



Metro Outer Joint Development Assessment Panel Agenda

Meeting Date and Time: Monday, 10 July 2023; 10.00am
Meeting Number: MOJDAP/257
Meeting Venue: Electronic Means

To connect to the meeting via your computer -
<https://us06web.zoom.us/j/84760114284>

To connect to the meeting via teleconference dial the following phone number -
+61 8 7150 1149 Australia
Insert Meeting ID followed by the hash (#) key when prompted - **847 6011 4284**

This DAP meeting will be conducted by electronic means (Zoom) open to the public rather than requiring attendance in person.

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Attendance

DAP Members

Karen Hyde (A/Presiding Member)
Lindsay Baxter (A/Deputy Presiding Member)
John Syme (A/Third Specialist Member)

~~Item 8.1~~

~~Cr Michelle Rich (Local Government Member, Shire of Serpentine Jarrahdale)~~
~~Cr Lauren Strange (Local Government Member, Shire of Serpentine Jarrahdale)~~

Item 8.2

Cr Lorna Buchan (Local Government Member, City of Rockingham)
Cr Mark Jones (Local Government Member, City of Rockingham)

Officers in attendance

~~Item 8.1~~

~~David Quelch (Shire of Serpentine Jarrahdale)~~

Item 8.2

Mike Ross (City of Rockingham)
Danny Sriono (City of Rockingham)
Sally Birkhead (City of Rockingham)

Minute Secretary

Ashlee Kelly (DAP Secretariat)

Applicants and Submitters

~~Item 8.1~~

~~Alessandro Stagno (Apex Planning)~~

Item 8.2

Alessandro Stagno (Apex Planning)
Lisa Azhar (Hames Sharley)
Vladimir Baltic (Transcore)
John Hurley (EAQ Consulting)
Nikki Lee

Members of the Public / Media

Nil

1. Opening of Meeting, Welcome and Acknowledgement

The A/Presiding Member declares the meeting open and acknowledges the traditional owners and pay respects to Elders past and present of the land on which the meeting is being held.

This meeting is being conducted by electronic means (Zoom) open to the public. Members are reminded to announce their name and title prior to speaking.



2. Apologies

Gene Koltasz (Presiding Member)
Jason Hick (Third Specialist Member)

3. Members on Leave of Absence

DAP Member, Gene Koltasz has been granted leave of absence by the Director General for the period of 1 July 2023 to 15 July 2023 inclusive.

DAP Member, Jason Hick has been granted leave of absence by the Director General for the period of 3 July 2023 to 19 July 2023 inclusive.

4. Noting of Minutes

Signed minutes of previous meetings are available on the [DAP website](#).

5. Declarations of Due Consideration

Any member who is not familiar with the substance of any report or other information provided for consideration at the DAP meeting must declare that fact before the meeting considers the matter.

6. Disclosure of Interests

Member	Item	Nature of Interest
Cr Mark Jones	8.2	Impartiality Interest – Cr Jones participated in a prior Council Meeting.
Cr Lorna Buchan	8.2	Impartiality Interest – Cr Buchan participated in a prior Council Meeting.

7. Deputations and Presentations

- 7.1 Nikki Lee presenting in support of the recommendation for the application at Item 8.2. The presentation will address a summary of the facts presented to date in relation to benzene, new data and other relevant items.
- 7.2 Lisa Azhar (Hames Sharley) presenting against the recommendation for the application at Item 8.1. The presentation will address the reasons why this application should be approved.
- 7.3 Vladimir Baltic (Transcore) presenting against the recommendation for the application at Item 8.1. The presentation will address the reasons why this application should be approved.
- 7.4 John Hurley (EAQ Consulting) presenting against the recommendation for the application at Item 8.1. The presentation will address the reasons why this application should be approved.
- 7.5 Alessandro Stagno (Apex Planning) presenting against the recommendation for the application at Item 8.1. The presentation will address the reasons why this application should be approved.



The City of Rockingham may be provided with the opportunity to respond to questions of the panel, as invited by the A/Presiding Member.

