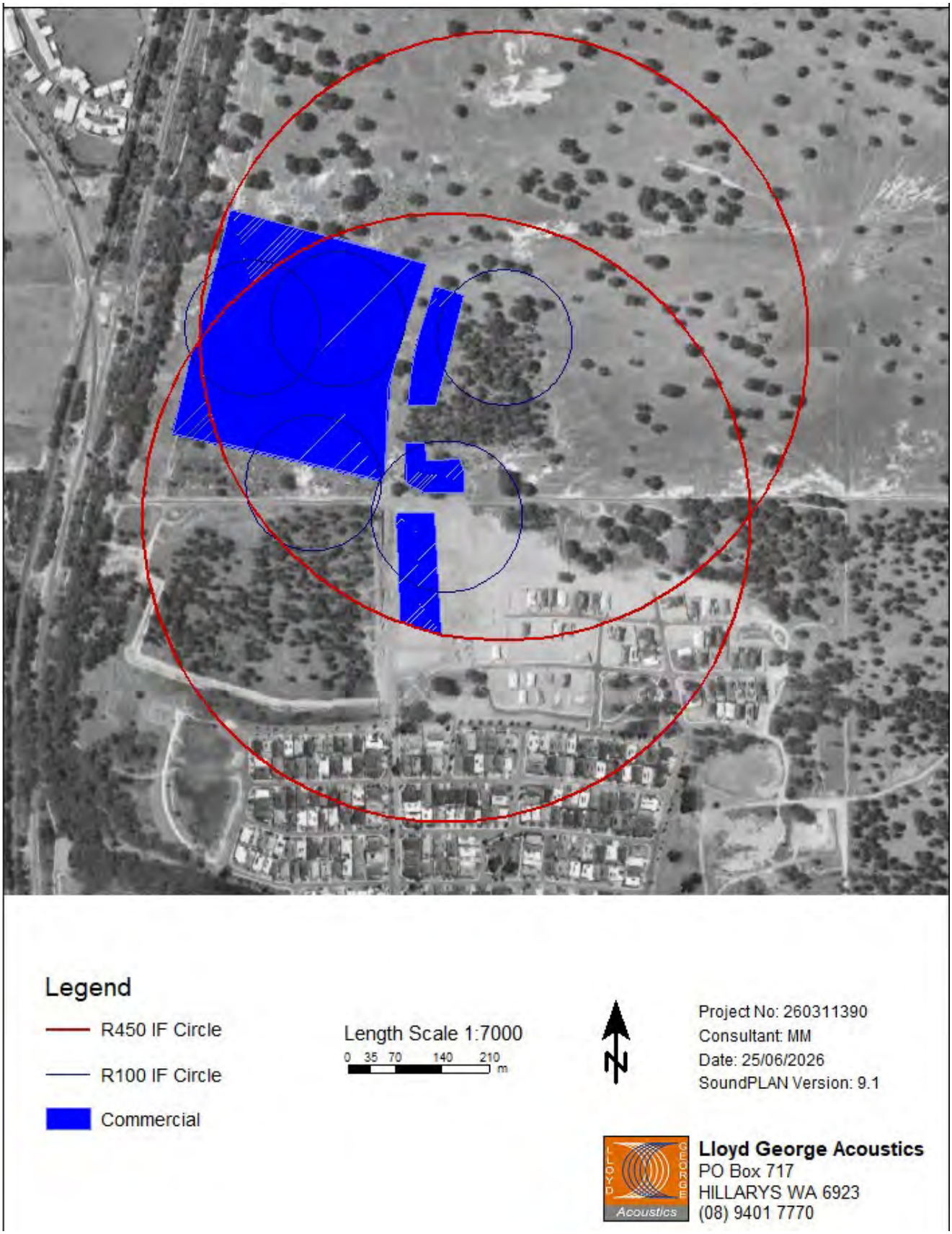


Figure B-1: Land Types within 100m and 450m Radii of 425 Pinjarra Road

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Table B-2 combines the percentage land types and Transport Factor to calculate the influencing factor.

Table B-2: Influencing Factor Calculation, dB

Receiver	Industrial Land	Commercial Land	Transport Factor	Total
Future East Residences	0	1.2	0	**1**
Future South Residences	0	2.6	0	**3**
Future South East Residences	0	1.6	0	**2**
Future North/North West Residences	0	5.4	0	**5**

The influencing factor calculated in *Table B-3* is combined with those baseline assigned levels of *Table 2-2*, resulting in the project assigned levels provided in *Table 2-3*.

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Appendix C – Terminology

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The following is an explanation of the terminology used throughout this report:

- **Decibel (dB)**

The decibel is the unit that describes the sound pressure levels of a noise source. It is a logarithmic scale referenced to the threshold of hearing.

- **A-Weighting**

An A-weighted noise level has been filtered in such a way as to represent the way in which the human ear perceives sound. This weighting reflects the fact that the human ear is not as sensitive to lower frequencies as it is to higher frequencies. An A-weighted sound level is described as L_A, dB.

- **Sound Power Level (L_w)**

Under normal conditions, a given sound source will radiate the same amount of energy, irrespective of its surroundings, being the sound power level. This is similar to a 1kW electric heater always radiating 1kW of heat. The sound power level of a noise source cannot be directly measured using a sound level meter but is calculated based on measured sound pressure level at known distances. Noise modelling incorporates source sound power levels as part of the input data.

- **Sound Pressure Level (L_p)**

The sound pressure level of a noise source is dependent upon its surroundings, being influenced by distance, ground absorption, topography, meteorological conditions etc. and is what the human ear actually hears. Using the electric heater analogy above, the heat will vary depending upon where the heater is located, just as the sound pressure level will vary depending on the surroundings. Noise modelling predicts the sound pressure level from the sound power levels taking into account ground absorption, barrier effects, distance etc.

- **L_{ASlow}**

This is the noise level in decibels, obtained using the A-frequency weighting and the S (slow) time weighting. Unless assessing modulation, all measurements use the slow time weighting characteristic.

- **L_{AFast}**

This is the noise level in decibels, obtained using the A-frequency weighting and the F (fast) time weighting. This is used when assessing the presence of modulation.

- **L_{APeak}**

This is the greatest absolute instantaneous sound pressure level in decibels using the A-frequency weighting.

- **L_{Amax}**

An L_{Amax} level is the maximum A-weighted noise level during a particular measurement.

- **L_{A1}**

The L_{A1} level is the A-weighted noise level exceeded for 1 percent of the measurement period and is considered to represent the average of the maximum noise levels measured.

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- **L_{A10}**

The L_{A10} level is the A-weighted noise level exceeded for 10 percent of the measurement period and is considered to represent the “intrusive” noise level.

- **L_{A90}**

The L_{A90} level is the A-weighted noise level exceeded for 90 percent of the measurement period and is considered to represent the “background” noise level.

- **L_{Aeq}**

The equivalent steady state A-weighted sound level (“equal energy”) in decibels which, in a specified time period, contains the same acoustic energy as the time-varying level during the same period. It is considered to represent the “average” noise level.

- **One-Third-Octave Band**

Means a band of frequencies spanning one-third of an octave and having a centre frequency between 25 Hz and 20000 Hz inclusive.

- **Representative Assessment Period**

Means a period of time not less than 15 minutes, and not exceeding four hours, determined by an inspector or authorised person to be appropriate for the assessment of a noise emission, having regard to the type and nature of the noise emission.

- **L_{Amax} assigned level**

Means an assigned level, which, measured as a L_{ASlow} value, is not to be exceeded at any time.

- **L_{A1} assigned level**

Means an assigned level, which, measured as a L_{ASlow} value, is not to be exceeded for more than 1 percent of the representative assessment period.

- **L_{A10} assigned level**

Means an assigned level, which, measured as a L_{ASlow} value, is not to be exceeded for more than 10 percent of the representative assessment period.

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- **Tonal Noise**

A tonal noise source can be described as a source that has a distinctive noise emission in one or more frequencies. An example would be whining or droning. The quantitative definition of tonality is:

– the presence in the noise emission of tonal characteristics where the difference between -

(a) the A-weighted sound pressure level in any one-third octave band; and

(b) the arithmetic average of the A-weighted sound pressure levels in the 2 adjacent one-third octave bands,

is greater than 3 dB when the sound pressure levels are determined as $L_{Aeq,T}$ levels where the time period T is greater than 10% of the representative assessment period, or greater than 8 dB at any time when the sound pressure levels are determined as $L_{A\ Slow}$ levels.

This is relatively common in most noise sources.

- **Modulating Noise**

A modulating source is regular, cyclic and audible and is present for at least 10% of the measurement period. The quantitative definition of modulation is:

– a variation in the emission of noise that —

(a) is more than 3 dB $L_{A\ Fast}$ or is more than 3 dB $L_{A\ Fast}$ in any one-third octave band; and

(b) is present for at least 10% of the representative assessment period; and

(c) is regular, cyclic and audible.

- **Impulsive Noise**

An impulsive noise source has a short-term banging, clunking or explosive sound. The quantitative definition of impulsiveness means:

– a variation in the emission of a noise where the difference between L_{Apeak} and L_{Amax} is more than 15 dB when determined for a single representative event.

- **Major Road**

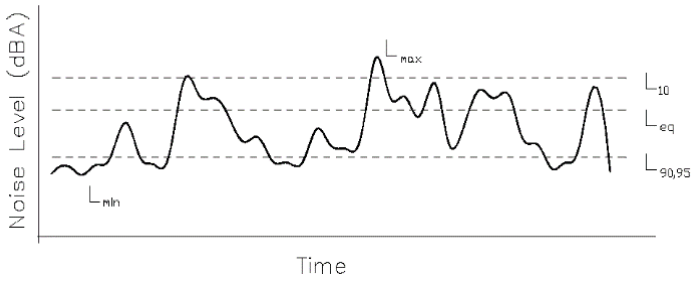
Is a road with an estimated average daily traffic count of more than 15,000 vehicles.

- **Secondary / Minor Road**

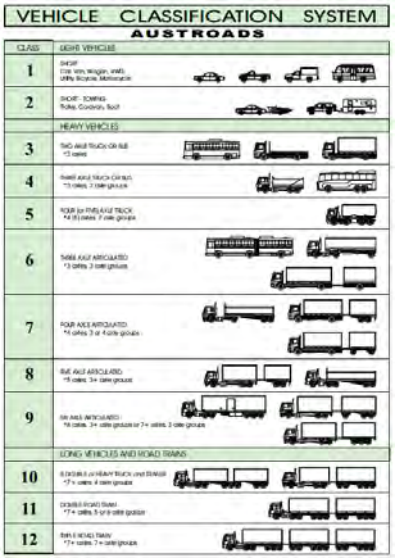
Is a road with an estimated average daily traffic count of between 6,000 and 15,000 vehicles.

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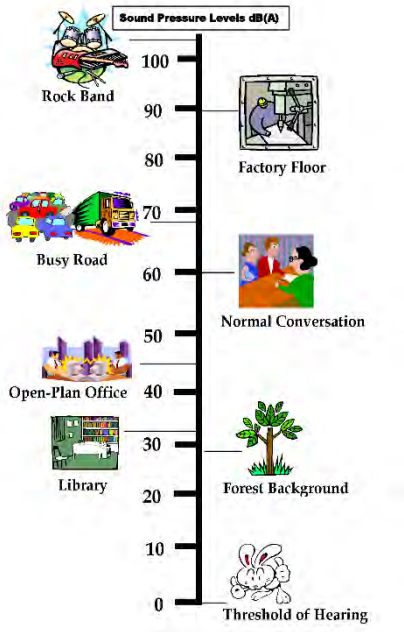
- **Chart of Noise Level Descriptors**



- **Austroads Vehicle Class**



- **Typical Noise Levels**



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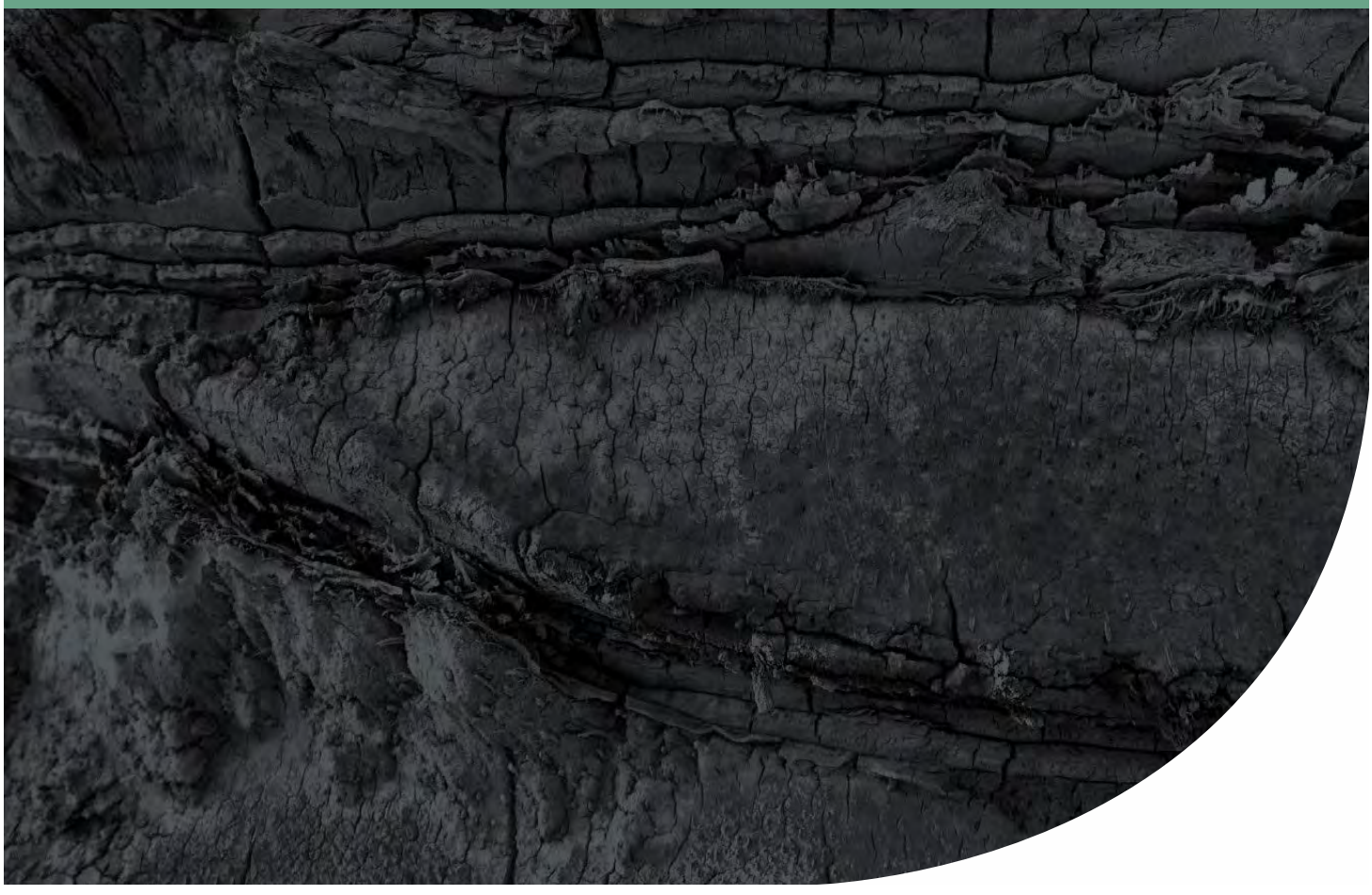
emerge ASSOCIATES
Integrated Science & Design

Bushfire Management Plan

Whitby Town Centre

Project No: EP13-067(101)

Prepared for Gold Fusion Pty Ltd
July 2026



Document Control

Doc name:	Bushfire Management Plan Whitby Town Centre				
Doc no.:	**EP13-067(101)--385 CNV**				
Version	**Date**	**Author**		**Reviewer**	
1	July 2026	Callum Vane	CNV	Connor Porter-Wilkinson	CPW
				Anthony Rowe	AJR
	Report Issued to client for use.				

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This document has been prepared primarily to consider the layout of development and/or the appropriate building construction standards applicable to development, where relevant. The measures outlined are considered to be prudent minimum standards only based on the standards prescribed by the relevant authorities. The level of bushfire risk mitigation achieved will depend upon the actions of the landowner or occupiers of the land and is not the responsibility of the author. The relevant local government and fire authority (i.e. Department of Fire and Emergency Services or local bushfire brigade) should be approached for guidance on preparing for and responding to a bushfire.

Notwithstanding the precautions recommended in this document, it should always be remembered that bushfires burn under a wide range of conditions which can be unpredictable. An element of risk, no matter how small, will always remain. The objective of the Australian Standard AS 3959:2018 is to “prescribe particular construction details for buildings to reduce the risk of ignition from a bushfire” (Standards Australia 2018). Building to the standards outlined in AS 3959 does not guarantee a building will survive a bushfire or that lives will not be threatened by the effects of bushfire attack.

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Executive Summary

Gold Fusion Pty Ltd (the proponent) is proposing to develop the Whitby Town Centre within a portion of Lot 9021 Robertson Road, Whitby (herein referred to as 'the site'), which is associated with the approved Whitby Activity Centre Plan.

The site comprises approximately 12 hectares and is located within the Shire of Serpentine Jarrahdale. It is bounded by the Perth to Bunbury rail line/Robertson Road and Bush Forever site 350 to the west, undeveloped broader Lot 9021 and Lot 29 to the north, existing or under construction residential development consisting of previous Whitby Estate precincts to the east, and undeveloped Lots 9005 and 9019 to the south. The undeveloped land to the north and south forms part of the broader Whitby Town Structure Plan area, is under the proponent's ownership, and is intended for future residential and commercial development. The northern area is subject to a subdivision approval (Western Australian Planning Commission (WAPC) subdivision approval 201377) and is anticipated to be developed concurrently with the site, while the southern area is not yet subject to subdivision approval and its timing remains unconfirmed. The site currently comprises predominantly cleared rural paddocks historically used for stock grazing, interspersed with remnant native trees and shrubs, as well as areas of more intact native vegetation.

The site is entirely located within 'Area 2' (designated bushfire prone) on the state-wide *Map of Bush Fire Prone Areas* prepared by the Office of Bushfire Risk Management (OBRM 2025) and as a result *State Planning Policy 3.7 Bushfire* (SPP 3.7) (WAPC 2024b) applies.

The identification of the site as bushfire prone requires further assessment of the bushfire risk in accordance with *Australian Standard 3959:2018 Construction of buildings in bushfire prone areas* (AS 3959), and the required risk treatments through compliance of the proposal with the policy measures described in the *Planning for Bushfire Guidelines - For the implementation of State Planning Policy 3.7 Bushfire* (the Guidelines) (WAPC 2024a).

The policy intent for SPP 3.7 is:

> "*to implement effective, risk-based land use planning and development which in the first instance avoids the bushfire risk, but where unavoidable, manages and/or mitigates the risk to people, property and infrastructure to an acceptable level. The preservation of life and the management of bushfire impact are paramount.*"

The proposed development comprises the Whitby Town Centre, including commercial, retail, food and beverage, medical, gym, swim school, community workshop and associated car parking/landscaped areas. A childcare centre is also proposed and is classified as a vulnerable land use (Class 9b early childhood centre). This BMP has followed the DPLH *Bushfire Management Plan Manual* (November 2024) for a development application. A separate Bushfire Emergency Plan (BEP) has also been prepared for the proposed childcare centre in accordance with Clause 7.4.ii of SPP 3.7 and Section 8 of the Guidelines.

A Bushfire Attack Level (BAL) assessment involving the classification of vegetation and effective slope extending 150 m from the site has been undertaken in accordance with AS 3959. Relevant bushfire hazards outside and within 150 m of the site in the post-development scenario include:

- **Forest (Class A):** Located externally to the west of the site within Bush Forever site 350, including a 50 m buffer to the CCW which is assumed to achieve a forest classification when works are implemented. This vegetation is external and is assumed to remain unmanaged in perpetuity. Forest vegetation is also located externally to the south of the site within Lot 9005 and has been classified as a temporary hazard that will be removed when future stages progress within the Whitby Activity Centre Plan and Whitby Town Structure Plan.
- **Woodland (Class B):** Located externally to the south of the site within Lot 9019 and classified as a temporary hazard. This vegetation will be removed when future stages progress within the Whitby Activity Centre Plan and Whitby Town Structure Plan.
- **Scrub (Class D):** Located externally to the north of the site within a proposed drainage corridor and identified as a permanent hazard. Scrub vegetation located externally to the south of the site within broader Lot 9021 is classified as a temporary hazard that will be removed when future stages progress.
- **Grassland (Class G):** Located externally to the west of the site within Bush Forever site 350 and assumed to remain unmanaged in perpetuity. Grassland vegetation to the south of the site is classified as a temporary hazard until future stages proceed, while grassland to the north is associated with the approved Precinct 6 subdivision and has been assessed in its final post-development low-threat/non-vegetated condition.

Compliance assessment

The bushfire protection criteria (BPC) provided in the Guidelines represent the risk treatment acceptable solutions. As this proposal consists of a singular development application containing mixed uses, the assessment is divided into two distinct components:

- Bushfire Protection Criteria 8: Development – Vulnerable Class 9 buildings (BPC 8), which applies to the proposed childcare centre.
- *Bushfire Protection Criteria 7: Development – Commercial and Industrial* (BPC 7), which applies to the remainder of the proposed Whitby Town Centre.

Compliance with each element is required to demonstrate that the risk is within an acceptable level.

The proposed commercial land uses are located within areas subject to BAL-19 or lower. The childcare centre is located within an area subject to BAL-LOW. An assessment has been included for the commercial components to demonstrate the holistic compliance of the entire proposal, with a separate, comprehensive assessment undertaken for the vulnerable childcare centre land use.

The BMP has identified that future development within the site (proposed childcare centre and future commercial mixed uses) will comply with the 'acceptable solution' for each of the applicable bushfire protection criteria outlined in the Guidelines. This includes:

- **Element 1 Location:** This element is not applicable at the development application stage. The suitability of the location was established during the preceding strategic planning, structure plan and subdivision processes.
- **Element 2 Siting and design:** The BAL assessment undertaken as part of the BMP indicates that all proposed habitable buildings can achieve BAL-29 or less. A small portion of the southernmost fast-food buildings, the tavern and the directly attached shops to the north will achieve BAL-19;

the gym, southern interface of the central shopping mall, medical centre and swim school will achieve BAL-12.5; and the remainder of the site, including the childcare centre, will achieve BAL-LOW. This relies on the site being developed and maintained as low-threat or non-vegetated areas where required, including car parking, pavement, public open space and landscaped areas.

- **Element 3 Vehicular Access:** The site is serviced by two crossovers onto Skyline Boulevard, linking to the broader public road network via Goodwood Boulevard to the south and future development associated with the Whitby Town Structure Plan. The internal vehicular network is designed as a continuous through-system, connecting the western retail/food centre and eastern childcare, medical centre, swim school and community workshop portions of the site. This facilitates multi-directional egress and emergency service access via either access point. The internal driveways and car parks are to comply with the relevant technical requirements of Table 10, Appendix B.3 of the Guidelines.
- **Element 4 Water:** The site is located within an area serviced by reticulated water. Existing hydrants are located to the south and east of the site, and the network will be extended as part of development to provide sufficient hydrant coverage in accordance with water authority requirements.

In accordance with Clause 7.4.ii of SPP 3.7, a BEP has been completed to augment this BMP in relation to the proposed childcare centre. The BEP addresses evacuation and shelter procedures, preparation before the bushfire season, monitoring and response during a bushfire event, and recovery and return to operation. Evacuation, when safe to do so, remains the preferred response, with sheltering within the designated safer building used as a last resort.

The management and mitigation measures to be implemented through the proposed development, together with the ongoing responsibilities for the proponent, Shire of Serpentine Jarrahdale, Water Corporation and childcare operator/proponent identified in **Section 6**, demonstrate that the site can appropriately manage bushfire risk in accordance with SPP 3.7 and the Guidelines.

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Appendix A

Site Plan

Appendix B

Whitby Activity Centre Plan

Appendix C

Vulnerable Land Use Assessment – Childcare Centre

Appendix D

Bushfire Emergency Plan

Appendix E

Landscape Concept Plan

Abbreviation Tables

Table A1: Abbreviations – General terms

General terms	
AS	Australian Standard
APZ	Asset Protection Zone
BAL	Bushfire Attack Level
BMP	Bushfire Management Plan
BPAD	Bushfire Planning and Design
CCW	Conservation category wetland
ESA	Environmentally sensitive area
FDI	Fire Danger Index
UFI	Unique feature identifier
BEP	Bushfire Emergency Plan
BPC	Bushfire Protection Criteria

Table A2: Abbreviations – Organisations

Organisations	
DBCA	Department of Biodiversity, Conservation and Attractions
DFES	Department of Fire and Emergency Services
DWER	Department of Water and Environmental Regulation
DPLH	Department of Planning, Lands and Heritage
OBRM	Office of Bushfire Risk Management
WAPC	Western Australia Planning Commission

Table A3: Abbreviations – Legislation and policies

Legislation	
AS 3959	*Australian Standard 3959:2018 Construction of buildings in bushfire prone areas*
SPP 3.7	*State Planning Policy 3.7 Bushfire* (WAPC 2024b)
Guidelines	*Planning for Bushfire Guidelines - For the implementation of State Planning Policy 3.7 Bushfire* (WAPC 2024a)

Table A4: Abbreviations – Planning and building terms

Planning and building terms	
MRS	Metropolitan Region Scheme
LPS	Local Planning Scheme

Table A4: Abbreviations – units of measurement

Units of measurement	
ha	Hectare
km	Kilometre
m	Metre
m AHD	m in relation to the Australian height datum

1 Introduction

1.1 Background

Gold Fusion Pty Ltd (the proponent) is proposing to develop the Whitby Town Centre within a portion of Lot 9021 Robertson Road, Whitby (herein referred to as 'the site'). This proposed development (shown in **Appendix A**) is associated with the approved Whitby Activity Centre Plan (the 'Centre Plan') and is depicted in **Appendix B**.

The site, shown in **Figure 1**, comprises approximately 12 hectares and is located within the Shire of Serpentine Jarrahdale. It is bounded by the Perth to Bunbury rail line/Robertson Road and Bush Forever site 350 to the west, undeveloped broader Lot 9021 and Lot 29 to the north, existing or under construction residential development consisting of previous Whitby Estate precincts to the east, and undeveloped Lots 9005 and 9019 to the south. The undeveloped land to the north and south forms part of the broader Whitby Town Structure Plan (the 'Structure Plan') area, is under the proponent's ownership, and is intended for future residential and commercial development. Notwithstanding this, the planning progression of these adjoining areas differs. The northern area is subject to Western Australian Planning Commission (WAPC) subdivision approval 201377 (WAPC 201377) and is anticipated to be developed concurrently with the site. Conversely, the southern area is not yet subject to subdivision approval, and the timing for its development remains unconfirmed. The site itself currently comprises predominantly cleared rural paddocks historically used for stock grazing, interspersed with remnant native trees and shrubs, as well as areas of more intact native vegetation.

The site is entirely located within 'Area 2' (designated bushfire prone) on the state-wide *Map of Bush Fire Prone Areas* prepared by the Office of Bushfire Risk Management (OBRM 2025), as shown in **Plate 1**. The identification of the site within 'Area 2' necessitates a further assessment of the determined bushfire risk affecting the site in accordance with *Australian Standard 3959:2018 Construction of buildings in bushfire prone areas* (AS 3959), and the satisfactory compliance of the proposal with the policy measures described in *State Planning Policy 3.7 Bushfire* (SPP 3.7) (WAPC 2024b) and the *Planning for Bushfire Guidelines - For the implementation of State Planning Policy 3.7 Bushfire* (the Guidelines) (WAPC 2024a).

The policy intent for SPP 3.7 is:

> "*to implement effective, risk-based land use planning and development which in the first instance avoids the bushfire risk, but where unavoidable, manages and/or mitigates the risk to people, property and infrastructure to an acceptable level. The preservation of life and the management of bushfire impact are paramount.*"

The *Planning and Development Act 2005* addresses the suitability of land for the intended use and its siting and servicing requirements. The *Building Act 2011* addresses the construction of buildings on site. The proposed development comprises a mix of building classes, including a shopping mall and tavern (Class 6), a medical centre (Class 5), and a gym and swim school (Class 6). The intended land uses also includes a childcare facility (Class 9b). Under the National Construction Code (NCC) 2022, there are no mandatory Deemed-to-Satisfy bushfire construction standards for these general commercial classes. However, the proposed childcare centre (Class 9b early childhood centre) is

classified as a vulnerable land use, which is subject to specific NCC bushfire construction and occupant shelter standards. Therefore, this Bushfire Management Plan (BMP) focuses on demonstrating compliance with the land use planning and development requirements of SPP 3.7 across the entire site.

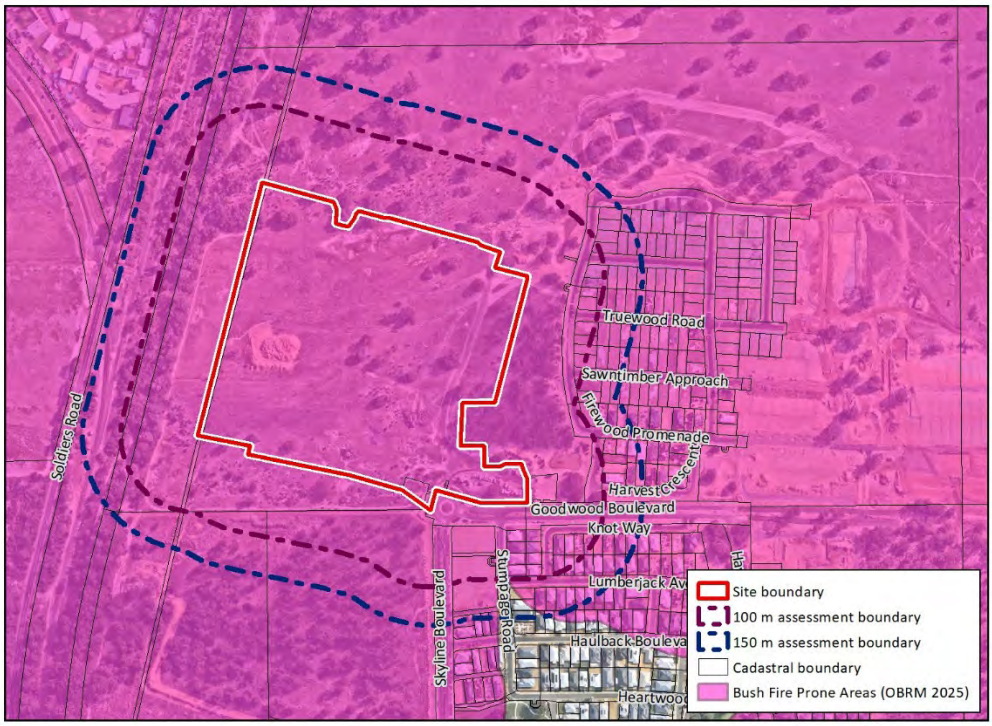


Plate 1: Areas within and near the site identified as 'bushfire prone areas' (as indicated in purple) under the state-wide Map of Bush Fire Prone Areas (OBRM 2025).

1.2 Aim of this report

The purpose of this BMP is to assess bushfire hazards both within the site, and nearby, and demonstrate that the threat posed by any identified hazards can be appropriately mitigated and managed as development is progressed. This BMP has been prepared in accordance with SPP 3.7 (WAPC 2024b), the Guidelines (WAPC 2024a) and AS 3959 (Standards Australia 2018). The document includes:

- An assessment of the existing classified vegetation in the vicinity of the site (within 150 m) and consideration of bushfire hazards that will exist in the post development scenario (**Section 3**).
- Commentary on how the proposed development can achieve compliance with the bushfire protection criteria outlined within the Guidelines, including an indication of BAL ratings applicable to proposed and likely future buildings (**Section 5**).
- A secondary assessment (**Appendix C**) of a vulnerable land use within the site (childcare centre).
- An outline of the roles and responsibilities associated with implementing this BMP (see **Section 6**).

1.3 Statutory policy and framework

The following key legislation, policies and guidelines are relevant to the preparation of a BMP:

- *Bush Fires Act 1954*
- *Fire and Emergency Services Act 1998*
- *Planning and Development Act 2005* and associated regulations
- *Building Act 2011* and associated regulations
- *State Planning Policy 3.7 Bushfire (WAPC 2024b)*
- *Planning for Bushfire Guidelines – For the implementation of State Planning Policy 3.7 Bushfire (WAPC 2024a)*
- *Australian Standard AS 3959 – 2018 Construction of buildings in bushfire prone areas* (Standards Australia 2018)

1.4 Description of the proposed development

This BMP has been prepared specifically to support the development application for the proposed Whitby Town Centre.

The proposed development, as detailed in the site plan (refer **Appendix A**), includes:

- Amenities, including car parks and public landscaped areas;
- Designated commercial space for a range of services including major and specialty retail, and a gym;
- Food and beverage areas including a café, restaurant, tavern and quick service food.
- Medical facilities including a medical centre and pharmacy;
- Community space including a swim school and community workshop; and
- A childcare centre, which is classified as a vulnerable land use.

The site is zoned 'Urban' under the Metropolitan Region Scheme (MRS) and is designated as an 'Urban Development' zone under the Shire of Serpentine Jarrahdale Local Planning Scheme No. 3, as shown in **Plate 2** below. The proposed development is consistent with this strategic planning framework and the approved Centre Plan (**Appendix B**) and the broader Structure plan.

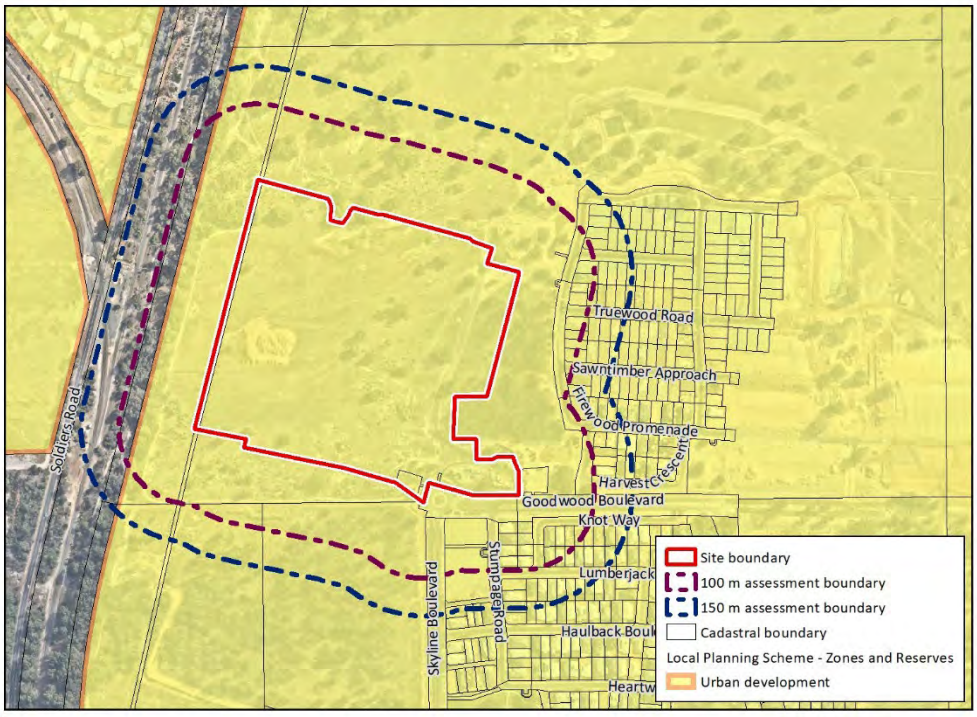


Plate 2: Shire of Serpentine Jarrahdale Local Planning Scheme No. 3 Zoning, in and surrounding the site.

1.5 Description of land characteristics

Based on a review of publicly available historic aerial imagery (WALIA 2026), large portions of the site were predominantly cleared of native vegetation by circa 1953 and utilised for rural/ agricultural purposes, likely stock grazing. The site was almost cleared in its entirety during the 1960s, with remnant scattered trees remaining.

Topographic mapping indicates the site is generally flat, with elevations ranging from approximately 41 m Australian Height Datum (AHD) in the western portion of the site to 48 m AHD in the eastern portion of the site (DoW 2008) (see **Figure 2**).

As established in **Section 1.1**, surrounding land uses include existing and future planned stages of the Whitby subdivision to the north, east and south, and Robertson Rd and Soldiers Rd to the west.

As seen in **Plate 2**, All immediate surrounding land uses fall within the 'Urban Development' zone under the Shire of Serpentine Jarrahdale Local Planning Scheme No. 3.

2 Environmental Considerations

In accordance with the *Bushfire Management Plan (BMP) Manual* (November 2024) prepared by the Department of Planning, Lands and Heritage (DPLH), this BMP has considered whether there are any environmental assets at or adjoining the site that may affect the options for the protection of the proposed development from bushfire. To support this, a review of publicly available databases has been undertaken, with particular reference to the Shared Location Information Platform (SLIP) databases, alongside site-specific investigations (Emerge 2026).

As outlined in **Section 1.5**, the site primarily consists of regrowth vegetation comprising a mixture of remnant native trees and planted native/non-native species, resulting from historical clearing and previous campus earthworks. The environmental values within and surrounding the site have been summarised in **Table 1** and are based on the environmental data and previous flora and vegetation survey's undertaken for the site and nearby areas (Emerge 2026).

Table 1: Summary of potential environmental considerations that may be associated with the site. (based on a search of the SLIP databases)

Key environmental feature (information in brackets refers to mapping data source)	Yes / no / potentially occurring within the site	If yes / potentially, describe value that may be impacted
Conservation category wetlands and buffer (Geomorphic wetlands – Swan Coastal Plain) (DBCA-019))	Yes	A review of the Geomorphic Wetlands of the Swan Coastal Plain dataset indicates that two conservation category wetlands (CCWs) occur adjacent to the west of the site, namely unique feature identifier (UFI) #15462 and #15463. An appropriate separation between the CCW and development within the site will be provided through the provision of the proposed public open space along the western boundary of the site and a 50 m-wide revegetated buffer. This will be a relevant consideration for bushfire risk. A multiple use wetland (UFI #16021) expands across the majority of the site, however, does not require buffers or revegetation that would influence bushfire risk.
RAMSAR wetlands (DBCA-010)	No	Not applicable. No RAMSAR wetlands are identified as occurring within the site or in close proximity.
Threatened and priority flora (DBCA-036)	No	No threatened or priority flora have been identified within the site based on previous investigations (Cardno 2010). The site has limited flora and vegetation values as a result of significant historical clearing and agricultural land uses.
Threatened and priority fauna (DBCA-037)	Potentially	Similar to flora and vegetation values, the site has limited fauna habitat values. Existing mature trees are present across the site and are habitat for black cockatoo species, and where possible will be retained within the public open space areas and wider road reserves. These trees can be retained without creating a bushfire hazard.
Threatened ecological communities (DBCA-038)	No	The Corymbia calophylla — Eucalyptus marginata woodlands on sandy clay soils of the southern Swan Coastal Plain threatened ecological community (TEC) (SCP3b) (EN) has been identified externally to the north of the site (where the proposed road extends through Bush Forever Site 354). While not applicable to the inside of the site, this vegetation has been accounted for within the bushfire assessment.

Table 1: Summary of potential environmental considerations that may be associated with the site. (based on a search of the SLIP databases) (continued).

Key environmental feature (information in brackets refers to mapping data source)	Yes / no / potentially occurring within the site	If yes / potentially, describe value that may be impacted
Bush Forever areas (DPLH-019)	No	Bush Forever Site 350 is located adjacent to the western boundary of the site, and Bush Forever Site 354 is located to the north of the site. While not applicable to the inside of the site, this vegetation has been accounted for within the bushfire assessment.
Clearing regulations – Environmentally sensitive areas (ESA) (DWER-046)	Yes	The majority of the site is situated within an environmentally sensitive area (ESA), associated with Bush Forever Site 350 and the conservation category wetland and TEC to the west. ESAs are only a relevant consideration where native vegetation is present and/or exemptions pursuant to Schedule 6 of the Environmental Protection Act 1986 do not apply. Given the largely cleared nature of the site, the implementation of the requirements of this BMP will not be constrained by these regulations.
Swan Bioplan Regionally Significant Natural Areas 2010 (DWER-070)	No	Not applicable. No Regionally Significant Natural Areas are identified within the site or nearby.

2.1 Native vegetation – modification and clearing

As outlined above, the majority of the site has been previously cleared and now comprises predominantly cleared paddocks with scattered trees and shrubs. As a result, the remaining vegetation is primarily characterised by regrowth, consisting of a mixture of remnant native and non-native trees.

It is acknowledged that with regard to bushfire management and to enable development, vegetation management and clearing will be required, such as tree thinning and pruning, removal of understorey vegetation within selected areas of the public open space areas (where more intact vegetation is present). While some areas will require these actions specifically for bushfire mitigation purposes, the majority of clearing and modifications to vegetation are required as a direct result of implementing the functional development footprint. No modification of vegetation in the nearby conservation category wetland or Bush Forever sites is required to implement this BMP.

Within the eastern POS area, it is noted that the retention of existing vegetation will occur. Notwithstanding this, the retained areas have been specifically designed to meet the size considerations of exclusion clause 2.2.3.2(b) of AS 3959. This approach ensures the retention of vegetation can be accommodated without resulting in BAL implications that would inhibit the development of the site in line with broader structure planning and subdivision intentions. This strategic retention and separation has been a long-standing consideration for the assessment of the area and the adjoining residential subdivision.

As per Regulation 5, Item 1 of the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*, clearing for the purposes of constructing a building and associated works (such as

car parking) is exempt from clearing permit requirements, where this does not fall within an ESA and is subject to a valid development approval.

2.2 Revegetation and landscape plans

As part of the development of the site as a community and commercial centre, it will be landscaped to support active and passive recreation, alongside necessary drainage infrastructure, as shown in Landscape Concept Plan in **Appendix E**. Landscape treatments include the provision of a public open space (POS) buffer along the western boundary of the site, incorporating pedestrian connections to the potential future train station, and a POS area to the east that retains existing mature trees while integrating recreational spaces with drainage basins.

Significant revegetation is proposed to occur throughout the site to enhance its public and commercial amenity. Nearly all of this proposed landscaping and revegetation will be designed, implemented, and maintained to achieve a 'low-threat' classification in line with clause 2.2.3.2(f) of AS 3959. It is noted that within the western POS area, allowances have been provided for the retention of unmanaged or minimally managed vegetation. Notwithstanding this, the design and layout of these specific areas have ensured that ongoing compliance with exclusionary clause 2.2.3.2(b) of AS 3959 is achieved in perpetuity, thereby removing this vegetation from consideration as a classifiable bushfire hazard for the site.

All formal landscaped areas, car parks, will be established and maintained to a low-threat (Exclusion 2.2.3.2(f)), non-vegetated state (Exclusion 2.2.3.2(e) or where woodland vegetation is retained in POS to the east of the site Exclusion 2.2.3.2 (b)). All landscaped areas will be designed to achieve a low threat status in accordance with Section 2.2.3.2 of AS 3959 and maintained to the Asset Protection Zone (APZ) standards prescribed in Table 9 (Appendix B) of the Guidelines (WAPC 2024a).

Ongoing management for the APZ areas is likely to include:

- Irrigation of grass (turf) and garden beds (where required).
- Regular removal of weeds and built-up dead material (such as fallen branches, leaf litter etc.)
- Low pruning of trees (branches below 2 m in height removed where appropriate).
- Application of ground/surface covers such as mulch or non-flammable materials as required.
- Regular mowing/slashing of grass to less than 100 mm in height.

3 Bushfire Assessment Results

Bushfire risk for the site has been appropriately considered with regard to the potential impact upon the site using AS 3959 and the Guidelines. The objective of AS 3959 is to reduce the risk of ignition and loss of a building to bushfire. It provides a consistent method for determining a radiant heat level (radiant heat flux) as a primary consideration of bushfire attack. AS 3959 measures the BAL as the radiant heat level (kW/m^2) over a distance of 100 m. AS 3959 also prescribes deemed-to-satisfy construction responses that can resist the determined radiant heat level at a given distance from the fire. It is based on six BAL ratings: BAL-LOW, BAL-12.5, BAL-19, BAL-29, BAL-40 and BAL-FZ.

A BAL contour plan has been prepared in accordance with Appendix A.3 of the Guidelines and Method 1 of AS 3959 to determine the BAL ratings likely to be applicable to future buildings. This has been based on the vegetation classifications and the effective slope under the vegetation (post-development scenario).

3.1 Assessment inputs

This BAL assessment was undertaken in accordance with Method 1 of AS 3959. Existing site vegetation classifications and effective slope have been detailed in **Figure 2**. A BAL Contour Plan has been prepared based on the post-development condition of the site in accordance with Appendix A.3 of the Guidelines and is provided in **Figure 3** and discussed further in **Section 3.1.2**. A site visit was undertaken on 30 June 2026.

3.1.1 Inputs and assumptions

The BAL assessment is based on the following inputs and assumptions:

- **Designated Fire Danger Index (FDI)**: 80
- **Flame temperature**: 1090 K
- **Effective slope beneath classified vegetation**: Flat/upslope (see **Figure 2**)
- Woodland, scrub and grassland vegetation external to the south of the site (where under the proponent's control) will be cleared as part of future stages of the Structure Plan development area and is therefore assumed a temporary hazard (see **Figure 2**).
- Where indicated as low threat, vegetation in the future public open space areas and road reserves (mature trees) will be modified to achieve low threat in accordance with Section 2.2.3.2 of AS 3959 and will be maintained as detailed in **Section 2.2.**
- Areas identified as low threat that are external to the site are assumed to continue to be managed in accordance with existing land management practices in the long-term (unless stated otherwise).
- Areas of grassland can include up to 10% foliage cover from shrubs and trees, per AS 3959.
- Classified vegetation that has been identified outside of the proponent's landholdings to the west of the site (Bush Forever site 350) have been assumed to remain in its current state and will therefore continue to be a bushfire hazard to development within the site.
- Woodland vegetation to the east of the site will be excluded under Clause 2.2.3.2 (b) of AS 3959, and will remain as an area of vegetation less than 1 hectare and more than 100 m from classifiable vegetation.

- A 50 m buffer of POS as shown in **Appendix E** will be managed in a low-threat condition and will be excludable under Section 2.2.3.2 of AS 3959 and will be maintained as detailed in **Section 2.2**.

3.1.2 Vegetation Classification

All vegetation within 150 m of the site was classified in accordance with Section 2.2.3 of AS 3959. Each distinguishable vegetation plot is described in **Table 2** and shown in **Figure 2**. The assignment of the vegetation classifications (or exclusions) is based on consideration of the fuel layers of different vegetation types, which can be broken down into five segments as illustrated in **Plate 3** below.

Not all vegetation is classified as a bushfire risk. Vegetation and ground surfaces that are exempt from classification as a potential hazard are identified as a low threat under Section 2.2.3.2 of AS 3959. Low threat vegetation includes the following:

Vegetation of any type that is more than 100 m from the site.

a. *Single areas of vegetation less than 1 ha in area and not within 100 m of other areas of vegetation being classified.*
b. *Multiple areas of vegetation less than 0.25 ha in area and not within 20 m of the site, or each other or of other areas of vegetation being classified.*
c. *Strips of vegetation less than 20 m in width (measured perpendicular to the elevation exposed to the strip of vegetation) regardless of length and not within 20 m of the site or each other, or other areas of vegetation being classified.*
d. *Non-vegetated areas, that is, areas permanently cleared of vegetation, including waterways, exposed beaches, roads, footpaths, buildings, and rocky outcrops.*
e. *Vegetation regarded as low threat due to factors such as flammability, moisture content or fuel load. This includes grassland managed in a minimal fuel condition, mangroves, and other saline wetlands, maintained lawns, golf courses (such as playing areas and fairways), maintained public reserves and parklands, sporting fields, vineyards, orchards, banana plantations, market gardens (and other non-curing crops), cultivated gardens, commercial nurseries, nature strips and wind breaks.*



Plate 3: The five fuel layers in a forest environment that could be associated with fire behaviour (Gould et al. 2007)

*Table 2: AS 3959 vegetation classifications (refer to **Figure 2**)*

Photo ID:	1	**Plot:**	1
Vegetation Classification or Exclusion Clause and effective slope			
Class A - Forest (flat/upslope)			
Description / Justification for Classification			
Forest (Class A) vegetation has been identified to the northwest of the site (within Bush Forever site 350) comprising tall mature trees 10 – 15 m in height with greater than 30% foliage cover over an understorey of shrubs and grasses. This vegetation being located within Bush Forever site 350, will remain post development of the site.			
Photo ID:	2	**Plot:**	1
Vegetation Classification or Exclusion Clause and effective slope			
Class A - Forest (flat/upslope)			
Description / Justification for Classification			
Forest (Class A) vegetation has been identified to the southwest of the site (within Bush Forever site 350) comprising tall mature trees 10 – 15 m in height with greater than 30% foliage cover over an understorey of shrubs and grasses. This vegetation being located within Bush Forever site 350, will remain post development of the site.			
Photo ID:	3	**Plot:**	2
Vegetation Classification or Exclusion Clause and effective slope			
Class B - Woodland (flat/upslope)			
Description / Justification for Classification			
Woodland (Class B) vegetation has been identified to the south of the site. This vegetation comprises trees with a height of between 6 – 15 m, with less than 30% foliage cover over a grassy understorey. This vegetation is to be removed in future stages, however for the purpose of this assessment is conservatively assumed to remain post development of the site.			

*Table 2: AS 3959 vegetation classifications (refer to **Figure 2**)(continued)*

Photo ID:	4	**Plot:**	2
Vegetation Classification or Exclusion Clause and effective slope			
Class B – Woodland (Flat/upslope)			
Description / Justification for Classification			
Woodland (Class B) vegetation has been identified to the south of the site. This vegetation comprises trees with a height of between 6 – 15 m, with less than 30% foliage cover over a grassy understorey. This vegetation is to be removed in future stages, however for the purpose of this assessment is conservatively assumed to remain post development of the site.			



Photo ID:	5	**Plot:**	3, 4
Vegetation Classification or Exclusion Clause and effective slope			
Class D - Scrub (flat/upslope) Class G - Grassland (flat/upslope)			
Description / Justification for Classification			
Scrub vegetation has been identified to the south of the site, as sown in the foreground of this image. The predominant vegetation is approximately 2 -4 m in height, with a greater than 30% foliage cover. The background of this image shows the area classified as grassland, surrounding the scrub vegetation to the west and north. This area consists of unmanaged grasses exceeding 100 mm in height with sparse trees and shrubs (<10% canopy cover). This vegetation is assumed to remain until removed in future unconfirmed stages.			

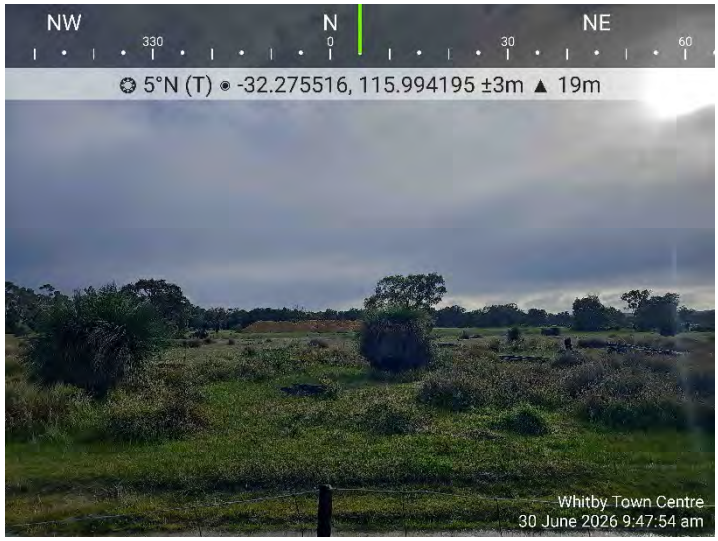


Photo ID:	6	**Plot:**	4
Vegetation Classification or Exclusion Clause and effective slope			
Class G - Grassland (flat/upslope)			
Description / Justification for Classification			
Grassland (Class G) vegetation (foreground) is identified to the south of the site. This area consists of unmanaged grasses over 100 mm in height. Sparse trees and shrubs are present, but their canopy contributes less than 10% foliage cover, and they are not considered the dominant vegetation type. This vegetation is to be removed in future stages, however for the purpose of this assessment is conservatively assumed to remain post development of the site.			



*Table 2: AS 3959 vegetation classifications (refer to **Figure 2**)(continued)*

Photo ID:	7	**Plot:**	4
Vegetation Classification or Exclusion Clause and effective slope			
Class G - Grassland (flat/upslope)			
Description / Justification for Classification			
Grassland (Class G) vegetation is identified to the southwest of the site. This area consists of unmanaged grasses over 100 mm in height. Sparse trees and shrubs are present, but their canopy contributes less than 10% foliage cover, and they are not considered the dominant vegetation type. This vegetation is to be removed in future stages, however for the purpose of this assessment is conservatively assumed to remain post development of the site.			
Photo ID:	8	**Plot:**	5
Vegetation Classification or Exclusion Clause and effective slope			
Exclusion clause 2.2.3.2 (b) (<1 ha and >100 m from classifiable vegetation)			
Description / Justification for Classification			
Woodland (Class B) vegetation is identified to the east of the site. Post-development, the retained unmanaged portion of this vegetation will be less than one hectare in size, and is therefore excluded in accordance with clause 2.2.3.2(b) of AS 3959.			
Photo ID:	9	**Plot:**	6
Vegetation Classification or Exclusion Clause and effective slope			
Post Development - Exclusion clause 2.2.3.2(e) non-vegetated area			
Description / Justification for Classification			
This photo shows the current condition of the site, consisting of majority grasses, with sporadic shrubs and mature trees. Once developed, the site will consist of infrastructure associated with commercial areas including roads, carparks, buildings and associated landscaping excludable under 2.2.3.2 (e & f) of AS 3959.			

*Table 2: AS 3959 vegetation classifications (refer to **Figure 2**)(continued)*

Photo ID:	10	**Plot:**	6
Vegetation Classification or Exclusion Clause and effective slope			
Post Development - Exclusion clause 2.2.3.2(e) non-vegetated area			
Description / Justification for Classification			
This photo shows the current condition of the area within the north of site labelled as "Future Development" as shown in **Appendix A**, consisting of grasses. Once developed, the site will consist of infrastructure associated with commercial areas including roads, carparks and buildings, excludable under 2.2.3.2 (e) and (f) of AS 3959.			
Photo ID:	11	**Plot:**	6
Vegetation Classification or Exclusion Clause and effective slope			
Exclusion clause 2.2.3.2(e) non-vegetated area			
Description / Justification for Classification			
Non-vegetated areas (2.2.3.2 Exclusion (e)) and managed low threat vegetation (2.2.3.2 Exclusion (f)) in the form of existing residential built-up area including roads, infrastructure, maintained road verges and urban landscape gardens, external to the site. This image is a view along Goodwood Boulevard. For ease of reference low threat vegetation within this plot is included within exclusion clause 2.2.3.2 (e).			
Photo ID:	12	**Plot:**	6
Vegetation Classification or Exclusion Clause and effective slope			
Exclusion clause 2.2.3.2(e) non-vegetated area			
Description / Justification for Classification			
This image shows the existing built-up area to the east of the site, which has been excluded in accordance with Clause 2.2.3.2 (e). This area features existing residential gardens, managed public areas, footpaths and roads consistent with Exclusion Clauses (e) and (f), however has been excluded under Clause (e) for simplicity.			

*Table 2: AS 3959 vegetation classifications (refer to **Figure 2**)(continued)*

Photo ID:	13	**Plot:**	6
Vegetation Classification or Exclusion Clause and effective slope			
Exclusion clause 2.2.3.2(e) non-vegetated area			
Description / Justification for Classification			
This photo shows the current condition of the vegetation to the north of the site, consisting of majority grassland, with sporadic shrubs and mature trees. This area is dedicated for Precinct 6 (WAPC Approval 201377) featuring residential lots. This area will feature existing residential gardens, managed public areas, footpaths and roads consistent with Exclusion Clauses (e) and (f), however has been excluded under Clause (e) for simplicity.			



Photo ID:	14	**Plot:**	7, 6, 3
Vegetation Classification or Exclusion Clause and effective slope			
Exclusion clause 2.2.3.2(e&f) non-vegetated or low-threat areas Class D – Scrub (flat/upslope)			
Description / Justification for Classification			
This photo shows the current condition of the vegetation to the north of the site, consisting of majority grassland, with sporadic shrubs and mature trees. This area is dedicated for Precinct 6 (WAPC Approval 201377) featuring residential lots. This area will feature existing residential gardens, managed public areas, footpaths and roads consistent with Exclusion Clauses (e) and (f), however has been excluded under Clause (e) for simplicity. The background of this image shows the area designated for the proposed drainage swale as part of Precinct 6, which will consist of vegetation and will remain a bushfire hazard in perpetuity.			



3.2 Assessment outputs

The vegetation classifications determined in **Section 3.1** are summarised in **Table 3** and shown in **Figure 2** and incorporate the known changes to vegetation post-development within the site and the determined effective slope.

Table 3: AS 3959 vegetation classification and effective slope applicable to the site and BAL rating for the proposed Clean Energy Hub

Plot	Applied vegetation classification	Effective slope
1	Class A – Forest	Flat/upslope
2	Class B – Woodland	Flat/upslope
3	Class D - Scrub	Flat/upslope
4	Class G - Grassland	Flat/upslope
5	Exclusion 2.2.3.2 (b) – (<1 ha and >100 m from classifiable vegetation)	Not applicable
6	Exclusion 2.2.3.2(e) – Non vegetated area	Not applicable
7	Exclusion 2.2.3.2(f) – Low threat vegetation	Not applicable

The resultant BAL ratings for the site are shown in **Figure 3**. The BAL ratings are based on the minimum setback distances outlined in Table 2.5 of AS 3959 for the applicable vegetation classifications and effective slope. The relevant setback distances to achieve the respective BAL ratings from AS 3959 have been summarised for ease of reference in **Table 4**.

Figure 3 confirms that the proposed habitable buildings within the site achieve a BAL rating of BAL-29 or less, with notable buildings achieving the following ratings:

- A small portion of the southernmost Fast-Food buildings, the Tavern, and the directly attached shops to the north will achieve a BAL-19 rating.
- The gym in the southeast, the southern interface of the central Shopping Mall facility, the Medical Centre, and the Swim School in the northeast of the site will achieve a BAL-12.5 rating.
- The remainder of the site, including the Childcare Centre, will achieve a BAL-LOW rating.

The identified BAL ratings are achieved through the strategic siting of the habitable buildings within the site. This placement actively maximises the physical separation distance from the site's most significant bushfire hazard, being the unmanaged forest vegetation located externally to the west and the temporary hazards (woodland and forest) to the south.

Combined, the eastern siting of the facility, implementation of managed interfaces and strategic POS buffers ensure the required setback distances from all classified vegetation for less than BAL-29 are achieved.

Table 4: Setback distances based on vegetation classification and effective slope and Table 2.5 of AS 3959, as determined by the method 1 BAL assessment at completion.

Plot number (see Figure 2)	Vegetation classification (see Figure 2)	Effective slope (see Figure 2)	Distance to vegetation (from Table 2.5 of AS 3959)	BAL rating
Plot 1	Forest (Class A)	Flat/upslope	< 16 m	BAL-FZ
			16 - < 21 m	BAL-40
			21 - < 31 m	BAL-29
			31 - < 42 m	BAL-19
			42 - < 100 m	BAL-12.5
			> 100 m	BAL-LOW
Plot 2	Woodland (Class B)	Flat/upslope	< 10 m	BAL-FZ
			10 - < 14 m	BAL-40
			14 - < 20 m	BAL-29
			20 - < 29 m	BAL-19
			29 - < 100 m	BAL-12.5
			> 100 m	BAL-LOW
Plot 3	Scrub (Class D)	Flat/upslope	< 10 m	BAL-FZ
			10 - < 13 m	BAL-40
			13 - < 19 m	BAL-29
			19 - < 27 m	BAL-19
			27 - < 100 m	BAL-12.5
			< 10 m	BAL-FZ
Plot 4	Grassland (Class G)	Flat/upslope	< 6 m	BAL-FZ
			6 - < 8 m	BAL-40
			8 - < 12 m	BAL-29
			12 - < 17 m	BAL-19
			17 - < 50 m	BAL-12.5
			> 50 m	BAL-LOW

4 Identification of Bushfire Hazard Issues

The key hazard issues with potential to impact the site include ember attack (particularly from forest vegetation to the west within Bush Forever site 350, and temporary woodland and scrub vegetation to the south of the site). From a bushfire hazard management perspective, based on the requirements of SPP 3.7 and the Guidelines, with consideration for potential hazards, future development is likely to require the following management and/or consideration:

- Provision of appropriate separation distance from bushfire hazards to ensure a BAL rating of BAL-29 or less can be achieved at buildings (built form). This will include ensuring that site landscaping is designed, implemented, and managed to achieve low threat for the identified areas, to reduce the impact of bushfire and risk of fires starting onsite and to provide separation to identified and/or assumed hazards.
- Ensuring that site access is designed, constructed, and managed to ensure safe access and egress for firefighting vehicles and occupants.
- Ensuring that site landscaping is designed, implemented, and managed to achieve and maintain low threat standards to reduce the risk of fires starting on-site.
- Addressing the specific requirements of the vulnerable land use (Childcare Centre) through the preparation and ongoing implementation of a comprehensive Bushfire Emergency Plan (BEP) to safely manage the evacuation or sheltering of occupants during a bushfire event.
- Ensuring that the provision of water for firefighting is sufficient and accessible to firefighting services.

4.1 Permanent hazards

The site itself will be developed and managed to a low-threat or non-vegetated state. On this basis, the primary permanent bushfire hazards impacting the proposed development are located externally to the west and include:

- **Forest (Class A):** Located externally to the west of the site within Bush Forever site 350, including a 50m buffer to the CCW which is assumed to achieve a forest classification (currently grassland) when the works are implemented. This vegetation is external and is assumed to remain unmanaged in perpetuity.
- **Scrub (Class D):** Located externally to the north of the site within a proposed drainage corridor (as shown in the Landscape Concept Plan in **Appendix E**). This vegetation is currently largely not present, however known changes to the area will result in the introduction of scrub vegetation. Given this vegetation's close proximity to surrounding land uses and external classifiable vegetation, no exclusion clauses are applicable, and it will remain a permanent hazard.
- **Grassland (Class G):** Located externally to the west of the site within Bush Forever site 350. This vegetation is external and is assumed to remain unmanaged in perpetuity.

4.2 Temporary hazards

This BMP assesses the bushfire risk based on the existing and permanent landscape features surrounding the site. The surrounding land is identified for future development under the Structure Plan, which includes future stages of the Whitby residential subdivision. Notwithstanding this, the timing for the delivery of surrounding development is currently unknown.

Scrub, grassland, and woodland vegetation identified externally to the south of the site will be removed as future stages progress within the Centre Plan and Structure Plan. However, as this southern land is not yet subject to subdivision approval, the timing of vegetation removal remains unconfirmed. Consequently, this vegetation has been classified as a temporary hazard affecting the site (as denoted in **Figure 2**) and is conservatively assumed to remain unmanaged for the purposes of this assessment.

Conversely, grassland vegetation currently present to the north of the site is situated within the approved Precinct 6 subdivision area (WAPC ref no. 201377). As the implementation of Precinct 6 will occur concurrently with the development of the subject site, this northern area has been assessed based on its final post-development condition. Accordingly, the area will be largely non-vegetated or managed to a low-threat standard, and is therefore excluded from classification as a bushfire hazard in accordance with Clauses 2.2.3.2(e) and (f) of AS 3959.

4.3 Vulnerable land use

The definition of vulnerable land use as outlined in SPP 3.7 is a land use which "*is designed to accommodate people who are less physically or mentally able and likely to present evacuation challenges; and/or due to the building design or use, or the number of people accommodated, likely to present evacuation challenges; and or involves visitors who are unfamiliar with the surroundings*" (WAPC 2024b). This generally includes (but is not limited to) schools, hospitals, aged care facilities and similar.

As shown in **Appendix A,** a childcare centre is proposed within the development, which is classified as a 'vulnerable land use' under SPP 3.7. This classification recognises that childcare centres accommodate occupants (primarily children) who may be less able to respond independently during an emergency and present unique evacuation challenges.

The designation as a vulnerable land use triggers the requirement to assess the proposal against the specific criteria outlined in *Bushfire Protection Criteria* (BPC) *8: Development - Vulnerable Class 9 buildings* within the *Guidelines*, which has been provided in **Appendix C**.

Key implications include the mandatory provision of an on-site 'safer building' (shelter) and the preparation of a comprehensive Bushfire Emergency Plan (BEP) (**Appendix D**) detailing evacuation and shelter-in-place procedures. The siting and design of the childcare, including access routes and the designated safer building (which will be accommodated within the primary building footprint), must explicitly address these vulnerabilities.

The proposed childcare centre will accommodate children, staff and visitors within a single building. This building is within a BAL-LOW rating, and site management and design will minimise student

exposure to harmful heat levels. The building will be constructed in accordance with the specific Class 9b early childhood centre requirements of the (NCC).

Evacuation, when safe to do so, remains the preferred response to avoid any exposure to smoke. As the proposed childcare centre is classified as a vulnerable Class 9 land use, it is required to have a contemporary and annually reviewed Bushfire Emergency Plan (BEP), which is provided in **Appendix D**. This plan has been prepared to support the development application for the childcare centre.

In the event of a bushfire alert, the children will be assembled within the main entry of the childcare centre and evacuated from the northern carpark, or allocated bus collection point on Skyline Boulevard to the west, to a secondary destination nominated by the BEP. The opportunity for a safe evacuation is enhanced by the broader location, which when development of the broader Structure Plan is completed, will be predominantly low threat suburban development.

5 Assessment Against the Bushfire Protection Criteria

5.1 Bushfire Protection Criteria

The bushfire protection criteria provided in the Guidelines represent the risk treatments applicable to achieving the intent and the objectives listed in SPP 3.7. The bushfire protection criteria vary depending upon the stage of the planning process and development type and are divided into four subsystems (elements). Each subsystem is provided with an outcome, or an acceptable solution method (predetermined solution). Compliance with each subsystem (as a risk treatment) is required to demonstrate to the decision-maker that the risk is within acceptable levels.

The bushfire protection criteria identified in the Guidelines and addressed as part of this BMP are:

- Element 1: Location
- Element 2: Siting and design
- Element 3: Vehicular access
- Element 4: Water supply

As previously mentioned, to assist in the assessment of the proposed development and accurately reflect the mix of land uses, two separate bushfire protection criteria assessments tables have been provided below to address:

- *Criteria 7 - Development – Commercial and Industrial* (BPC 7) in **Table 5** and **Section 5.1.2**, for the development of the site.
- *Criteria 8 - Development – Vulnerable Class 9 buildings* (BPC 8) in **Table C-1** (**Appendix C**), for the proposed childcare centre. A summary of the assessment of the bushfire protection criteria against the childcare centre is summarised below, in **Section 5.1.1**.

The assessment demonstrates that the subdivision and future development can achieve the objectives of SPP 3.7 and addresses BCP 5 and BCP 8 through acceptable solutions detailed in the Guidelines, as summarised in **Table 5** and **Table C-1**.

5.1.1 Childcare Centre Development Application – Criteria 8 - Development – Vulnerable Class 9 buildings

The BAL assessment (**Figure 3**) indicates that the childcare centre building is located in an area subject to BAL-LOW, based on a post development scenario.

In accordance with Section 8 of the Guidelines, an in-depth assessment against the relevant elements has been provided in **Appendix C**, and summarised below to emphasise the compliance of the proposal:

- **Element 1 (Location):** This element is not applicable at the development application stage. The suitability of the location was established during the preceding strategic planning (structure plan and subdivision) processes.
- **Element 2 (Siting and Design):** The childcare centre building is sited in an area subject to BAL-LOW. This is achieved through the ongoing management of the site as low-threat vegetation, utilising the sealed car parking, pavement, and maintained landscaping to separate the building from external classified vegetation.

- **Element 3 (Vehicular Access):** The childcare centre is serviced by a shared carpark to the north, accessed by two crossovers onto Skyline Boulevard. The external shared car parking area acts as a through-road network, allowing vehicles two-way access and egress onto Skyline Boulevard, providing multiple egress options on the broader approved public road network.
- **Element 4 (Water):** The development is located within a reticulated water supply area. Existing fire hydrants are located along to the south and east of the site, ensuring the proposal complies with the locational and flow requirements of the Water Corporation and DFES.

The assessment demonstrates that the subdivision and future development can achieve the objectives of SPP 3.7 and addresses BCP 8 through acceptable solutions detailed in the Guidelines, as outlined in **Appendix C**.

5.1.2 Whitby Town Centre Development Application – Criteria 7 - Development – Commercial and Industrial

Table 5: Assessment against the Bushfire Protection Criteria 7 - Development – Commercial and Industrial criteria from the Guidelines

Bushfire protection criteria	Proposed bushfire management strategies
Element 1: Location	
Element 1 (Location) and the associated Broader Landscape Assessment are not applicable at the development application stage. The site's suitability for development was established during the preceding structure plan and subdivision approval processes.	
Element 2: Siting and design	
A2.1 Siting and design	The proposed buildings within the site achieve sufficient separation from the post-development classified vegetation to ensure a rating of BAL-29 or less. The BAL contour plan provided in **Figure 3** demonstrates that the proposed structures (habitable buildings) have been sited to achieve maximum BAL ratings of BAL-19 as below: • A small portion of the southernmost Fast Food buildings, the Tavern (and the directly attached shops to the north) will achieve a BAL-19 rating. • The gym in the southeast, the southern interface of the central Shopping Mall facility, the Medical Centre, and the Swim School in the northeast of the site will achieve a BAL-12.5 rating. • The remainder of the site, including the Childcare Centre, will achieve a BAL-LOW rating. As noted in Section 3.2 of AS3959, due to the application of shielding provisions and the minimum construction standards of AS 3959, the Gym, central Shopping Mall structure, Medical Centre, and the Swim School are subject to BAL-12.5 on all interfaces. The proposal complies with **A2.1.**
A2.2 Asset Protection Zone (APZ)	Asset Protection Zones (APZ's) of sufficient sizes are provided to ensure the potential radiant heat impact of a bushfire does not exceed 29 kW/m² (BAL-29) at the habitable buildings. The APZ is accommodated within the boundaries of the subject site. All areas designated as APZ or managed low-threat interfaces will be maintained in perpetuity in accordance with the standards prescribed in Appendix B.2.3 of the Guidelines and Clause 2.2.3.2 of AS 3959. The proposed complies with **A2.2.**

Table 5: Assessment against the Bushfire Protection Criteria 7 - Development – Commercial and Industrial criteria from the Guidelines (continued)

Bushfire protection criteria	Proposed bushfire management strategies
Element 2: Siting and design *(continued)*	
A2.3 Clearing of native vegetation	As outlined in **Section 2.1**, the site has been subject to historical agricultural clearing. As a result, the remaining vegetation is primarily characterised by regrowth, consisting of a mixture of remnant native and non-native trees and shrubs. While some vegetation modification (such as tree thinning, pruning, and understorey removal in selected areas) is required specifically for bushfire mitigation purposes, the majority of the proposed clearing within the site is a direct result of implementing the functional development footprint (i.e., the built form, hardstand areas, and landscaped areas). Furthermore, existing vegetation within the eastern POS area will be strategically retained and designed to achieve exclusion under clause 2.2.3.2(b) of AS 3959. This demonstrates that the proposal actively minimises the unnecessary clearing of native vegetation while still accommodating the development and achieving acceptable bushfire safety standards. The proposal complies with **A2.3**.
A2.4 Storage of hazardous, flammable and/or combustible materials	Given the site's function as a commercial and retail centre, it is anticipated that specialized hazardous, flammable, or combustible goods (e.g., flammable goods including aerosols, batteries, cleaning chemicals) may be in storage or for retail purposes. No external storage of these materials is proposed. Any such materials will be stored exclusively internally within the primary building envelope. As demonstrated in A2.1, all habitable buildings have been sited to achieve a maximum rating of BAL-19. Consequently, the building structures themselves will effectively screen and protect any internally stored materials from direct radiant heat and ember attack. Furthermore, all internal storage will be constructed and maintained in strict accordance with the relevant Australian Standards (e.g., AS 1940) and the *Dangerous Goods Safety Act 2004,* ensuring that the presence of these materials does not unacceptably increase the bushfire risk to the site or responding emergency personnel. The proposal complies with **A2.6.**
Element 3: Vehicular access	
A3.1 Private Driveway	The proposed development is located within an area serviced by a reticulated water supply. Furthermore, all proposed habitable buildings within the site are located no greater than 70 m in length from the public road network, specifically Skyline Boulevard in the eastern portion of the site providing access in a north-to-south direction, and Goodwood Boulevard at the southern boundary providing access in an east-to-west direction. As these conditions are met, there are no private driveway technical requirements prescribed by the Guidelines for the broader commercial site. Notwithstanding, the internal driveway network of the site has been specifically designed to avoid no-through portions, allowing for continuous, two-way through traffic movements throughout the development compliant with requirements in Appendix B.3 Table 10, Column 5 (an excerpt is provided in **Plate 4** below). Notwithstanding the above, it is noted that additional vehicular access considerations are required for the childcare centre due to its classification as a vulnerable land use; these specific requirements are outlined in detail within **Appendix C**. The proposal complies with **A3.1.**

Table 5: Assessment against the Bushfire Protection Criteria 7 - Development – Commercial and Industrial criteria from the Guidelines (continued)

Bushfire protection criteria	Proposed bushfire management strategies
Element 4: Water Supply	
A4.1 Water supply	The proposed development is located in an area that will be serviced by a reticulated water supply, with existing hydrants to the south and east of the site. The current network will be extended as part of the development within the site and additional hydrants will be supplied in accordance with the water authority requirements. Specific technical requirements regarding structural firefighting water supplies (such as fire hydrant locations, spacing, and required flow rates) will be detailed and addressed during the detailed design and construction phases. The site's established access to the reticulated water network ensures that compliant implementation of these structural firefighting requirements is achievable. The proposal complies with **A4.1.**

Table 10: Vehicular access technical requirements

	1		2		3		4		5	
TECHNICAL REQUIREMENTS	**PERIMETER ROADS**		**PUBLIC ROADS**		**EMERGENCY ACCESS WAY[3]**		**FIRE SERVICE ACCESS ROUTE[3]**		**BATTLE-AXE & PRIVATE DRIVEWAYS[1]**	
MAP OF BUSH FIRE PRONE AREAS DESIGNATION	**Area 2**	**Area 1**	**Area 2**	**Area 1**	**Area 2**	**Area 1**	**Area 2**	**Area 1**	**Area 2**	**Area 1**
Minimum horizontal clearance (metres)	12	8	See note 5		10	6	10	6	6	
Minimum vertical clearance (metres)	4.5									
Minimum weight capacity (tonnes)	15									
Maximum grade unsealed road[2]	See note 5		See note 5		1:10 (10% or 6°)					
Maximum grade sealed road[2,4]					1:7 (14.3% or 8°)					
Maximum average grade sealed road					1:10 (10% or 6°)					
Minimum inner radius of road curves (metres)					8.5					

Notes:
1. Driveways and battle-axe legs to comply with the Residential Design Codes and Development Control Policy 2.2 Residential Subdivision where not required to comply with the widths in this Appendix or the Guidelines.
2. Dips must have no more than a 1 in 8 (12.5% - 7.1 degrees) entry and exit angle.
3. To have crossfalls between 3 per cent and 6 per cent.
4. For sealed roads only the maximum grade of no more than 1 in 5 (20 per cent) (11.3 degrees) for no more than 50 metres is permissible, except for short constrictions to 3.5 metres for no more than 30 metres in length where an obstruction cannot be reasonably avoided or removed.
5. As outlined in the Institute of Public Works Engineering Australasia (IPWEA) subdivision guidelines, Liveable Neighbourhoods, Austroads Standards Main Roads standard, supplement, policy or guideline and/or any applicable or relevant local government standard or policy.

Plate 4: Excerpt of Table 10 from Appendix B.3 of The Guidelines outlining vehicle access requirements

5.2 Additional management strategies

5.2.1 Future approval considerations

The BAL assessment in this BMP assesses the potential bushfire risk posed to future habitable buildings within the site based on the proposed management of vegetation and assumptions outlined in **Section 3**.

The proposed development comprises a mix of building classes, including a shopping mall and tavern (Class 6), a medical centre (Class 5), and a gym, swim school, and childcare centre (Class 9b). These

habitable buildings proposed within the site are located within a designated bushfire-prone area and subject to BAL ratings between BAL-LOW and BAL-19.

As previously established, under the NCC 2022, there are no mandatory Deemed-to-Satisfy bushfire construction standards for general commercial classes. It's noted, however, that the application of specific bushfire construction standards under the NCC 2022 has been deferred in Western Australia for certain buildings. Nevertheless, as the proposed childcare centre (Class 9b early childhood centre) is classified as a vulnerable land use, it will need to satisfy the relevant bushfire construction and occupant shelter requirements of the NCC at the building permit stage.

5.2.2 Vegetation management

5.2.2.1 Within the site

Vegetation within the site will be managed to achieve low threat conditions. The formal landscaped areas and hardstand areas (public road reserves, carparks and footpaths) will function as the APZ and low-threat areas. These specific areas are required to be designed, implemented, and maintained by the proponent to achieve a non-vegetated or 'low threat' state in accordance with Section 2.2.3.2(e) and (f) of AS 3959 and the APZ standards outlined in Appendix B.2 of the Guidelines. This minimal fuel condition must be maintained in perpetuity.

Management practices for the APZ and low-threat areas should include (but are not limited to):

- Irrigation of grass and garden beds (where required).
- Regular maintenance, including removal of weeds and dead material.
- Low pruning of trees (branches below 2 m in height removed where appropriate).
- Application of ground covers such as mulch or non-flammable materials.
- Regularly mowing/slashing of grass to less than 100mm in height.

5.2.2.2 Surrounding the site

Low threat area management by proponent

While not required to successfully implement this BMP, the proponent may choose to manage hazards to the north and south of the site, to reduce the extent of BAL ratings on development. A minimum 100 m-wide area would need to be subject to regular ongoing management (e.g. slashing/removal of grass and/or removal of built-up dead material (or similar type treatments)) until broader development progresses, to enable buildings to achieve BAL-LOW.

Private landholdings and public open space areas

Where indicated as a low threat in **Figure 2**, the areas surrounding the site will be managed by the applicable landowners/land managers in accordance with the Shire of Serpentine Jarrahdale fire hazard reduction notice (as published) and/or in accordance with existing maintenance regimes. Where indicated as classified vegetation in **Figure 2**, these areas have been assumed to remain a bushfire hazard in the long-term. Temporary hazards have been identified in association with future stages of development, and while these will be removed as the Centre Plan and broader Structure Plan are implemented, they have been conservatively treated as unmanaged hazards for the purpose of this assessment.

5.2.3 Shire of Serpentine Jarrahdale Fire Hazard Reduction Notice

The Shire of Serpentine Jarrahdale releases a fire hazard reduction notice on an annual basis to provide a framework for bushfire management within the Shire. The Shire of Serpentine Jarrahdale are able to enforce this notice in accordance with Section 33 of the *Bush Fires Act 1954*. In addition, Section 33 1(b) also provides the Shire with additional power to direct landowners to undertake works to remedy conditions conducive to the outbreak or spread of bushfire.

Once the site is developed (low threat), the landowner will be required to comply with the requirements of the annual fire hazard reduction notice relevant to their landholding. The current Fire Hazard Reduction Notice should be referred to, and where there is any inconsistency between the requirements of the notice and this BMP, the higher standard shall apply.

5.2.4 Public education and preparedness

Community bushfire safety is a shared responsibility between individuals, the community, government, and fire agencies. DFES has an extensive Community Bushfire Education Program, including a range of publications, a website, and Bushfire Ready Groups. The DFES website (https://www.dfes.wa.gov.au/bushfire/prepare/) provides a range of materials to help the community prepare for and survive the bushfire season.

The Shire of Serpentine Jarrahdale provides bushfire safety advice to residents available from their website https://www.sjshire.wa.gov.au/community/fire-and-emergency-management/preparing-your-family-and-property-for-fire-season.aspx. Qualified consultants also offer bushfire safety advice and relevant services to residents and businesses in high-risk areas, in addition to that provided in this BMP.

In the case of a bushfire in the area, advice would be provided to residents by DFES, Department of Biodiversity Conservation and Attractions (DBCA) and/or the Shire of Serpentine Jarrahdale on any specific recommendations with regard to responding to the bushfire, including evacuation if required.

6 Responsibilities for Implementation and Management of Bushfire Measures

The responsibilities for the implementation and ongoing management of the bushfire mitigation measures detailed in this BMP have been divided into two distinct tables to reflect the overarching civil requirements and the specific operational requirements of the vulnerable land use.

Table 6 outlines the general bushfire risk management responsibilities for the broader Whitby Town Centre development. It details the physical site preparation and construction actions required by the proponent, alongside the ongoing maintenance and compliance monitoring obligations of the Shire of Serpentine Jarrahdale and the Water Corporation.

Table 6: Responsibilities for the implementation of this BMP

	Management Action	Timing
	Proponent	
1	All habitable buildings are to be located in an area that achieves BAL-29 or less.	During construction and ongoing
2	Design, implement and maintain the site in accordance with the vegetation management approach outlined in **Section 2.2**. This includes maintaining the formal landscaped areas, public road reserves, car parks and footpaths. Comply with the Shire of Serpentine Jarrahdale's annual fire hazard reduction notice as updated, until the development is completed, by ensuring the site is free of flammable matter, grassed areas are maintained at less than 100 mm and low hanging branches to no lower than 2m.	During construction and ongoing
3	Construct all driveways and carparks within the site in accordance with the technical requirements of Appendix B.3, Table 10, Column 5 of the Guidelines for private driveways.	During construction
4	Connect the site to the reticulated water supply and provide sufficient hydrant coverage.	Prior to occupation and ongoing
5	Maintain fuel loads in the adjoining road reserve of Gardiner Avenue to the north of the site where abutting the facility to a non-vegetated (AS 3959 Section 2.2.3.2(e)) or low-threat state (AS 3959 Section 2.2.3.2(f)).	Prior to occupation and ongoing
	Shire of Serpentine Jarrahdale	
1	Monitoring vegetation fuel loads in surrounding landholdings of the site against the requirements of the Shire of Serpentine Jarrahdale's annual fire hazard reduction notice and liaising with relevant stakeholders to maintain fuel loads at minimal/appropriate fuel levels.	Ongoing
2	Maintaining fuel loads in existing and future road reserves (under the Shire of Serpentine Jarrahdale's management) to appropriate low-threat standards.	Ongoing
	Water Corporation	
1	Ensure water hydrants in adjacent road reserves are maintained and accessible to fire services at all times.	Ongoing

Table 7 details the specific, ongoing operational and emergency management responsibilities associated exclusively with the proposed childcare centre. Given its classification as a vulnerable land use, these targeted actions must be undertaken by the childcare operator and/or proponent to ensure the continued safety of occupants and strict compliance with the Bushfire Emergency Plan (BEP).

Table 7: Responsibilities for the implementation of this BMP – Childcare Centre (Vulnerable Land Use)

	Management Action	Timing
	Proponent	
1	Construct the internal driveway networks and designated parking areas to accommodate the specific vehicular access and egress considerations required for the vulnerable land use, as detailed in **Appendix C**.	During construction and ongoing
2	Ensure the designated 'safer building' (on-site shelter) is constructed and maintained in accordance with the applicable bushfire construction requirements of the National Construction Code (NCC). The building surveyor and fire engineer must verify the applicable building standards pursuant to Regulation 31BA of the Building Regulations 2012, specifically addressing the WA transitional arrangements for the application of NCC 2022 bushfire provisions to Class 3 and Class 9 buildings.	During construction and ongoing
3	Finalise and implement the Bushfire Emergency Plan (BEP) for the childcare centre prior to occupation. Review the BEP annually prior to the commencement of the prescribed bushfire season, updating contact details, evacuation routes, and secondary destinations as required.	Prior to occupation and ongoing
4	Confirmation of the establishment of a secondary vehicular access route extending northwards on Skyline Boulevard (in line with approved subdivision) to ensure multiple, multi-directional egress options are available for the facility prior to occupation.	Prior to occupation and ongoing

7 Applicant Declaration

7.1 Accreditation

This BMP has been prepared by Emerge Associates who have a number of team members who have undertaken Bushfire Planning and Design (BPAD) Level 1 and Level 2 training and are Fire Protection Association of Australia (FPAA) accredited practitioners and/or in the process of obtaining accreditation. Emerge Associates have been providing bushfire risk management advice for more than 12 years, undertaking detailed bushfire assessments (and associated approvals) to support the land use development industry.