8. Form 1 – Responsible Authority Reports – DAP Applications

8.1 ~~Lot 57 Briggs Road, Byford~~

Development Description: ~~Proposed Child-Minding Centre~~
Applicant: ~~Apex Planning~~
Owner: ~~DRB Developments~~
Responsible Authority: ~~Shire of Serpentine Jarrahdale~~
DAP File No: ~~DAP/23/02453*~~

****This application has been postponed from meeting MOJDAP/191, 10 July 2023 and rescheduled to 9.30am, 13 July 2023 via Zoom.***

8.2 Lot 622 (No.2) Aurea Boulevard, Golden Bay

Development Description: Proposed mixed commercial development (Golden Bay Neighbourhood Centre)
Applicant: Apex Planning
Owner: Golden Bay Village Pty Ltd
Responsible Authority: City of Rockingham
DAP File No: DAP/23/02447

9. Form 2 – Responsible Authority Reports – DAP Amendment or Cancellation of Approval

Nil

10. State Administrative Tribunal Applications and Supreme Court Appeals

File No. & SAT DR No.	LG Name	Property Location	Application Description	Date Lodged
DAP/22/02346 DR47/2023	City of Joondalup	8 Elcar Lane, Joondalup	Two Storey Mixed Used Development	17/03/2022
DAP/18/01543 DR 75/2022	City of Joondalup	Lot 649 (98) O'Mara Boulevard, Iluka	Commercial development	02/05/2022
DAP/22/02394 DR69/2023	City of Mandurah	Lot 9124 Cobaki Brace, Lakelands	Proposed Bulky Goods Showroom	28/04/2023
DAP/22/02379 DR98/2023	City of Swan	Lot 31 (No.1487) Neaves Road, Bullsbrook	Proposed roadhouse	16/06/2023



11. General Business

In accordance with Section 7.3 of the DAP Standing Orders 2020 only the A/Presiding Member may publicly comment on the operations or determinations of a DAP and other DAP members should not be approached to make comment.

12. Meeting Closure



Presentation Request Form

[Regulation 40\(3\)](#) and [DAP Standing Orders 2020](#) cl. 3.5

Must be submitted at least 72 hours (3 ordinary days) before the meeting

Presentation Request Guidelines

Persons interested in presenting to a DAP must first consider whether their concern has been adequately addressed in the responsible authority report or other submissions. Your request will be determined by the Presiding Member based on individual merit and likely contribution to assist the DAP's consideration and determination of the application.

Presentations are not to exceed **5 minutes**. It is important to note that the presentation content will be **published on the DAP website** as part of the meeting agenda.

Please complete a separate form for each presenter and submit to daps@dplh.wa.gov.au

Presenter Details

Name	Nikki Lee
Company (if applicable)	Click or tap here to enter text.
Please identify if you have any special requirements:	YES <input checked="" type="checkbox"/> NO <input checked="" type="checkbox"/> If yes, please state any accessibility or special requirements: Click or tap here to enter text.

Meeting Details

DAP Name	Metro Outer
Meeting Date	10 th July 2023
DAP Application Number	DAP/MOJDAP/
Property Location	Lot 266 Aurea Boulevard, Golden Bay
Agenda Item Number	Click or tap here to enter text.

Presentation Details

I have read the contents of the report contained in the Agenda and note that my presentation content will be published as part of the Agenda:	YES <input checked="" type="checkbox"/>
Is the presentation in support of or against the <u>report recommendation</u> ? (<i>contained within the Agenda</i>)	SUPPORT <input checked="" type="checkbox"/> AGAINST <input type="checkbox"/>
Is the presentation in support of or against the <u>proposed development</u> ?	SUPPORT <input type="checkbox"/> AGAINST <input checked="" type="checkbox"/>
Will the presentation require power-point facilities?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>



Presentation Content*

These details may be circulated to the local government and applicant if deemed necessary by the Presiding Member. Handouts or power points will not be accepted on the day.

Brief sentence summary for inclusion on the Agenda	<i>The presentation will address:</i> A summary of the facts presented to date in relation to benzene, new data and other relevant items.
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In accordance with Clause 3.5.2 of the [DAP Standing Orders](#), your presentation request must also be accompanied with a written document detailing the content of your presentation.

Please attach detailed content of presentation or provide below:



Sadly, this is not my community's first rodeo when it comes to a development of a petrol station. I hold great concern with the prospect of an additional petrol station being built across the road from children's play and living spaces as this will result in a long term health crisis to brew within Golden Bay.