Anthony Rowe is a FPAA Level 3 BPAD accredited practitioner (BPAD No. 36690) in accordance with clause 9.10 of the Guidelines.

7.2 Declaration

I declare that the information provided is true and correct to the best of my knowledge.

Signature:



Name: Anthony Rowe

Company: Emerge Associates/ Envision Bushfire Protection

Date: 17/07/2025

BPAD Accreditation: Level 3 BPAD no. 36690

8 References

8.1 General references

The references listed below have been considered as part of preparing this document.

Cardno 2010, *Flora and vegetation survey*.

Department of Biodiversity, Conservation and Attractions (DBCA) 2017, *Ramsar Sites (DBCA-010)*.

Department of Biodiversity, Conservation and Attractions (DBCA) 2022a, *Geomorphic Wetlands, Swan Coastal Plain (DBCA-019)*, Western Australia, <https://catalogue.data.wa.gov.au/dataset/geomorphic-wetlands-swan-coastal-plain>.

Department of Biodiversity, Conservation and Attractions (DBCA) 2022b, *Threatened Ecological Communities (DBCA-038)*, Perth, Western Australia <https://catalogue.data.wa.gov.au/dataset/threatened-ecological-communities>.

Department of Planning, Lands and Heritage (DPLH) 2019, *Bush Forever Areas 2000 (DPLH-019)*, <https://catalogue.data.wa.gov.au/org/department-of-planning-lands-and-heritage>.

Department of Water and Environmental Regulation (DWER) 2021, *Clearing Regulations - Environmentally Sensitive Areas (DWER-046)*, <https://catalogue.data.wa.gov.au/dataset/clearing-regulations-environmentally-sensitive-areas-dwer-046>.

Emerge Associates (Emerge) 2026, *TAFE Munster PDP Environmental Assessment Report* EP25-112(04)--003a DTA.

Gould, J., McCaw, W., Cheney, N., Ellis, P. and Matthews, S. 2007, *Field Guide: Fuel Assessment and Fire Behaviour Prediction in Dry Eucalypt Forest*, CSIRO and Department of Environment and Conservation, Perth, Western Australia.

Office of Bushfire Risk Management (OBRM) 2025, *Map of Bush Fire Prone Areas*, Department of Fire and Emergency Services, <https://maps.slip.wa.gov.au/landgate/bushfireprone/>.

Standards Australia 2018, *AS 3959:2018 Construction of buildings in bushfire-prone areas*, Sydney.

Western Australian Land Information Authority (WALIA) 2026, *Landgate Map Viewer Plus*, <https://map-viewer-plus.app.landgate.wa.gov.au/>.

Western Australian Planning Commission (WAPC) 2024a, *Planning for Bushfire Guidelines*, Western Australia.

Western Australian Planning Commission (WAPC) 2024b, *State Planning Policy 3.7 Busfire*, Western Australia.

8.2 Online references

The online resources that have been utilised in the preparation of this report are referenced in **Section 8.1**, with access date information provided in **Table R-1**.

Table R 1 Access dates for online references

Reference	Date accessed	Website or dataset name
(Landgate 2025)	29.06.2026	https://map-viewer-plus.app.landgate.wa.gov.au/index.html
(OBRM 2025)	01.07.2026	Bush Fire Prone Areas
(DBCA 2022a)	29.06.2026	Geomorphic Wetlands, Swan Coastal Plain
(DBCA 2017)	29.06.2026	Ramsar Sites
(DBCA 2022b)	29.06.2026	Threatened ecological communities
(DWER 2021)	29.06.2026	Environmentally sensitive areas
(DPLH 2019)	01.07.2026	Bush Forever areas

Figures

Figure 1: Site Location and Environmental Features

Figure 2: AS 3959 Vegetation Classification and Effective Slope

Figure 3: Bushfire Attack Level Contour Plan

Figure 4: Spatial Representation of Bushfire Management Strategies

Figure 5: Spatial Representation of Bushfire Management Strategies – Childcare

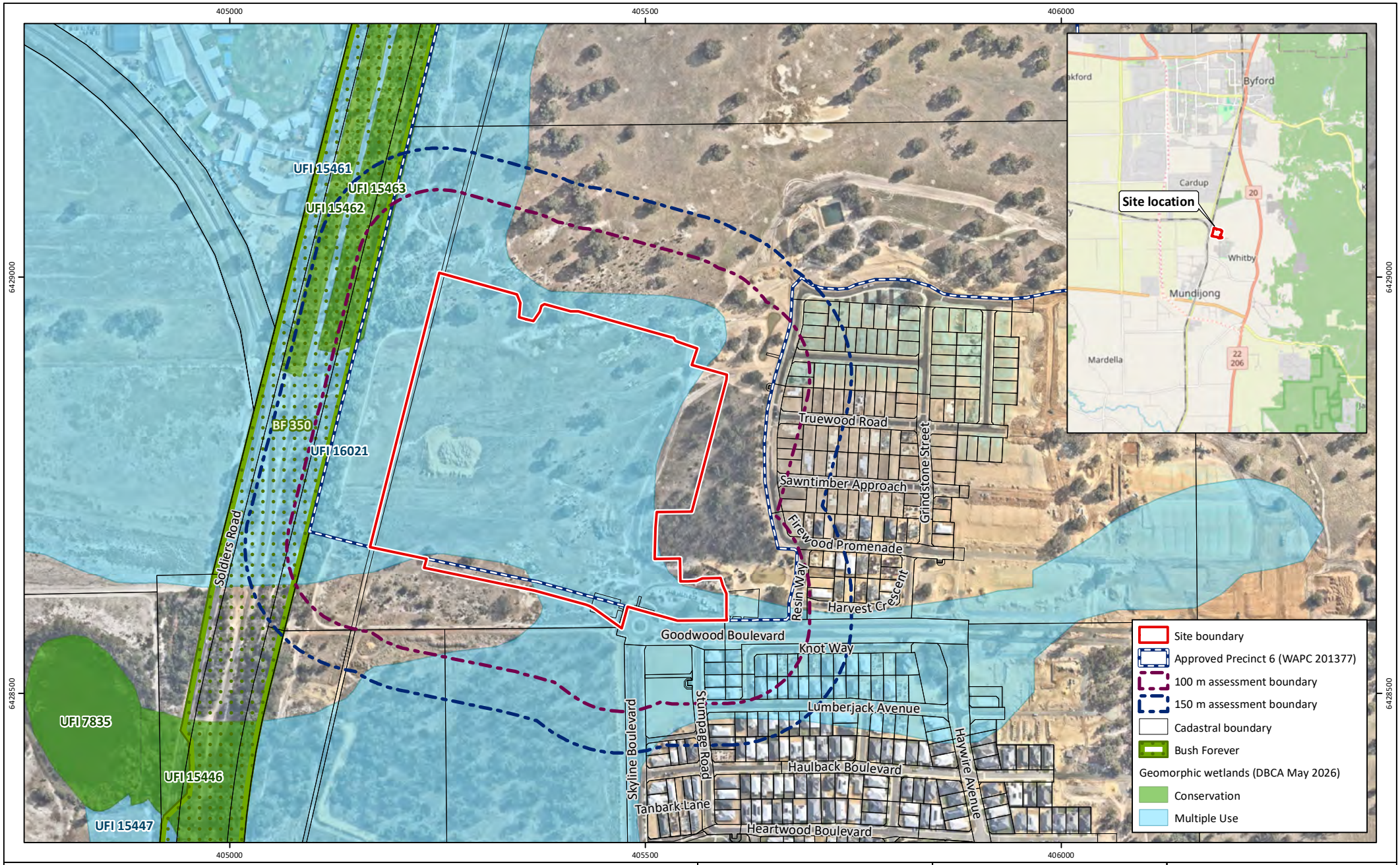


Figure 1: **Site Location and Environmental Features**

Project: Bushfire Management Plan
Whitby Town Centre
Client: Gold Fusion Pty Ltd

Plan Number:
EP13-067(101)--F506
Drawn: LAM
Date: 08/07/2026
Checked: CNV
Approved: CPW
Date: 17/07/2026

N

0 100 200
Metres
Scale: 1:6,000@A4
GDA 1994 MGA Zone 50

emerge ASSOCIATES

While Emerge Associates makes every attempt to ensure the accuracy and completeness of data, Emerge accepts no responsibility for externally sourced data used
©Landgate (2026). Nearmap Imagery date: 02/04/2026

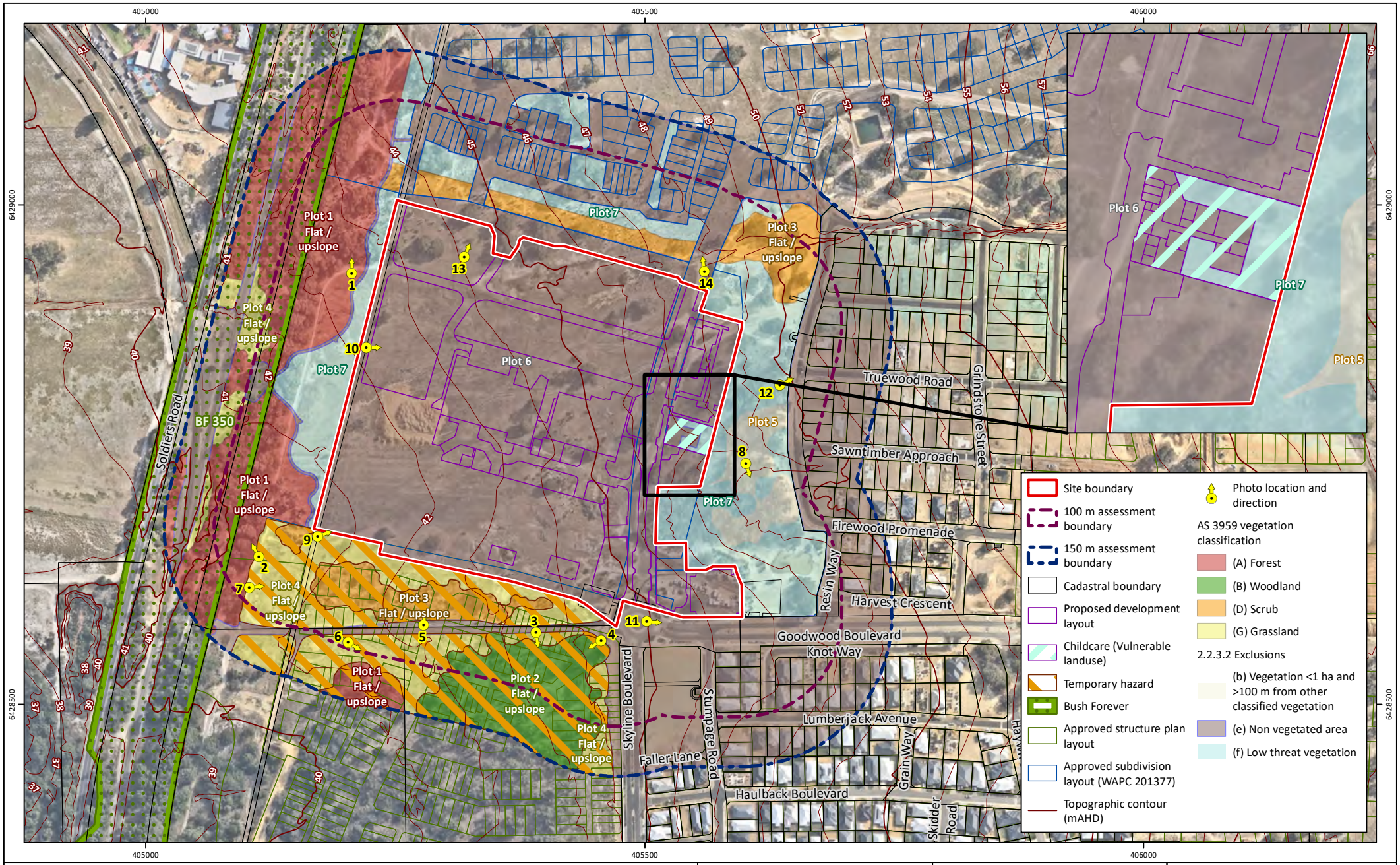


Figure 2: **AS 3959 Vegetation Classification and Effective Slope**

Project:	Bushfire Management Plan Whitby Town Centre
Client:	Gold Fusion Pty Ltd

Plan Number:
EP13-067(101)--F507

Drawn:	LAM
Date:	08/07/2026
Checked:	CNV
Approved:	CPW
Date:	17/07/2026

N

0 100 200
Metres

Scale: 1:5,000@A4

GDA 1994 MGA Zone 50

emerge ASSOCIATES

While Emerge Associates makes every attempt to ensure the accuracy and completeness of data, Emerge accepts no responsibility for externally sourced data used
©Landgate (2026). Nearmap Imagery date: 02/04/2026

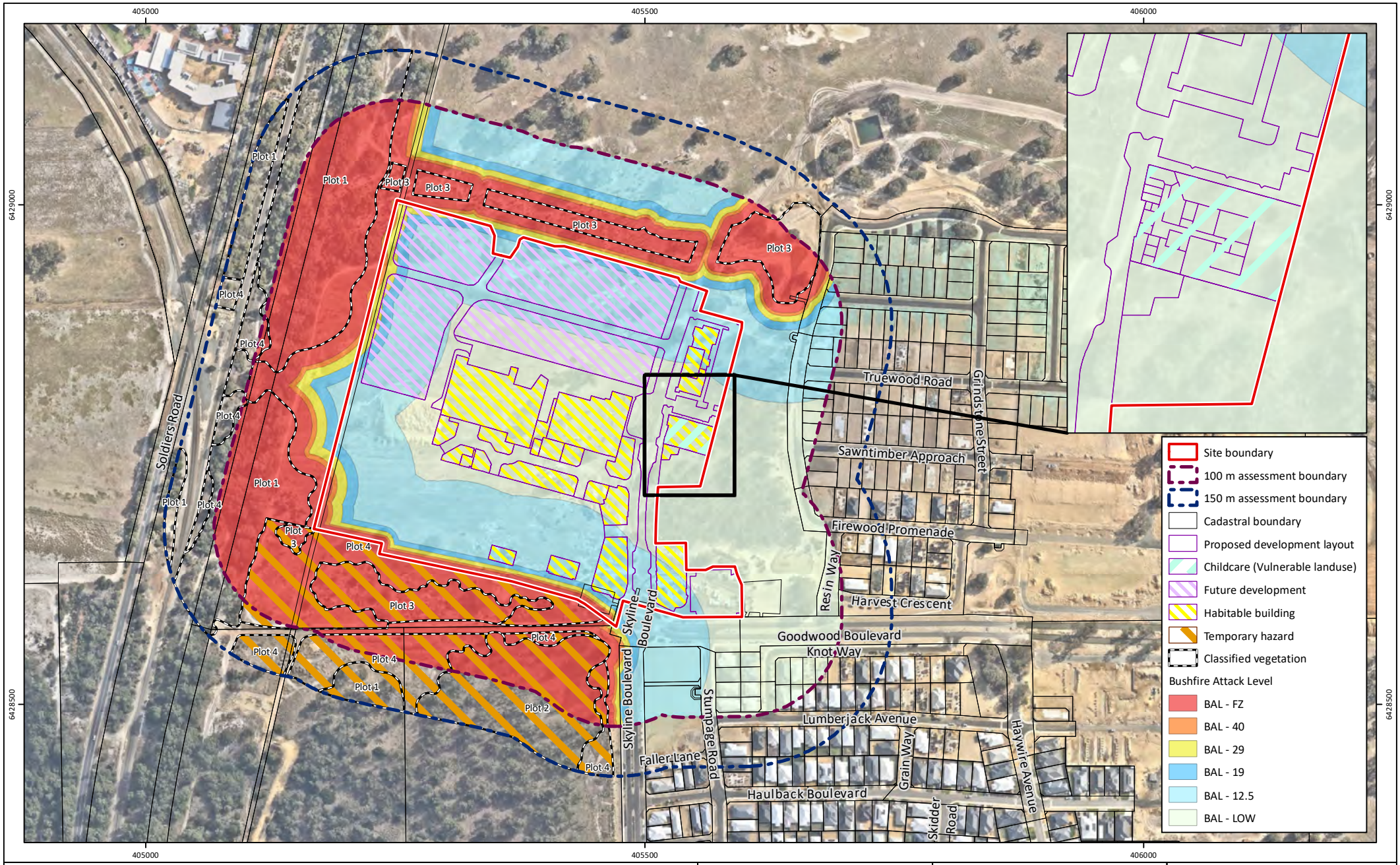


Figure 3: **Bushfire Attack Level Contour Plan**

Project: Bushfire Management Plan
Whitby Town Centre
Client: Gold Fusion Pty Ltd

Plan Number:
EP13-067(101)--F508

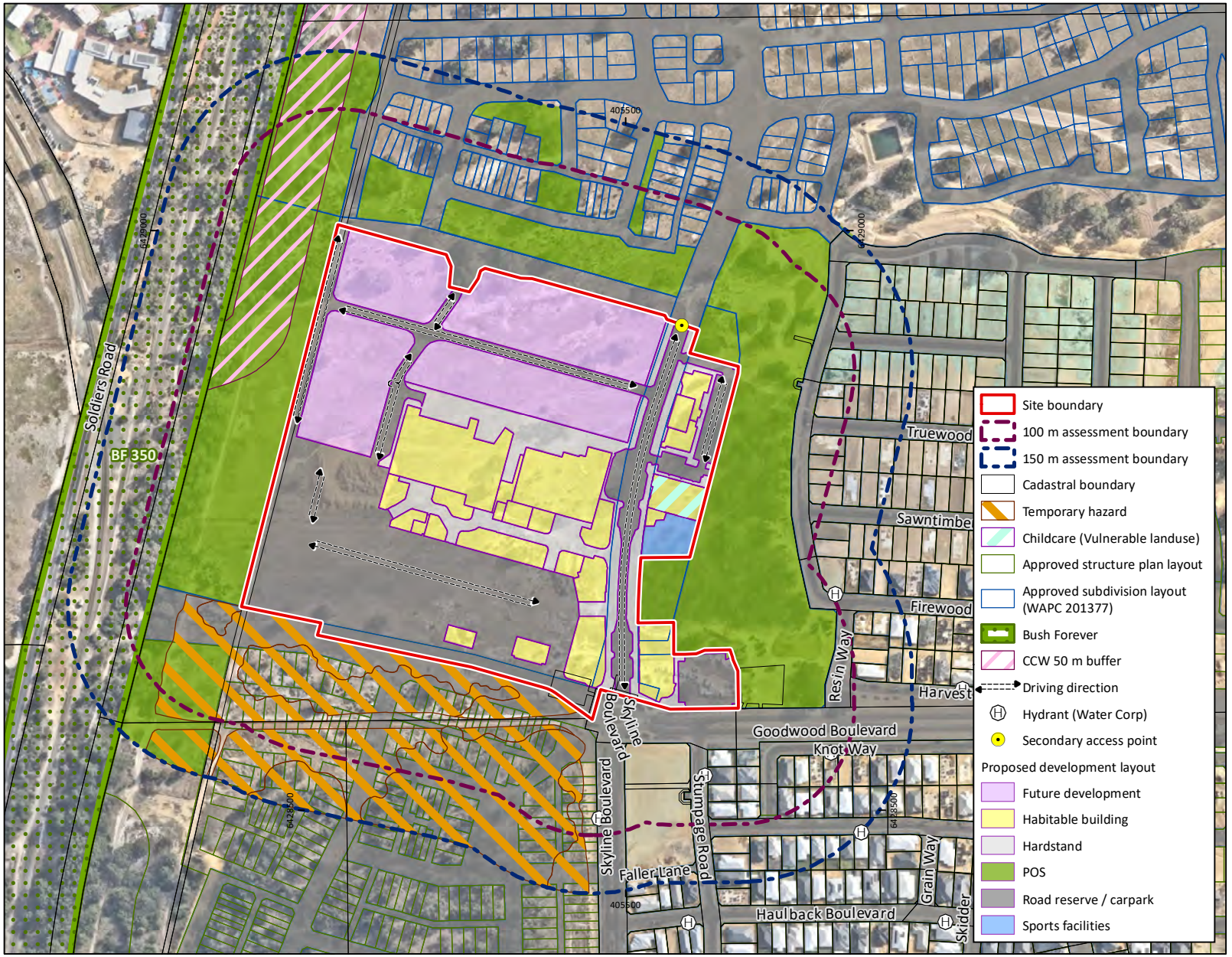
Drawn:	LAM
Date:	08/07/2026
Checked:	CNV
Approved:	CPW
Date:	17/07/2026

N

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Metres
Scale: 1:5,000@A4
GDA 1994 MGA Zone 50

emerge ASSOCIATES

While Emerge Associates makes every attempt to ensure the accuracy and completeness of data, Emerge accepts no responsibility for externally sourced data used
©Landgate (2026). Nearmap Imagery date: 02/04/2026



Siting

All proposed habitable buildings are to be sited to ensure the potential radiant heat impact of a bushfire does not exceed 29 kW/m² (BAL-29).

Asset Protection Zone

The entirety of the site is to be managed and maintained to an Asset Protection Zone (APZ) standard in perpetuity. This includes maintaining the site in a low-threat or non-vegetated state in accordance with Section 2.2.3.2(e) and (f) of AS 3959 and the standards prescribed in Schedule 1 of the Guidelines.

Vehicular Access

Vehicular access and egress for the site are to be provided via the internal private driveway and shared carpark networks. These internal networks are designed to avoid no-through portions, facilitating continuous two-way traffic flows and connecting onto the surrounding public road network.

Water Supply

The site is located in an area serviced by an existing reticulated hydrant network. A connection to the reticulated scheme water supply is to be provided for the site, and hydrants are to be constructed and connected in accordance with Water Authority and DFES standards.

Figure 4: Spatial Representation of Bushfire Management Strategies

Project: Bushfire Management Plan
Whitby Town Centre
Client: Gold Fusion Pty Ltd

Plan Number:
EP13-067(101)--F509
Drawn: LAM
Date: 09/07/2026
Checked: CNV
Approved: CPW
Date: 17/07/2026

N

0 50 100 150
Metres
Scale: 1:5,000@A4
GDA 1994 MGA Zone 50

emerge ASSOCIATES

While Emerge Associates makes every attempt to ensure the accuracy and completeness of data, Emerge accepts no responsibility for externally sourced data used
©Landgate (2026). Nearmap Imagery date: 02/04/2026

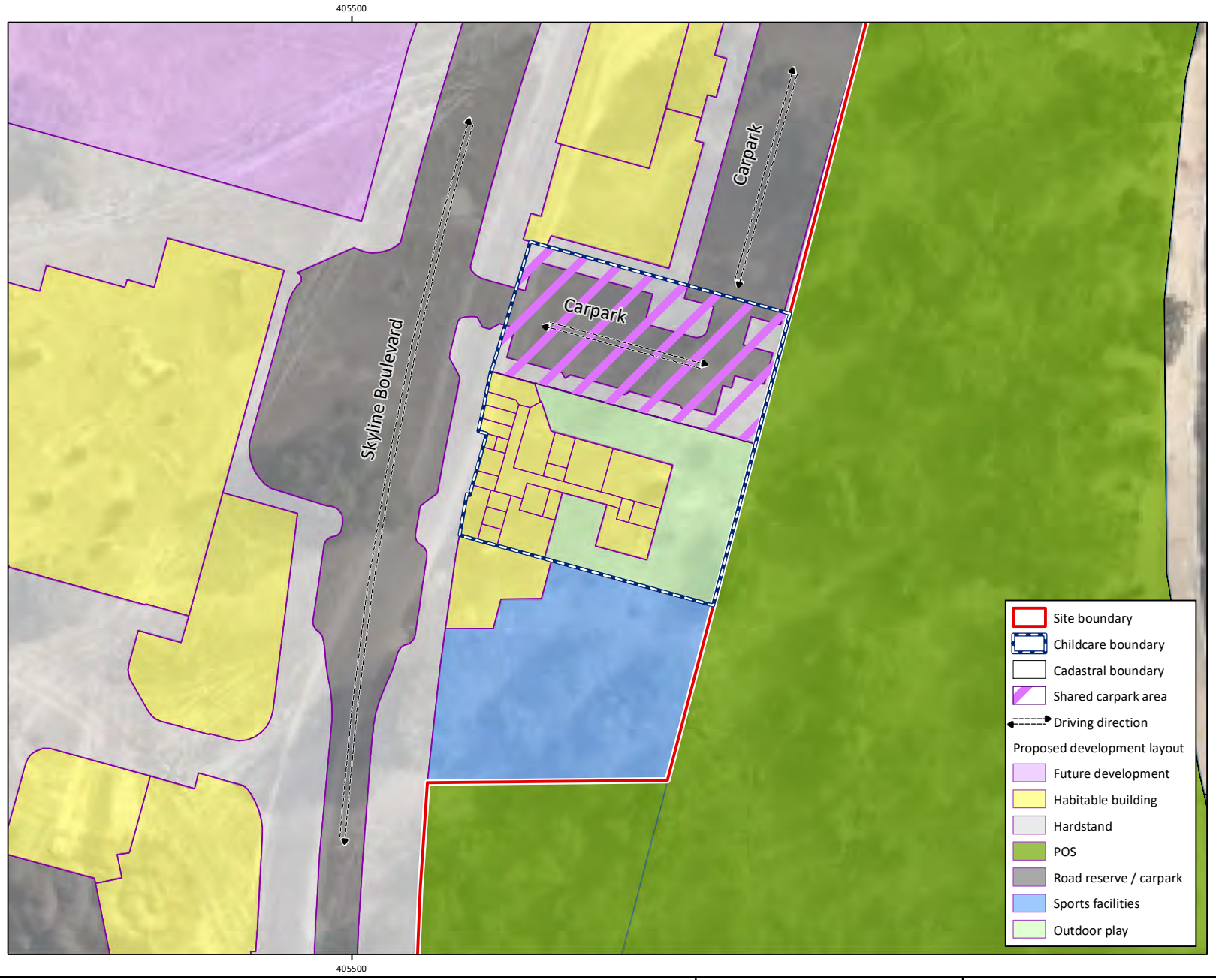


Figure 5: Spatial Representation of Bushfire Management Strategies - Childcare

Project: Bushfire Management Plan
Whitby Town Centre
Client: Gold Fusion Pty Ltd

Plan Number:
EP13-067(101)--F510
Drawn: LAM
Date: 09/07/2026
Checked: CNV
Approved: CPW
Date: 17/07/2026

N

0 10 20 30
Metres
Scale: 1:1,000@A4
GDA 1994 MGA Zone 50

Siting
The proposed childcare centre habitable building is to be sited to achieve maximum separation from classified vegetation, ensuring a radiant heat impact of BAL-LOW.

Asset Protection Zone
The childcare centre and its associated outdoor play areas are to be established and managed to a low-threat condition in perpetuity, in accordance with Section 2.2.3.2 of AS 3959 and the Planning for Bushfire Guidelines.

Vehicular Access
Vehicular access is to be provided via the shared carpark to the north, which connects to Skyline Boulevard via two distinct crossovers. To ensure continuous two-way traffic flow and provide multiple egress options to the broader public road network in the event of an emergency, secondary access extending to the north along Skyline Boulevard is required to be provided prior to the occupation of the childcare centre.

Water Supply
The site is located in an area serviced by an existing reticulated hydrant network. A connection to the reticulated scheme water supply is to be provided, and hydrants are to be constructed and connected in accordance with Water Authority and DFES standards to support structural firefighting requirements for the vulnerable land use.

While Emerge Associates makes every attempt to ensure the accuracy and completeness of data, Emerge accepts no responsibility for externally sourced data used
©Landgate (2026). Nearmap Imagery date: 02/04/2026

Appendix A

Site Plan

Rev.	Date	Description	Iss.	Appr.
A	04.05.2026	ISSUED FOR INFORMATION		
B	06.05.2026	ISSUED FOR INFORMATION	JE	AP
C	07.05.2026	ISSUED FOR INFORMATION	JE	AP
D	22.05.2026	ISSUED FOR INFORMATION	HD	AP
E	28.05.2026	ISSUED FOR INFORMATION	HD	AP
F	09.06.2026	ISSUED FOR INFORMATION	HD	
G	12.06.2026	ISSUED FOR INFORMATION	HD	AP
H	18.06.2026	ISSUED FOR INFORMATION	HD	AP

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Area Legend

- Amenities
- BOH
- Childcare
- Circulation
- Community Workshop
- Food & Beverage
- Gym
- LSA
- Major
- Medical
- Pharmacy
- Specialty
- Swim School
- Tavern

CATEGORY	AREA
Amenities	266.61 m²
BOH	774.57 m²
Childcare	1360.91 m²
Circulation	3185.83 m²
Community Workshop	188.69 m²
Food & Beverage	1987.51 m²
Gym	1926.90 m²
LSA	697.08 m²
Major	9497.79 m²
Medical	636.15 m²
Pharmacy	433.86 m²
Specialty	5091.42 m²
Swim School	480.57 m²
Tavern	741.90 m²
	27269.81 m²

BAY TYPE	COUNT
GYM	
ACROD - 5400x2700	2
Shared Space - 5400x2700	1
Standard Bay - 5400x2700	77
	80
HIGH STREET	
On-Street Parallel Bay - 6600x2600	27
	27
MEDICAL CENTRE	
ACROD - 5400x2700	4
Shared Space - 5400x2700	2
Standard Bay - 5400x2700	77
	83
SHOPPING CENTRE	
ACROD - 5400x2700	17
Electric Vehicle Bay - 2700x5400	8
Shared Space - 5400x2700	16
Standard Bay - 5400x2700	749
	790
TOTAL: 980	980

Project

WHITBY TOWN CENTRE

WHITBY, WESTERN AUSTRALIA

Project Number
240263

Status

Date Plotted 18/06/2026 11:53:04 AM

Scale 1 : 1000 @A1

Drawing Title
SITE PLAN

Drawing Number
WTC-BUC-A-DA-01000

Revision
H

BUCHAN

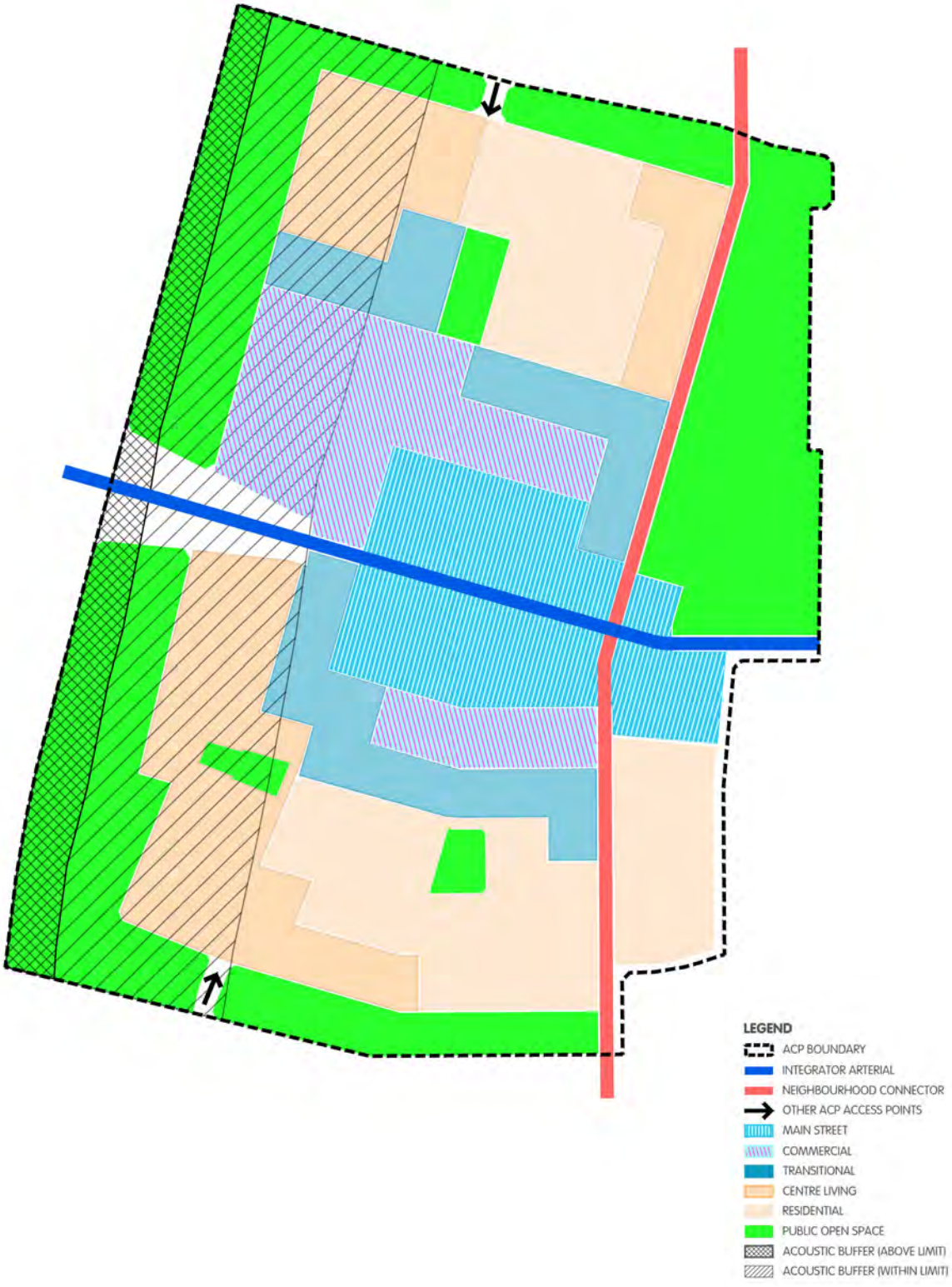
Perth Studio
+ 61 8 9211 9898 / **buchan.au**

File
Autodesk Docs://240263-R25-Whitby-Town-Centre/WTC-BUC-ZZ-M6-A-R25-ARCHITECTURE.rvt

Appendix B

Whitby Activity Centre Plan

Plan 1: Activity Centre Plan



Appendix C

Vulnerable Land Use Assessment – Childcare Centre

The proposed Whitby Town Centre incorporates a childcare centre, which is classified as a vulnerable land use (Class 9b building) under *State Planning Policy 3.7 Bushfire* (SPP 3.7). This classification recognises that the facility will accommodate occupants (primarily children) who may present evacuation challenges and are less able to respond independently during a bushfire emergency.

In accordance with the *Planning for Bushfire Guidelines* (the Guidelines), development applications for vulnerable land uses must be assessed against the specific criteria outlined in *Bushfire Protection Criteria 8: Development – Vulnerable Class 9 buildings* (BPC 8).

This appendix provides a detailed assessment of the proposed childcare centre against BPC 8, as detailed in **Table C-1** below, to demonstrate that the bushfire risk to this vulnerable facility is manageable and complies with the acceptable solutions of the Guidelines. The spatial layout of the bushfire management strategies specific to the childcare centre is illustrated in **Figure 5** of the BMP, and a comprehensive Bushfire Emergency Plan (BEP) has been prepared and is provided in **Appendix D**.

Table C-1: Assessment against the Bushfire Protection Criteria 8 - Development – Vulnerable Class 9 buildings criteria from the Guidelines

Bushfire protection criteria	Proposed bushfire management strategies
Element 1: Location	
Element 1 is not applicable at the development application stage. The suitability of the location was established during the preceding strategic planning and subdivision approval processes.	
Element 2: Siting and design	
A2.1 Siting and design	The proposed habitable building is able to achieve sufficient separation from post-development classified vegetation to achieve BAL-LOW. The entire Whitby Town Centre, within which the childcare centre is located, will be managed to achieve low threat in accordance with AS 3959 Section 2.2.3.2. The BAL contour plan provided in **Figure 3** demonstrates that the childcare centre building (habitable building and the development site) has been sited to achieve a maximum BAL rating of BAL-LOW. The proposed childcare centre complies with **A2.1**.
A2.2 Asset Protection Zone (APZ)	The childcare centre is required to be managed to a low-threat condition with a minimum APZ to ensure the habitable building achieves a siting below BAL-29 in perpetuity. While APZs are typically contained within a lot, they can also include external areas that meet low-threat criteria according to Section 2.2.3.2 of AS 3959, such as managed road reserves and public open space. As outlined in **Section 3.1** of the BMP, classified woodland, forest and grassland vegetation is present to the north, south and west of the site. However, the existing public road network, managed POS, and the broader Whitby Town Centre development provide sufficient separation for the childcare centre to achieve BAL-LOW at the proposed habitable building. The required APZ is accommodated within these managed low-threat areas, complying with the standards prescribed in Table 9 of the Guidelines. The proposed childcare centre complies with **A2.2**.