Child care centres and residential areas are considered sensitive land use areas and the EPA guidelines state that petrol stations **should not be built within 200m of sensitive land use areas**. The proponents of the 7/11 development in Golden Bay argued at their first JDAP meeting that the EPA guidelines, are just that, a guide and not mandatory, thereby JDAP is obliged to approve the application. Sadly, that approval will be at the cost of the long term health outcomes of the people and children who live work and play within the 200m buffer zone.

The Department of Health was contacted for comment on this proposal and their stance at that time was that a petrol station **should not be built** in this location. BTEX (Benzene, toluene, ethylbenzene, and xylene) exposure is known to cause significant lifelong health defects for people, especially young children. Most of my research into peer reviewed academic journals has centred around Benzene and in Australia, it is a known human carcinogen rated at a level of A1, the highest rating possible. The World Health Organisation states that '**there is no safe level of Benzene**'. Benzene or BTEX combined is known to cause in the short or long term;

- leukaemia
- lymphoma
- bone marrow depletion
- central nervous system depression
- menstrual problems
- long term fertility issues for men and women
- numbness in the distal extremities
- migraines
- respiratory problems

Surprisingly, to everyone in the room at the JDAP meeting on the 7th of May 2021, the first proposal was rejected with a vote of 3:2. The proponents then appealed that decision with SAT and at mediation, an air quality report was requested. The proponents then submitted an updated proposal which went out for public comment with triple the number of people objecting to its development. There is still strong consensus within the community that an additional petrol station **should not be built in this area**. In fact, nearly double as many people objected this time around as did the last time.

The area that is proposed for this new petrol station is across the road from two child care centres, within 250m of the local primary school and sporting oval, 2 family daycare services and a high number of cottage block homes. The children and residents who live, work, attend care services or play within this buffer zone have the potential to be exposed to increased levels of BTEX for 24 hours per day, 7 days per week. Sadly, our lifestyles today dictate that the children who live and play in this area are already at risk of developing a chronic illness. It is outrageous that their odds of developing a chronic illness within their lifetime have already increased to be 4 times more likely with the current petrol station. How much will those odds increase with the development of yet another.



Once upon a time, smoking didn't kill, thalidomide treated morning sickness and asbestos was in every home. When we know better, we do better.

In December 2018 a petrol station was approved to be developed across the road from a child care centre on Council Ave Rockingham. There was no consultation from the Department of Health because no resident highlighted the potential risk to children. That service has since closed. It is unfathomable that a risk such as this had to come from a resident (myself) for anyone to investigate further. Even the chairperson at the JDAP meeting on the 7th of May 2021 found it unfathomable and incredulous that the Department of Health and the Planning bodies were not working in partnership to enforce EPA guidelines as he had never come across this particular issue in all his times residing on a JDAP panel. In their response, The Department of Health reiterated what I have been quoting since early 2021 'There is NO SAFE LEVEL of benzene'.

We entered uncharted waters with the proposal of the existing petrol station, I know of only one other time JDAP has refused an application for a petrol station in WA based on health grounds. This was the site of 72 Walter Road East, Eden Hill. It would appear that developers in that instance, chose not to appeal through SAT. The approval to build the existing petrol station in Golden Bay was unprecedented with the developers having mediated for Vapour Recovery systems to be installed, a first of its kind in WA. Sadly for our community, the second proposal was approved by JDAP at the subsequent meeting.

I am here today to highlight the health risks of a second petrol station built in my community. My community rejects this proposal, the City of Rockingham rejects this proposal, and based off the health risks being reason enough under state planning laws, I implore you to reject this proposal today.

In the book 'Silent Spring' biologist, Rachel Carson writes – pesticides have been recovered from most of the major river systems, and ground water, in fish in remote mountain lakes, in earthworms burrowing in soils, in the eggs of birds and in humans. They occur within breast milk and in the tissues of the unborn child. I can assert, from the research I have done, the same can be said of Benzene.

Carson's research, while centred around pesticides is no less true today in relation to benzene as it was in the 1950's in relation to arsenic pesticide. In Australia, the arsenic pesticides that Rachel reports on are no longer in use due to its toxic effects. Our reliance on the oil industry means that me or my children will unlikely see a world where benzene use is eradicated.

To quote Rachel Carson 'The public must decide whether it wishes to continue on the present road and it can do so only when in full possession of the facts.'

Fact – Benzene is a known human carcinogen

Fact – Benzene causes a myriad of health problems, including headaches, nausea, numbness in the distal extremities, bone marrow depletion, central nervous system depression, miscarriage and reproductive health issues at increased and longer-term exposure.



Fact – Benzene at any level poses a significant health risk.

Fact –the development of a petrol station within the Golden Bay Village will NEVER be able to maintain EPA separation distances to sensitive land use areas.

Fact - In November 2018, Metro Central JDAP unanimously refused a development of a petrol station in Eden Hill in part due to the health concerns and separation distances. There were no appeals.

Fact - In May 2020, Metro Inner South JDAP refused the development of a petrol station in part due to the health concerns and separation distances. (voting 3:2).

Fact - In August 2020, South Metro JDAP refused the development of a childcare centre on a main road. JDAP Specialist member John Syme moved for an amended motion that included pollution concerns for the children enrolled at the childcare centre. This motion carried unanimously and the panel voted to reject the proposal. The City of Melville then went ahead with planning scheme changes to formally deem childcare centres an 'unpermitted use' on sections of Leach and Canning Highways due to pollution concerns.

Fact – this Panel today could make history and set a future precedent that Petrol Stations not be built in close proximity to child care centres or sensitive land use areas.

In Golden Bay, there are three main commercial plots of land. One that has been developed with a petrol station which the community fought to be rejected. This property which the community is fighting for the proposal to be rejected and a third lot currently up for sale. Should this petrol station be approved, what of the third and final commercial lot of Golden Bay? Should I expect to see you again in another three years reiterating a similar rhetoric a third petrol station to not be build in our community.

To the developers, I implore you to withdraw your proposal to build a petrol station in my community. I challenge you to propose a development which will serve my community. Be my guest, come visit my neighbourhood and talk to the residents. Survey the locals and they will give you a plethora of decent ideas that they are willing to support long term. A second service station, more fast food and yet another bottle shop food does not serve my community nor its future generations.

Rachel Carson wrote that we are in an era dominated by industry, in which the right to make a dollar at whatever cost is seldom challenged. That which was true for the 1950's I am hoping today, 70 years later, that her statement is no longer applicable and a new precedent will be set. Reject this proposal and protect the children of Golden Bay from being exposed to increased levels of dangerous chemicals that they can never truly escape.



Presentation Request Form

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Presenter Details

Name	Lisa Azhar
Company (if applicable)	Hames Sharley
Please identify if you have any special requirements:	YES <input type="checkbox"/> NO <input type="checkbox"/> If yes, please state any accessibility or special requirements: Click or tap here to enter text.

Meeting Details

DAP Name	Metro Outer JDAP
Meeting Date	10 th July 2023
DAP Application Number	DAP/23/02447
Property Location	Lot 622 (2) Aurea Boulevard, Golden Bay
Agenda Item Number	8.2

Presentation Details

I have read the contents of the report contained in the Agenda and note that my presentation content will be published as part of the Agenda:	YES <input checked="" type="checkbox"/>
Is the presentation in support of or against the <u>report recommendation</u> ? (<i>contained within the Agenda</i>)	SUPPORT <input type="checkbox"/> AGAINST <input checked="" type="checkbox"/>
Is the presentation in support of or against the <u>proposed development</u> ?	SUPPORT <input checked="" type="checkbox"/> AGAINST <input type="checkbox"/>
Will the presentation require power-point facilities?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> If yes, please attach



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Brief sentence summary for inclusion on the Agenda	<i>The presentation will address:</i> The reasons why this application should be approved.
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Please attach detailed content of presentation or provide below:

Refer to attached submission and presentation slides.