Table C-1: Assessment against the Bushfire Protection Criteria 8 - Development – Vulnerable Class 9 buildings criteria from the Guidelines (continued)

Bushfire protection criteria	Proposed bushfire management strategies
Element 2: Siting and design *(continued)*	
A2.3 Clearing of native vegetation	As outlined in **Section 2.1** of the BMP, the site has been subject to historical agricultural clearing. As a result, the remaining vegetation is primarily characterised by regrowth, consisting of a mixture of remnant native trees and shrubs. While some vegetation modification (such as tree thinning, pruning, and understorey removal in selected areas) is required specifically for bushfire mitigation purposes, the majority of the proposed clearing within the site is a direct result of implementing the broader town centre's functional development footprint (i.e., the built form, hardstand areas, and active and passive POS). This management is not a direct result of the childcare centre itself, but rather relates to the broader implementation requirements of the Whitby Town Centre development. The proposed childcare centre complies with **A2.3.**
A2.4 Landscape management plan	Landscape treatments are proposed within the childcare centre, shared carpark, and POS to the east, as shown in the Landscape Concept Plan in **Appendix E**. Within the childcare site itself, outdoor play areas will be implemented to achieve low-threat classifications in accordance with Section 2.2.3.2(f) of AS 3959, with management to occur in perpetuity. This is likely to include: • Irrigation of grass and garden beds (where required). • Regular removal of weeds and built-up dead material (such as fallen branches, leaf litter etc.) • Low pruning of trees (branches below 2 m in height removed where appropriate). • Application of ground/surface covers such as mulch or non-flammable materials as required. • Regular mowing/slashing of grass to less than 100 mm in height. Furthermore, the broader town centre Landscape Concept Plan (**Appendix E**) demonstrates the broad implementation of landscaping throughout the site. A mix of managed and unmanaged vegetation is present, resulting in the application of some classified vegetation in POS areas to the northeast. However, within the POS to the east, areas of vegetation proposed for retention and minimal management have been specifically designed to achieve exclusion under Clause 2.2.3.2(b) of AS 3959. The proposed childcare centre complies with **A2.4**.
A2.5 On-site shelter (safer building) – schools	While the acceptable solution explicitly references schools, the childcare centre will operate in accordance with a comprehensive BEP. The BEP prioritises safe evacuation to multiple destinations. Shelter-in-place is designated as a last resort within the primary building, which is sited in BAL-LOW. The proposed childcare centre complies with **A2.5.**
A2.6 Storage of hazardous, flammable and/or combustible materials	The proposed childcare centre site does not incorporate the storage of any hazardous, flammable and/or combustible materials and is located in BAL-LOW. The proposed childcare centre complies with **A2.6.**

Table C-1: Assessment against the Bushfire Protection Criteria 8 - Development – Vulnerable Class 9 buildings criteria from the Guidelines (continued)

Bushfire protection criteria	Proposed bushfire management strategies
Element 3: Vehicular access (continued)	
A3.1 Public roads	The proposed town centre development incorporates the extension of two existing public roads, with Skyline Boulevard in the eastern portion of the site providing access in a north-to-south direction, and Goodwood Boulevard at the southern boundary providing access in an east-to-west direction. The proposed childcare centre will connect to Skyline Boulevard which provides for access onto the broader surrounding road network. These public roads satisfy the requirements of Appendix B.3 and Table 10 of the Guidelines. Furthermore, the road network to the north of the site is subject to WAPC approval 201377 and will be staged concurrently with the site, providing for additional egress routes to the north. No public roads are proposed internal to the childcare centre. The proposed childcare centre complies with **A3.1.**
A3.2 Access routes (area 2)	The proposed childcare centre will connect to Skyline Boulevard via two crossovers to the shared carpark to the north of the childcare centre. For the direct implementation of the Whitby Town Centre, access to the south has already been constructed and provides suitable access and egress arrangements for the broader commercial development. However, as the childcare centre is a vulnerable land use, a secondary access route is required to be available prior to occupation. Given the approved road network surrounding the childcare centre is not yet fully constructed, an additional connection is required to the north, as identified in **Figure 4** of this BMP. This secondary access may be delivered either as a public road consistent with the approved road alignments under WAPC approval 201377 (Precinct 6) or as an Emergency Access Way (EAW). In either case, the arrangement must provide a functional secondary access route for the childcare centre. At a minimum, the connection should tie into the existing Precinct 5 road network to the east to ensure consistency with the previously supported emergency access/egress arrangement for Whitby, whereby two points of emergency access/egress are available via Keirnan Street and Reilly Road. This arrangement has been supported by the WAPC through subdivision approvals for the Whitby District Centre (WAPC ref. 201221). Alternatively, provision of the northern connection in accordance with the approved Precinct 6 road layout will also satisfy this requirement. Where the secondary connection is provided as an EAW, it shall be designed and constructed in accordance with the requirements of A3.4 Emergency Access Way outlined below. Accordingly, subject to provision of the northern secondary access prior to occupation of the childcare centre, the proposal complies with **A3.2**.
A3.3a No-through roads (area 2)	As per Implementation Action 4 within **Table 7** of this BMP, Skyline Boulevard is required to be developed to the extent necessary to provide continuous through-road access to the childcare centre site. This will be achieved via the construction of the approved road alignment to a public road standard, or at a minimum, to an Emergency Access Way (EAW) standard. On this basis, the proposed development does not rely on a permanent no-through road, and the restriction on no-through road lengths is not applicable. The proposed childcare centre complies with **A3.3a.**

Table C-1: Assessment against the Bushfire Protection Criteria 8 - Development – Vulnerable Class 9 buildings criteria from the Guidelines (continued)

Bushfire protection criteria	Proposed bushfire management strategies
Element 3: Vehicular access (continued)	
A3.3b No-through road requirements	As established in A3.3a, Skyline Boulevard will function as a continuous through-road (or compliant EAW) facilitating multi-directional access to the broader public road network. Consequently, no-through road technical requirements are not applicable to the childcare centre application. The proposed childcare centre complies with **A3.3b.**
A3.4 Emergency access way	An EAW may be relied upon to provide secondary access to the north of the site along the Skyline Boulevard alignment, pending the full construction of the approved public road network. Where an EAW is implemented in lieu of a constructed public road, it will be constructed and maintained in accordance with the technical requirements of Appendix B.3, Table 10, Column 3 of the Guidelines (extract provided in **Plate 4**). This includes providing a through connection to a public road, a maximum length of 500 m, a minimum horizontal clearance of 10 m, a vertical clearance of 4.5 m, a 15-tonne weight capacity, and appropriate signposting. The proposed childcare centre complies with **A3.4.**
A3.5 Fire service access route	The proposed lots do not adjoin any classifiable vegetation as outlined in **Section 3.1** of the BMP. Therefore, no Fire Service Access Route is required. The proposed childcare centre complies with **A3.5.**
A3.6 Internal vehicular access and private driveways	The childcare centre utilises a shared carpark to the north, which also services the adjoining medical centre and swim school. This shared carpark is designed to facilitate continuous, two-way traffic flows and incorporates two separate access points to the external public road network (Skyline Boulevard). This arrangement ensures efficient through-traffic movements and unobstructed access and egress for occupants and emergency services, satisfying the private driveway technical requirements of Appendix B.3, Table 10, Column 5 of the Guidelines (extract provided in **Plate 4**). The proposed childcare centre complies with **A3.6.**
A3.7 Signage	Signage will be installed at the entry points to the external shared car park to clearly indicate access and egress routes for visitors. Additionally, comprehensive signage will be prominently displayed within the childcare centre facility outlining evacuation routes, designated assembly locations, and general bushfire emergency procedures in accordance with the site-specific BEP and the Guidelines. The proposed childcare centre complies with **A3.7.**
Element 4: Water Supply	
A4.1 Water supply	The proposed development is situated within a reticulated water supply area, with existing fire hydrants located to the south and east of the site. The reticulated network will be extended throughout the site, and additional hydrants will be installed in accordance with the specifications of the Water Corporation and the Department of Fire and Emergency Services (DFES). Specific technical requirements regarding structural firefighting water supplies (such as fire hydrant locations, spacing, and required flow rates) will be addressed during the detailed design and construction phases to ensure sufficient water is available and accessible for emergency services. The proposed childcare centre complies with **A4.1.**

Appendix D

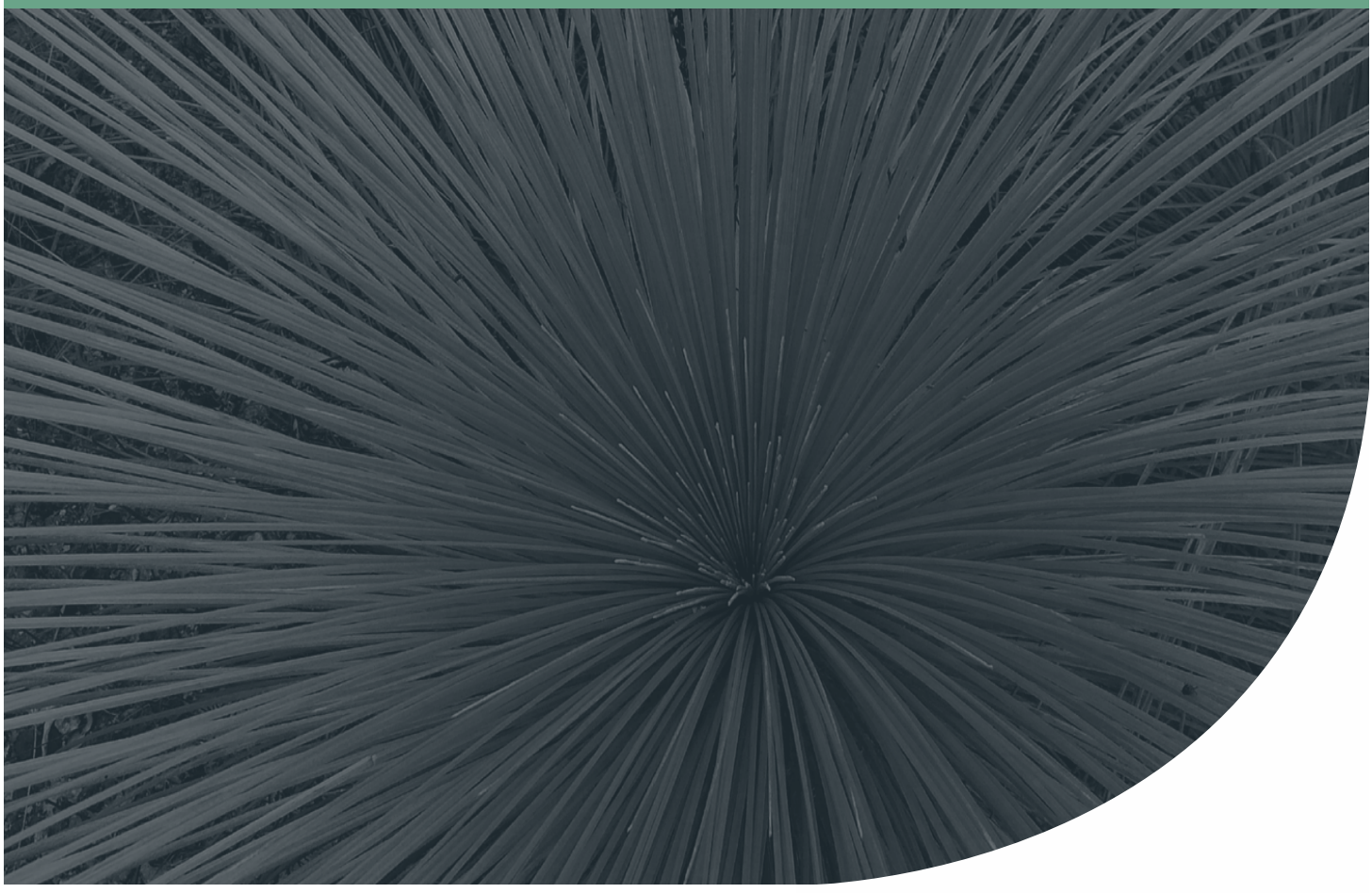
Bushfire Emergency Plan

Bushfire Emergency Plan

Childcare Centre, Whitby Town Centre

Project No: EP13-067(102)

Prepared for Gold Fusion Pty Ltd
July 2026



Document Control

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1	July 2026	Callum Vane	CNV	Connor Porter-Wilkinson	CPW
				Anthony Rowe	AJR
	Submitted to client for use.				

Processes and consideration outlined in this document can be incorporated into childcare specific procedures as deemed suitable/appropriate

Accreditation

This Bushfire Emergency Plan has been reviewed for consistency with the DPLH/WAPC *Bushfire Emergency Plan (BEP) Manual* (November 2024), by Anthony Rowe, an accredited Level 3 Bushfire Planning and Design (BPAD) practitioner (accreditation number: BPAD 36690) under the Fire Protection Association of Australia's (FPAA) Western Australian accreditation scheme.

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Emergency Plan Summary

This document has been prepared in two parts:

Part 1 (main report) provides the explanatory document that details the emergency context and procedures for the Facility. This document should be read in full and understood by all personnel with a bushfire evacuation responsibility.

Part 2 is appended to Part 1 and provides a summary of Part 1 with key points to be referenced during a bushfire emergency, preparation prior to bushfire season, and post-emergency. Part 2 is intended to be a Quick Reference Guide.

Both documents, or a future format specific to the childcare centre, are to be reviewed annually and updated accordingly.

Daily registers of occupants can be attached to Part 2 in the event of an emergency.

Key Definitions

Key terminology used throughout the Bushfire Emergency Plan (BEP) has been compiled below in **Table A1**.

Table A1: Summary of definitions

Term	Definition
Emergency Planning Committee (EPC)	Responsible for the emergency preparedness arrangements, to ensure resources are available to effectively implement the emergency plan.
Chief Warden	The Chief Warden is responsible for the management of on-site and off-site emergencies and critical incidents.
Emergency Control Organisation	The Emergency Control Organisation (ECO) is appointed by EPC to direct and control the implementation of the emergency response. The team will include the following: • Chief Warden (White) / Deputy Chief Warden (White) • Communications Warden (Orange) • Transport Warden (Yellow) • First Aid Wardens (Green) • Area Wardens (Red) **The safety of occupants is prioritised above the protection of any asset.**
Evacuation	The orderly movement of people from a place of danger.
Preparedness	The measures taken to eliminate the incidence of emergencies. These include the regulatory and physical measures to ensure that emergencies are prevented.
Prevention	The arrangements made to ensure that, should an emergency occur, all those resources and services that are needed to cope with the effects can be mobilised and deployed.
Recovery	Measures which support emergency or critical incident–affected individuals and communities in the reconstruction of the physical infrastructure and restoration of emotional, economic, environmental and physical well-being.
Response	Actions taken immediately prior to, during and immediately after an emergency or critical incident to ensure that its effects are minimised.

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Part 2: Bushfire Emergency Plan

1 Introduction

Gold Fusion Pty Ltd are seeking to develop a Childcare Centre (the 'Facility'), portion Lot 9021 Robertson Road (herein referred to as 'the site)'. The Facility is situated in the eastern portion of the site. It is located approximately 57 km southeast of the Perth central business district within the Shire of Serpentine Jarrahdale, as shown in **Plate 1**. The site is bound by undeveloped land to the north associated with the Whitby Town Structure Plan, existing residential development and managed POS to the east and south, and broader commercial development within the site to the west, with proposed Roberston Rd, railway reserve and Soldiers Road further west.

This document seeks to mitigate and manage the risk associated with a bushfire emergency threatening the Facility.

The objectives of this Bushfire Emergency Plan (BEP) are to:

- Decrease the level of risk to staff, children and visitors.
- Describe a clear means for alert and decisive action.
- Ensure safe and effective evacuation or sheltering if required.
- Ensure the Facility is prepared seasonally to be ready in case of a bushfire event (evacuation).

Occupancy numbers may vary and would not affect the use and/or implementation of this plan.

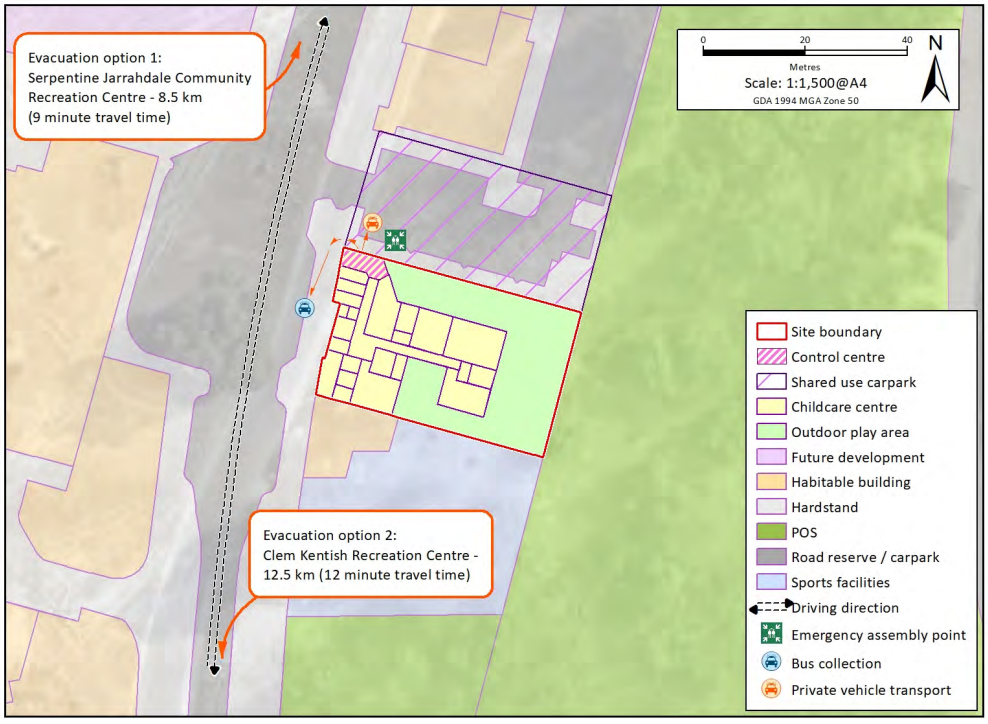


Plate 1: Summary of key buildings/features proposed as part of the development.

2 Outline of the Bushfire Emergency Plan

2.1 Purpose of the Bushfire Emergency Plan

The purpose of this BEP is to provide guidance and direction to all children, staff and visitors by providing:

- Information, advice and means to prepare for a bushfire emergency
- Actions to be taken in the event of a bushfire emergency.

This BEP identifies the administrative structure of the Emergency Planning Committee (EPC) and the Emergency Control Organisation (ECO). It describes the process to be followed in the event of an emergency caused by an imminent bushfire threat only, with other emergency procedures to be established as part of the Facility's operations. It should be regarded as a 'living document' with guidelines that can be adapted to changing circumstances.

The BEP is intended to be used by the Facility to:

- Outline key emergency features relevant to a bushfire event, see **Section 3**.
- Define the functions, roles and responsibilities of staff in a bushfire emergency, see **Section 4**.
- Establish ongoing education and training as part of the overall strategy, see **Section 5**.
- Provide procedures to evacuate children, staff, and visitors in the event of a bushfire, or take shelter in a 'safer place', see **Section 6**.

Control and coordination are critical for the effective evacuation of the Facility whether by sheltering in place or by evacuation, whichever is the safest option. This is especially the case where fire impact is imminent, and there may not be time for emergency agencies to direct the Facility in an evacuation. In this context, the choice to take shelter or implement a safe evacuation needs to be understood by management and the roles of staff for either option must be clearly understood, including the responsibilities assigned and appropriate training undertaken. Other roles and responsibilities, such as traffic management and visitor control, need to be assigned and understood by management and staff.

The BEP specifically addresses the personal safety and survival of people present at the time of a bushfire emergency and is not concerned with the protection of property.

2.2 Policies, guidelines and standards informing the Bushfire Emergency Plan

This BEP is based on guidance provided in the following:

- *Planning for Bushfire Guidelines: For the implementation of State Planning Policy 3.7 Bushfire* (the Guidelines) (WAPC 2024).
- *Australian Standard 3745:2010, Planning for Emergencies in Facilities* (Standards Australia 2010).
- *Bushfire Emergency Plan (BEP) Manual* (November 2024) (WAPC 2024).
- *Australian Standard 3745:2010, Planning for Emergencies in Facilities* (Standards Australia 2010).

2.3 Distribution of the Bushfire Emergency Plan

The BEP is an internal document for Facility staff to guide evacuation procedures, with an up-to-date copy maintained in the 'Reception' room and provided to all staff.

All permanent staff at the Facility will be briefed on the emergency response protocols and procedures, with an up-to-date copy of the BEP (provided in **Part 2**) to be displayed at appropriate locations across the Facility.

3 Emergency Features Relevant to the Bushfire Emergency Plan

3.1 Firefighting equipment

The Facility will have on-site firefighting equipment that will be available for emergency personnel, including:

- Fire extinguishers.
- Fire hose reels.
- Fire booster.

Additional equipment that may be required in the case of a bushfire emergency may include:

- Evacuation kit, as per the Facility's 'Incident Management Plan'
- Evacuation maps and diagrams.
- Walkie-talkies/handheld radios (VHF).

The additional equipment will be stored in the 'Reception' room, which is also designated as the Facility control centre.

All equipment should be maintained annually (as a minimum) in accordance with equipment specifications and the relevant standards, including (but not limited to) *Australian Standard 1851 – 2005 Maintenance of Fire Protection Equipment* (Standards Australia 2012). Any large-scale bushfire events observed should be reported to emergency services, who will coordinate the overall response, while Facility personnel coordinate the safe internal response (i.e. evacuation) as needed.

3.2 First aid

First aid kits are available from various suppliers that provide the requirements for threatening bushfire-type injuries.

A first aid kit, equipped to treat injuries that may be sustained during a bushfire, will be stored within on-site structures, with staff made aware of its location.

The first aid kits will be kept in complete, up-to-date condition at all times.

Personal protective clothing, specifically designed for bushfire conditions, will be available for all Area Wardens who may be responsible for and trained in small fire suppression. Both first aid kits and personal protective clothing are available from various specialised suppliers.

3.3 Vehicular access

The facility carpark, located to the north of the site, can be accessed from Skyline Boulevard to the west, which also provides access to the bus collection point directly to the west of the Facility. These access points serve the surrounding residential areas and the on-site car parks.

In addition, fire vehicle access is provided from multiple locations along Skyline Boulevard. As staff and children will routinely arrive at the Facility via drop-off or parking, supplementary transport (buses) may be required to evacuate the Facility to a secondary location. The bus collection location is located directly to the west of the childcare on Skyline Boulevard. Identified off-site destinations for evacuation include:

- Serpentine Jarrahdale Community Recreation Centre (38 Mead St, Byford); and
- Clem Kentish Recreation Centre (24 Wellard St, Serpentine).

This arrangement is to be affirmed prior to October each year.

The primary emergency evacuation point from the Facility is the main entry of the building.

It is to be noted that the use of supplementary transport may not be required for all scenarios.

3.4 Communication equipment

Three (3) separate blasts via a horn or siren are required to 'Sound the Alarm' to commence the evacuation of all children, staff and visitors from the Facility.

All ECO members will utilise their mobile phones for communication and will register their numbers with the EPC for access by the Chief Warden.

Two-way radios will be provided for the Chief Warden, Area Warden and Transport Warden. These roles are discussed further below in **Section 4.1**.

3.5 Condition of grounds and buildings

The Facility shall be maintained in a low-threat state (AS3959-2018, clause 2.2.3.2(e) and 2.2.3.2(f)) and flammable objects should not be placed in proximity to any Facility buildings that may increase their risk of ignition.

The Facility buildings and grounds should be inspected prior to the commencement of the bushfire season (by 1 November each year). A seasonal works checklist is included in **Part 2.**

The management for a bushfire event should be prepared prior to the commencement of the bushfire season (by 1 November each year). A seasonal management checklist is included in **Part 2.**

In addition to the seasonal assessment, on the mornings of predicted Extreme or Catastrophic Fire Danger Rating (FDR) days, the Facility grounds should be inspected to ensure there are no flammable materials against or in proximity to the buildings.

4 Roles and Responsibilities

4.1 Emergency Planning Committee (EPC)

An **Emergency Planning Committee** ('the Committee' or EPC) is required to be established by the Facility and include the ECO.

The Committee is responsible for:

- Overseeing the preparation of the Facility buildings and grounds for the approaching bushfire season, including attendance to any maintenance required to minimise the risk of damage from bushfire attack (**Part 2**).
- Assigning the Emergency Control Organisation (ECO) (the Emergency response team)
- Reviewing the BEP and broader Emergency Response Plan,
- Overseeing the undertaking of education and training, evaluating the outcomes of drills and responses (when applicable), and ensuring appropriate resources are provided to maintain equipment.
- Ensuring that safer places are prepared. There may be one nominated safe place for shelter within the site, and this should be assigned as a responsibility to and for management during an emergency.
- Ensuring all firefighting equipment is in working order.

The Committee will assign roles and responsibilities to staff.

The Committee may be formed by representatives from the overarching party responsible for the childcare.

4.2 Emergency Control Organisation (ECO)

The Facility is to establish an **Emergency Control Organisation** (ECO), which is designated staff personnel who have been trained and, where applicable, certified to undertake/provide specific tasks in the event of an emergency, including the operation of firefighting equipment if they are comfortable doing so.

The Emergency Control Organisation comprises the following positions:

- Chief Warden
- Deputy Chief Warden and/or Assistant Chief Warden
- Area Warden
- Communications Officer
- First Aid Personnel
- Traffic Warden.

It is noted that staff designated as the Communications Officers, First Aid Personnel and Traffic Wardens will also act as Area Wardens as a secondary role.

4.3 Roles of Evacuation Managers

In planning for a bushfire emergency, the following roles should be assigned.

4.3.1 Chief Warden

The Chief Warden is responsible for:

- Supervising the emergency response within the site.
- Evaluating the need for evacuation outlined in **Section 6**, including understanding the location of a bushfire, proximity of the bushfire to the site (is it within 1 hour of impacting the site?), is the bushfire moving towards the site and/or evacuation routes, which direction is wind moving if towards the site and evacuation routes, this is a greater threat.
- Initiating the evacuation.
- Coordinating and supervising the evacuation to a safer place.
- As required, advising authorities that an evacuation is underway, including the Department of Fire and Emergency Services (DFES) and the Shire of Serpentine Jarrahdale fire and emergency services manager.
- Documenting the circumstances of the emergency, processes and outcome.
- Checking on Extreme and Catastrophic FDR days that flammable materials are not located against or close to buildings, including litter, grass and leaves, and rubbish bins.
- Checking on Extreme and Catastrophic FDR days that firefighting equipment is ready and that the safer place has the required equipment for communication, safety (including first aid equipment) and comfort.

4.3.2 Deputy Chief Warden

The Deputy Chief Warden/Assistant Chief Warden is responsible for assisting the Chief Warden in all duties and assuming the responsibilities of the Chief Warden in their absence. Key responsibilities include:

- Assisting with the overall supervision of the emergency response within the site.
- Supporting the Chief Warden in evaluating the need for evacuation by gathering and relaying critical information (e.g., bushfire proximity, wind direction, and status of evacuation routes).
- Helping to initiate and coordinate the evacuation process as directed.
- Supervising a specific area or group of people during an evacuation to ensure a safe and orderly process.
- Acting as a secondary point of contact and assisting with communications to authorities like the Department of Fire and Emergency Services (DFES).
- Assisting with documenting the circumstances of the emergency, including keeping a log of events, actions taken, and outcomes.
- Conducting checks on Extreme and Catastrophic Fire Danger Rating (FDR) days to ensure flammable materials (litter, rubbish bins, etc.) are cleared from areas near buildings.
- Ensuring that firefighting and emergency equipment are ready and accessible on high-risk days.

4.3.3 Area Warden

Area Wardens are responsible for:

- Taking direction from and carrying out tasks allocated by the Chief Warden.
- Checking all buildings/facilities.
- Ensuring all children, staff, and visitors have been alerted, and evacuation has been initiated.
- Maintaining communication with and updating the Chief Warden with situation reports.
- Providing situational information.
- Contributing to debriefing.

4.3.4 Communications Officer

The Communications Officer is responsible for:

- Taking direction from and carrying out tasks allocated by the Chief Warden.
- Maintaining communication with and updating the Chief Warden with situation reports.
- Monitoring information sources.
- Providing situational updates to parents/guardians and staff.
- Maintaining communication with staff to travel to and from the site.

4.3.5 First Aid Personnel

First Aid Personnel, under the direction of the Chief Warden, are responsible for:

- Evaluating the extent of any injuries.
- Administer first aid (only where safe to do so).
- Assess if the injured can be evacuated safely.

4.3.6 Traffic Warden

The Traffic Warden, together with the Chief Warden, is responsible for arranging for the coordination and supply of additional transport.

They will also be responsible for:

- Ensuring an orderly evacuation if the decision is made to evacuate the Facility.
- Managing the access and placement of Area Wardens to coordinate vehicles to leave the Facility during a bushfire event safely.
- Coordinating traffic flows on the Facility grounds during a bushfire evacuation.

4.3.7 Emergency Response Team Identification

The control of a bushfire emergency is greatly assisted by key personnel being quickly identified by staff, guests and emergency services.

Table 1 below outlines the tabards and/or helmets to be worn by the Emergency Response Team to ensure they can be identified.

Table 1: Summary of Emergency Response Team Identification

Wearers Title	Identification colour
Chief Warden	White helmet
Area Warden	Red helmet or red vest
Communications Officer	Orange helmet or orange vest
First Aid Personnel	Green Helmet or green vest
Traffic Warden	Yellow helmet or yellow vest

4.4 Distribution of the Bushfire Emergency Plan

The BEP is an internal document to be used by Facility staff to guide evacuation procedures, with an up-to-date copy of the document to be maintained within the 'Reception' room of the Facility and to be provided to all staff. In addition, a copy of the summary and Bushfire Emergency Plan diagram (refer to **Part 2**) will be displayed in a prominent position within each teaching block.

The delegated officer will forward a copy of the evacuation plan for the site (refer to Page iv) to the relevant local emergency services, by 31 October prior to the bushfire season (South-West WA – November to April) each year.

The delegated officer will ensure the BEP is readily accessible to all children, staff, and visitors. A current copy of the BEP will be maintained and distributed through the following measures:

- If the Facility does not have a website, or as a supplementary measure, a physical copy of the BEP will be kept in a prominent and accessible location (e.g., Admin).
- All new staff members, relieving staff, and visitors will be briefed on the requirements of the BEP during their site induction.
- The delegated officer will include bushfire season reminders and information in site newsletters or on noticeboards, where applicable.

All staff members are to receive pre-fire season updates prior to the bushfire season (South-West WA – November to April) and ongoing information about any changes to process or instruction about the contents and requirements of the BEP prior to the bushfire season at scheduled staff meetings.

Bushfire advice received by the Facility from the DFES, the Local Emergency Management Committee (LEMC), Community Emergency Services Manager (CESM) from the local government or external bushfire experts, shall be documented, identifying the date, source of the advice and action taken by the Facility.

5 Preparation and Actions

The actions outlined below relate specifically to bushfire evacuation and should be managed in compliance with the Facility's broader Emergency in Facilities Response Plan.

5.1 Training requirements

All Chief and Area Wardens, staff and other responsible personnel working at the Facility should be informed of and trained in relation to:

- All information contained in this document and all documents referred to in **Section 2.2**.
- Individual roles and responsibilities.
- Evacuation and shelter triggers.
- Access and egress routes.
- Assembly point locations.
- Written evacuation procedures applicable to the process.
- Communication equipment.

All those who have received bushfire training should formally acknowledge that they have read and understood the emergency evacuation procedures, understand their role and responsibilities and whether any questions relating to the evacuation procedure were adequately answered.

5.2 Exercise drills

The evacuation (drill) shall be practised at a minimum of annually.

The procedure checklist is described in **Part 2**.

An orderly evacuation from the Facility will be conducted in the event of a bushfire.

Staff briefing shall occur prior to the drill (to clarify the procedures and expectations), and a debriefing should follow any drill or bushfire event to discuss any issues and the effectiveness of the BEP.

5.3 Maintenance of equipment

The communications systems and water supply infrastructure will be regularly checked, tested and serviced according to Facility servicing schedules, and in accordance with *Australian Standard 1851-2012 Routine service of fire protection systems and equipment* (AS 1851) (Standards Australia 2012).

5.4 Evacuation plan review

This plan should be treated as a 'living document' and reviewed and revised (if required) before each bushfire season (which is from November to April of each year).

In addition to this annual review, a review of the plan and response of the Facility staff and children should be undertaken following any bushfire in the area and or after an evacuation.

6 Primary and Secondary Emergency Actions

6.1 Objective of the Bushfire Emergency Plan

The objective of this BEP is to:

- Decrease the level of risk to children, staff and visitors in the Facility grounds.
- Ensure safe and effective evacuation (both within the Facility and off-site) through effective control and management.
- Ensure safe refuge is accessible offsite (evacuation) or onsite (shelter as last resort).

There are two principal types of evacuation possible from the childcare:

- Pre-warned evacuation: when authorities contact and coordinate an evacuation. This decision is made to evacuate ahead of a bushfire impacting the site.
- Self-evacuation: a spontaneous evacuation involving the self-initiated movement of children, staff and visitors after an assessment has been made that the childcare could be threatened by a bushfire and sufficient time exists to move everyone safely from the site.

An alternative to evacuation is to shelter in place. This would occur if the risk associated with evacuation was greater than sheltering in place.

In considering the response to a bushfire threat, primary and secondary emergency actions have been determined for the site.

The primary emergency action relates to off-site evacuation to an identified evacuation location. Serpentine Jarrahdale Community Recreation Centre (38 Mead St, Byford) and Clem Kentish Recreation Centre (24 Wellard St, Serpentine) are the designated evacuation centres, to be used instead of other childcare-designated locations or on receiving instructions from emergency services (e.g., via Emergency WA or other official means) to evacuate to another location. The triggers and actions associated with emergency evacuation are addressed within **Section 6.5** and **Part 2**.

The secondary emergency action relates to sheltering in place as a last resort. A bushfire event may occur within the vicinity of the site where the risk associated with evacuation is greater than sheltering in place (i.e., it may be safer for the occupants to remain within the Childcare Centre building), and/or off-site evacuation may not be triggered. The triggers and processes associated with sheltering in place are addressed in **Section. 6.6** and **Part 2**.

The Facility may also **be pre-emptively closed** when an Extreme FDR (fire behaviour index of 75 or greater) is being forecast. This is undertaken where advice from the Security and Emergency Management Unit is received.

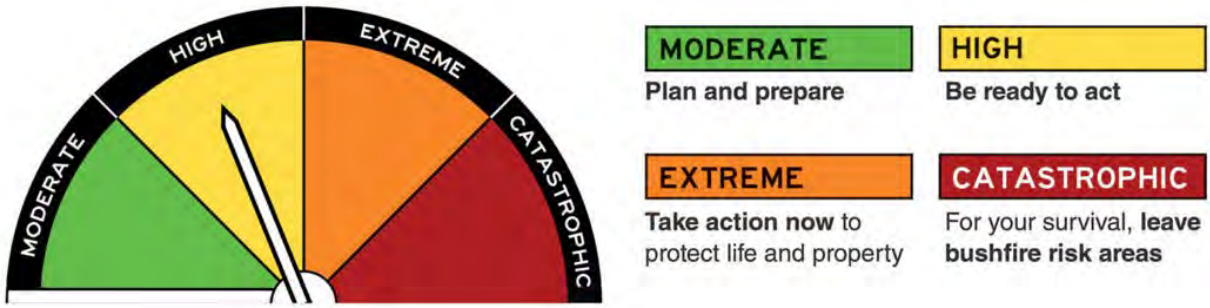
6.2 Monitoring for bushfires

Receiving a warning of an approaching fire is enhanced by actively monitoring communications over the internet (i.e. Emergency WA) and observing the environment surrounding the site.

It is common for the first indication that a bushfire is burning nearby to observe smoke in the surroundings.

Fire Danger Ratings (FDRs) provide advice on the level of bushfire threat on any given day. They are based on the forecast daily fire danger indices (which include consideration of forecast wind speed, temperature, humidity and fuel conditions). There are four FDRs plus a 'no rating'. These four include 'moderate', 'high', 'extreme' and 'catastrophic' ratings, which provide an indication of how difficult a bushfire will be for authorities to extinguish and on what days bushfires are going to pose the greatest threat to property and lives.

Fire danger ratings



Moderate: Plan and prepare.
Most fires can be controlled. Stay up to date and be alert for fires in your area.

High: Be ready to act.
Fires can be dangerous. Decide what you will do if a fire starts.
Leave bushfire risk areas if necessary.

Extreme: Take action now to protect your life and property.
Fires will spread quickly and be extremely dangerous. Put your bushfire plan into action.
If you and your property are not prepared to the highest level, plan to leave early.

Catastrophic: For your survival, **leave bushfire risk areas.**
These are the most dangerous conditions for a fire. If a fire starts and takes hold, lives are likely to be lost. Homes cannot withstand fires in these conditions.

The forecasted FDR can be accessed online through the Department of Fire and Emergency Services or Bureau of Meteorology websites, or through Emergency WA.

On days when the FDR is 'high' or above, bushfires can be unpredictable and uncontrollable, and these days trigger basic preparation and monitoring procedures.

Monitoring involves accessing websites or related apps throughout the bushfire season (November to April) (i.e. those of the Department of Fire and Emergency Services, Emergency WA) at regular intervals throughout the day; to check for breaking bushfire events.

Bushfire warnings



In the event that an **Advice Warning** is issued, this means a fire has started, but there is no immediate threat to lives or property. If one is received at the site for an approaching bushfire, staff and visitors should be notified by the Chief Warden of the potential need to evacuate or shelter.

If a **Watch and Act Warning** is issued, it means there is a possible threat to life or property, and preparations to leave or defend need to begin. It is recommended that consideration be given to evacuation based on the location of the fire, wind direction, traffic on the surrounding road network, and any public broadcast warnings or recommendations from Emergency Services.

Area Wardens should check the grounds to ensure the entry and exit lanes to the site are clear and that potentially flammable objects are moved away from buildings or stored areas. Precautionary evacuation may be undertaken.

If an **Emergency Warning** is received, this means there is a threat to lives or property, and immediate action is required due to the danger. If one is received, evacuation should be undertaken to the Serpentine Jarrahdale Community Recreation Centre (38 Mead St, Byford) or Clem Kentish Recreation Centre (24 Wellard St, Serpentine), in lieu of receiving instructions from emergency services (e.g., via Emergency WA or other official means) to evacuate to another location, **but only if the route is safe and the fire is not impacting the site within 2 hours** (based on preparation for evacuation, 60 minutes; travel to evacuation destination, 9 minutes; total estimated time required for evacuation is 69 minutes (evacuation via bus assumed)).

An **'all clear'** message means the danger has passed and the fire is under control. Although it is possible that it still may not be safe to revisit the site (if a bushfire has affected the site directly). The Chief Warden should inspect the buildings and, if determined safe, instruct the Communication

Warden to advise children and staff when it is appropriate to return, or alternate arrangements in the event it is not safe or appropriate to return.

6.3 Emergency assembly point

The 'Reception' room being designated as the 'control centre', while the area outlined below has been designated as the 'emergency assembly point' (safer building). If a decision to remain at the Facility (shelter-in-place) in lieu of evacuation is made, children, staff, and visitors will within the Facility.

All children, staff, and visitors will locate at the main entry of the Facility. Its location is entirely within BAL-LOW and has adjacency to access routes. The main entry to the Facility has been designated as the 'emergency assembly point' and inside the facility is the 'Designated shelter/ refuge building'.

6.4 Communication

The Emergency Control Organisation (Chief Warden, Deputy Wardens, Transport Warden and Area Wardens) will communicate during a bushfire event using two-way handheld radios/walkie-talkies.

Contact with emergency authorities will be maintained through mobile telephone.

Children will be informed of a bushfire event that may impact the Facility and any action required via a loudspeaker system and/or via Area Wardens moving through the site and communicating face to face.

6.5 Primary action - evacuation

The Chief Warden is responsible for deciding whether an evacuation is necessary and should consider the following when determining if and when to evacuate:

- Public warnings from Emergency Services. These may not always be available in a timely manner, particularly if a bushfire occurs near the site and is affecting it before emergency services become aware of the event.
- The severity of a bushfire incident, proximity of the bushfire and predicted fire spread (i.e. smoke, embers and radiant heat). Wind speed and direction will be a relevant factor.
- The safety of evacuation routes, including whether the wind is likely to move the bushfire in a way that could impede the route, or if routes are congested with other traffic already.

The process that should be followed involves:

- Daily recording of Fire Danger Rating and weather conditions, during the bushfire season.
- Monitoring to establish the extent of bushfire danger (Fire Danger Ratings) and to identify bushfires in the area.
- Determining whether the bushfire is a potential threat.
- Deciding to evacuate, shelter in place or to pre-emptively close (protective action).

- Implementing the protective action decision to evacuate or shelter in place or pre-emptively close.

The process to monitor for and implement evacuation due to bushfire is outlined below.

It is important to factor in, as part of situational awareness and decision making, that expert guidance during different stages of a bushfire event may not be available, if at all. This means the Chief Warden must be prepared to take responsibility and make decisions regarding the actions to take, as best as possible.

As a bushfire is a dynamic emergency, understanding local conditions, how the bushfire is impacting the site, and the status of persons onsite will be key variables and information inputs.

Greater caution needs to be applied where a bushfire is close to the Facility and/or evacuation routes, as the margin for safety is less.

6.5.1 Monitoring for bushfire

This should be as per **Section 6.2**.

6.5.2 Evacuation triggers

The following are triggers for evacuation:

- Observation of smoke/fire nearby or awareness by another means. Evacuate if the Facility will be affected, but only as long as a minimum 1 hour is available to enact evacuation before fire is likely to impact the Facility or the evacuation routes.
- Receipt of an official warning to evacuate from the emergency authorities via broadcast announcements.
- Monitoring of the Emergency WA web page (https://www.emergency.wa.gov.au/) at regular intervals and changes in conditions, broadcast of a bushfire event and triggering of official warnings.

The Emergency Alert Telephone warning system is generally used during an emergency to send messages to mobile phones within a defined area where lives and homes are deemed to be under direct and imminent threat from a bushfire. The Emergency Mobile Phone will be registered and with the Chief Warden.

These warnings should trigger an evacuation if they are received in a timely manner. These official warnings however must be assessed against the local conditions (location of bushfire compared to Facility and evacuation routes, wind speed and direction or road congestion) before evacuation is undertaken and when it is judged by the Chief Warden that a bushfire has the potential to impact the site.

See **Section 6.5.6** regarding consideration of the ongoing suitability of evacuation.

6.5.3 Evacuation alarm

When the decision is made to **Evacuate**, the Chief Warden will:

- Sound the Alarm.
- Notify Area Wardens and staff that a bushfire evacuation is underway.
- The Chief Warden will convene the ECO, and each member will wear their ECO hat/vest for role identification.

6.5.4 Evacuation

- Staff will assemble initially in their classroom and await instruction to move to the main entry (for disembarking for evacuation or to take refuge).
- The Area Wardens will acquire personal protective clothing and check all buildings are clear and secured (air conditioning turned off, vents and windows closed, door closed, outdoor bins closed.
- Staff will confirm all children and visitors are accounted for.
- An Area Warden will be sent to receive the arrival of all children and visitors at the muster location, and together with the supervising staff, inform the Chief Warden that everyone has arrived and is accounted for.
- A Warden will be sent to receive the arrival of all children and visitors, together with the supervising staff inform the Chief Warden that everyone has arrived and are accounted for.
- The ECO will evacuate the site. Children and staff will use vehicle arrangements based on their specific circumstances, see **Section 6.5.5** and **Part 2**).

6.5.5 Phasing of evacuation

Responsibility for coordinating the physical evacuation rests with the Traffic Warden. Evacuation from the childcare may be facilitated by walking to a designated nearby safe location or by using supplementary transport (e.g., buses), depending on the nature of the threat and advice from emergency services. Arrangements for supplementary transport, including providers and collection points, are to be confirmed annually by the EPC. Ambulances may be required to assist any child with special needs/disabilities.

The Traffic Warden and Assistant Traffic Warden will be stationed at the assembly building and the Bus Collection area to manage the evacuation process. Children and the supervising staff will be allocated from the assembly building to an available bus at the Bus Collection area.

To facilitate an orderly evacuation of the site, the departure of children and staff should be phased:

- Evacuating the most vulnerable children first, such as the disabled or those likely to have breathing difficulties.
- Evacuating the youngest children first.

For these evacuation procedures, people are considered disabled if they are unable to evacuate the site or building without assistance, or if their time to exit the site or building would be significantly longer than that of the average person.

The Chief Warden should make arrangements for another person to be assigned to assist a person (if any) with a disability in an emergency. This assigned person will assist the person with a disability to the designated emergency assembly area.

Each child with a disability is to be provided with a personal evacuation plan (PEP) that is to be prepared for implementation by the EPC and Chief Warden before October.

6.5.6 Ongoing suitability of evacuation

It is possible that a bushfire will change direction or that winds will increase, shortening the time before it impacts the Facility or the evacuation routes. This means it is possible there will not be enough time to initiate and fully complete the evacuation procedure.

The decision to evacuate and/or continue evacuating will need to be evaluated throughout the process. It is possible that only a proportion of occupants can be evacuated before conditions change and become too dangerous. If this is the case, sheltering in place will need to be enacted.

6.5.7 Communications

DFES will need to be notified of the choice to either evacuate or shelter in place to assist in broader decision-making. If the Facility were pre-emptively closed, emergency services should already be aware.

6.6 Secondary action - shelter in place as a last resort

An alternative to evacuation is to take shelter in place. This would occur if the risk associated with evacuation is greater than sheltering, or if the threat is considered manageable, but it is safer for occupants to remain within the site. For this scenario the **Childcare Centre Building is the designated on-site shelter/refuge**, with the **Reception Room** nominated as the 'control centre' for bushfire emergencies.

It is the responsibility of the Chief Warden to ensure the designated shelter (safer building) is equipped with all necessary portable equipment (e.g., first aid kits, fire extinguishers, and communications equipment). The control centre must have access to a list of key contacts at all times, and the Chief Warden must have a designated Emergency Mobile Phone during an emergency.

Extreme conditions diminish quickly after the passing of the fire front. Buildings, if ignited, usually lose tenability after the passing of a fire front and therefore should not be occupied if the building is on fire.

Notwithstanding, the condition of the occupied building must be monitored throughout the bushfire event. If any of the building ignites and becomes unsafe, a local evacuation from that building to a nearby burnt or paved area (such as a car park, nearby facility or landscaped area if deemed safe) must be undertaken. Where available, wet towels should be used for protection and to filter smoke if it is necessary to move outdoors.

6.6.1 Shelter triggers

The following are triggers for sheltering in place:

- The threat is considered manageable, and it may be safer for occupants to remain within the site.
- An assessment is made by the Chief Warden or through official broadcast warnings (e.g. an Emergency warning and evacuation is no longer safe) that evacuation would be unsafe due to conditions impacting the Facility or along evacuation routes i.e. travel delays caused by congestion and insufficient time before the arrival of the fire.
- A bushfire is observed nearby and is approaching the site with not enough time (at least 2 hours) to safely evacuate and clear the fireground.