GOLDEN BAY NEIGHBOURHOOD CENTRE

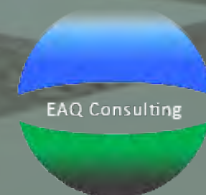
METRO OUTER JOINT DAP PRESENTATION

ISSUED: 06/07/2023
REVISION C



PREPARED BY
**Hames
Sharley**

apex
planning



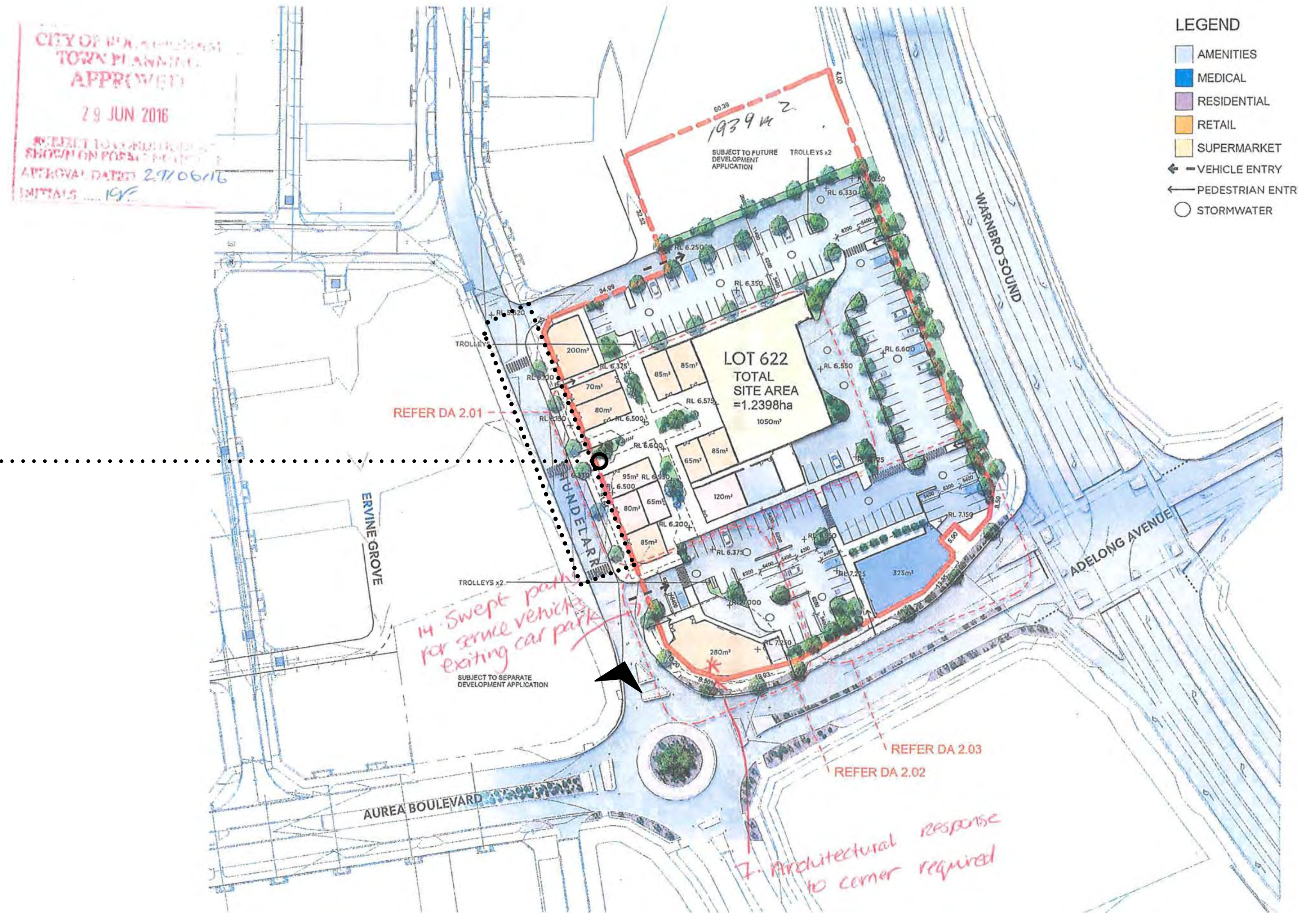
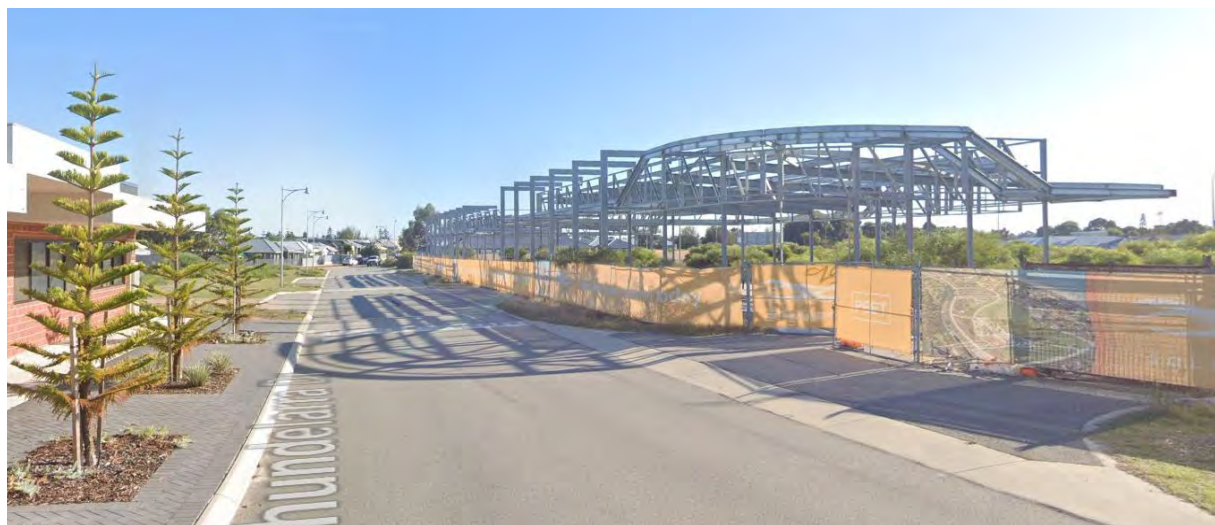
FOR



previous approval

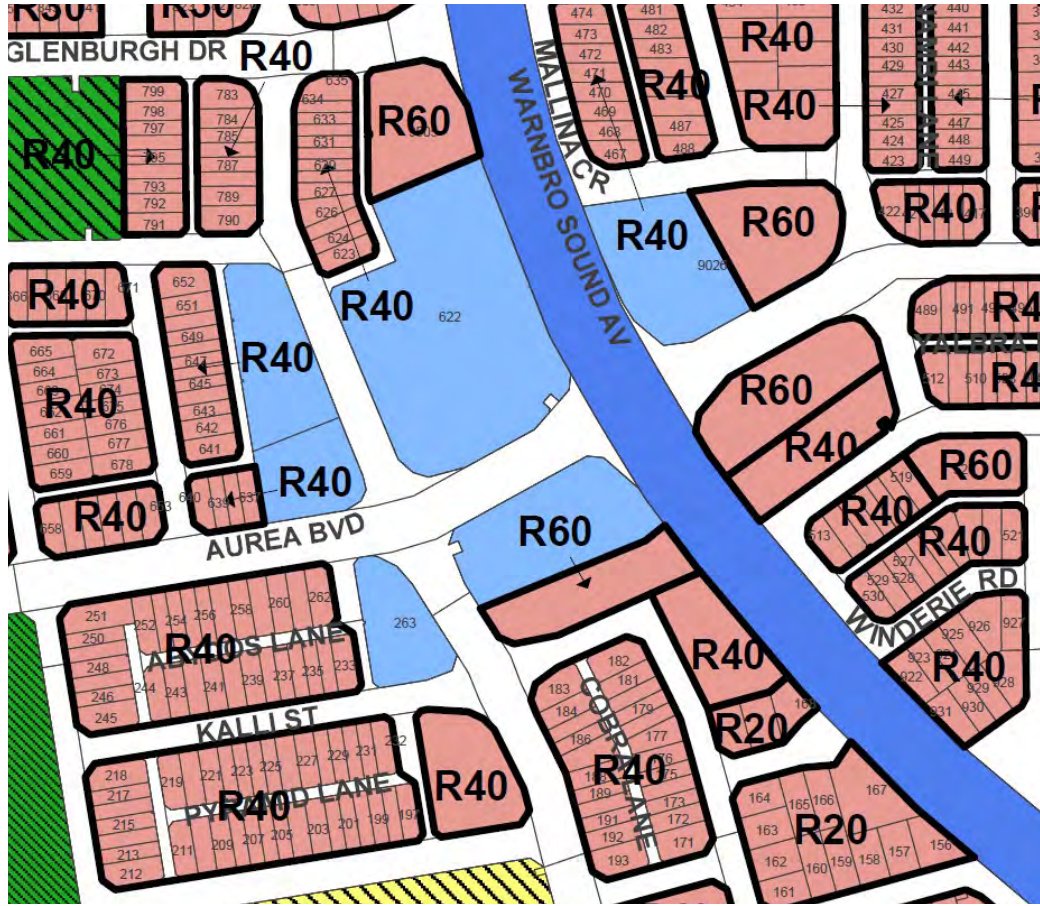
- + The previous development was approved June 2016
- + Construction commenced late 2017 but was never completed