6.6.2 Implementation of sheltering in place

Shelter in place is based on an assessment by the Chief Warden that it is not safe to leave, and may include that supplementary transport is not able to attend the site.

If a decision to shelter in place is taken, occupants will shelter within the **Childcare Centre Building –** which is the designated on-site shelter.

For sheltering in place, the following procedures shall be implemented:

- Chief Warden/Area Wardens to notify all staff, children and visitors that shelter-in-place is underway.
- Advise emergency services of the decision to shelter in place.
- Chief Warden/Area Wardens to ensure all people have returned and are present (or accounted for if offsite). This would include contacting children and staff by mobile if they are not able to be located on site.
- Remove all flammable objects from under the eaves of the shelter structures building (including any operations vehicles that may be parked near doors, and close all external windows, vents and doors.

The site may be subject to an ember attack that may last for many hours. Embers may cause fires on-site that threaten lives. Staff must therefore be prepared for this occurrence when sheltering, to keep calm and to methodically look for embers or small fires and extinguish them using the provided firefighting equipment.

After the fire front has passed, the Chief Warden should:

- Inspect the shelter building and extinguish small fires using firefighting equipment provided (where safe to do so).
- Monitor the grounds and building for small fires for 24 hours after the fire.
- If the site is damaged, the damage should be reported to DFES or WA Police to assist their investigations.
- Confirm with DFES or the police when it will be safe to leave the site. Evacuation may be delayed due to public road blockages.

A summary of the shelter-in-place procedure is provided in **Part 2**.

6.6.3 Communications

DFES will need to be notified of the choice to either evacuate or shelter in place..

If sheltering on site is required, the following information should be provided to the emergency services if sheltering on site is required:

1. Nature of the emergency:
    - Immediacy – Can the bushfire be seen/ distance from the Facility?
    - Evidence of an ember attack?
    - Evidence of spot fires?
2. Details of individuals sheltering:
    - Number of people
    - Condition/state
    - Special needs (i.e. disabilities, medical conditions)
3. Location:
    - Address of Facility
    - The designated on site shelter/refuge is the: **Childcare Centre Building.**

6.7 Recovery

Following a bushfire event, recovery will include:

- The Chief Warden will receive the 'all clear'.
- The Communications Warden will issue an SMS message to children's parents or guardians advising of the collection arrangement for children.
- The Chief Warden and Area Warden will return to the site and inspect.
- If determined safe by the Chief Warden, the Communications Warden will issue details on the reopening of the site.
- The ECO will debrief the EPC.

7 References

Standards Australia 2010, *Australian Standard 3745-2010 Planning for emergencies in facilities* (AS 3745-2010), SAI Global Limited, Sydney.

Standards Australia 2012, *Australian Standard 1851-2012 Routine service of fire protection systems and equipment* (AS 1851-2012), SAI Global Limited, Sydney.

Western Australian Planning Commission (WAPC) 2024, *Planning for Bushfire Guidelines*, Western Australia.

Western Australian Planning Commission (WAPC) 2024, *Bushfire Emergency Plan Manual*, Western Australia.

Part 2

Bushfire Emergency Plan for Quick Reference Guide

BUSHFIRE EMERGENCY PLAN

Name of Site / Facility	Childcare Centre, Whitby Town Centre		
Address of Site / Facility	currently Lot 9021 Robertson Road, Whitby, Shire of Serpentine Jarrahdale		
Owner/Operator	Gold Fusion Pty Ltd		
Plan Prepared By	Callum Vane		
Plan Approved By	Anthony Rowe	**BPAD No.**	Level 3 BPAD no. 36690
Date Approved	17/07/2026	**Plan Version**	1

The **Primary Action** to follow under **normal** bushfire conditions is to:

EVACUATE

shelter on site only if it is not safer to leave

Refer to Pre-emptive Procedures when forecast conditions exceed normal

IMPORTANT:

If conditions change during evacuation and the safety of the evacuation roads cannot be guaranteed (smoke, fire travelling more quickly or similar), stay at the Facility and shelter.

The purpose of this plan is to identify procedures for occupants and site managers to follow in the event of a bushfire emergency.

This is a living document that must be reviewed annually, prior to the bushfire season, and after any bushfire event.

Information within this plan must be maintained, and key personnel must review their responsibilities under this plan.

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Document Control

Date	Plan reviewed	Modification requested	Action procedures practiced	Responsible person	
		Yes/no/details	Yes/no	Name	Signature

1 Communications

To be completed by the school ahead of its operation.

1.1 Site Emergency Contact(s)

Primary contact			
Position / role	Chief Warden		
Phone number (BH)		**Phone number (AH)**	
Secondary contact			
Position / role	Deputy Chief Warden		
Phone number (BH)		**Phone number (AH)**	

1.2 Site Details

Type of facility / site	Childcare Centre		
Number of buildings	1		
Number of occupants	Maximum ___ Children Maximum ___ Staff	**Number with support needs**	Children and staff dependent _____

Description of support needs
To be confirmed at the start of each school term with child-specific detail appended where applicable

1.3 List of Emergency Control Personnel

The following table identifies the **Emergency Control Organisation (ECO)** – the individuals responsible for implementing the emergency procedures in the event of a bushfire emergency.

Function	Role/name	Contact No.
Chief Warden		
Deputy Chief Warden		
Area Warden		
Area Warden		
Area Warden		
Communications Officer		
First Aid Personnel		
Traffic Warden		

1.4 Emergency Contacts

Dial '000' for emergency assistance.

The following table identifies important contacts and information sources for bushfire emergency management purposes.

Name / Organisation	Phone No. / Website
Fire, Police, Ambulance	000
Department of Fire and Emergency Services (DFES)	13 33 37 for non-urgent
Western Australian Police (WAPOL)	131 444 for non-urgent
Shire of Serpentine Jarrahdale Emergency Management team	(08) 9526 1111
Water Corporation Emergencies	13 13 75
Electricity (Western Power Emergencies)	13 13 51
Bureau of Meteorology	https://www.bom.gov.au/wa/forecasts/fire-danger-ratings.shtml
Emergency WA	https://www.emergency.wa.gov.au/

2 Preparations prior to bushfire season

SEASONAL CHECKLIST - WORKS	COMPLIES (Y/N)
• Unless identified as remnant native vegetation not subject to management, the site shall be maintained in a low-threat state as per AS3959-2018, clause 2.2.3.2(e) and 2.2.3.2(f). • No turf/grass areas within the facility should exceed 100 mm. • Clear dead and flammable material. Maximum fuel load of 2 tonnes per hectare in grounds where identified as low threat.	
• Ensure all buildings are maintained in accordance with the designated bushfire attack level rating, other relevant building standards and the approved design. This includes inspecting gaps in roofs and walls, screens, windows, shutters and similar features. They should all be in working order and as per the approved design.	
• Ensure all roof and building junctions are clear of litter.	
• All buildings are free of flammable materials: not located within 3m of the building face, including from roof gutters.	
• All objects attached to the buildings are non-combustible or easily removable, and the removal mechanism is in working order.	
• The hoses supplied for firefighting are protected from radiant heat (non-flammable fire reel cover) and are in working order.	
• Fire extinguisher charge levels are in working order, and the instructions on use are attached.	
• Smoke detectors are in working order.	
• The Evacuation Diagram is clearly displayed on or immediately next to all external doors.	
• Emergency Contact details are current and identified on the Evacuation Diagram.	
• Ensure induction details for personnel during the bushfire season are up to date.	
• Confirm driveways and access routes allow for the safe passage of emergency vehicles to all buildings and assets on the land.	
• If applicable, confirm roof-mounted evaporative air coolers fitted with ember-proof screens to the filter media to reduce the possibility of bush fire embers igniting the air cooler.	
Date of inspection	

MANAGEMENT PREPARATION CHECKLIST – BUSHFIRE SEASON	COMPLIES (Y/N)
• Ensure the Bushfire Emergency Plan is reviewed prior to the bushfire season.	
• The Chief Warden, Deputy Chief Warden and Area Warden/s are thoroughly familiar with the Bushfire Emergency Plan.	
• Ensure children, staff, and visitors have been made aware of the Bushfire Emergency Plan.	
• Ensure children, staff, and visitors are aware of the facility procedures during a bushfire.	
• Ensure supplementary transport arrangements have been arranged.	
• Ensure the Chief Warden, Deputy Chief Warden and Area Wardens are able to liaise with the relevant authorities with up-to-date contact details, including (but not limited to) the Department of Fire and Emergency Services, the Department of Biodiversity, Conservation and Attractions, WA Police, local volunteer fire brigade, and local government representative.	
• Ensure the above authorities are aware of the primary evacuation arrangements.	
• Ensure evacuation drills for personnel are practised prior to the start of the bushfire season.	
• Check the Department of Fire and Emergency Services website / EmergencyWA website, or app for any alerts daily during the bushfire season.	
• Ensure that on days with a declared 'high' (or greater) fire danger rating, the identified assembly buildings are available in the event of an emergency.	
Date of compliance	

EVACUATION

3 Evacuation Procedures

Evaluation of bushfire risk and the safety of employees and occupants is the **PRIMARY** action to follow under normal bushfire conditions. Evacuation is the preferred option if there is time to safely leave.

Due to the location of the Facility within a largely urbanised area of Whitby, it is likely there will be some warning of an approaching bushfire; however, a rapidly developing incident is not an impossibility, particularly from vegetation within Bush Forever sites to the west and north. This could reduce the response time available to conduct a safe evacuation, meaning sheltering in place may be required. The preference for evacuation is via the main access route of Skyline Boulevard. This route may be affected by significant road congestion, depending upon the number of people from nearby residential and commercial areas also seeking to evacuate. This must be considered by the Chief Warden (e.g., by monitoring traffic flow on the surrounding road network), and a decision may be made that sheltering on-site is the safer option.

Evacuation

To facilitate the orderly evacuation of the facility, the departure of children, staff and visitors should be phased if necessary, depending upon the number of occupants at the facility at the time (occupancy will vary through the year) and the resources available (number of staff). This can be achieved by:

- Evacuating the most vulnerable occupants first, such as the disabled, those with medical conditions and/or those likely to have breathing difficulty.
- Evacuating visitors and children, followed by staff.

The Chief Warden is to understand the types of children present and have a pre-determined plan for evacuation.

Implement the following procedures:

- Engage the alarm system.
- Notify staff that a bushfire evacuation is underway.
- Children, staff and visitors to be informed and organised for evacuation by Area Wardens.
- Assemble all children, staff and visitors at the main entry of the building.
- Area Wardens are to secure the building, including closing all windows and doors.
- Determine the route to be used for evacuation. This includes providing clear instructions on the direction of travel for vehicles. The route for travel will depend on the fire location.
- Determine the safety of the route, whether there is time available before the fire arrives, and if the route is safe for a sufficient time for people to be clear of the fire risk. Consider the road congestion (increasing volume of traffic on surrounding roads).
- Complete headcount prior to evacuation and, where staged, at each stage of evacuation (when checking buildings, when assembling, when leaving the site, and at the evacuation location).
- Commence evacuation.
- Take the facility Emergency Mobile Phone and this plan with the Chief Warden.
- Enact the transport plan which is children and staff to evacuate via walking or using arranged vehicles.
- Advise emergency authorities of the decision to evacuate and the route.
- Nominated Area Wardens are to ensure the facility is completely evacuated before the site is secured.
- Evacuate away from the threat.

Once the threat has passed, refer to *Procedures Following Bushfire*.

3.1 Assembly Points

Designated Evacuation Assembly Points
1. Children, staff and visitors are initially to wait in their assigned rooms for evacuation instruction.
2. Children, staff and visitors to proceed in an orderly fashion to the main entry of the building

3.2 Off-Site Refuge(s)

Primary Off-Site Refuge	
Name of venue:	Serpentine Jarrahdale Community Recreation Centre
Address of venue:	38 Mead St, Byford WA 6122
Nearest cross-street:	
Map reference:	
Venue phone number:	
Travel time to venue:	**Approx. Distance:** 8.5 km north, time to travel 9 minutes

Secondary Off-Site Refuge	
Name of venue:	Clem Kentish Recreation Centre
Address of venue:	24 Wellard St, Serpentine WA 6125
Nearest cross-street:	
Map reference:	
Venue phone number:	
Travel time to venue:	**Approx. Distance:** 12.5 km south, time to travel 12 minutes

3.3 Evacuation Transportation Arrangements

Transportation Arrangements	
Name of transport provider:	Contact Information:
Horizons West	**9351 8980**
Bus West	**9395 4444**
Time required before transport on-site:	Ability for supplementary transport to travel to site in time (assume at least 2 hours) to be considered when determining if evacuation or shelter in place will be followed.

SHELTER-IN-PLACE

4 Shelter as a Last Resort Procedures

Evaluation of bushfire risk and the safety of occupants has determined that the **SECONDARY** action to follow under normal bushfire conditions is to shelter, as a last resort, in the nominated on-site refuges (shelter/safer buildings). The decision to shelter should only be made if it is not safe to evacuate. If in doubt, shelter-in-place as a last resort.

4.1 On-Site Refuge(s)

Designated On-Site Refuge
The Childcare Centre building is the designated on site shelter/refuge for all children, staff and visitors

4.2 Sheltering Procedures

- Notify staff that a bushfire warning is current or there is a bushfire in the vicinity of the site.
- Engage the alarm system.
- Assemble children, staff and visitors inside the Childcare Centre building (designated shelter/refuge building)
- Area Warden will secure all buildings, including the closing of all windows and doors.
- Check and confirm all occupants are accounted for (use children/staff/visitor registers).
- Secure shelter building - close the windows and blinds/shutters, ensure doors are closed, and ventilation systems are working. The Chief Warden is to continue to observe the fire front.
- Advise the Emergency Services Incident Controller (DFES or Shire) that shelter is being taken on site and state the number of occupants present (children, staff and visitors).
- Monitor conditions in the building, keep calm, block smoke ingress, and keep children hydrated.
- Monitor conditions in the Childcare Centre building after the fire's passing – if the building catches alight, do not stay in a burning building.
- Seek instructions from the Emergency Services Incident Controller (DFES or Shire) on the passage/status of the bushfire.

Once the threat has passed, refer to *Procedures Following Bushfire*.

POST-EMERGENCY

5 Procedures Following Bushfire

5.1 Having evacuated?

- Chief Warden, with advice from Emergency Services, will decide when the buildings on the site can be re-occupied.
- The Communications Warden will issue an SMS message to children' parents or guardians advising of the collection arrangements for children.
- If determined safe by the Chief Warden, the Communications Warden will issue details on the reopening of the site.
- Re-entry to the building is not permitted until a 'Stand Down – All Clear' has been issued.

5.2 Having Sheltered-In-Place?

- Await instruction from Emergency Services that the threat has passed. Ensure air quality is acceptable before reopening doors or windows or allowing occupants to exit the shelter.
- Confirm with DFES or the police when it will be safe to leave the site. Evacuation may be delayed due to public road blockages.
- Monitor the grounds and buildings for small fires for 24 hours after the bushfire passes.
- The Chief Warden will inspect the site for damage and, where buildings are damaged, consult with Emergency Services to determine when the buildings can be reoccupied.
- If there are damaged buildings, DFES or the police may wish to examine the damage as part of their examinations following a bushfire. No evidence should be disturbed.
- The Communications Warden will issue an SMS message to children's parents or guardians advising of the collection student arrangement.
- If determined safe by the Chief Warden, the Communications Warden will issue details on the reopening of the school.

5.3 Debriefing

- Follow debriefing procedures.
- The Emergency Control Organisation (ECO) will debrief the Emergency Planning Committee (EPC).

PRE-EMPTIVE

6 Pre-emptive Procedures

Evaluation of bushfire risk and the safety of occupants has determined that the following pre-emptive measures should be implemented outside of normal bushfire conditions.

Trigger(s)	Actions
Extreme or catastrophic forecast	Facility grounds should be inspected to ensure there are no flammable materials against or in proximity to the buildings The Facility may also **be pre-emptively closed** when an Extreme FDR (fire behaviour index of 75 or greater) is being forecast. This is undertaken where advice from the Security and Emergency Management Unit is received.
Direction from DFES or Emergency Control Organisation	Follow advice regarding the suitability to evacuate or shelter-in-place as a primary response. Follow any other advice provided. The Facility may also **be pre-emptively closed** when an Extreme FDR (fire behaviour index of 75 or greater) is being forecast. This is undertaken where advice from the Security and Emergency Management Unit is received.

Attachments

☐ Bushfire Emergency Evacuation Plan

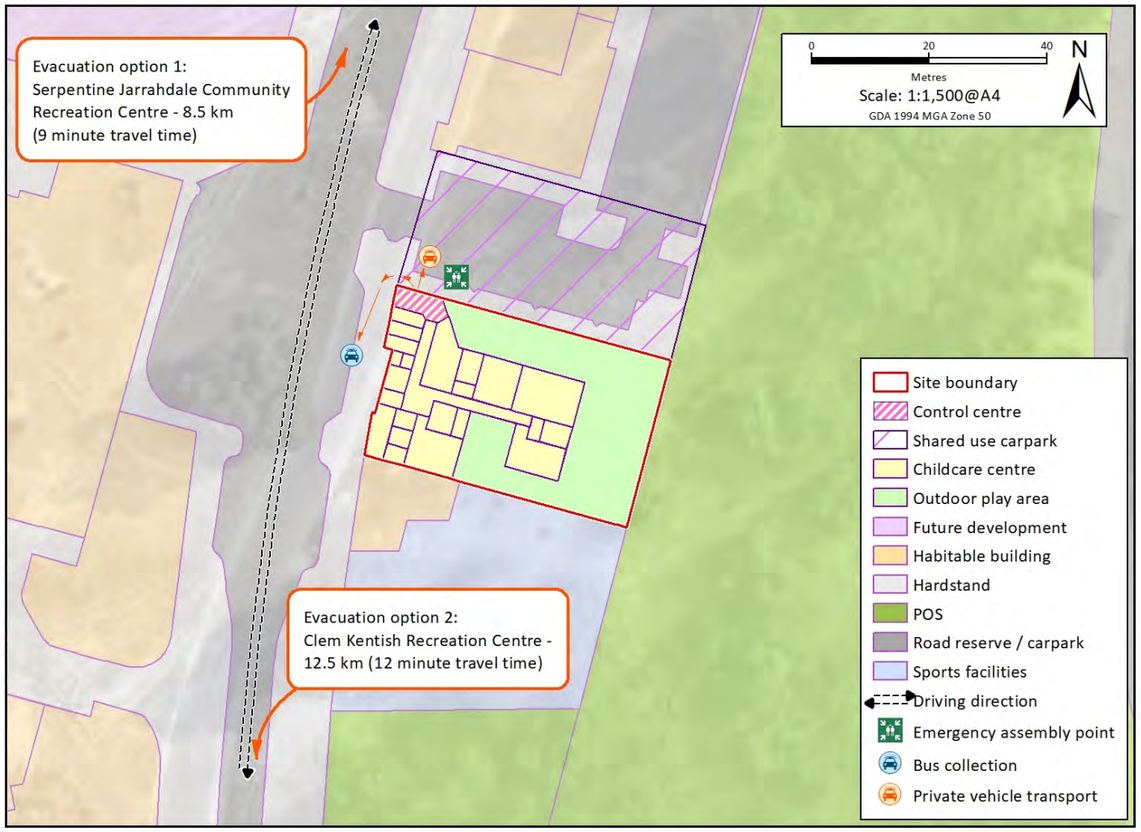
☐ Student/staff register

☐ Visitor contact register

☐

☐

BUSHFIRE EMERGENCY EVACUATION PLAN



Key Phone Numbers	
Emergency (Police, Ambulance, Fire)	000
DFES Information Line	13 33 37
Police (non-urgent)	13 14 44
Local Emergency Services Manager	(08) 9526 1111

Contacts	Staff Role / Name	Number
Chief Warden		
Deputy Chief Warden		
Area Warden		
Communications Officer		
First Aid Personnel		
Traffic Warden		

FIRE DANGER RATING



MODERATE — Plan and prepare

HIGH — Be ready to act

EXTREME — Take action now to protect life and property

CATASTROPHIC — For your survival, leave bushfire risk areas



EMERGENCY WA – WARNINGS AND INCIDENTS



ON ADVICE OF A BUSHFIRE THREAT OR YOU NOTICE A BUSHFIRE

Assess situation and assign a member of (facility) supervising personnel to monitor website or information line (if DFES on 13 DFES (13 33 37) or www.dfes.wa.gov.au and Emergency WA website: www.emergency.wa.gov.au or app).

- Turn off evaporative air conditioners if present.
- Check availability of supplementary vehicles to evacuate occupants.
- Account for occupants (children, staff and visitors).

EVACUATION

If you are told to leave – **EVACUATE**

To facilitate the orderly offsite evacuation of the site, the departure of occupants, should be phased if necessary, depending upon the number of occupants and the resources available. This can be achieved by:

- Evacuating the most vulnerable occupants first, such as the disabled, those with medical conditions and/or those likely to have breathing difficulty.
- Evacuating children and visitors, followed by staff.

Implement the following procedures:

- Sound Alarm.
- Call for supplementary vehicles
- Assemble all children, staff and visitors inside the Childcare Centre building,
- Account for all children, staff and visitors. (Wardens to check all other areas on site have been evacuated).
- Determine the route to be used for evacuation. This includes providing clear instructions on the direction of travel for pedestrians (if walking) or vehicles.
- Determine the route is safe before commencing evacuation.
- Close roof vents, windows and doors in entire building.
- Occupants to be instructed to evacuate.
- Evacuate when directed.

Option 1: Serpentine Jarrahdale Community Recreation Centre (38 Mead St, Byford)

OR

Option 2: Clem Kentish Recreation Centre (24 Wellard St, Serpentine)

IMPORTANT: If conditions change during an evacuation (smoke, road congestion, fire impact time) and the safety of the evacuation roads cannot be guaranteed, stay at the facility and seek shelter.

SHELTER

If external conditions are hazardous and/or there is less than 1 hour to potential impact – **TAKE SHELTER**

- Assemble all children, staff and visitors inside the Childcare Centre building (it is the designated shelter/refuge building)
- Close vents, windows, doors and blinds.
- Check occupant, student, staff and visitor registers that everyone is accounted for.
- Wardens to check all rooms have been evacuated.
- Advise the Emergency Services Incident Controller (DFES or Shire) on the location of children, staff and visitors.
- Monitor conditions in the building, keep calm, block smoke ingress if it occurs (wet towels at gaps), keep hydrated.
- Monitor conditions in the building after the fire's passing – if the building catches alight, do not stay in a burning building move to a low heat space outside.
- Seek instructions from the Emergency Services Incident Controller (DFES or Shire) and/or Emergency WA on passage/status of the bushfire.

ALL CLEAR

Seek instructions from the Emergency Services Incident Controller (DFES) prior to return to the facility or leaving the shelter building– All clear.

Appendix E

Landscape Concept Plan

WHITBY

TOWN CENTRE PRECINCT

emerge ASSOCIATES

09.06.2026

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REV	DATE	ISSUE OR AMENDMENT	BY	REVIEWED
A	17.02.2026	DRAFT FOR COORDINATION	LL	PB
B	24.02.2026	PRELIMINARY SHIRE PRESENTATION	LL	PB
C	01.06.2026	DEVELOPMENT APPLICATION (DRAFT)	LL	PB
D	09.06.2026	DEVELOPMENT APPLICATION	LL	EC

1.0 SITE CONTEXT

This Town Centre will be the Heart of Whitby Town. Key site context to be explored through the Town Centre and Adjacent Town Centre Destination Park in landscape design to create a clear sense of place.

history

RAILWAY LINE + MUNDIJONG TOWN

- Originally named Jarrahdale Junction, it was at the Junction of the Rockingham-Jarrahdale line (Mundijong to Rockingham section removed 1950) and the government line from Perth to Bunbury which was built in 1893. A town grew up around the Junction and a timber depot which included a large board mill was constructed.
- The train corridor is a key defining feature bounding the western edge the Whitby Estate and there is a potential future Armadale/Byford rail line extension with possible future train station adjacent Whitby town center.

natural materials

TIMBER INDUSTRY

- Millar's Mundijong Timber Yard (1918-1928)
- Mundijong Road Reserve has a long, narrow composition which has resulted from its history as being part of the original railway alignment between Jarrahdale and Rockingham which served the Jarrahdale timber cutting and milling operations until 1940. Since the rails and sleepers have been removed the reserve has been able to regenerate.
- Watkins Road Reserve, Duckpond Reserve and Mundijong Road Reserve has original vegetation substantially intact and as such provides key reference to original vegetation, in an area dominated by agricultural properties where very little original structure remains.



ecology

ECOLOGICAL BIODIVERSITY

- Located within Shire of Serpentine-Jarrahdale at the base of the Darling Scarp
- Bushforever site
- Marri-Kingia Threatened Community
- Mundijong Road Reserve and Watkins Road Reserve south of Whitby precinct
- Shire promotes the conservation of mature trees and regeneration of local species to protect biodiversity, for instance *Eucalyptus lane-poolei* and *Eucalyptus laelei*
- Whitby was named after Whitby Falls, originally known as Mundajill. The intricate network of groundwater river and streams surrounding Whitby and Jarrahdale/Serpentine area aid the health of groundwater dependent native vegetation such as Banksia Woodlands which provide habitat for endemic fauna.

community

FRANK LUPINO MEMORIAL PARK

- Free overnight rest area
- Memorial site
- This park was created with assistance from the Rotary Club of Armadale. The SerpentineJarrahdale Lions Club & The Shire of Serpentine-Jarrahdale Tourist Information Committee as a community service project to commemorate a Rotarian.

exercise / outdoors

TRAILS NETWORKS

- The Whitby Falls walk trail was opened in 2015 and borders the Murdoch University Whitby Farm. The 1.5km loop trail is bitumised making it easy to use for families with prams. The trail is serviced well with multiple parking bays and two disability access toilets. It also has multiple picnic tables and rest points where you can sit, relax and enjoy the scenery.
- Jarrahdale Bridle trails

health & education

WHITBY FALLS FARM + HOSPITAL

- Whitby Falls has been associated with the farming history of the Serpentine-Jarrahdale Shire since the 1840s and subsequently functioned, from 1897 – 2006, as the longest operating facility in Western Australia for the care and treatment of people with mental illness.
- The site now functions as a place of education. In November 2013, Murdoch University entered into a 42 year lease with the National Trust of Western Australia for the 203 HA heritage listed property at Whitby Falls Farm. Works to the value of $3million have been undertaken to ensure the heritage values of the farm are protected and to restore the property as an operational farm.

2.0 TOWN CENTRE PRECINCT - LANDSCAPE CONCEPT



3.0 TC POS - SCHEMATIC CONCEPT

GUIDING LANDSCAPE PRINCIPLES

ECOLOGY:
OPPORTUNITY FOR DYNAMIC PLAY SPACE AMONGST EXISTING TREES DESIGN TO BE SENSITIVE OF EXISTING SITE ECOLOGY, MAINTAINING HEALTH OF EXISTING TREES
GRASS TREE TRANSPLANTS FROM TC SITE TO BE REUSED THROUGH LANDSCAPE AREAS

COMMUNITY
STRONG WALKING/CYCLING LINKS INTO THE PUBLIC OPEN SPACE AND TOWN CENTRE PROMOTING PEDESTRIAN USE.
FEATURE PLAY TOWER LOCATED ON KEY SIGHT LINE AXIS TO TOWN CENTRE PLAZA/ SPINE

OPPORTUNITY TO INCLUDE COMMUNITY EVENTS SPACES AND COMMUNITY GARDENS TO ACTIVATE SPACE AND CREATE A SENSE OF COMMUNITY OWNERSHIP

EXERCISE
OPPORTUNITY TO INCORPORATE EXERCISE NODES AND DISTANCE MARKERS INTO PATH LOOP TO INTEGRATE THE PROPOSED GYM INTO THE ADJACENT LANDSCAPE.

HEALTH AND EDUCATION
INCLUDE INCLUSIVE PLAY AND PARK INFRASTRUCTURE TO ENSURE THAT THE SPACE CAN BE ENJOYED BY ALL. INCLUDE SENSORY PLAY AND WALKING TRAILS

SITE HISTORY
OPPORTUNITY FOR RAIL & TIMBER WORKS HISTORY TO BE INCLUDED IN PUBLIC ARTWORK/ BESPOKE FURNITURE

NATURAL MATERIALS
NATURAL STONE, BRICK, TIMBER ELEMENTS TO BE INCLUDED WITHIN LANDSCAPE DESIGN TO BUILD UPON EXISTING WHITBY CHARACTER

Note: Adjacent TC POS & Streetscape design shown as context only, subject to seperate approvals.



LEGEND

- TURF
- SHRUB PLANTING
- DUAL USE PATH
- CONCRETE PATH 1.8m WIDE
- BOARDWALK CROSSING
- UNIT PAVING TO MAIN STREET/ PLAZAS
- RAISED GARDEN BEDS
- RUBBER SOFTFALL - YOGA MATS
- COMMUNITY STAGE



CHANGE IN PAVING TO PEDESTRIAN CROSSINGS - DEMONSTRATES SHARED USE



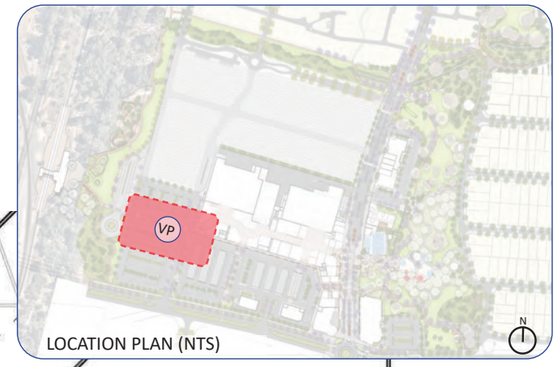
ICONIC PLAY TOWER/ STRUCTURE ON KEY SIGHT LINES



PLAYGROUND DESIGN SENSITIVE TO EXISTING TREES

4.0 TOWN CENTRE PRECINCT - PEDESTRIAN CONNECTION WEST





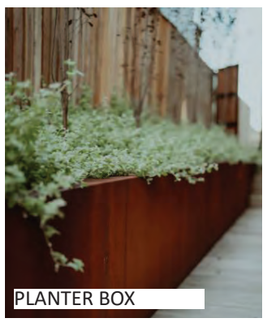

RAISED PLANTERS


SEATING WALLS

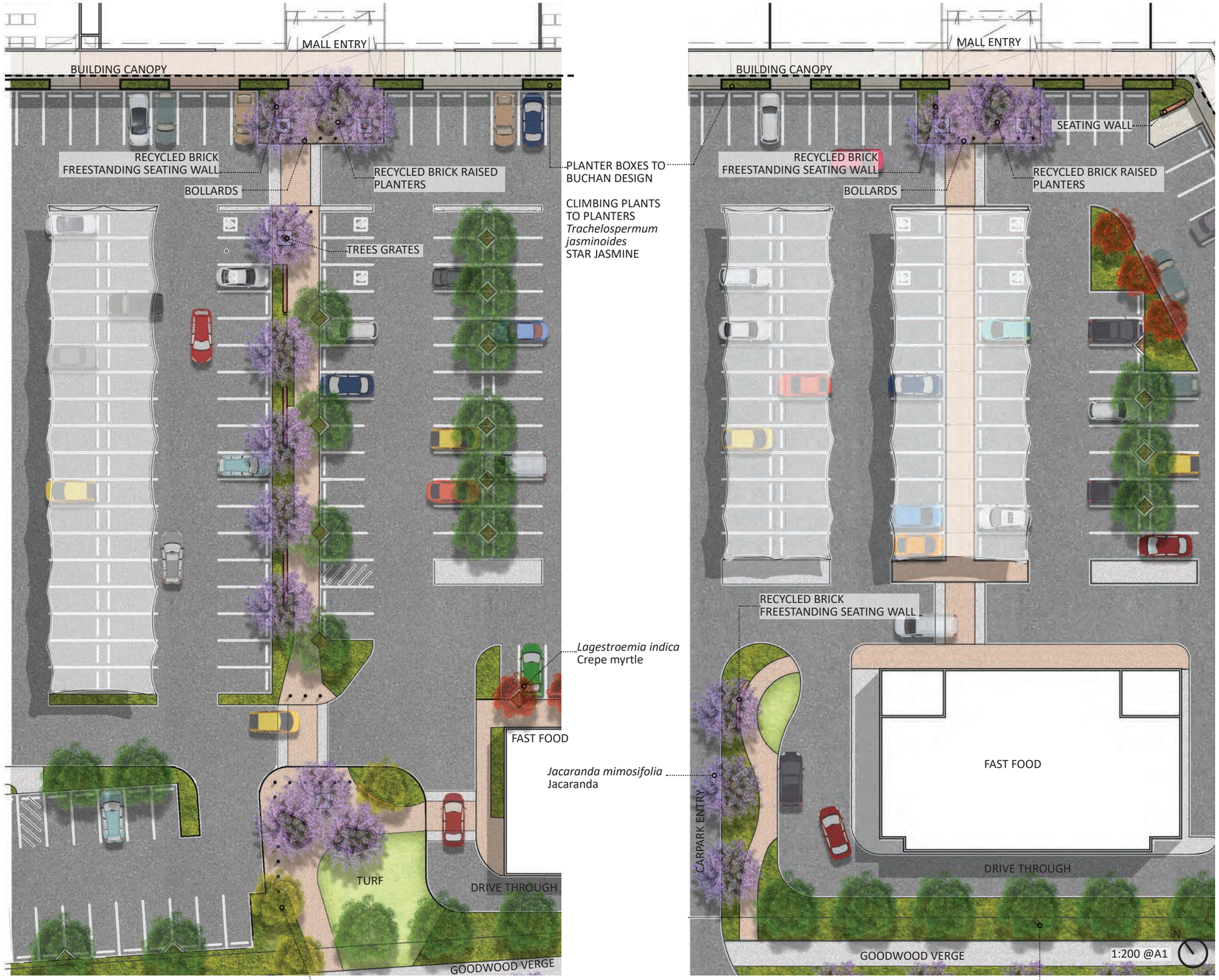

SPOTTED GUM

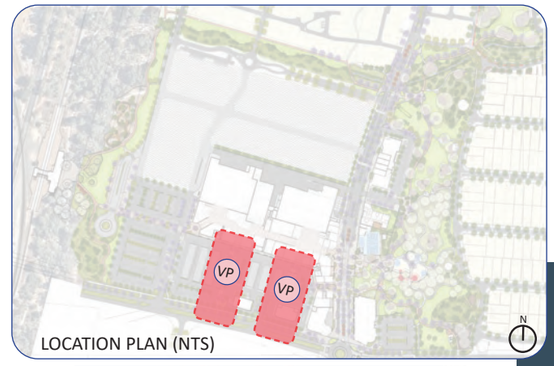

JACARANDA


CHINESE ELM


PLANTER BOX

5.0 PEDESTRIAN CONNECTIONS SOUTH





LOCATION PLAN (NTS)


CREPE MYRTLE


ENGINEERED SHADE

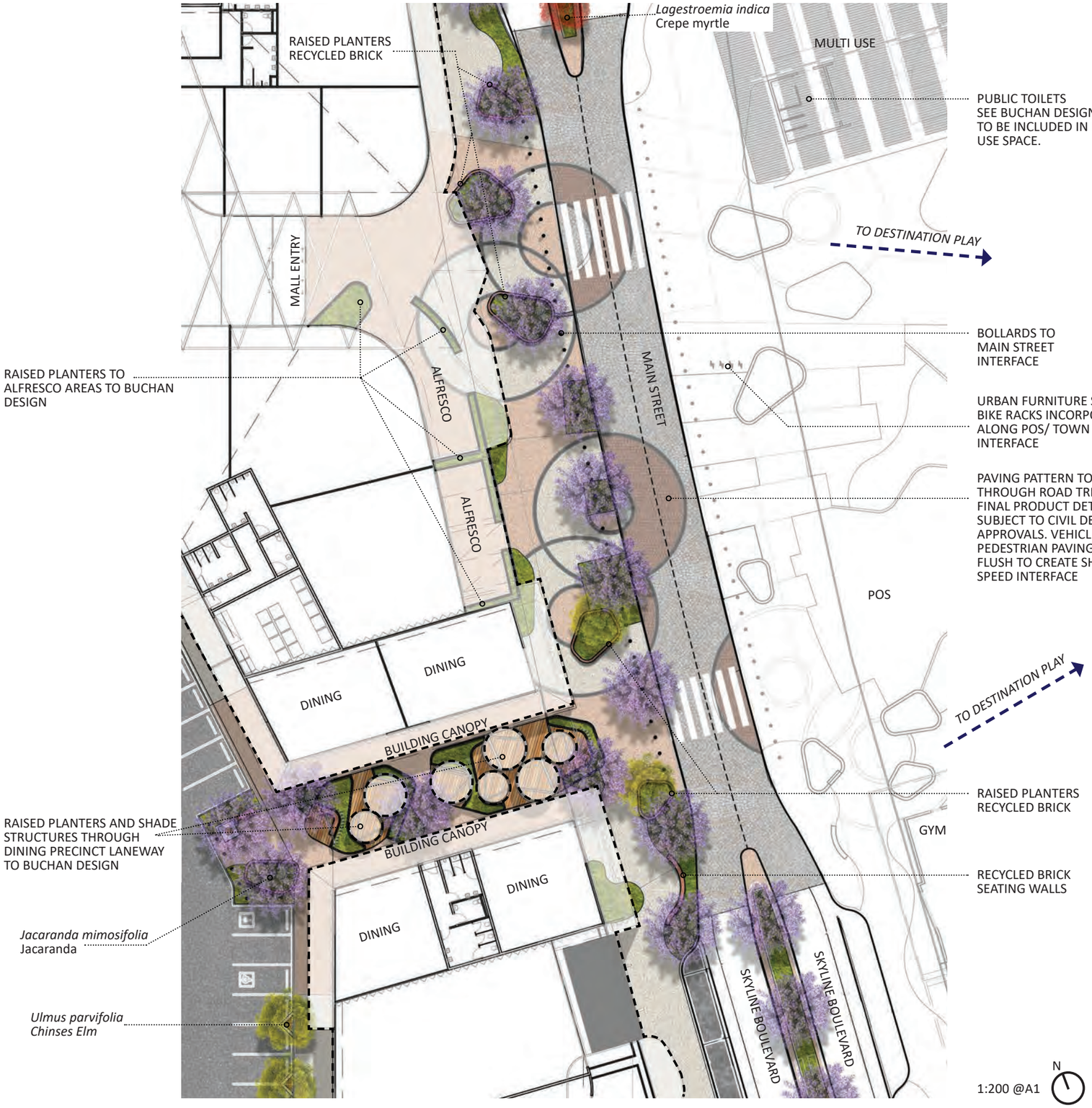

PED CROSSINGS

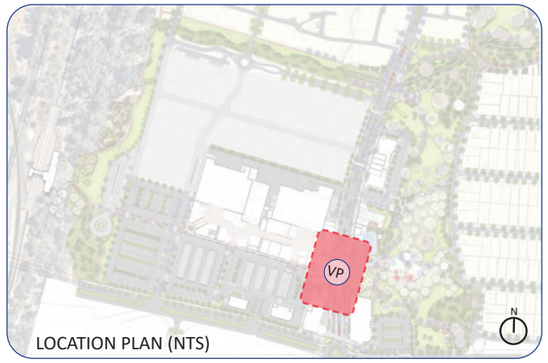

CLASSIC ROSE WHITE


OYSTER GREY

EXPOSED AG CONCRETE TO CREATE PATTERNING AND DEFINE PATH HIERARCHY THROUGH TOWN CENTRE

6.0 TOWN CENTRE PRECINCT - MAIN STREET INTERFACE





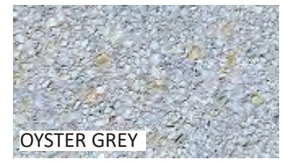
LOCATION PLAN (NTS)


DINING PRECINCT LANEWAY - CHARACTER IMAGE



CHARACTER IMAGE - RAISED PLANTERS PROVIDE INFORMAL SEATING
TREES SOFTEN BUILT FORM AND PROVIDE SHADE TO PEDESTRIANS


CLASSIC ROSE WHITE


OYSTER GREY

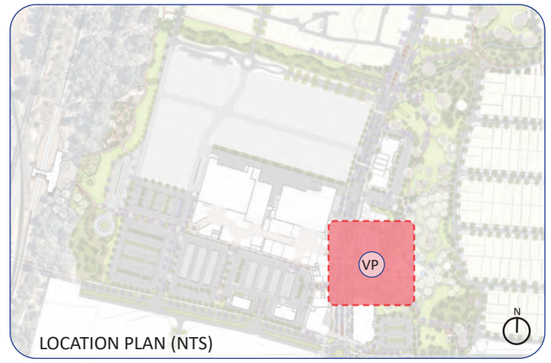
EXPOSED AG CONCRETE TO
CREATE PATTERNING THROUGH
TOWN CENTRE PRECINCT


CHARACTER IMAGE - RAISED PLANTERS &
SEATING TO DEFINE ENTRY POINTS AND BREAK
UP BOLLARD LINE

7.0 TOWN CENTRE PRECINCT - MULTI USE



1:200 @A1



LOCATION PLAN (NTS)



BIKE PARKING



BIKE REPAIR STATION

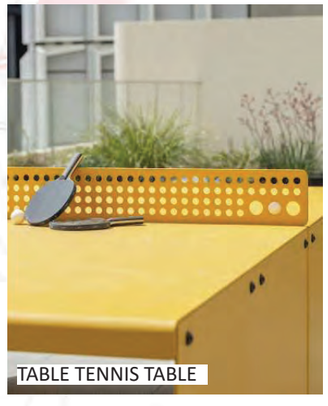


TABLE TENNIS TABLE

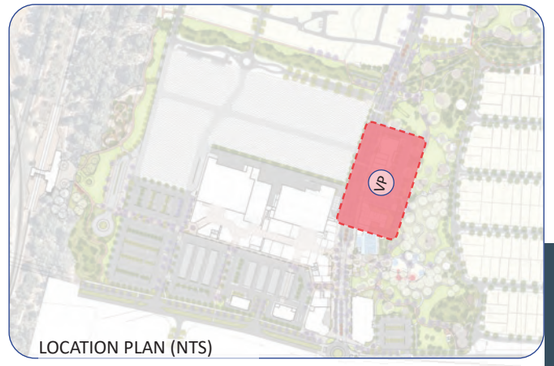


URBAN CHESS TABLE

8.0 GYM & TAVERN



9.0 TOWN CENTRE PRECINCT - CHILDCARE AND MEDICAL PRECINCT





10.0 TOWN CENTRE PRECINCT - LANDSCAPE CHARACTER

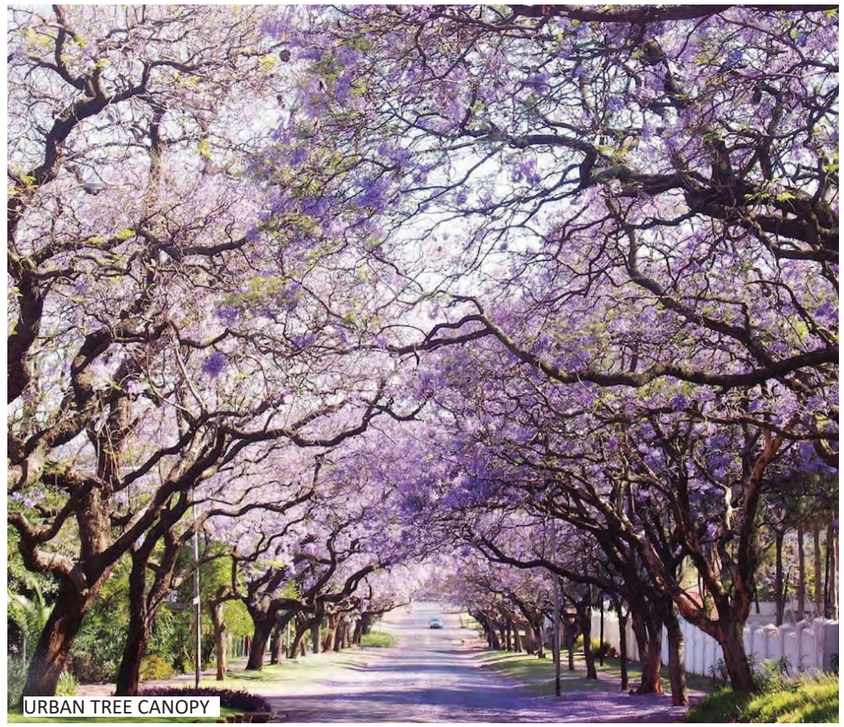

NEIGHBORHOOD CONNECTIONS


COMMUNITY EVENTS


OPPORTUNITY TO INTEGRATE ARTWORK


LATERATE STONE AND TIMBER


RECYCLED BRICKS


URBAN TREE CANOPY


PEDESTRIAN CONNECTIVITY


SEATING/ MEETING NODES


URBAN FURNITURE

MEANDERING PATHS TO SOFTEN BUILT FORM


INTEGRATE SHADE


ALFRESCO DINING

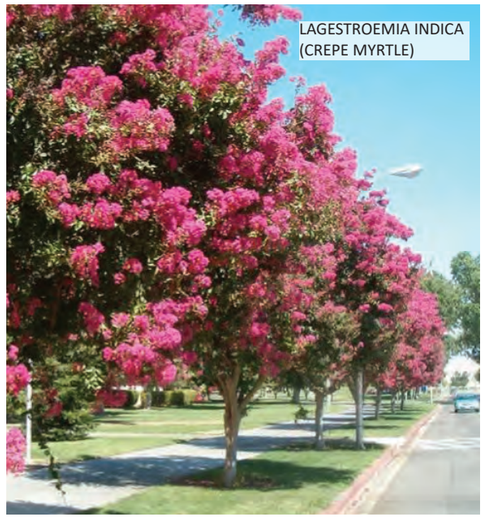
11.0 TC - PLANTING PALETTE

TREES - URBAN HEART

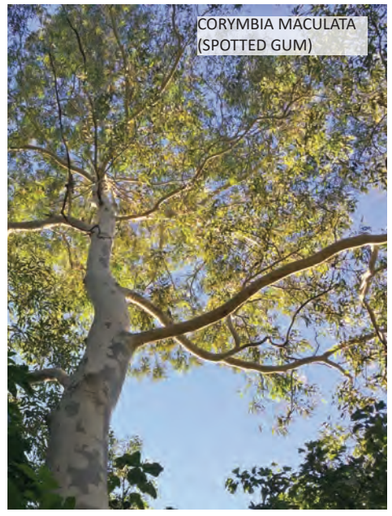
PRIMARILY EXOTIC DECIDUOUS TREES PROPOSED THROUGH THE URBAN HEART IN LINE WITH OVERARCHING WHITBY STYLE GUIDE AND STREET TREE MASTER PLAN.
THESE TREES PROVIDE PASSIVE SOLAR BENEFITS TO HIGH USE PEDESTRIAN SPACES AND HELP WITH HIERARCHY AND WAY FINDING.