Existing site conditions



SITE AND CONTEXT

local context



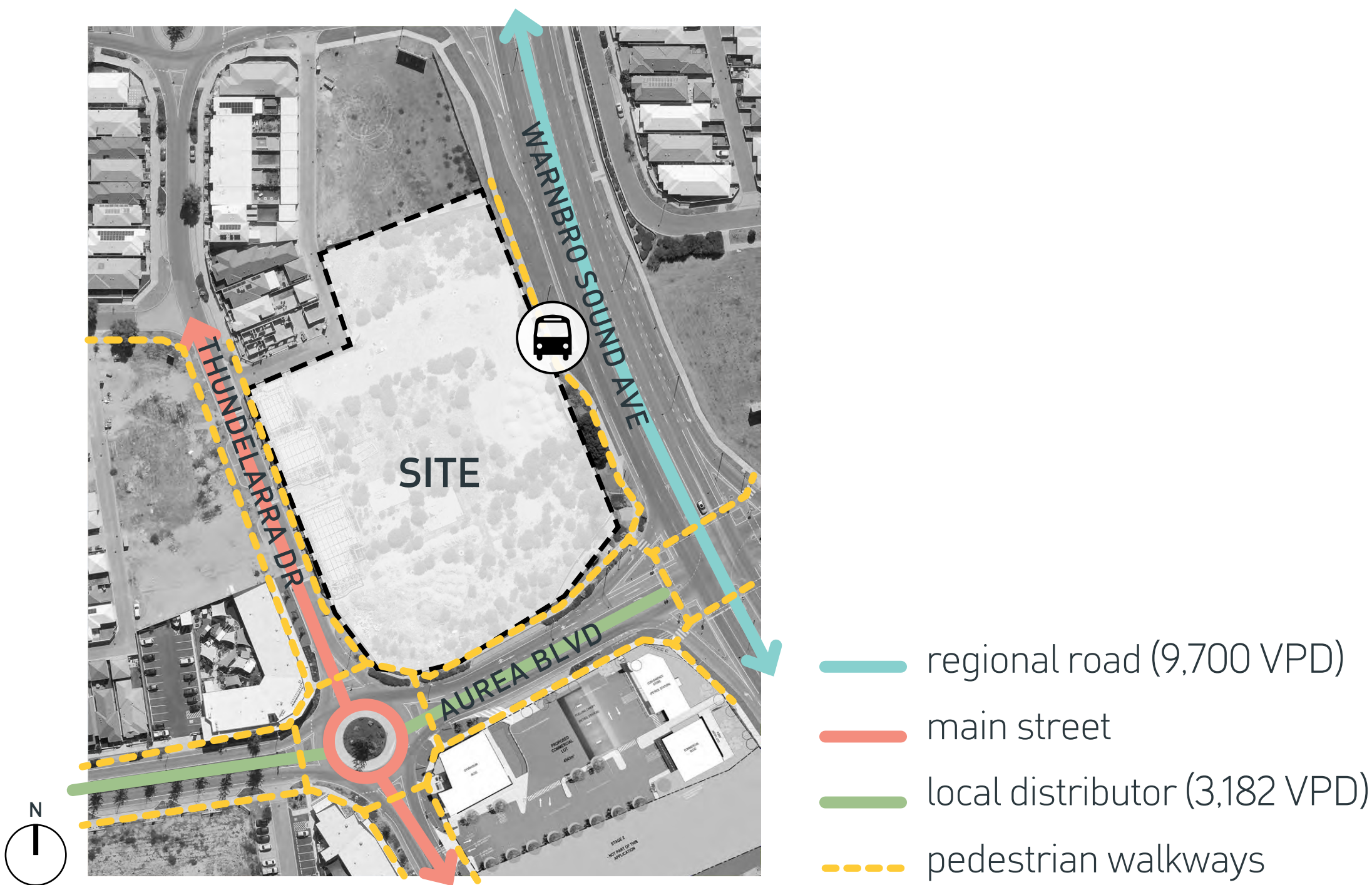
town planning scheme no 2 zoning map

- RESIDENTIAL
- COMMERCIAL
- residential
- gym
- service station
- commercial
- early learning centre