JACARANDA MIMOSIFOLIA
(JACARANDA)


LIQUIDAMBAR FORMOSANA
(CHINESE SWEET GUM)

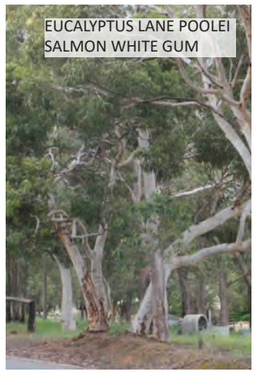

LAGESTROEMIA INDICA
(CREPE MYRTLE)

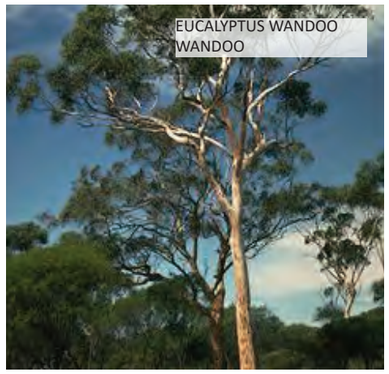

ULMUS PARVIFOLIA
(CHINESE ELM)

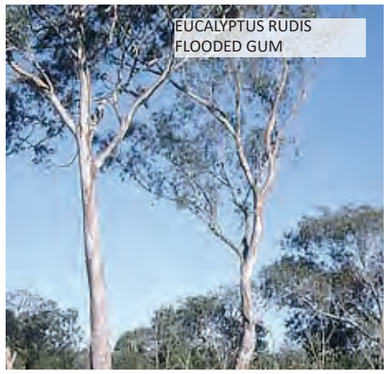

CORYMBIA MACULATA
(SPOTTED GUM)

TREES - TRANSITIONING INTO POS AREAS AND SURROUNDING NEIGHBORHOOD

INTEGRATION OF NATIVE SPECIES TO REFLECT THE RURAL CONTEXT AND BACKDROP OF THE AREA


EUCALYPTUS LANE POOLEI
SALMON WHITE GUM


EUCALYPTUS WANDOO
WANDOO


EUCALYPTUS RUDIS
FLOODED GUM


EUCALYPTUS MARGINATA
JARRAH


CORYMBIA FICIFOLIA
RED FLOWERING GUM


EUCALYPTUS TORQUATA
CORRAL GUM

SHRUBS & GROUNDCOVERS

PRIMARILY NATIVE HARDY SPECIES WHICH WILL EXCEL IN URBAN ENVIRONMENTS. SPECIES TO BE LOW SHRUBS AND GROUNDCOVERS TO MAINTAIN SIGHT LINES FOR PEDESTRIAN SAFETY


Anigozanthos


Conostylis candicans


pimelea bon petite


Lomandra lime tuff


Westringia mundi


Dwarf banksia


Kenedia prostrata


Hemiandra pungens


Eremophila Prostrate

Waste Management Plan

Whitby Town Centre

Prepared for Sedayu Whitby Commercial Pty Ltd

30 June 2026

Project Number: WMP25127

Document Set ID: 1012808
Version: 1, Version Date: 03/07/2026

DOCUMENT CONTROL

Version	Description	Date	Author	Reviewer	Approver
2.0	First Approved Release	30/06/2026	JL	AB	AB

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Document Set ID: 1012808
Version: 1, Version Date: 03/07/2026

Executive Summary

Sedayu Whitby Commercial Pty Ltd is seeking development approval for the proposed Whitby Town Centre.

To satisfy the conditions of the development application the City of Armadale (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	5,729	1,100	Three	Twice each week	Private Contractor
Recycling	5,729	1,100	Three	Twice each week	Private Contractor
Bin Storage Area 2					
Refuse	12,478	1,100	Six	Twice each week	Private Contractor
Recycling	12,478	1,100	Six	Twice each week	Private Contractor
Bin Storage Area 3					
Refuse	812	660	One	Twice each week	Private Contractor
Recycling	812	660	One	Twice each week	Private Contractor
Bin Storage Area 4					
Refuse	2,366	660	Two	Twice each week	Private Contractor
Recycling	2,366	660	Two	Twice each week	Private Contractor
Bin Storage Area 5					
Refuse	8,982	1,100	Five	Twice each week	Private Contractor
Recycling	7,302	1,100	Four	Twice each week	Private Contractor
Organics	3,849	660	Two	Three times each week	Private Contractor
Bin Storage Area 6					
Refuse	12,010	1,100	Six	Twice each week	Private Contractor
Recycling	7,028	1,100	Four	Twice each week	Private Contractor
Organics	5,147	660	Three	Three times each week	Private Contractor
Bin Storage Area 7					
Refuse	963	660	One	Twice each week	Private Contractor
Recycling	963	660	One	Twice each week	Private Contractor

A private contractor will service the Proposal onsite, directly from the respective Bin Storage Area. The private contractor's waste collection vehicle will enter and exit the Proposal in forward gear via Skyline Boulevard/Goodwill Boulevard.

A centre manager/caretaker will oversee the relevant aspects of waste management at the Proposal.

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Figure 1: Locality Plan

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1 Introduction

Sedayu Whitby Commercial Pty Ltd is seeking development approval for the proposed Whitby Town Centre.

To satisfy the conditions of the development application the City of Armadale (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 vacant land to the north and south, Resin Way to the east and Soldiers Road to the west, 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, recyclables and organics) at the Proposal. Specifically, the WMP demonstrates that the Proposal is designed to:

- Adequately cater for the anticipated volume of waste to be generated;
- Separate at least three waste streams;
- 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: Waste Generation;
- Section 3: Waste Storage;
- Section 4: Waste Collection;
- Section 5: Waste Management; and
- Section 6: Conclusion.

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2 Waste Generation

The following section shows the waste generation rates used and the estimated waste volumes to be generated at the Proposal.

2.1 Proposed Tenancies

The anticipated volume of refuse and recyclables is based on the floor areas (m^2) of both the Stage 1 and Stage 2 commercial tenancies. The Proposal consists of the following:

Bin Storage Area 1:

- Retail – 273m^2;
- Retail – 112m^2;
- Liquor Store – 205m^2;
- Retail – 371m^2;
- Retail – 171m^2;
- Retail – 189m^2; and
- Retail – 315m^2.

Bin Storage Area 2:

- Retail - 128m^2;
- Pharmacy – 619m^2;
- Liquor Store – 200m^2;
- Retail – 217m^2;
- Retail – 226m^2;
- Retail – 230m^2;
- Retail – 327m^2;
- Retail – 344m^2;
- Retail – 108m^2;
- Retail – 111m^2;
- Retail – 205m^2;
- Retail – 90m^2;
- Retail – 147m^2;
- Retail – 133m^2;
- Retail – 163m^2; and
- Retail – 117m^2.

Bin Storage Area 3:

- Medical Centre - 636m^2;
- Swim School – 480m^2; and
- Tenancy 1 – 125m^2;
- Tenancy 2 – 126m^2;
- Tenancy 3 – 127m^2; and
- Tenancy 4 – 127m^2.

Bin Storage Area 4:

- Childcare – 649m^2; and
- Community Workshop – 188m^2.

Bin Storage Area 5:

- Café – 240m^2;
- Restaurant – 187m^2;
- Quick Service Food – 97m^2; and
- Quick Service Food – 103m^2.

Bin Storage Area 6:

- Quick Service Food - 90m^2;
- Quick Service Food – 92m^2;
- Restaurant – 271m^2; and
- Tavern – 741m^2.

Bin Storage Area 7:

- Gym – 1,926m^2.

Note, the Major tenancies will have their own back of house and manages waste through their own internal processes governed by national waste collections contracts and therefore has not been included as part of this report. The future pad sites will also be managed individually by the respective tenancies and therefore have not been included as part of this report.

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2.2 Waste Generation Rates

In order to achieve an accurate projection of waste volumes for the Proposal, consideration was given to the following guidelines:

- City of Melbourne's *Guidelines for Waste Management Plans* (2021);
- City of Perth's *Waste Guidelines for New Developments* (Revision 5, effective from June 2019); and
- City of Gosnell's *Information Sheet – Waste Collection*.

Table 2-1 shows the waste generation rates which have been applied to the Proposal.

Table 2-1: Waste Generation Rates

Tenancy Use Type	Guideline Reference	Refuse Generation Rate	Recycling Generation Rate
Retail Tenancies, Pharmacy & Liquor Store	Perth - Retail Shops (>100m^2)	50L/100m^2/day	50L/100m^2/day
Medical Centre, Swim School, Gym & Community Workshop	Perth - Offices	10L/100m^2/day	10L/100m^2/day
Childcare	Melbourne – Childcare	350L/100m^2/day	350L/100m^2/day
Café	Perth – Café (Dine In)	300L/100m^2/day	200L/100m^2/day
Restaurant	Perth - Restaurants	667L/100m^2/day	133L/100m^2/day
Quick Service Food	Gosnells - Fast Food Outlet	150L/100m^2/day	150L/100m^2/day
Tavern	Perth – Licensed Club, Tavern, Small Bar (without dining)	50L/100m^2/day	50L/100m^2/day

2.3 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.

2.3.1 Bin Storage Area 1 Waste Generation

Waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown in Table 2-2. It is estimated that Bin Storage Area 1 will generate 5,729L of refuse and 5,729L of recyclables each week.

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Table 2-2: Estimated Waste Generation – Bin Storage Area 1

Tenancy Use Types	Area (m^2)	Waste Generation Rate (L/100m^2/day)	Waste Generation (L/week)
Refuse			
Retail	273	50	956
Retail	112	50	392
Liquor Store	205	50	718
Retail	371	50	1,299
Retail	171	50	599
Retail	189	50	662
Retail	315	50	1,103
		Total	**5,729**
Recyclables			
Retail	273	50	956
Retail	112	50	392
Liquor Store	205	50	718
Retail	371	50	1,299
Retail	171	50	599
Retail	189	50	662
Retail	315	50	1,103
		Total	**5,729**

2.3.2 Bin Storage Area 2 Waste Generation

Waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown in Table 2-3. It is estimated that Bin Storage Area 2 will generate 12,478L of refuse and 12,478L of recyclables each week.

Table 2-3: Estimated Waste Generation – Bin Storage Area 2

Tenancy Use Types	Area (m^2)	Waste Generation Rate (L/100m^2/day)	Waste Generation (L/week)
Refuse			
Retail	2,746	50	9,611
Pharmacy	619	50	2,167
Liquor Store	200	50	700
		Total	**12,478**
Recyclables			
Retail	2,746	50	9,611
Pharmacy	619	50	2,167
Liquor Store	200	50	700
		Total	**12,478**

2.3.3 Bin Storage Area 3 Waste Generation

Waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown in Table 2-4. It is estimated that Bin Storage Area 3 will generate 812L of refuse and 812L of recyclables each week.

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Table 2-4: Estimated Waste Generation – Bin Storage Area 3

Tenancy Use Types	Area (m^2)	Waste Generation Rate (L/100m^2/day)	Waste Generation (L/week)
Refuse			
Medical Centre	636	10	318
Swim School	480	10	240
Tenancy 1	125	10	63
Tenancy 2	126	10	63
Tenancy 3	127	10	64
Tenancy 4	127	10	64
		Total	**812**
Recyclables			
Medical Centre	636	10	318
Swim School	480	10	240
Tenancy 1	125	10	63
Tenancy 2	126	10	63
Tenancy 3	127	10	64
Tenancy 4	127	10	64
		Total	**812**

2.3.4 Bin Storage Area 4 Waste Generation

Waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown in Table 2-5. It is estimated that Bin Storage Area 4 will generate 2,366L of refuse and 2,366L of recyclables each week.

Table 2-5: Estimated Waste Generation – Bin Storage Area 4

Tenancy Use Types	Area (m^2)	Waste Generation Rate (L/100m^2/day)	Waste Generation (L/week)
Refuse			
Childcare	649	350	2,272
Community Workshop	188	10	94
		Total	**2,366**
Recyclables			
Childcare	649	350	2,272
Community Workshop	188	10	94
		Total	**2,366**

2.3.5 Bin Storage Area 5 Waste Generation

Waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown in Table 2-6. It is estimated that Bin Storage Area 5 will generate 12,832L of refuse and 7,302L of recyclables each week.

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Table 2-6: Estimated Waste Generation – Bin Storage Area 5

Tenancy Use Types	Area (m^2)	Waste Generation Rate (L/100m^2/day)	Waste Generation (L/week)
Refuse			
Cafe	240	300	5,040
Quick Service Food 1	187	150	1,964
Quick Service Food 2	97	150	1,019
Restaurant	103	667	4,809
		Total	**12,832**
Recyclables			
Cafe	240	200	3,360
Quick Service Food 1	187	150	1,964
Quick Service Food 2	97	150	1,019
Restaurant	103	133	959
		Total	**7,302**

2.3.6 Bin Storage Area 6 Waste Generation

Waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown in Table 2-7. It is estimated that Bin Storage Area 6 will generate 17,158L of refuse and 7,028L of recyclables each week.

Table 2-7: Estimated Waste Generation – Bin Storage Area 6

Tenancy Use Types	Area (m^2)	Waste Generation Rate (L/100m^2/day)	Waste Generation (L/week)
Refuse			
Quick Service Food	90	150	945
Quick Service Food	92	150	966
Restaurant	271	667	12,653
Tavern	741	50	2,594
		Total	**17,158**
Recyclables			
Quick Service Food	90	150	945
Quick Service Food	92	150	966
Restaurant	271	133	2,523
Tavern	741	50	2,594
		Total	**7,028**

2.3.7 Bin Storage Area 7 Waste Generation

Waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown in Table 2-8. It is estimated that Bin Storage Area 7 will generate 963L of refuse and 963L of recyclables each week.

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Table 2-8: Estimated Waste Generation – Bin Storage Area 7

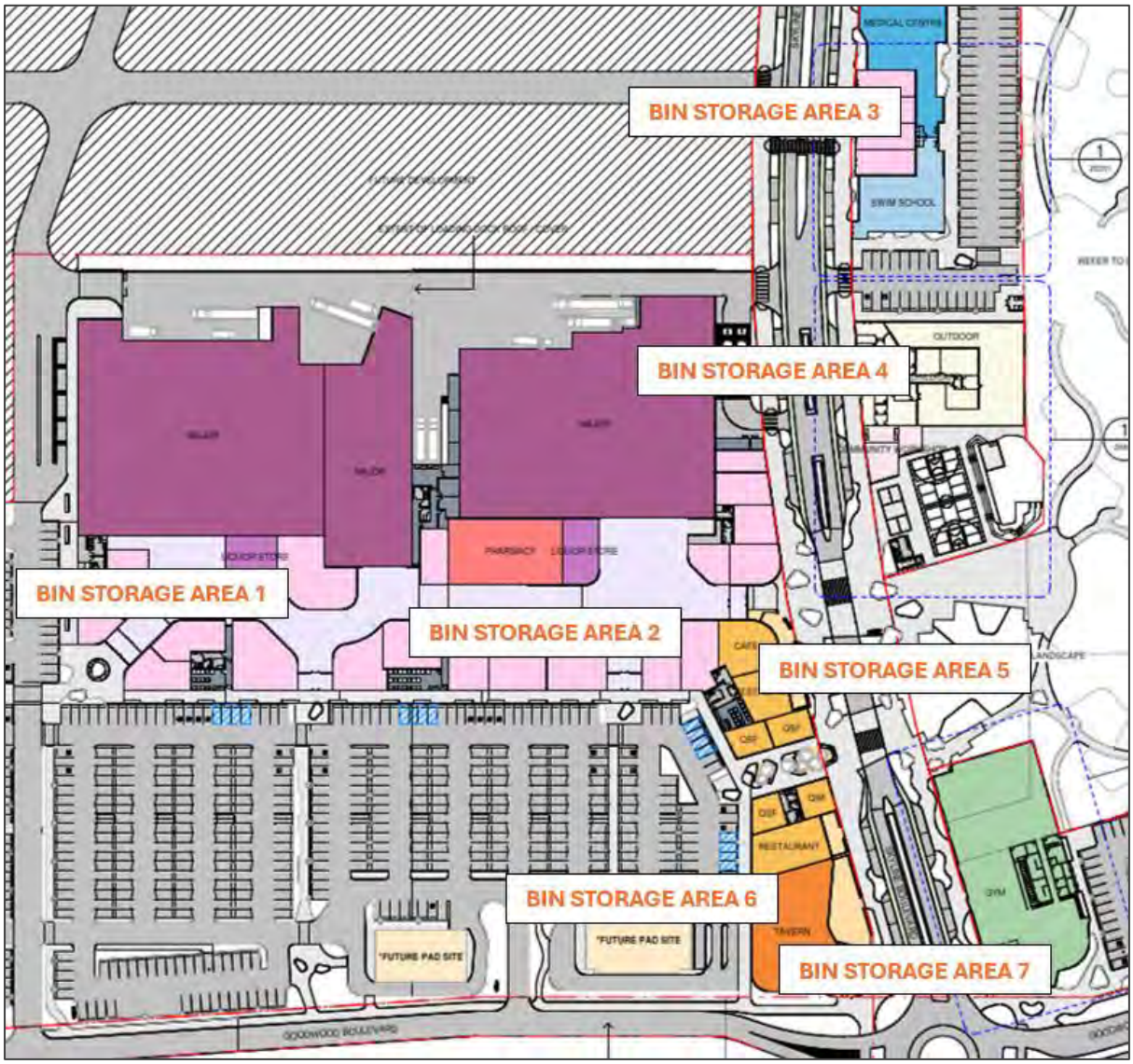
Gym	Area (m^2)	Waste Generation Rate (L/100m^2/day)	Waste Generation (L/week)
Refuse	1,926	10	963
Recyclables	1,926	10	963
		Total	**1,926**

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3 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



3.1 Internal Transfer of Waste

To promote positive recycling behaviour and maximise diversion from landfill, internal ~60L bins will be available throughout each tenancy at the Proposal for the source separation of refuse and recycling. Food and beverage tenancies will also have space for a loose countertop kitchen caddy (typically 7L) or larger 60L bin for the disposal of food organics. The preferred food organics internal bins can be determined by staff once operational.

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.

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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.

3.2 Bin Sizes

Table 3-1 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.

Table 3-1: Typical Bin Dimensions

Dimensions (m)	Bin Sizes	
	660L	1,100L
Depth	0.780	1.070
Width	1.260	1.240
Height	1.200	1.330

Reference: SULO Bin Specification Data Sheets

3.3 Bin Storage Area 1 Size

To ensure sufficient area is available for storage of bins, the amount of bins required for Bin Storage Area 1 was modelled utilising the estimated waste generation in Table 2-2, bin sizes in Table 3-1 and based on collection of refuse and recyclables twice each week.

Based on the results shown in Table 3-2, Bin Storage Area 1 has been sized to accommodate:

- Three 1,100L refuse bins; and
- Three 1,100L recycling bins.

Table 3-2: Bin Requirements for Bin Storage Area – Bin Storage Area 1

Waste Stream	Waste Generation (L/week)	Number of Bins Required	
		660L	1,100L
Refuse	5,729	5	3
Recycling	5,729	5	3

The configuration of these bins within Bin Storage Area 1 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 two collections each week of refuse and recyclables.

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Diagram 2: Bin Storage Area 1



3.4 Bin Storage Area 2 Size

To ensure sufficient area is available for storage of bins, the amount of bins required for Bin Storage Area 2 was modelled utilising the estimated waste generation in Table 2-3, bin sizes in Table 3-1 and based on collection of refuse and recyclables twice each week.

Based on the results shown in Table 3-3, Bin Storage Area 2 has been sized to accommodate:

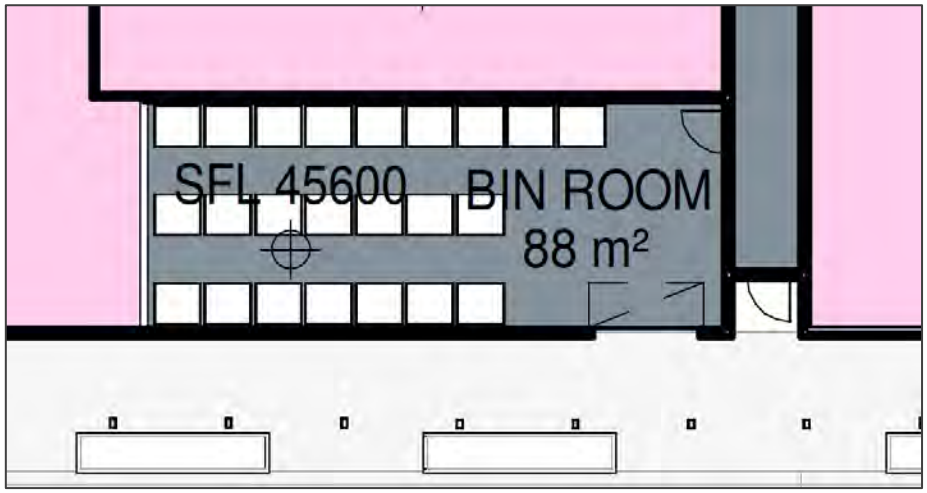
- Six 1,100L refuse bins; and
- Six 1,100L recycling bins.

Table 3-3: Bin Requirements for Bin Storage Area – Bin Storage Area 2

Waste Stream	Waste Generation (L/week)	Number of Bins Required	
		660L	1,100L
Refuse	12,478	10	6
Recycling	12,478	10	6

The configuration of these bins within Bin Storage Area 2 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



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3.5 Bin Storage Area 3 Size

To ensure sufficient area is available for storage of bins, the amount of bins required for Bin Storage Area 3 was modelled utilising the estimated waste generation in Table 2-4, bin sizes in Table 3-1 and based on collection of refuse and recyclables twice each week.

Based on the results shown in Table 3-4, Bin Storage Area 3 has been sized to accommodate:

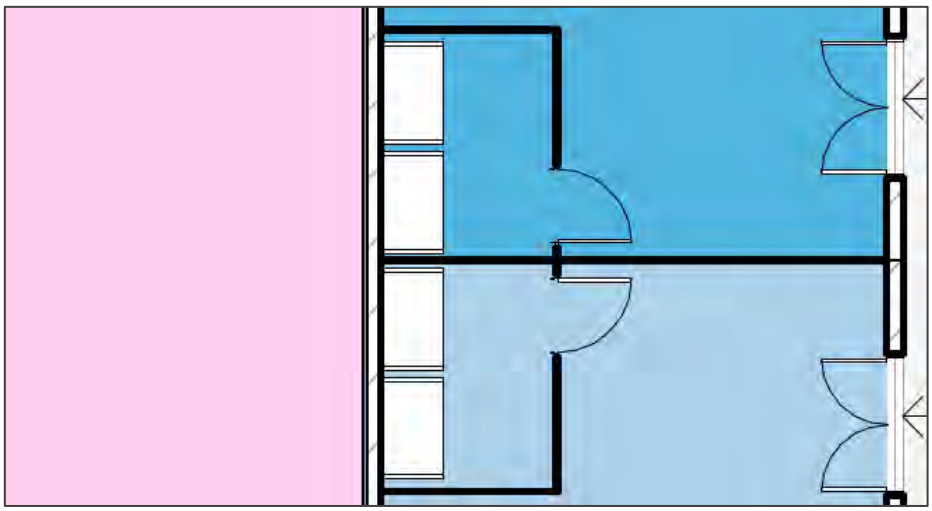
- One 660L refuse bin; and
- One 660L recycling bin.

Table 3-4: Bin Requirements for Bin Storage Area – Bin Storage Area 3

Waste Stream	Waste Generation (L/week)	Number of Bins Required	
		660L	1,100L
Refuse	812	1	1
Recycling	812	1	1

The configuration of these bins within Bin Storage Area 3 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



3.6 Bin Storage Area 4 Size

To ensure sufficient area is available for storage of bins, the amount of bins required for Bin Storage Area 4 was modelled utilising the estimated waste generation in Table 2-5, bin sizes in Table 3-1 and based on collection of refuse and recyclables twice each week.

Based on the results shown in Table 3-5, Bin Storage Area 4 has been sized to accommodate:

- Two 660L refuse bins; and
- Two 660L recycling bins.

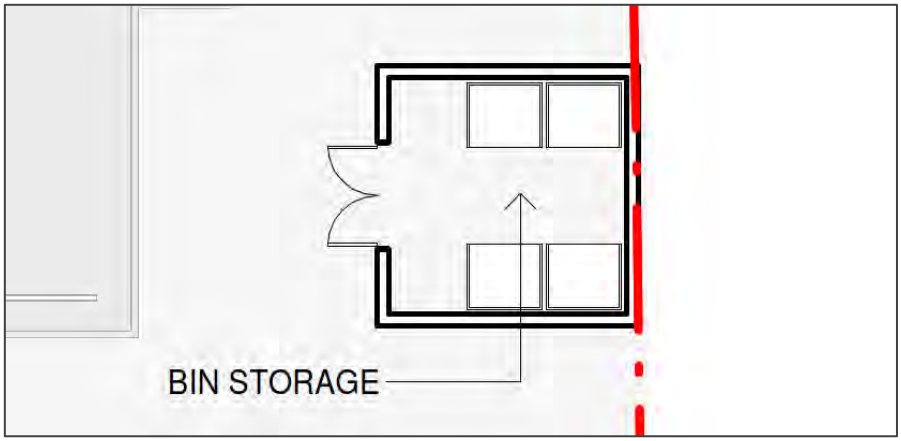
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Table 3-5: Bin Requirements for Bin Storage Area – Bin Storage Area 4

Waste Stream	Waste Generation (L/week)	Number of Bins Required	
		660L	1,100L
Refuse	2,366	2	2
Recycling	2,366	2	2

The configuration of these bins within Bin Storage Area 4 is shown in Diagram 5. It is worth noting that the number of bins and corresponding placement of bins shown in Diagram 5 represents the maximum requirements assuming two collections each week of refuse and recyclables.

Diagram 5: Bin Storage Area 4



3.7 Bin Storage Area 5 Size

To ensure sufficient area is available for storage of bins, the amount of bins required for Bin Storage Area 5 was modelled utilising the estimated waste generation in Table 2-6, bin sizes in Table 3-1 and based on collection of refuse and recyclables twice each week and organics three times each week.

It is the intention of the Proposal to separate a number of waste streams onsite for collection. Table 3-6 shows the bins required for the source separation of waste streams. This breakdown has been based on industry specific waste composition data which has then been averaged across the Proposal.

Based on the results shown in Table 3-6, Bin Storage Area 5 has been sized to accommodate:

- Five 1,100L refuse bins;
- Four 1,100L recycling bins; and
- Two 660L organics bins.

Table 3-6: Bin Requirements for Bin Storage Area – Bin Storage Area 5

Waste Stream	Waste Generation (L/week)	Number of Bins Required	
		660L	1,100L
Refuse	8,982	7	5
Recycling	7,301	6	4
Organics	3,849	2	-

The configuration of these bins within Bin Storage Area 5 is shown in Diagram 6. It is worth noting that the number of bins and corresponding placement of bins shown in Diagram 6 represents the maximum

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requirements assuming two collections each week of refuse and recyclables and three collections each week of organics.

Diagram 6: Bin Storage Area 5



3.8 Bin Storage Area 6 Size

To ensure sufficient area is available for storage of bins, the amount of bins required for Bin Storage Area 6 was modelled utilising the estimated waste generation in Table 2-7, bin sizes in Table 3-1 and based on collection of refuse and recyclables twice each week and organics three times each week.

It is the intention of the Proposal to separate a number of waste streams onsite for collection. Table 3-7 shows the bins required for the source separation of waste streams. This breakdown has been based on industry specific waste composition data which has then been averaged across the Proposal.

Based on the results shown in Table 3-7, Bin Storage Area 6 has been sized to accommodate:

- Six 1,100L refuse bins;
- Four 1,100L recycling bins; and
- Three 660L FOGO bins.

Table 3-7: Bin Requirements for Bin Storage Area – Bin Storage Area 6

Waste Stream	Waste Generation (L/week)	Number of Bins Required	
		660L	1,100L
Refuse	12,010	10	6
Recycling	7,028	6	4
Organics	5,147	3	-

The configuration of these bins within Bin Storage Area 6 is shown in Diagram 7. It is worth noting that the number of bins and corresponding placement of bins shown in Diagram 7 represents the maximum requirements assuming two collections each week of refuse and recyclables and three collections each week of organics.

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Diagram 7: Bin Storage Area 6



3.9 Bin Storage Area 7 Size

To ensure sufficient area is available for storage of bins, the amount of bins required for Bin Storage Area 7 was modelled utilising the estimated waste generation in Table 2-8, bin sizes in Table 3-1 and based on collection of refuse and recyclables twice each week.

Based on the results shown in Table 3-8, Bin Storage Area 9 has been sized to accommodate:

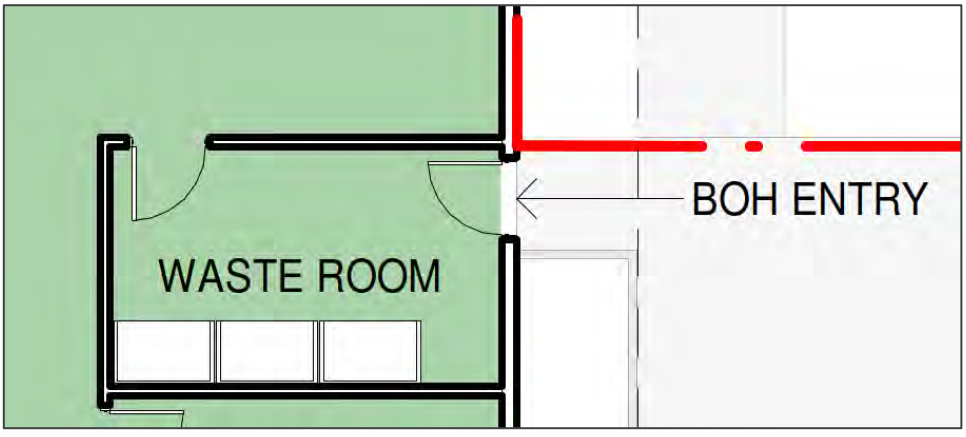
- One 660L refuse bin; and
- One 660L recycling bin.

Table 3-8: Bin Requirements for Bin Storage Area – Bin Storage Area 7

Waste Stream	Waste Generation (L/week)	Number of Bins Required	
		660L	1,100L
Refuse	963	1	1
Recycling	963	1	1

The configuration of these bins within Bin Storage Area 7 is shown in Diagram 8. It is worth noting that the number of bins and corresponding placement of bins shown in Diagram 8 represents the maximum requirements assuming two collections each week of refuse and recyclables.

Diagram 8: Bin Storage Area 7



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3.10 Bin Storage Area Design

The design of the Bin Storage Areas will take into consideration:

- Smooth impervious floor sloped to a drain connected to the sewer system;
- Taps for washing of bins and Bin Storage Areas;
- Adequate aisle width for easy manoeuvring of bins;
- No double stacking of bins;
- Doors to the Bin Storage Areas self-closing and vermin proof;
- Doors to the Bin Storage Areas wide enough to fit bins through;
- Ventilated to a suitable standard;
- Appropriate signage;
- Undercover where possible and be designed to not permit stormwater to enter into the drain;
- Located behind the building setback line;
- Bins not to be visible from the property boundary or areas trafficable by the public; and
- Bins are reasonably secured from theft and vandalism.

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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4 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 3.3 to Section 3.9.

The private contractor's 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 Skyline Boulevard/Goodwill Boulevard, turn into the Proposal in forward gear and pull up adjacent to the respective Bin Storage Areas for servicing.

The 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 staff will be provided with key/PIN code access to the Bin Storage Areas and security access gates to facilitate servicing, if required.

Once servicing is complete the private contractor's front loader waste collection vehicle will exit in a forward motion, turning left onto Skyline Boulevard/Goodwill Boulevard 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 of waste collection vehicles to access the Proposal has been assessed by qualified traffic engineers and will be included within their Traffic Impact Assessment.

4.1 Bulk and Speciality Waste

Adequate space may be allocated throughout the Proposal for placement of cabinets/containers for collection and storage of bulk and specialty wastes that are unable to be disposed of within the bins in the Bin Storage Area. 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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5 Waste Management

A centre manager/caretaker 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/staff/cleaners at the Proposal are made aware of this WMP and their responsibilities thereunder;
- Monitor tenant/staff/cleaner 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/staff/cleaners 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.

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6 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 respective Bin Storage Area. The private contractor's waste collection vehicle will enter and exit the Proposal in forward gear via Skyline Boulevard/Goodwill Boulevard.

A centre manager/caretaker will oversee the relevant aspects of waste management at the Proposal.

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Figures

Figure 1: Locality Plan

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405,000 405,200 405,400 405,600 405,800

6,429,000 6,428,800 6,428,600

Soldiers Rd

Truewood Rd

Sawntimber App

Firewood Prom

Resin Way

Harvest Cr

Goodwood Bvd

Knot Way

Skyline Bvd

Stumpage Rd

Lumberjack Av

Data source: Roads, Cadastre - Landgate, 2026. Imagery: Nearmap, 2026.

LEGEND

- Site Boundary

Cadastre

- Crown Allotment
- Freehold
- Road
- Easement
- Reserve

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LOCALITY



0 5 10 15 20 25 km

LOCALITY

District Town Centre
Whitby WA 6123

Sedayu Witby Commercial Pty Ltd

N 0 25 50 75 100 m

Coordinate System: GDA2020 MGA Zone 50
Scale @ A3: 1:2,500

Prepared:	ZO	Date:	12/05/2026
Reviewed:	JL	Revision:	A
Project:	WMP25127		

talis consultants

Figure 01



Assets | Engineering | Environment | Noise | Spatial | Waste

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ABN 85 967 691 321

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WHITBY

TOWN CENTRE PRECINCT

emerge ASSOCIATES

01.06.2026

Document Set ID: 1012783
Version: 1, Version Date: 03/07/2026

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REV	DATE	ISSUE OR AMENDMENT	BY	REVIEWED
A	17.02.2026	DRAFT FOR COORDINATION	LL	PB
B	24.02.2026	PRELIMINARY SHIRE PRESENTATION	LL	PB
C	01.06.2026	DEVELOPMENT APPLICATION (DRAFT)	LL	PB
D	09.06.2026	DEVELOPMENT APPLICATION	LL	EC

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1.0 SITE CONTEXT

This Town Centre will be the Heart of Whitby Town. Key site context to be explored through the Town Centre and Adjacent Town Centre Destination Park in landscape design to create a clear sense of place.

history

RAILWAY LINE + MUNDIJONG TOWN

- Originally named Jarrahdale Junction, it was at the Junction of the Rockingham-Jarrahdale line (Mundijong to Rockingham section removed 1950) and the government line from Perth to Bunbury which was built in 1893. A town grew up around the Junction and a timber depot which included a large board mill was constructed.
- The train corridor is a key defining feature bounding the western edge the Whitby Estate and there is a potential future Armadale/Byford rail line extension with possible future train station adjacent Whitby town center.

natural materials

TIMBER INDUSTRY

- Millar's Mundijong Timber Yard (1918-1928)
- Mundijong Road Reserve has a long, narrow composition which has resulted from its history as being part of the original railway alignment between Jarrahdale and Rockingham which served the Jarrahdale timber cutting and milling operations until 1940. Since the rails and sleepers have been removed the reserve has been able to regenerate.
- Watkins Road Reserve, Duckpond Reserve and Mundijong Road Reserve has original vegetation substantially intact and as such provides key reference to original vegetation, in an area dominated by agricultural properties where very little original structure remains.



ecology

ECOLOGICAL BIODIVERSITY

- Located within Shire of Serpentine-Jarrahdale at the base of the Darling Scarp
- Bushforever site
- Marri-Kingia Threatened Community
- Mundijong Road Reserve and Watkins Road Reserve south of Whitby precinct
- Shire promotes the conservation of mature trees and regeneration of local species to protect biodiversity, for instance *Eucalyptus lane-poolei* and *Eucalyptus laelei*
- Whitby was named after Whitby Falls, originally known as Mundajill. The intricate network of groundwater river and streams surrounding Whitby and Jarrahdale/Serpentine area aid the health of groundwater dependent native vegetation such as Banksia Woodlands which provide habitat for endemic fauna.

community

FRANK LUPINO MEMORIAL PARK

- Free overnight rest area
- Memorial site
- This park was created with assistance from the Rotary Club of Armadale. The SerpentineJarrahdale Lions Club & The Shire of Serpentine-Jarrahdale Tourist Information Committee as a community service project to commemorate a Rotarian.

exercise / outdoors

TRAILS NETWORKS

- The Whitby Falls walk trail was opened in 2015 and borders the Murdoch University Whitby Farm. The 1.5km loop trail is bitumised making it easy to use for families with prams. The trail is serviced well with multiple parking bays and two disability access toilets. It also has multiple picnic tables and rest points where you can sit, relax and enjoy the scenery.
- Jarrahdale Bridle trails

health & education

WHITBY FALLS FARM + HOSPITAL

- Whitby Falls has been associated with the farming history of the Serpentine-Jarrahdale Shire since the 1840s and subsequently functioned, from 1897 – 2006, as the longest operating facility in Western Australia for the care and treatment of people with mental illness.
- The site now functions as a place of education. In November 2013, Murdoch University entered into a 42 year lease with the National Trust of Western Australia for the 203 HA heritage listed property at Whitby Falls Farm. Works to the value of $3million have been undertaken to ensure the heritage values of the farm are protected and to restore the property as an operational farm.

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2.0 TOWN CENTRE PRECINCT - LANDSCAPE CONCEPT



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3.0 TC POS - SCHEMATIC CONCEPT

GUIDING LANDSCAPE PRINCIPLES

ECOLOGY:
OPPORTUNITY FOR DYNAMIC PLAY SPACE AMONGST EXISTING TREES DESIGN TO BE SENSITIVE OF EXISTING SITE ECOLOGY, MAINTAINING HEALTH OF EXISTING TREES
GRASS TREE TRANSPLANTS FROM TC SITE TO BE REUSED THROUGH LANDSCAPE AREAS

COMMUNITY
STRONG WALKING/CYCLING LINKS INTO THE PUBLIC OPEN SPACE AND TOWN CENTRE PROMOTING PEDESTRIAN USE.
FEATURE PLAY TOWER LOCATED ON KEY SIGHT LINE AXIS TO TOWN CENTRE PLAZA/ SPINE

OPPORTUNITY TO INCLUDE COMMUNITY EVENTS SPACES AND COMMUNITY GARDENS TO ACTIVATE SPACE AND CREATE A SENSE OF COMMUNITY OWNERSHIP

EXERCISE
OPPORTUNITY TO INCORPORATE EXERCISE NODES AND DISTANCE MARKERS INTO PATH LOOP TO INTEGRATE THE PROPOSED GYM INTO THE ADJACENT LANDSCAPE.

HEALTH AND EDUCATION
INCLUDE INCLUSIVE PLAY AND PARK INFRASTRUCTURE TO ENSURE THAT THE SPACE CAN BE ENJOYED BY ALL. INCLUDE SENSORY PLAY AND WALKING TRAILS

SITE HISTORY
OPPORTUNITY FOR RAIL & TIMBER WORKS HISTORY TO BE INCLUDED IN PUBLIC ARTWORK/ BESPOKE FURNITURE

NATURAL MATERIALS
NATURAL STONE, BRICK, TIMBER ELEMENTS TO BE INCLUDED WITHIN LANDSCAPE DESIGN TO BUILD UPON EXISTING WHITBY CHARACTER

Note: Adjacent TC POS & Streetscape design shown as context only, subject to seperate approvals.



LEGEND

- TURF
- SHRUB PLANTING
- DUAL USE PATH
- CONCRETE PATH 1.8m WIDE
- BOARDWALK CROSSING
- UNIT PAVING TO MAIN STREET/ PLAZAS
- RAISED GARDEN BEDS
- RUBBER SOFTFALL - YOGA MATS
- COMMUNITY STAGE



CHANGE IN PAVING TO PEDESTRIAN CROSSINGS - DEMONSTRATES SHARED USE



ICONIC PLAY TOWER/ STRUCTURE ON KEY SIGHT LINES



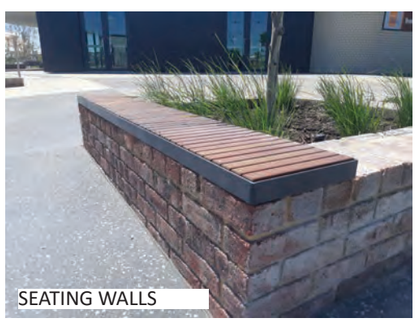
PLAYGROUND DESIGN SENSITIVE TO EXISTING TREES

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4.0 TOWN CENTRE PRECINCT - PEDESTRIAN CONNECTION WEST



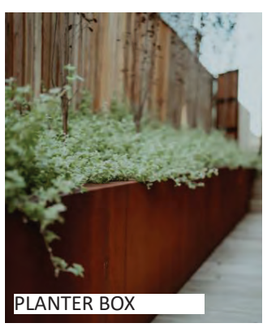

RAISED PLANTERS


SEATING WALLS


SPOTTED GUM

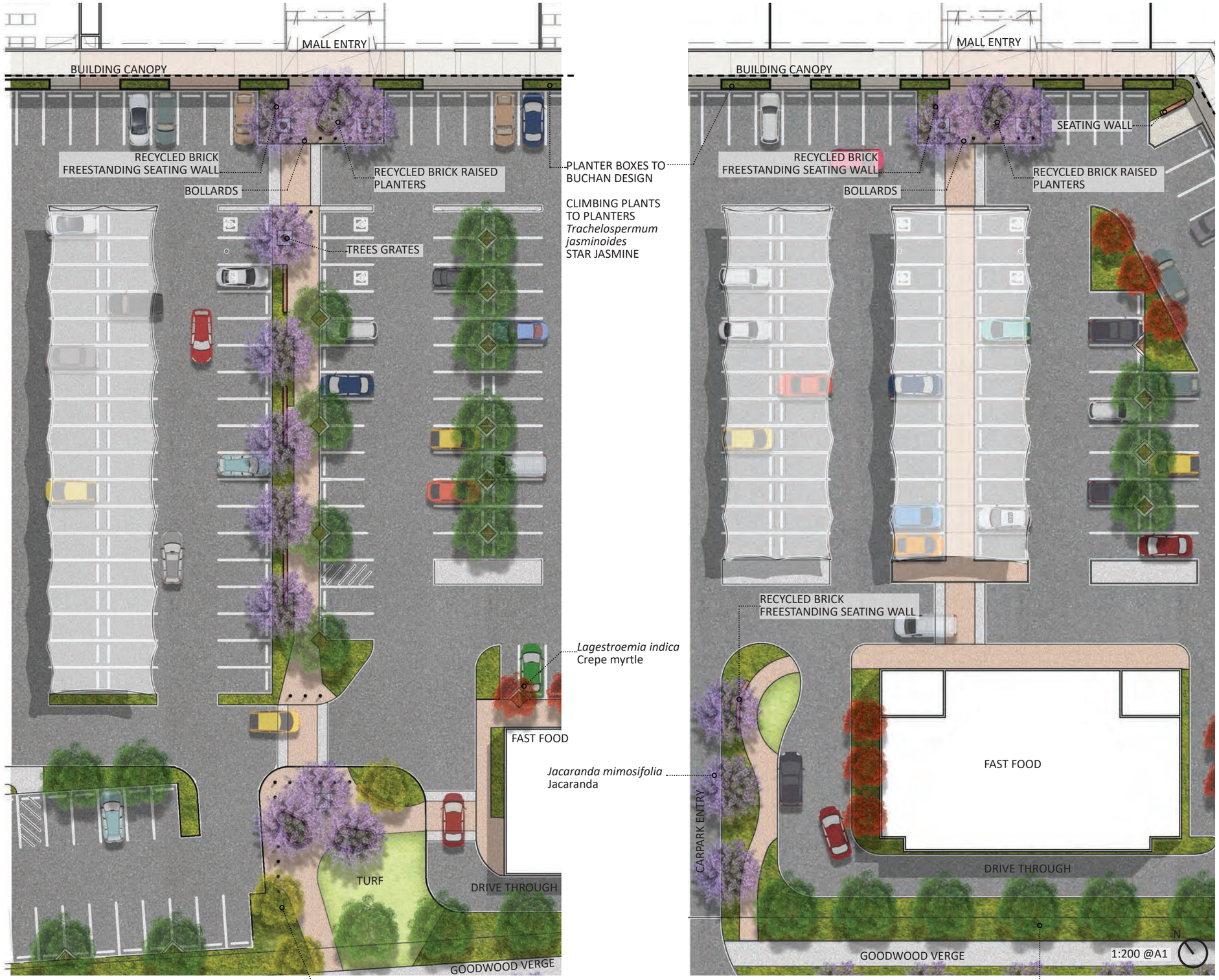

JACARANDA

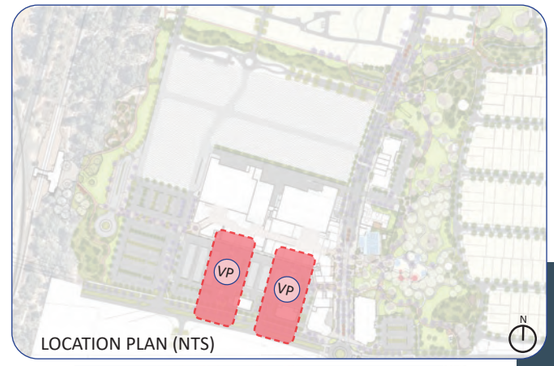

CHINESE ELM


PLANTER BOX

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5.0 PEDESTRIAN CONNECTIONS SOUTH





LOCATION PLAN (NTS)


CREPE MYRTLE


ENGINEERED SHADE


PED CROSSINGS

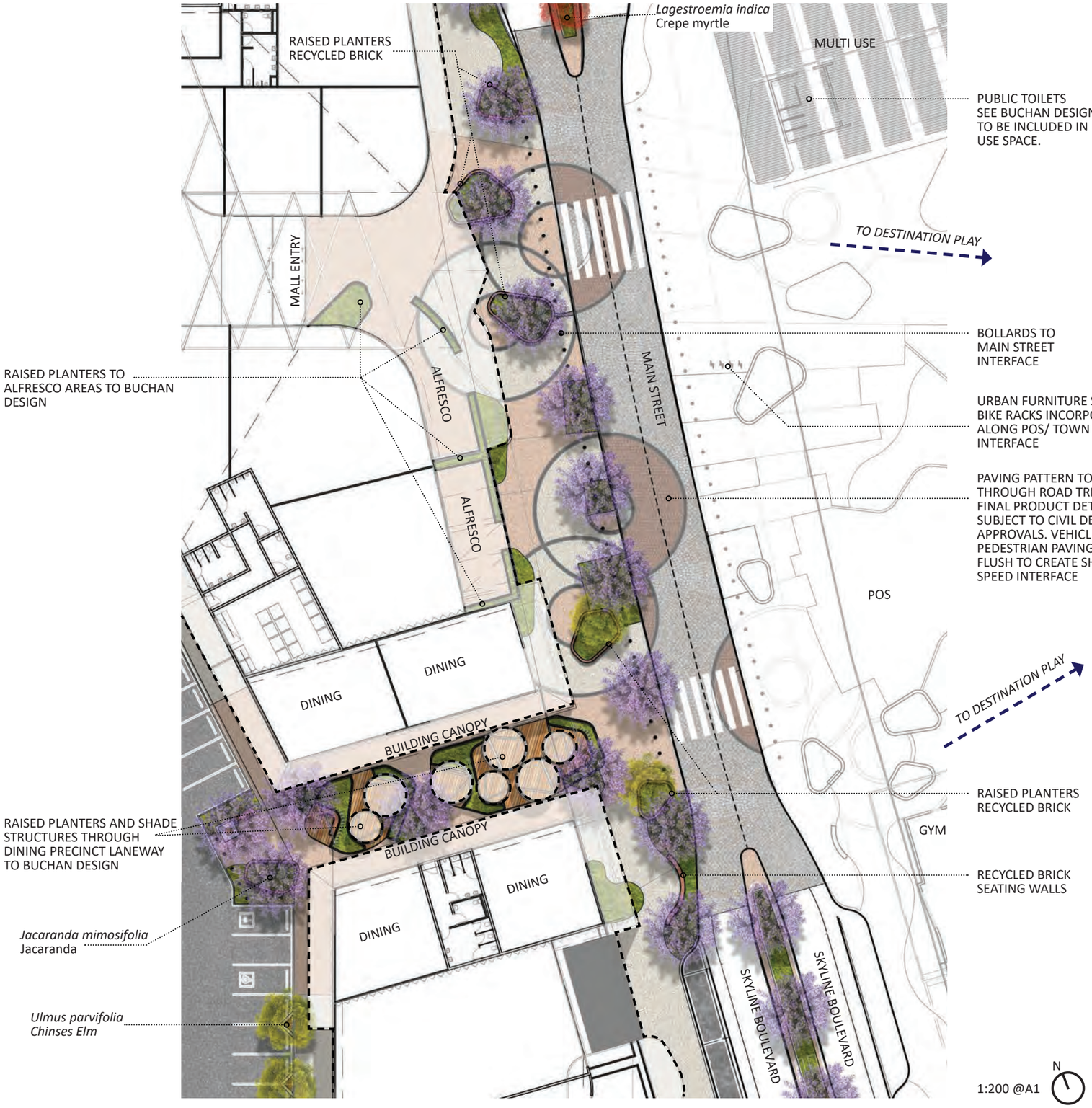

CLASSIC ROSE WHITE

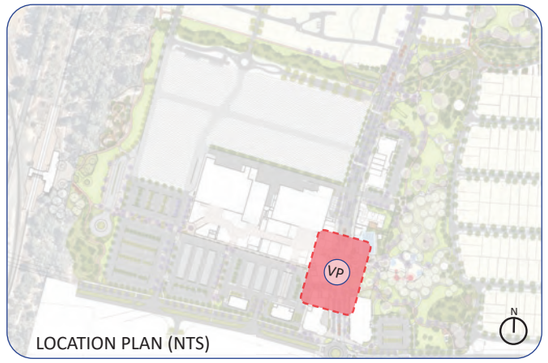

OYSTER GREY

EXPOSED AG CONCRETE TO CREATE PATTERNING AND DEFINE PATH HIERARCHY THROUGH TOWN CENTRE

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6.0 TOWN CENTRE PRECINCT - MAIN STREET INTERFACE





LOCATION PLAN (NTS)


DINING PRECINCT LANEWAY - CHARACTER IMAGE



CHARACTER IMAGE - RAISED PLANTERS PROVIDE INFORMAL SEATING
TREES SOFTEN BUILT FORM AND PROVIDE SHADE TO PEDESTRIANS


CLASSIC ROSE WHITE


OYSTER GREY

EXPOSED AG CONCRETE TO
CREATE PATTERNING THROUGH
TOWN CENTRE PRECINCT

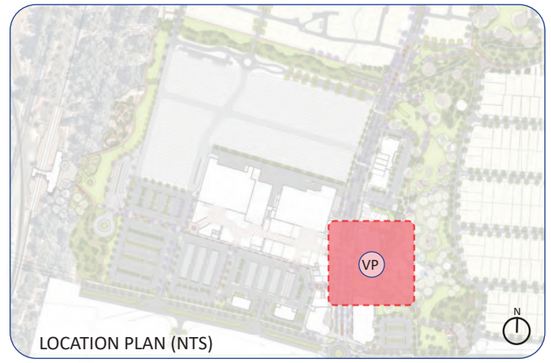

CHARACTER IMAGE - RAISED PLANTERS &
SEATING TO DEFINE ENTRY POINTS AND BREAK
UP BOLLARD LINE

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7.0 TOWN CENTRE PRECINCT - MULTI USE



1:200 @A1



LOCATION PLAN (NTS)



BIKE PARKING



BIKE REPAIR STATION

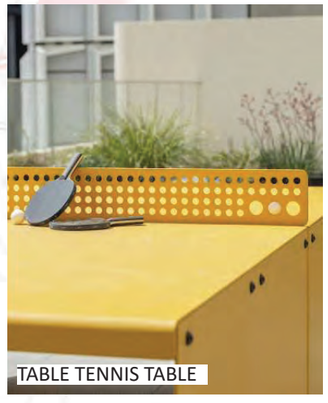


TABLE TENNIS TABLE



URBAN CHESS TABLE

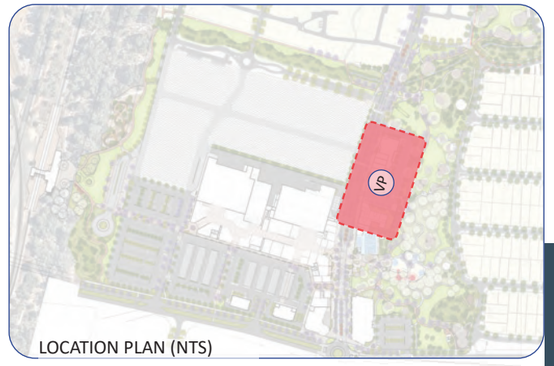
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8.0 GYM & TAVERN



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9.0 TOWN CENTRE PRECINCT - CHILDCARE AND MEDICAL PRECINCT



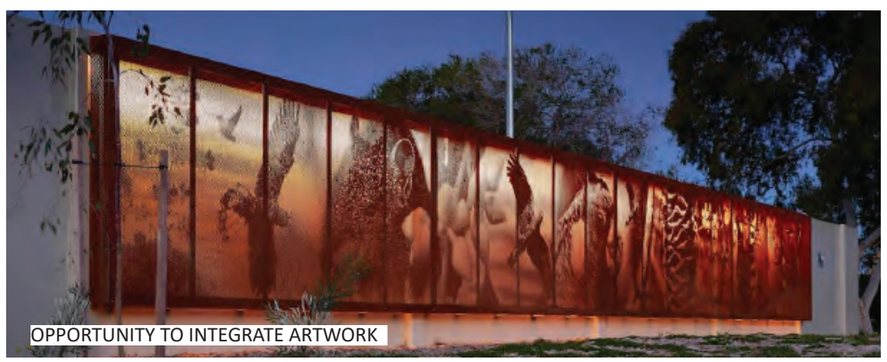


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10.0 TOWN CENTRE PRECINCT - LANDSCAPE CHARACTER

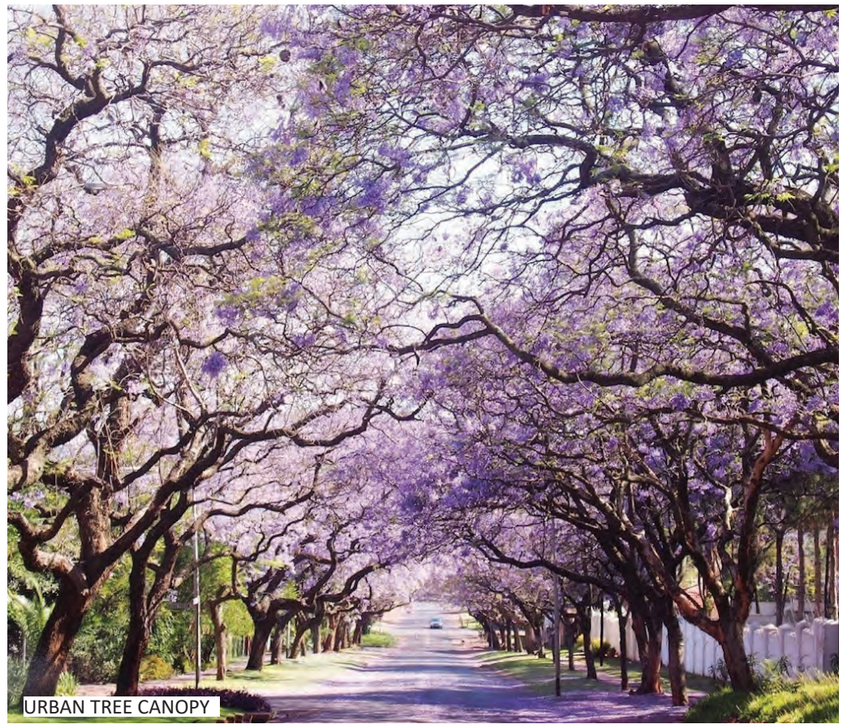

NEIGHBORHOOD CONNECTIONS


COMMUNITY EVENTS


OPPORTUNITY TO INTEGRATE ARTWORK


LATERATE STONE AND TIMBER


RECYCLED BRICKS


URBAN TREE CANOPY


PEDESTRIAN CONNECTIVITY


SEATING/ MEETING NODES


URBAN FURNITURE

MEANDERING PATHS TO SOFTEN BUILT FORM


INTEGRATE SHADE


ALFRESCO DINING

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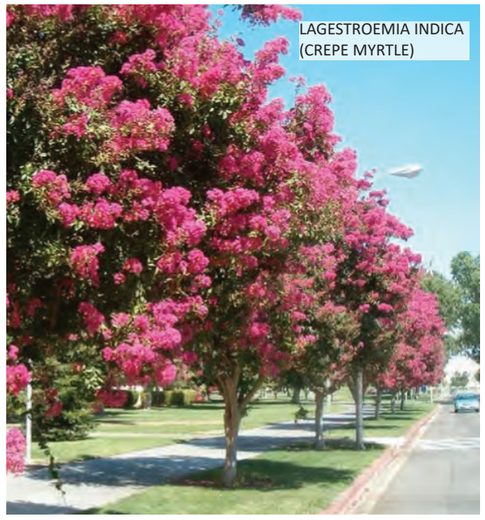
11.0 TC - PLANTING PALETTE

TREES - URBAN HEART

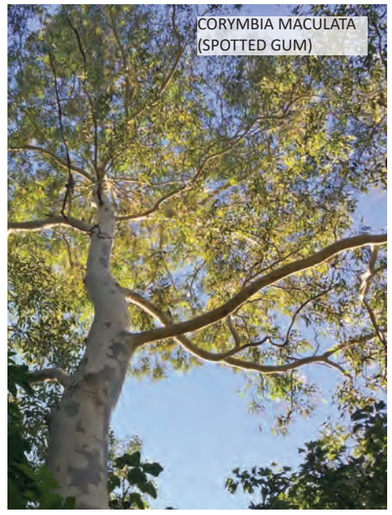
PRIMARILY EXOTIC DECIDUOUS TREES PROPOSED THROUGH THE URBAN HEART IN LINE WITH OVERARCHING WHITBY STYLE GUIDE AND STREET TREE MASTER PLAN.
THESE TREES PROVIDE PASSIVE SOLAR BENEFITS TO HIGH USE PEDESTRIAN SPACES AND HELP WITH HIERARCHY AND WAY FINDING.


JACARANDA MIMOSIFOLIA
(JACARANDA)


LIQUIDAMBAR FORMOSANA
(CHINESE SWEET GUM)

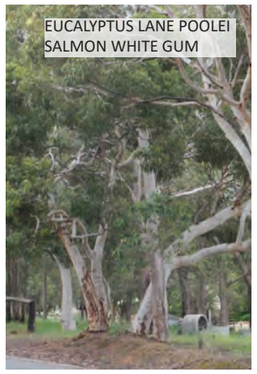

LAGESTROEMIA INDICA
(CREPE MYRTLE)

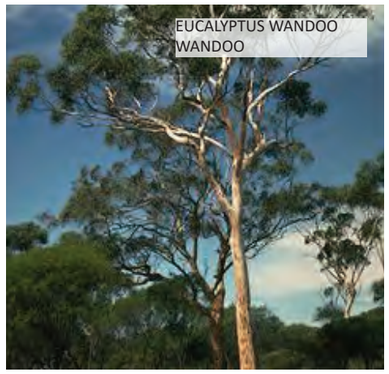

ULMUS PARVIFOLIA
(CHINESE ELM)

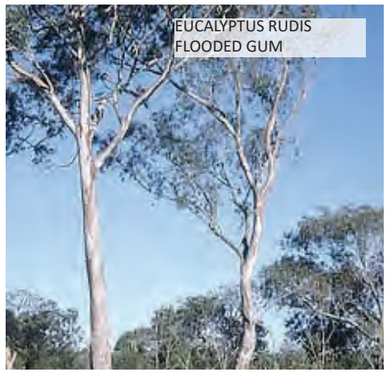

CORYMBIA MACULATA
(SPOTTED GUM)

TREES - TRANSITIONING INTO POS AREAS AND SURROUNDING NEIGHBORHOOD

INTEGRATION OF NATIVE SPECIES TO REFLECT THE RURAL CONTEXT AND BACKDROP OF THE AREA


EUCALYPTUS LANE POOLEI
SALMON WHITE GUM


EUCALYPTUS WANDOO
WANDOO


EUCALYPTUS RUDIS
FLOODED GUM


EUCALYPTUS MARGINATA
JARRAH


CORYMBIA FICIFOLIA
RED FLOWERING GUM


EUCALYPTUS TORQUATA
CORRAL GUM

SHRUBS & GROUNDCOVERS

PRIMARILY NATIVE HARDY SPECIES WHICH WILL EXCEL IN URBAN ENVIRONMENTS. SPECIES TO BE LOW SHRUBS AND GROUNDCOVERS TO MAINTAIN SIGHT LINES FOR PEDESTRIAN SAFETY


Anigozanthos


Conostylis candicans


pimelea bon petite


Lomandra lime tuff


Westringia mundi


Dwarf banksia


Kenedia prostrata


Hemiandra pungens


Eremophila Prostrate

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Version: 1, Version Date: 03/07/2026

June 2026

Whitby Town Centre

Sustainability DA Report

Graham Agar
FULL CIRCLE DESIGN SERVICES

Document Set ID: 1012808
Version: 1, Version Date: 03/07/2026

Full Circle Design Services

Telephone: 0412475819	**Report №:** 2026_009_ESD_STR_01
Email: graham.agar@@fcds.com.au	**Original Date of Issue:** 10th May 2026
ACN: 163 742 890	
ABN: 84 163 742 890	

Title:	Whitby Town Centre - Sustainability DA Report
Author:	Graham Agar
Client:	Buchan
Contact:	Allesandro Paladin
Description:	This report presents the ESD Strategy for the proposed works to be undertaken for the new proposed Whitby Town Centre – located south east of the Perth CBD in the town of Serpentine Jarrahdale – prepared as part of the project DA Submission. The project is targeting 'Best Practice' sustainable design through comparison to the design features and weightings within the Green Star Buildings framework.

Revision	Date	Checked by		Transmitted by	
A	10th May 2026	X	GEA	X	GEA
B	7th June 2026	X	GEA	X	GEA

Distribution	Revision								
Receiver	A	B							
Buchan	X	X							
Golden Group	X	X							
Design Team	X	X							

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Version: 1, Version Date: 03/07/2026

Executive Summary

FCDS have been commissioned to assist the Whitby Town Centre project team in developing an implementing a sustainability strategy to align the development with current market best practice, the Activity Centre Plan and State Planning Policy.

Whitby Town Centre is envisioned as a contemporary, sustainable and community-focused activity centre that will serve the rapidly growing south-east growth corridor of Perth. The development combines retail, dining, recreation, health, wellness and community uses within a walkable "town centre" environment designed to support long-term environmental, social and economic resilience. The proposed masterplan includes a shopping centre, dining precinct, medical and wellness facilities, childcare, gym, community workshop spaces and landscaped public realm areas integrated across staged delivery phases.

The project team are committed to addressing the Whitby Town Centre activity centre by incorporating the following sustainability themes within the development:

- Sustainable and Walkable Town Centre
  - Pedestrian infrastructure and microclimate
- Climate Responsive Design
  - Improved envelope, spare cooling capacity, fossil fuel reduction
- Water Sensitive Urban Design
  - Species selection and rainwater management
- Community, Health and Social Sustainability
  - Community spaces, integration and connection to nature
- Sustainable Transport and Connectivity
  - Potential for public transport connection, EV facilitation
- Long Term Resilience and Future Growth
  - Social, economic and ecological sustainability considerations within the development.

Overall, Whitby Town Centre has the opportunity to become a leading example of sustainable suburban town centre development in Western Australia — delivering lasting environmental, economic and social value for the Whitby community and future generations.

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1. Introduction

FCDS have been commissioned to provide sustainable design advice for the Whitby Town Centre project. This report is issued as part of the DA submission, summarising the sustainable design strategy for the project.

1.1 Project Overview

The proposed Whitby Town Centre includes:

- Shopping centre and supermarket uses
- Dining precinct and high street plaza
- Health and wellness precinct including medical centre and swim school
- Childcare and community workshop facilities
- Gym and recreation uses
- Public realm and high street landscape areas
- Large-format parking and access infrastructure
- Potential for staged delivery across multiple development phases

The site plan and staging plans create a town-centre style mixed-use development with strong pedestrian interfaces, landscaped public spaces and integrated retail frontages.

The strategy recognises the hot Mediterranean type climate of Perth and the rapidly growing residential catchment surrounding Whitby, providing for water and carbon sensitive solutions which can adapt to the changing social and ecological environment.

1.2 Sustainability Objectives

Sustainable design encompasses all three elements of the triple bottom line; environmental, social and economic sustainability. The proposed strategy aims to address all three as follows:

Environmental Objectives

- Reduce operational greenhouse gas emissions
- Maximise energy efficiency and renewable energy generation
- Minimise potable water demand
- Reduce urban heat island impacts
- Increase biodiversity and tree canopy coverage
- Reduce construction and operational waste
- Support climate resilience and long-term adaptability

Social Objectives

- Deliver comfortable and safe public spaces
- Encourage walking, cycling and active lifestyles
- Provide inclusive community infrastructure
- Improve public health outcomes
- Create a vibrant and socially connected centre

Economic Objectives

- Lower operational costs for tenants and operators
- Improve long-term asset value
- Increase centre attractiveness and dwell time
- Enhance leasing appeal through sustainability leadership
- Future-proof infrastructure and reduce retrofit costs

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2. Vision Statement

Whitby Town Centre will become a benchmark suburban activity centre for Western Australia — creating a resilient, low-carbon, community-focused destination that integrates retail, dining, recreation, health, wellness and civic uses within a highly walkable and climate-responsive environment.

The sustainability vision is to deliver:

- A low-energy and climate-resilient town centre
- A highly walkable and socially connected destination
- Reduced operational carbon and long-term running costs
- Strong urban greening and biodiversity outcomes
- Water-sensitive urban design suited to Western Australia's climate
- Future-ready infrastructure supporting EVs, renewable energy and circular economy principles
- Healthy indoor and outdoor environments for workers, residents and visitors

The strategy aligns with:

- Whitby Town Centre Activity Plan
- WA State Sustainability and Climate Policy objectives
- Green Star Communities principles
- Net Zero by 2050 pathways
- Waterwise Development principles for WA
- Liveable Neighbourhoods and activity centre planning principles

3. Sustainability Targets:

The following table present the project targets and verification strategy:

Category	Proposed Target	Verification Strategy
Energy	Minimum 25–35% reduction in operational energy versus NCC baseline	Energy modelling report at BL Submission NABERS Rating in operation
Renewable Energy	Solar PV sized to offset common area energy demand	100kW (200m^2) PV Array
Water	40% Common area potable water reduction	Water model at BL Submission Rain water toilet flushing systems
Landscaping	Minimum 30% tree canopy coverage in public realm areas over time	Landscape plan
Transport	EV charging infrastructure to minimum 5 bays initially, scalable to 20%	Drawings
Waste	90% construction waste diversion from landfill	Report at PC
Heat Island	High SRI roofing and shaded pedestrian routes throughout precinct	Marked up site plan
Embodied Carbon	Preference for low-carbon concrete, recycled steel and locally sourced materials	LCA Report or Opinion
Wellness	Natural daylight and ventilation to occupied spaces where practical	Report at Building License

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4. Climate Responsive Urban Design

4.1 Shade and Thermal Comfort

Given Whitby's hot summer climate, thermal comfort is a primary design priority.

Proposed Initiatives

- Planting throughout parking and pedestrian areas
- Continuous shaded pedestrian connections between retail, dining and recreation uses
- Covered walkways and awnings along the high street interface
- Overhangs and reduced glazing to western-facing facades
- Use of pergolas, tensile shade structures and landscaped seating zones
- Integration of water-sensitive landscaping to assist microclimate through evaporative cooling

The dining precinct and high street plaza provide strong opportunities for shaded outdoor activation.

4.2 Urban Heat Island Reduction

Strategies

- High-reflectance roofing materials
  - Target Dover White or similar colourbond finishes for roof.
- Light-coloured paving where appropriate
- Increased tree canopy or shade sails over parking areas
- Green buffers along major road interfaces
- Landscaped medians and bioswales integrated within parking areas

5. Energy and Carbon Strategy

5.1 Passive Design

Buildings should prioritise passive environmental performance before active systems. Passive solutions reduce maintenance cost and are more resilient to changing social, economic and environmental conditions.

Key Measures

- Solar-responsive orientation where feasible
- Reduced western glazing exposure
- External shading devices
- High-performance glazing for non-retail spaces
- Increased insulation above NCC minimums
- Airtight building envelopes for conditioned spaces, mixed mode operation for cafes and food tenancies
- Cross-ventilation opportunities in public and semi-open spaces

5.2 Efficient Building Services

Proposed Systems

- High-efficiency VRF or heat pump HVAC systems with economy cycle for larger units
- Smart BMS monitoring and tenant metering
- LED lighting throughout development
- Motion and daylight sensor controls
- Demand-controlled ventilation systems

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5.3 Renewable Energy

Large roof areas across the shopping centre, gym and health precinct provide significant opportunity for rooftop solar generation.

Proposed Initiatives

- Precinct-wide solar PV installation and solar-ready roof design for future expansion
- Battery storage assessment– spatial allowance for future installation
- Embedded energy network
- EV charging integrated with solar generation

5.4 Electrification Pathway

To support long-term decarbonisation:

- Avoid new fossil fuel infrastructure where practical
- All-electric building systems for heating and hot water
- Provide future capacity for battery storage
- Support transition to renewable electricity supply contracts on a precinct basis

6. Water Sensitive Urban Design

6.1 Water Efficiency

Strategies

- Water-efficient fixtures and fittings
- Smart irrigation systems with moisture sensors
- Drought-tolerant native planting
- Leak detection systems
- Sub-metering for major tenancies and common areas

6.2 Stormwater Management

WSUD Initiatives

- Biofiltration swales integrated within landscape zones
- Raingardens within parking areas
- On-site detention integrated with public realm
- Permeable paving in selected locations
- Stormwater quality treatment for carparking before discharge
- Passive irrigation from captured runoff

The extensive hardstand and parking areas identified within the site plan create strong opportunities for integrated WSUD outcomes which address water and urban heat island effect.

6.3 Irrigation Strategy

- Native and climate-adapted planting palette
- Hydro-zoned irrigation systems
- Piping to allow future use of recycled water if available in future servicing strategies
- Minimise turf to key activity and recreation zones only

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7. Sustainable Transport Strategy

7.1 Walkability

The development should prioritise pedestrian-first movement within the town centre.

Proposed Measures

- Safe and legible pedestrian crossings
- Continuous footpaths connecting all precincts
- Shade-protected pedestrian routes
- Reduced crossing distances in parking areas
- Universal accessibility throughout public spaces

7.2 Cycling Infrastructure

Proposed Measures

- End-of-trip facilities
- Secure bicycle parking
- Shared path integration with surrounding residential areas
- Bicycle repair stations and drinking fountains

7.3 Electric Vehicle Infrastructure

EV Strategy

- Initial EV charging infrastructure to parking bays
- Passive provision for future expansion to 20%
- Fast chargers adjacent convenience and dining areas
- Solar-integrated charging opportunities
- Priority parking for low-emission vehicles

7.4 Public Transport Integration

Future bus routes are envisioned on the Main Street. The design will cater for integration with public transport in future, including:

- Potential bus stop integration and wayfinding
- Weather-protected (shaded and covered) waiting areas
- Pedestrian connectivity to future transit infrastructure

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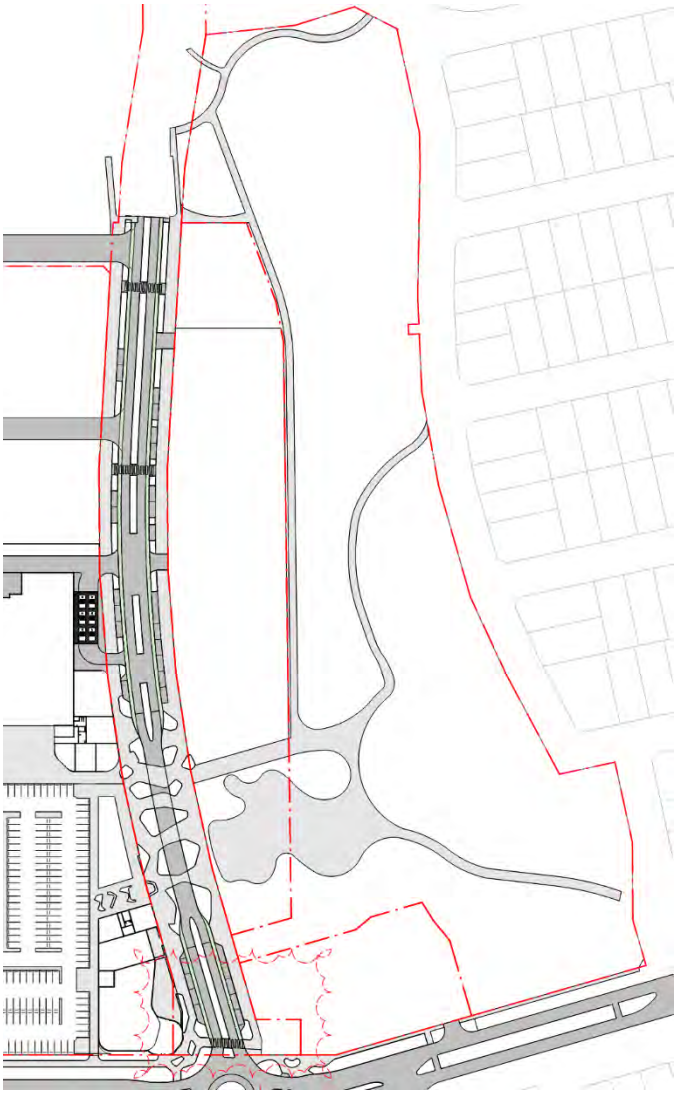
8. Landscape and Biodiversity Strategy

8.1 Landscape Vision

The landscape strategy should establish Whitby Town Centre as a green, shaded and highly liveable destination.

Objectives

- Increase biodiversity
- Improve thermal comfort
- Create memorable public spaces
- Strengthen local identity
- Improve stormwater outcomes



8.2 Native Planting

Proposed Principles

- Use predominantly endemic and WA-native species
- Incorporate flowering species supporting pollinators
- Select drought-tolerant and low-maintenance planting
- Prioritise large-canopy shade trees
- Make use of undeveloped area to the east for native planting and pedestrian access to allow connection to nature

8.3 Habitat Creation

Opportunities

- Native understory planting
- Bird habitat integration
- Pollinator gardens
- Green corridors through landscape setbacks
- Integrated ecological interpretation signage

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9. Waste and Circular Economy

9.1 Construction Waste

Targets

- Minimum 90% diversion from landfill
- Reuse of site materials where feasible
- Contractor waste reporting requirements

9.2 Operational Waste

An operational waste management plan is being developed for the site, catering for current and future trends and requirements for landfill diversion.

Strategies

- Dedicated recycling areas
- Back-of-house waste separation systems
- Retail tenant waste guidelines
- Potential for food organics collection from dining precinct
- Cardboard compaction and recycling

9.3 Circular Economy Measures

- Preference for recycled-content materials
- Durable low-maintenance finishes
- Modular and adaptable tenancy design
- Local sourcing of materials where feasible

10. Healthy Buildings and Community Wellbeing

10.1 Indoor Environmental Quality

Measures

- Low-VOC paints, adhesives and finishes
- Daylight access to occupied areas
- High indoor air quality standards
- Acoustic management for community areas
- Thermal comfort optimisation – ambient responsive temperature control 18-26°C

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10.2 Community Activation

The project includes community-oriented uses such as childcare, workshop and multi-purpose facilities which support long-term social sustainability.

Proposed Initiatives

- Strategy for community events and markets
- Outdoor dining activation
- Public art integration
- Flexible civic gathering spaces
- Local business and maker support programs

10.3 Health and Wellness

The inclusion of medical, swim school and gym uses provides strong alignment with healthy community outcomes.

Proposed Features

- Outdoor fitness zones
- Walking circuits and exercise trails – integrated with nature where possible
- Drinking fountains and refill stations
- Mental wellbeing-focused landscape spaces
- Activated bike parking areas



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11. Resilience and Adaptation

11.1 Climate Resilience Priorities

Heatwave Resilience

- Extensive shading
- Spatial allowance for battery
- Cooling refuges within public areas using shading and landscape to create cooler microclimates
- Drought-tolerant landscapes

Storm Resilience

- Robust drainage design; 1:100 year event
- Flood-aware landscape planning
- Durable external materials
- Protected critical infrastructure

Long-Term Adaptability

- Flexible tenancy planning
- Future-ready EV infrastructure
- Solar expansion capability
- Adaptable public realm spaces

12. Governance and Delivery

12.1 Sustainability Governance

Proposed Actions

- Appoint sustainability consultant for duration of the project, including 12 months of facility monitoring and tuning
- Establish sustainability KPIs for contractors and tenants
- Establish precinct sustainability committee to review and improve performance in operation
- Undertake operational performance reviews post-occupancy
- Include sustainability requirements in tenant fit out guides
- Review potential for Fitwel certification in operation
- Preference modular and consistent tenancy joinery to permit adaptable reuse and modification

12.2 Staged Delivery Alignment

As the project is proposed in multiple stages, sustainability initiatives are intended to be scalable and embedded from Stage 1 onward. Early-stage infrastructure should include:

- Solar-ready electrical infrastructure
- Future EV capacity
- Integrated WSUD systems
- Landscape establishment strategy
- Waste management infrastructure

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13. Conclusion

The proposed development address all major recommendation of the Whitby Activity Centre Plan, as follows:

13.1 Sustainable and Walkable Town Centre

The Whitby Town Centre Sustainability Strategy has been developed to directly support the vision and objectives of the Whitby Town Centre Activity Centre Plan by delivering a highly connected, walkable and community-focused destination. The proposed development integrates retail, dining, recreation, health and community uses within a climate-responsive urban environment that prioritises pedestrian movement, accessibility and public activation.

The strategy supports the Activity Centre Plan's objective of creating an active and vibrant main street environment through shaded pedestrian connections, activated building frontages, outdoor dining opportunities and high-quality public realm design. The proposed high street plaza and dining precinct create opportunities for social interaction, community gathering and increased economic activity within the centre.

13.2 Climate Responsive Design and Environmental Performance

The Sustainability Strategy responds to the Activity Centre Plan's sustainability objectives by embedding climate-responsive design principles throughout the development. Given Whitby's hot Mediterranean climate, significant emphasis has been placed on reducing urban heat island impacts and improving outdoor thermal comfort through extensive tree canopy planting, shaded walkways, cool material selections and integrated landscape treatments.

The strategy also promotes reduced operational carbon emissions through energy-efficient building systems, rooftop solar PV infrastructure, future-ready electrification and electric vehicle charging capability integrated throughout the precinct. Large roof areas associated with the shopping centre, gym and wellness precinct provide strong opportunities for renewable energy generation and future energy resilience.

13.3 Water Sensitive Urban Design and Landscape Integration

The strategy aligns with the Activity Centre Plan's environmental and landscape objectives through the incorporation of Water Sensitive Urban Design initiatives across the site. Biofiltration swales, permeable surfaces, drought-tolerant landscaping and integrated stormwater treatment measures will contribute to improved water efficiency, reduced runoff impacts and enhanced landscape quality throughout the precinct.

The landscape approach prioritises native and climate-adapted planting, increased tree canopy and green public spaces to support biodiversity, improve visual amenity and reinforce the identity of Whitby Town Centre as a green and liveable activity centre.

13.4 Community, Health and Social Sustainability

The Sustainability Strategy strongly supports the Activity Centre Plan's objective of delivering a socially sustainable and inclusive community destination. The inclusion of health, wellness, childcare, recreation and community workshop uses contributes to a diverse and accessible town centre that supports community wellbeing and long-term liveability.

The integration of community-oriented facilities and flexible public spaces creates opportunities for social connection, local events and community activation, reinforcing the role of Whitby Town Centre as a key civic and social hub for the surrounding residential catchment.

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13.5 Sustainable Transport and Connectivity

The strategy supports the Activity Centre Plan's movement and accessibility objectives through the prioritisation of pedestrian connectivity, cycling infrastructure and future-ready transport initiatives. Shaded walking routes, end-of-trip facilities, bicycle parking and EV charging infrastructure encourage more sustainable transport choices while supporting long-term adaptability as transport technologies evolve.

These initiatives contribute to reduced vehicle dependency and promote healthier, more active movement throughout the centre.

13.6 Long-Term Resilience and Future Growth

Importantly, the Sustainability Strategy has been developed to support the staged delivery of Whitby Town Centre while ensuring sustainability initiatives are embedded from the earliest phases of development.

The proposed approach promotes long-term environmental, economic and social resilience through adaptable infrastructure, renewable energy capability, water-efficient design and flexible community-focused spaces. Collectively, these measures position Whitby Town Centre as a leading example of a contemporary, sustainable and climate-responsive activity centre for Perth's emerging south-east growth corridor.

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SUMMARY OF SUBMISSIONS
PA26/49 – Whitby District Centre Development

Submitter	Submitter Comments	Applicant Response/Comment
1	It looks like a great development plan. We counted on it when we bought in Whitby. Please do not sacrifice parking spaces, recreational areas and greenary for further additions. We propose to strongly consider providing a slip road for the traffic entering and exiting the carparks as the Goodwood Boulevard is bound to be very busy in the future.	Noted. The ultimate solution of Goodwood Parade has not been resolved as it is dependent on any rail crossings required. An interim access solution is proposed.
2	All I ask for, are the buildings to have an elevation unique to Whitby/Mundijong area. And for the trees to be beautiful Jacarandas lining the streets with gorgeous badgers of geraniums hung around, similar to Pinjarra but better !!!	The elevations of the buildings have been designed as a unique blend of new and tradition. The combination of contemporary forms with colours and materials informed by local heritage and natural setting create a unique aesthetic language that is both of its place and of its time. Each building along Skyline Boulevard is treated as an individual expression within a cohesive vocabulary, ensuring the creation of the visual interest typical of small towns high streets. Landscaping is considered an integral component of the centre as seen on the landscape plans submitted with the application. This will be worked through in detail with the Shire.
3	Very welcomed however observed there is a very large flock of carnaby parrots who use the area for a major roosting site. This is of most importance that this area is kept for breeding as they are endanger. Please please look into that.	Existing mature trees are present and will be retained in the POS areas and the area between the gym and multi purpose space.
4	Yeah sounds sweet.	
5	I support the development of a well-designed District Centre for Whitby and recognise the benefits of providing local employment, services, retail and community facilities. However, I have concerns about the treatment of existing vegetation and whether the proposal will deliver the environmental and landscape outcomes identified for the Whitby Town Centre. The development documentation identifies a “country town atmosphere” as an important objective and specifically recognises the retention of vegetation as part of that vision. The landscape plans state that the design should be sensitive to existing site ecology and maintain the health of existing trees. I support these objectives. However,	Large portion of the existing trees are indicated to be retained in the lodged design, particularly between the Gym and the multi purpose space. Significantly landscaping is also being proposed through the development and the remainder of the estate. Bushforever zones are also protected to the west of the site.

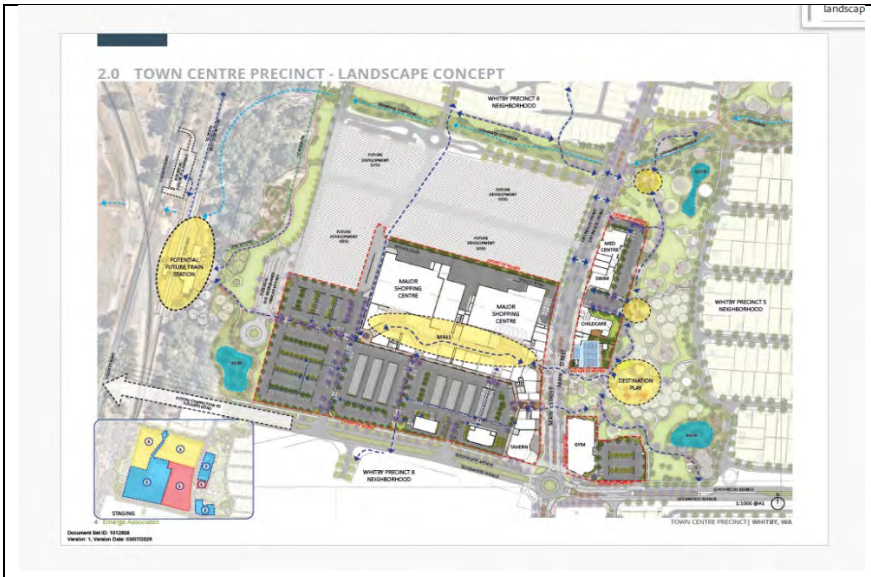
SUMMARY OF SUBMISSIONS
PA26/49 – Whitby District Centre Development

Submitter	Submitter Comments	Applicant Response/Comment
	the landscape plans describe existing trees as being "retained and protected where possible". Given the Shire is currently revising its Urban and Rural Forest Strategy and has identified development as a significant driver of canopy loss, I believe this application provides an opportunity to demonstrate those principles in practice. I request that the Shire require clear identification of existing mature trees within the development footprint, including: the number and location of existing mature trees; which trees will be retained and protected; which trees will be removed and why; and the number, species and expected mature canopy of replacement trees. Retention should be prioritised over replacement wherever reasonably practicable. A newly planted tree cannot provide the immediate shade, habitat, biodiversity and canopy benefits of an established mature tree. I am also concerned that replacement planting should not be used to justify avoidable removal of established vegetation. The associated Bushfire Management Plan identifies existing mature trees as habitat for black cockatoo species and states that these trees can be retained without creating a bushfire hazard. This demonstrates that bushfire management does not necessarily require the removal of mature trees. I request that the final landscape design maximise the use of locally appropriate native species, particularly where trees are intended to provide long-term canopy, habitat and contribute to Whitby's character. The current proposal identifies primarily exotic deciduous trees within the urban heart, with native species used more extensively toward the POS and surrounding neighbourhood areas. Greater consideration should be given to native canopy within the Town Centre itself. Any approval should also include conditions requiring appropriate protection of retained trees throughout construction, including protection of root zones, together with monitoring to ensure retained trees remain healthy following earthworks and construction. Replacement planting should be monitored for survival rather than simply counted when planted. The Shire's revised Urban and Rural Forest Strategy proposes the principles of Avoid–Minimise–Restore–Offset and a live vegetation balance sheet. PA26/49 provides an opportunity to demonstrate these principles through an actual development. I therefore support the development in principle, but request that approval include clear, measurable and enforceable requirements for mature tree retention, protection, replacement planting and long-term canopy outcomes.	

Whitby District Centre Development – State Department Comments	
Comment	**Applicant Comment**
PTA	
Thank you for your referral dated 16/07/2026, the Public Transport Authority (PTA) does/does not object to this application subject to the following conditions and additional comments: **Conditions** 1. Prior to commencement of development or works the applicant/owner shall amend the development plans dated 03/07/2026, prepared by SLR Consulting Australia Pty Ltd on behalf of Gold Fusion Pty Ltd, reference 675.V25325.00EA1 (revision #2, document set ID: 1012808), Architectural Drawings dated 02/07/2026, Project Number 240263 (document set ID: 1012808)and all other documents, to be submitted and approved by the Public Transport Authority (PTA) and thereafter implemented in full. The amended plans shall include: a. Bus embayment's as detailed within the development report dated 03/07/2026, prepared by SLR Consulting Australia Pty Ltd on behalf of Gold Fusion Pty Ltd, reference 675.V25325.00EA1 (revision #2, document set ID: 1012808), are to be designed in accordance with the PTA's Bus Stop Design Guidelines 2020. b. The proposal to drain under the railway corridor removed from all plans and diagrams consistent with Condition 2. c. Prior to the commencement of development or works the application/owner shall amend all planning reports and drawings to remove any mentions and references to the future Whitby Train Station and Bus Interchange. 2. Prior to the commencement of development, the applicant/owner shall amend the Local Water Management Strategy Addendum, dated 03/07/2026, document reference EP18-053(03)--008A ASC (Document Set ID: 1012808), Landscape Plan and Design Report, dated 03/07/2026, prepared by emerge Associates (version 1, document set ID: 1012808) and all other attached documents to remove any current proposals to drain under the railway corridor and identify a new location to provide a new Culvert linking the basin in the southwest of the site to the twin lakes that enables drainage under the rail corridor to prevent flooding or spillage of the site, to the satisfaction of the Public Transport Authority (PTA) and there after implemented in full, the preparation and installation costs are to be borne by the applicant/owner. The detailed culvert design package shall include details on the following to ensure there is no risk of flooding to the rail corridor: a. Full flood modelling, b. Overland flow paths,	a. Amended plan provided depicting location of future bus stops. Condition to be imposed to ensure that the bus stops are delivered to the specification of PTA to the satisfaction of the Shire. b. Disagree. The drainage regime under the railway corridor is existing and has been documented and approved in both the Cardno LWMS [Whitby, Various Lots Local Water Management Strategy (Cardno 2011)] and the Mundijong District Water Management Strategy. These existing drainage corridors need to be maintained. The proposed site specific stormwater management plan proposes to maintain pre-and post development flows, including relevant flood detention to ensure no greater water discharge occurs within the PTA rail corridor. A standard condition of approval is recommended to ensure that stormwater is appropriately detained and disposed of to the satisfaction of the Shire. c. It is understood that there is no government commitment to a train Station/Bus Interchange at Whitby. The Whitby LSP requires regard to be had for possible future passenger rail station at Whitby to ensure that if a train station was to occur in the future, then it can be appropriately addressed. Recommend that an advice note be added to the approval advising that there is no government committment to a passenger rail station at Whitby at this present time." "Disagree. Refer to comment b) above. The LWMS is subject to approval as a condition of subdivision of WAPC Ref 201377 5. Prior to the commencement of subdivisional works, a Water Management Report is to be prepared and approved, in consultation with the Department of Water and

c. Drainage runoff calculations towards the west for rainfall events 1% AEP, 10% AEP and 1EY, d. On-site storage arrangements	Environmental Regulation, consistent with the approved Whitby, Various Lots Local Water Management Strategy (Cardno, 2011)."
Advice	
a) With regards to condition 1, this will ensure that proposed bus embayment's are designed to accommodate PTA operated services.	Agreed. Condition of approval as per a) above
b) With regards to condition 1 and 2, the applicant will need to identify a new proposed culvert location and submit a detailed design package to be approved by the PTA and Arc, and enter into a pipeline lease agreement, to be submitted to TPLPSPTALeasingEnquiries@pta.wa.gov.au for approval.	Disagree. Existing culverts and water regime to be as per approved water management strategies.
c) With regards to Condition 3, the Culvert located at the proposed Whitby Station is not sufficient to accommodate the additional drainage that would be produced from the sites run-off.	Condition is to be imposed to ensure that adequate detention is allowed for on site and that any post development flows match pre existing flows.
d) The PTA currently has no plans to operate services along Goodwood Avenue as there is no planned Whitby Station or associated bus interchange. The significant recent investment in the Byford Rail Extension (BRE) project, including the opening of Byford Station, should be acknowledged within the report. Byford Station already provides improved rail access for the Whitby area, with residents of Skyline Boulevard able to access the station via bus (25 minutes) or car (10 minutes).	Agreed. Advice note to be added
e) The Public Transport Authority (PTA) cannot serve the area without the north-south connector road Skyline Boulevard being constructed through to Norman Road. As soon as this section of Skyline Boulevard is connected, the PTA plans to reroute existing Route 259 and 262 off Soldiers Road and onto Skyline Boulevard to serve this Town Centre development as well as the existing and growing residential population in the surrounding area. If this northern segment of Skyline Boulevard is not delivered when this Town Centre development opens, they will have no public transport. Please see the attached marked-up plans that indicate the preferred locations for PTA bus embayment's to service the application area.	Noted. Advice note to be added. Condition also required for the completion of Skyline Boulevard prior to occupation of the shopping centre.
f) The PTA does not support any new at-grade level crossings being created.	Agreed. Advice note to be added.
g) The Public Transport Authority (PTA) advises that as the land subject to this approval is less than 50 metres from a railway corridor, the development is within the PTA's Asset Protection Zone. The landowner/applicant may be required to receive approval from the PTA for works in and around the operating railway corridor in accordance with PTA procedure *8810-450-003 Procedure Working in and Around the operating PTA Rail Corridor, Assets, and Infrastructure*. For more information with regards to the landowner's/applicant's obligations, please email PTAthirdpartyaccess@pta.wa.gov.au.	Noted. Advice note to be added.

Should the city elect not to include the aforementioned conditions and advice in their response to the MODAP, the PTA requests the opportunity to meet and discuss the inclusion of these prior to final comments being submitted due to the significance of the work that are proposed.	
DPLH – Bush Forever	
Lot 9021 is adjacent to Bush Forever area 350 to the west and near Bush Forever area 354 to the north and east. I note the approved subdivision 201377. It appears the area shown in the architectural drawings (in your snip below) within Bush Forever area 350 is the potential future train station. This figure refers to the landscape plan and future train station. Figure 2 – Town centre precinct – Landscape Concept - Appendix D shows the potential future train station and potential future parking in Bush Forever area 350.	These are indicative concept plans only and such works do not form part of the approval. There is a red dashed line clearly shows the “Extent of Works” on the plans. It is understood that there is no current commitment to any train station at Whitby. Any drainage infrastructure required will be provided as a condition of approval and be subject to further assessment.
It is recommended removal of all indicative works within Bush Forever from the plans so there is not inference of support for these works in this location. It is also recommended Bush Forever be depicted on the landscape concept plan as it is difficult to work out where the boundary is, and ensure any grassed areas are separated from the Bush Forever area and CCW buffer by a path or hard edge.	"Not relevant to the Development Application. Protection of Bush Forever is addressed by conditions of subdivision approval WAPC Ref 201377. Condition 13 “Measures being taken to ensure no vegetation within Bush Forever Site 350 and 354 is removed or disturbed during subdivisional works, other than as approved in an Environmental Management Plan, including any secondary impacts from works to provide service infrastructure and drainage to implement the approved plan of subdivision.”
It is noted page 5 indicates that clearing of Bush Forever area 354 is required to install the road required as part of the structure plan. Further commentary on this should be provided in the documentation. Such as, is this the road conditionally approved through subdivision 201377? Or another road which will require additional environmental and planning assessment and approvals?	"Not relevant to the Development Application as the construction of this road is not proposed by this application, only an interim connection to Skyline Boulevard and teh proposed shopping centre as shown on the DA plans. Protection of Bush Forever is addressed by conditions of subdivision approval WAPC Ref. 201377. Condition 9 of Subdivision Approval “Prior to commencement of subdivisional works an Environmental Management Plan for Bush Forever site 354 is to be prepared and approved to ensure the protection and management of the sites environmental assets with satisfactory

	arrangements being made for the implementation of the approved plan." Condition 13 "Measures being taken to ensure no vegetation within Bush Forever Site 350 and 354 is removed or disturbed during subdivisional works, other than as approved in an Environmental Management Plan, including any secondary impacts from works to provide service infrastructure and drainage to implement the approved plan of subdivision."""
DFES	
General Comment • DFES acknowledges that the site is currently within the broader Whitby Local Structure Plan (2012) and will accommodate supermarkets, a gym, a childcare centre, medical centre, swim facility and speciality tenancies. • The BMP includes the compliance statements for Bushfire Protection Criteria 8 (BPC 8): Vulnerable Class 9 buildings in Appendix C of the BMP rather than addressing them within the main body of the report. Section 1.2 of the BMP also refers to the assessment of BPC 8 as a 'secondary assessment', notwithstanding that BPC 8 should be the primary assessment criterion given there is vulnerable land use in the form of a childcare centre proposed.	The inclusion of the Bushfire Protection Criteria 8 (BPC 8) assessment in Appendix C was simply to structurally separate the vulnerable land use (Class 9b childcare centre) from the broader commercial development (BPC 7). This assessment maintains full technical and statutory compliance under SPP 3.7 (2024) and the Planning for Bushfire Guidelines (2024). To eliminate ambiguity, Section 1.2 of the BMP to be amended to replace "A secondary assessment" with "An assessment," to remove any ambiguity with assessment priority.
• Furthermore, Section 5.1.1 of the BMP provides a summary of compliance of the proposal against BPC 8 and states that Element 3: Vehicular Access is met by having two-way access and egress onto a single public road. This does not demonstrate how the proposal achieves public road access in two different directions to two different suitable destinations. • It is noted the BMP appears to rely on the public road network being achieved by the broader overall subdivision which the proposed district centre sits within. It is considered that the BMP lacks certainty on the secondary access route required for vulnerable class 9 building land uses. • DFES has reviewed the BMP, however cannot guarantee that the BMP is consistent with all other plans and information submitted as part of the proposal. • The decision maker should be satisfied that all submitted documents have consistent details. • Specific requirements of SPP 3.7 and the Guidelines are to be further addressed in the BMP as outlined in the below assessment Tables 1 and 2.	This is already in the BMP. Section 6, Table 7, Point 4 states: Confirmation of the establishment of a secondary vehicular access route extending northwards on Skyline Boulevard (in line with approved subdivision) to ensure multiple, multi-directional egress options are available for the facility prior to occupation. - Timing: Prior to occupation and ongoing.

Recommendation: Compliance with acceptable solutions not demonstrated – modifications required DFES advises that the BMP has not demonstrated that the proposed development complies with the following requirements of SPP 3.7 and the Guidelines: 1. Element 2: Siting and Design; and 2. Element 3: Vehicular Access.	

Additional DFES Comments

Table 1: Assessment – Policy Measure 7.1 ii. c. Compliant Preparation of a Bushfire Attack Level (BAL) Contour Map

Vegetation Classification or Exclusions	BMP Modification Required
Exclusion of Plots 5 and 7 – not demonstrated Evidence to support the exclusion of public open space (POS) as managed to low threat in accordance with AS 3959 is required. The area denoted as Plot 5 and excluded under AS 3959 section 2.2.3.2 clause (a) is part of a larger POS area which has been excluded as non-vegetated within Plot 7. The POS is identified in the Landscape Plans and appears to retain the existing trees as nature play and public open space area. The decision maker should be satisfied that the area subject to tree retention does not exceed 1 hectare. If the nature area does exceed 1 hectare it should either be classified or should be managed in accordance with the definition of low threat. It is generally accepted that the technical requirements of an Asset Protection Zone (APZ) meet the low threat exclusion requirements, however the number of trees in this area appears to be in excess of the maximum 15% canopy cover required to meet the APZ standard. If unsubstantiated, the vegetation should be classified as per AS 3959, or the resultant BAL ratings may be inaccurate.	**BAL Rating cannot be validated.** Insufficient information. The decision maker to be satisfied with the vegetation exclusions and vegetation management proposed. This is particularly relevant as the childcare centre is adjacent to the POS.

Applicant comment:
The vegetation classifications applied to the eastern POS accurately reflect the intended post-development scenario, informed by long-standing subdivision assumptions and the Landscape Concept Plan (Appendix E of the BMP). The POS design strategically integrates both managed low-threat areas and specific patches of retained native vegetation to balance retention with bushfire risk mitigation.

The retained woodland vegetation within the POS (assessed as Plot 5) is not proposed to be managed to an Asset Protection Zone (APZ) standard. However, the landscape design specifically restricts this unmanaged patch to less than 1 hectare in total area. Furthermore, this retained vegetation pocket is situated greater than 100 m from any other classifiable vegetation, with the nearest classifiable vegetation being the Scrub (Class D) located within the drainage reserve to the north. Consequently, this patch of retained vegetation satisfies the parameters of Exclusion Clause 2.2.3.2(b) of AS 3959.

The remainder of the POS area will be subject to ongoing management and maintenance. This area will comprise irrigated gardens, mown grasses maintained below 100 mm, and non-vegetated hardstand surfaces. Any mature trees retained within this actively managed portion will be pruned and maintained to ensure foliage cover does not exceed the 15% APZ threshold, ensuring the understorey cannot sustain a surface fire. This satisfies the low-threat requirements of Exclusion Clause 2.2.3.2(f) of AS 3959.

On this basis, the post-development exclusions applied to the eastern POS are substantiated and compliant with AS 3959 and the Planning for Bushfire Guidelines (2024). No further revision to the Method 1 BAL Assessment or resultant BAL ratings is required.

Table 2: Policy Measure 7.1 ii. e. Compliance with the Bushfire Protection Criteria 7: Development – Commercial and Industrial and Bushfire Protection Criteria 8: Development – Vulnerable Class 9 Buildings

Element	Assessment	Action

Siting and Design – Siting and Design and Asset Protection Zone (APZ)	**A2.1 and A2.2 (BPC 7 and 8) – not demonstrated** The BAL ratings cannot be validated for the reason(s) outlined in Table 1.	**BAL Rating cannot be validated.** Modification to the BMP is required to address the Assessment advice in Table 1.
Siting and Design – Clearing of native vegetation	**A2.3 (BPC 7 and 8) – not demonstrated** The exclusion of the public open space area to the east of the childcare centre cannot be validated. Significant clearing of Class A Forest vegetation may be required to achieve a compliant low threat status and may conflict with the Landscape Plans for the area.	**BAL Rating cannot be validated.** Modification to the BMP is required to address the Assessment advice in Table 1.
Vehicular Access – Access Routes and No-through Roads	**A3.2 and A3.3a (BPC 8) – not demonstrated** A secondary vehicular access option cannot be confirmed. The development report shows two no-through road extensions on the eastern and southern boundaries of the district centre. Skyline Boulevard and Goodwood Boulevard will both be extended to the north and west to service the district centre. However, the entire existing subdivision only has one point of access/egress to the south via Tinspar Avenue to Keirnan Street. The proposed district centre is already approximately 1 kilometre from an intersection where two-access is provided. This is well in excess of the allowed 200 metres. The proposed development does not include a secondary public access road. Furthermore, Table 7 in the BMP notes the implementation measures for the childcare centre which states that '*confirmation of the establishment of a secondary vehicular access route extending northwards on Skyline Boulevard (in line with approved subdivision) to ensure multiple, multi-directional egress options are available for the facility prior to occupation'*. The statement indicates that a secondary public road access route has not been confirmed as part of the current proposal. Should the decision maker consider it appropriate to approve the development and defer resolution of this matter to the occupancy permit stage, the decision maker should be satisfied that this matter will be complied with prior to occupation of the development, particularly the childcare centre.	**Compliance with Vehicular Access not demonstrated.** Modification to the BMP is required to address the Assessment advice.
Applicant comment: As per above. The BMP substantiates the application of exclusion clauses (b) and (f) of AS3959 for plots 5 and 7 within the POS area to the west. BAL ratings within the BMP reflect the Post-Development threat. Condition of approval to ensure completion of Skyline Boulevard prior to occupation.		
Table 3: Policy Measure 7.1 iv. and Section 9.4.2 of the Guidelines: DFES Role as Hazard Management Agency (HMA) DFES wishes to provide the below additional advice in its role and responsibilities of HMA for Fire in Western Australia.		
AS 3959 construction standards, including clause 3.2.3 adjacent structures		**Action**
Building Construction	It is acknowledged that the transition period for Class 9b primary and secondary schools and class 9b early	Comment only.

Standards	childhood centres (and any Class 10a building or deck immediately adjacent or connected to buildings of these types) to comply with the amended National Construction Code Specification 43 has been extended until 30 April 2028. However, DFES as the hazard Management Agency, is of the opinion that all Class 9 buildings should be afforded significant protection from the impacts of a bushfire due to being occupied by people who may need assistance, or be unable, to evacuate the building in the event of a bushfire. The changes include but are not limited to; minimum separation between buildings, and separation from allotment boundaries, carparking areas and hazards. It is suggested the decision maker consider applying the higher construction and design standards to the proposed development. Further information regarding the changes can be found here: Specification 43 Bushfire protection for certain Class 9 buildings | NCC.	
Bushfire Emergency Plan (BEP)		**Action**
Bushfire Emergency Plan (BEP)	The referral has not included a 'Bushfire Emergency Plan' for the purposes of addressing the policy requirements. Consideration should be given to the Bushfire Emergency Plan (BEP) Manual (as published by the Western Australian Planning Commission). This contains details of information that should be included in a BEP and will ensure the appropriate content is detailed when finalising the BEP to the satisfaction of the Shire.	Comment only.
DFES Other Technical Advice		**Action**
DFES Built Environment Branch	As the proposed development includes buildings classified as Class 9b, plans and specifications are to be submitted to the DFES Built Environment Branch for assessment, in accordance with Regulation 18B of the Building Regulations 2012 (as amended). Additionally, given that the total floor area of the proposed building appears to exceed 500m², fire hydrant coverage will be required. If compliant hydrant coverage cannot be achieved from street hydrants, an on-site hydrant system that meets the FES Commissioner's Operational Requirements and AS 2419 will be necessary.	To be addressed at the building permit application stage.
DFES Land Use Planning	It is the responsibility of the proponent to ensure the proposal complies with relevant planning and building requirements. This advice does not exempt the applicant/proponent from obtaining approvals that apply to the proposal including planning, building, environmental health or any other approvals required by a relevant authority under written laws.	Comment only.

Full Planning Assessment

Deemed Provisions Clause 67 Assessment

a) The aims and provisions of this Scheme and any other local planning scheme operating within the area	**YES** ☒	**NO** ☐	**N/A** ☐

Comment:

The requirements of LPS3 pertaining to land use, the objectives of the zone and the Clause 4.2 development standards have been considered in full within the RAR.

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* or any other proposed planning instrument that the local government is seriously considering adopting of approving	**YES** ☐	**NO** ☐	**N/A** ☐

Comment:

Consistent with planning framework – refer to Planning Assessment section of RAR.

c) any approved State planning policy	**YES** ☐	**NO** ☐	**N/A** ☐

Comment:

State Planning Policy 3.7 – Planning in Bushfire Prone Areas (SPP3.7) – The proposal suitably addresses SPP3.7 and bushfire risk, as seen in the relevant section of the RAR.

State Planning Policy 4.2 – Activity Centres (SPP4.2)

SPP4.2 sets out broad planning requirements for the development of new activity centres. SPP4.2 is primarily concerned with the distribution, function, broad land use and urban design criteria of activity centres, together with coordinating their land use and infrastructure planning. As per the corresponding section of the RAR, the proposal is mostly consistent with the intent of SPP4.2. In addition, the considerations of Clause 7.1 of SPP4.2 have been addressed in full below:

Role and Characteristic	Officer Comment
Main role and typical attributes District centres have a greater focus on servicing the daily and weekly needs of residents. Their relatively smaller scale and catchment enables them to have a greater local community focus and provide services, facilities and job opportunities that reflect the needs of	Mainline supermarkets and a variety of services are to be provided at a local scale.

their catchments. Many district centres also have a specialisation such as tourism or entertainment which serves a wider catchment. District centres with a rail station should be a focus for medium and high-density housing and employment growth.	
Future indicative service population (trade) area 20,000 – 50,000 persons	The Shire's Local Planning Strategy (LPS) identifies a likely population of 50,000 residents in the Mundijong Whitby area by 2050. The Whitby Activity Centre Plan notes a full population build out of 60,000 residents. While this exceeds the service population area for a district level activity centre, additional services are to be provided for the Mundijong Whitby catchment area in the Mundijong District Activity Centre (on Paterson Street).
Typical transport connectivity and accessibility Focal point for rail and/or bus network, ideally with high frequency bus links.	The proposal offers a suitable pedestrian connection to the possible future Whitby train station and associated extension of the Armadale line.
Desired land uses All local and neighbourhood centres land uses plus district centre land uses: Bulky goods showroom, nightclub, cinema/theatre, hotel, motel. District centres with access to a rail station may be suitable for office – large.	The proposal does not provide any of the specific district centre land uses mentioned in this clause. However, the proposed land uses in this application are consistent with the desired land uses for local and neighbourhood centres, which are also considered desirable in district centre areas.
Typical urban form Characterised by mid-rise buildings and contiguous, pedestrian friendly street frontages and public spaces that include some activation. New development should create an attractive and coherent street frontage that has a pedestrian scale and provides passive surveillance of the street.	The proposal offers mid-rise buildings towards the main street especially, with active frontages and design features on facades. The proposal is consistent with the urban form aims of SPP4.2.
Average residential density (dwellings per gross Urban Zone hectare within the walkable catchment) 25+ (400m) 35+ (800-1200m) where there is an existing or proposed train station within 400m of the centre	The subject development proposal does not incorporate residential development. This is intended to be facilitated to the north of the subject site in a future development proposal.
Preferred residential dwelling types Medium rise apartments / multiple dwellings Town houses / grouped dwellings – 2+ storeys	

State Planning Policy 5.4 - Road and Rail Noise (SPP5.4) – The sensitive premises within the proposed development are not located within the buffer distance from the freight rail, consistent with SPP5.4.

State Planning Policy 7.2 – Precinct Design (SPP7.2)

The purposes of SPP7.2 includes providing guidance on the design, planning, assessment and implementation of development in areas identified as precincts. Clause 7.2 of SPP7.2 states that, "*where an endorsed precinct structure plan… exists, subdivision and development should be consistent with the applicable plan*". Therefore, the development has been considered against the requirements of Whitby Activity Centre Plan as viewed in the RAR.

The SPP7.2 Guidelines incorporate the 10 key design principles of SPP7.0, which relate to good design of the built environment. As addressed in the RAR, the proposal has suitably addressed the design principles of SPP7.0 and as detail in the built form section, offers a suitably built form for a district centre development.

d) any environmental protection policy approved under the *Environmental Protection Act 1986* section 31(d)	**YES** ☐	**NO** ☐	**N/A** ☒
Comment:			

e) any policy of the Commission	**YES** ☐	**NO** ☐	**N/A** ☒
Comment:			

f) any policy of the State	**YES** ☐	**NO** ☐	**N/A** ☒
Comment:			

g) any local planning policy for the Scheme area	**YES** ☒	**NO** ☐	**N/A** ☐

Comment:

Local Planning Policy 1.6 - Public Art for Major Developments (LPP1.6) - If supported a condition would require that a public art contribution is paid.

Local Planning Policy 2.4 - Water Sensitive Design (LPP2.4) – The requirements of LPP2.4 are required to be addressed in a recommended condition of determination that requires a detailed Stormwater Management Plan to be prepared by the Applicant.

Local Planning Policy 2.8 - Public Open Space Development Standards (LPP2.8) – The requirements of LPP2.8 are to be addressed through a final landscaping plan that aims to ensure the suitable delivery of the Public Open Space to the east of the District Centre.

Local Planning Policy 2.9 - Environmentally Sustainable Design Considerations for Retail and Commercial Development

A Sustainability Report has been prepared by Full Circle Design Services to demonstrate how the development will deliver a more sustainable centre. In their planning report, the Applicant summarises the measures proposed to address sustainability principles as follows:

- Climate-responsive urban design through extensive landscaping, shade structures, continuous shaded pedestrian connections, high-reflectance roofing materials, passive solar design principles and measures to reduce urban heat island effects.
- Energy efficiency initiatives, including passive building design, efficient building services, LED lighting, smart building management systems and consideration of rooftop solar photovoltaic infrastructure with future battery storage capability.
- Water Sensitive Urban Design (WSUD) measures such as biofiltration swales, rain gardens, on-site stormwater detention, permeable paving, water-efficient fixtures, drought-tolerant landscaping and irrigation systems designed to minimise potable water demand.
- Sustainable transport initiatives including high-quality pedestrian connections, cycling infrastructure, end-of-trip facilities, provision for electric vehicle charging infrastructure and safeguarding for future public transport integration.
- Landscape and biodiversity outcomes through increased tree canopy, predominantly native and climate-adapted planting, habitat creation opportunities and landscaped public spaces that improve amenity and thermal comfort.
- Waste and resource efficiency measures, including construction waste minimisation, dedicated recycling facilities, adaptable tenancy design and consideration of recycled and locally sourced materials where feasible.
- Healthy building and community outcomes through indoor environmental quality measures, activation of public spaces, community facilities, outdoor recreation opportunities and improved walkability.

The development generally meets the objectives of LPP2.9, as well as the policy measures where possible. Energy efficiency requirements are to be addressed at the building permit stage.

Local Planning Policy 4.9 - Fast Food Premises (LPP4.9) – A condition of the determination requires the Applicant to provide updated plans of the Fast Food Outlet tenancies, for review and acceptance by the Shire.

Local Planning Policy 4.11 - Advertising Policy (LPP4.11) – Refer to the signage section of the RAR. A condition is required to ensure signage is managed through Signage Strategies.

Local Planning Policy 4.15 - Bicycle Facilities Policy (LPP4.15) – Additional bicycle parking facilities are to be provided through a condition of determination.

Local Planning Policy 4.16 - Tree Retention and Planting (LPP4.16) – A condition of determination seeks to ensure that a tree survey report is provided for the Public Open Space, which will allow the Shire to ensure as many trees are retained as possible.

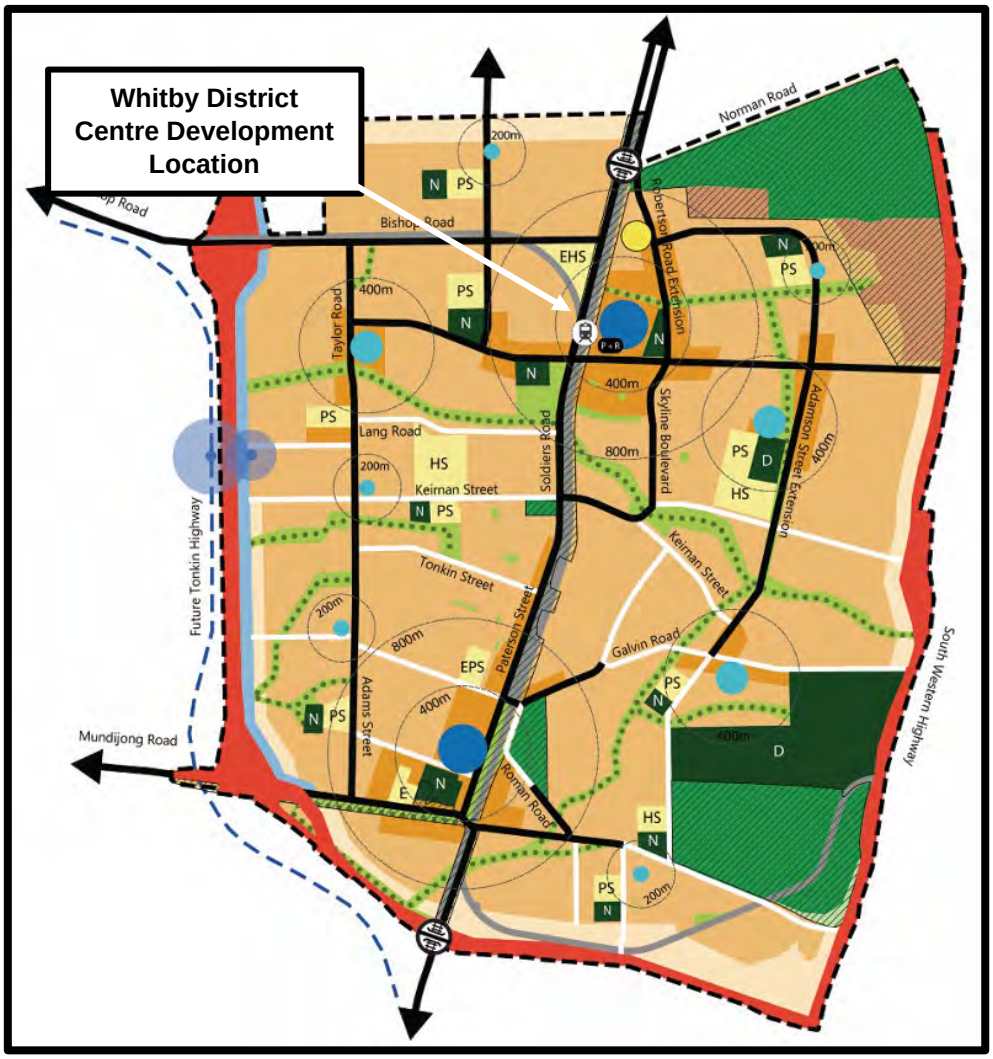
Local Planning Policy 4.24 - Child Minding Centres (LPP4.24) – The Acceptable Development criteria of LPP4.24 are generally satisfied by the development. The hours of operation in accordance with the LPP4.24 and the **Local Planning Policy 24 - Designing out Crime (LPP24)** – The principles of Crime Prevention Through Environmental Design have been considered throughout the Built Form section of the RAR.

h) any structure plan, activity centre plan or local development plan that relates to the development	**YES** ☒	**NO** ☐	**N/A** ☐

Comment:

Mundijong District Structure Plan (DSP)

The DSP identifies two district level activity centres within the Mundijong and Whitby area. One of these is the subject site, which contains the Whitby District Centre, shown following:



The DSP provides high level details for this site including that it is "*the primary location for retail activity, commercial, employment, and medium high density housing.*" The DSP identifies the need for an Activity Centre Plan to be prepared to address key issues such as

land use, cohesion, movement, access and urban form. This development seeks to deliver the District Centre envisaged, consistent with the aims and intent of the DSP. **Whitby Activity Centre Plan (ACP)** – The requirements of the Whitby ACP have been addressed in the corresponding section of the RAR.

i) any report of the review of the local planning scheme that has been published under the P*lanning and Development (Local Planning Schemes) Regulations 2015*	**YES** ☐	**NO** ☐	**N/A** ☒
Comment:			

j) in the case of land reserved under this Scheme, the objectives for the reserve and the additional and permitted uses identified in this Scheme for the reserve	**YES** ☐	**NO** ☐	**N/A** ☒
Comment:			

k) the built heritage conservation of any place that is of cultural significance	**YES** ☐	**NO** ☐	**N/A** ☒
Comment:			

l) the effect of the proposal on the cultural heritage significance of the area in which the development is located	**YES** ☐	**NO** ☐	**N/A** ☒
Comment:			

m) the compatibility of the development with its setting including the relationship of the development to development on adjoining land or on other land in the locality including, but not limited to, the likely effect of the height, bulk, scale, orientation and appearance of the development	**YES** ☒	**NO** ☐	**N/A** ☐
Comment: The development generally provides a suitable built form as expected in a district centre development. This is discussed in full within the built form section of the RAR and Officers			

have recommended several conditions to address certain built form aspects of the development.

n) the amenity of the locality including the following –	YES	NO	N/A
I. Environmental impacts of the development II. The character of the locality III. Social impacts of the development	☒	☐	☐
Comment: The key amenity impact of this proposal is noise. Full consideration has been undertaken in the Noise section of the report. Further consideration from the applicant in an amended environmental noise assessment and a noise management plan is required to confirm that the requirements of the Noise Regulations can be addressed by the development.			

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	YES	NO	N/A
	☐	☐	☒
Comment:			

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	YES	NO	N/A
	☒	☐	☐
Comment: A landscape concept plan was provided as part of the application. A full detailed Landscaping Plan is recommended as a condition of determination. This is required to ensure the suitable delivery of landscaping throughout the Public Open Space and public realm of the district centre.			

q) the suitability of the land for the development taking into account the possible risk of flooding, tidal inundation, subsidence, landslip, bushfire, soil erosion, land degradation or any other risk	YES	NO	N/A
	☒	☐	☐
Comment: The proposal is consistent with SPP3.7 – Planning in Bushfire Prone Areas – refer to Planning Assessment section of RAR.			

r) the suitability of the land for the development taking into account the possible risk to human health or safety	**YES** ☐	**NO** ☐	**N/A** ☒
Comment:			

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	**YES** ☒	**NO** ☐	**N/A** ☐
Comment: A Traffic Impact Assessment was submitted with the application. This reviews the safety of all access and egress points throughout the development. Refer to the Traffic section of the RAR for full consideration.			

t) the amount of traffic likely to be generated by the development, particularly in relation to the capacity off the road system in the locality and the probable effect on traffic flow and safety	**YES** ☐	**NO** ☐	**N/A** ☐
Comment: The TIA identifies that the local road network is set to undertake several key road and intersection upgrades in the context of this site. The TIA considers that the road network is capable of facilitating the traffic generated by the proposed development.			

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	**YES** ☒	**NO** ☐	**N/A** ☐
Comment: The Public Transport Authority has provided comments in relation to the provision of bus stops throughout the district centre. Final design and acceptance will be subject to a condition on the advice of the PTA. Waste management has been considered in the corresponding section of the RAR.			

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	**YES** ☒	**NO** ☐	**N/A** ☐
Comment: The proposal would provide additional retail opportunities for the local community.			

w) the history of the site where the development is to be located	**YES** ☐	**NO** ☐	**N/A** ☒
Comment:			

x) the impact of the development on the community as a whole notwithstanding the impact of the development on particular individuals	**YES** ☒	**NO** ☐	**N/A** ☐
Comment: The proposal benefits the community broadly, providing retail opportunities to support the growing Mundijong and Whitby suburbs, consistent with the intent of the strategic planning framework for the area.			

y) any submissions received on the application	**YES** ☒	**NO** ☐	**N/A** ☐
Comment: The submissions have been addressed as part of the report. A summary of the submissions also forms Attachment 3.			

Za) the comments or submissions received from any authority consulted under clause 66	**YES** ☒	**NO** ☐	**N/A** ☐
Comment: State agency comments can be viewed in full within Attachment 4 to this RAR. The comments have bee considered in full within the Referrals section of the RAR.			

Zb) any other planning consideration the local government considers appropriate	**YES** ☐	**NO** ☐	**N/A** ☒
Comment:			