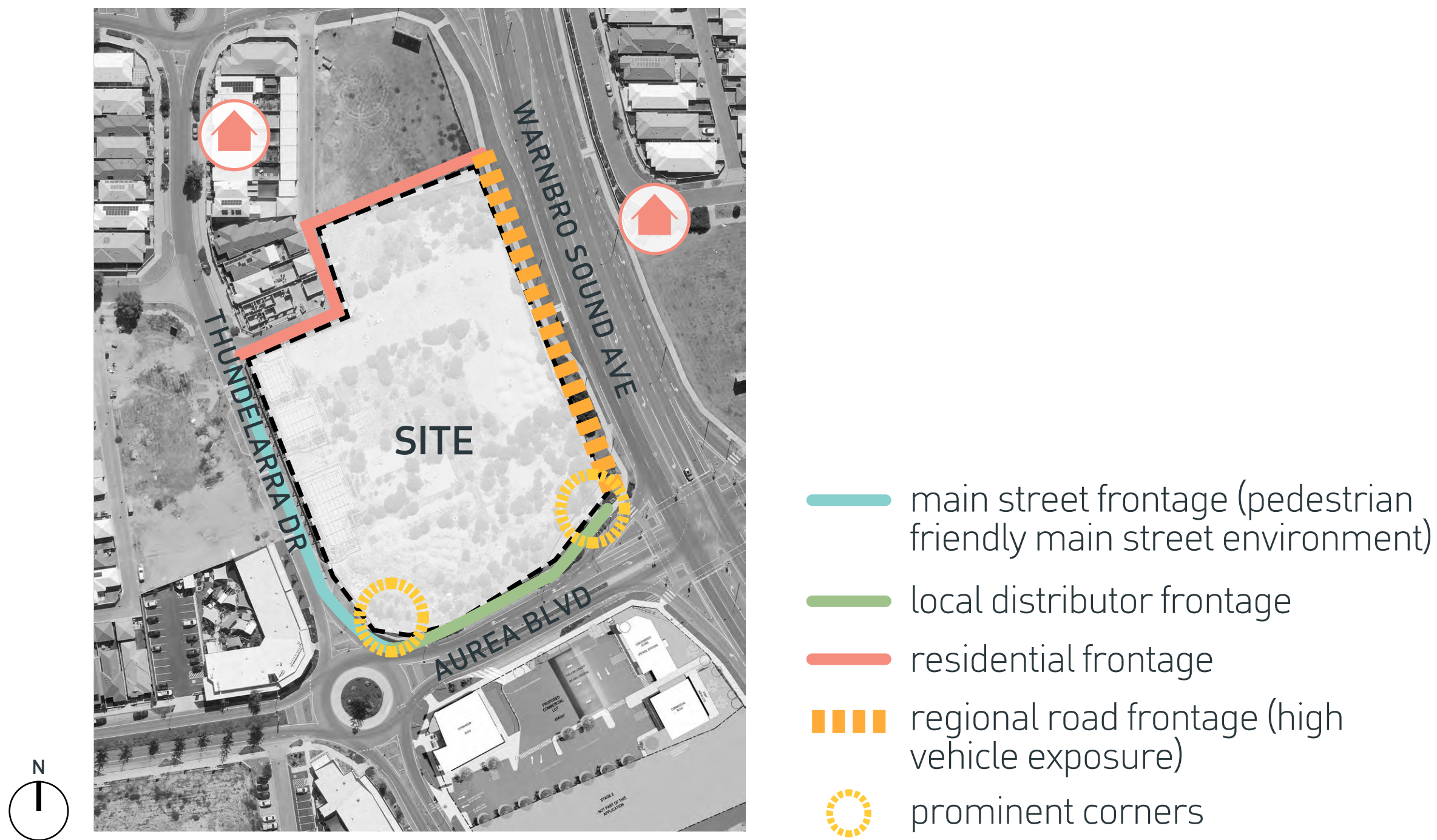
SITE AND CONTEXT

local context

movement

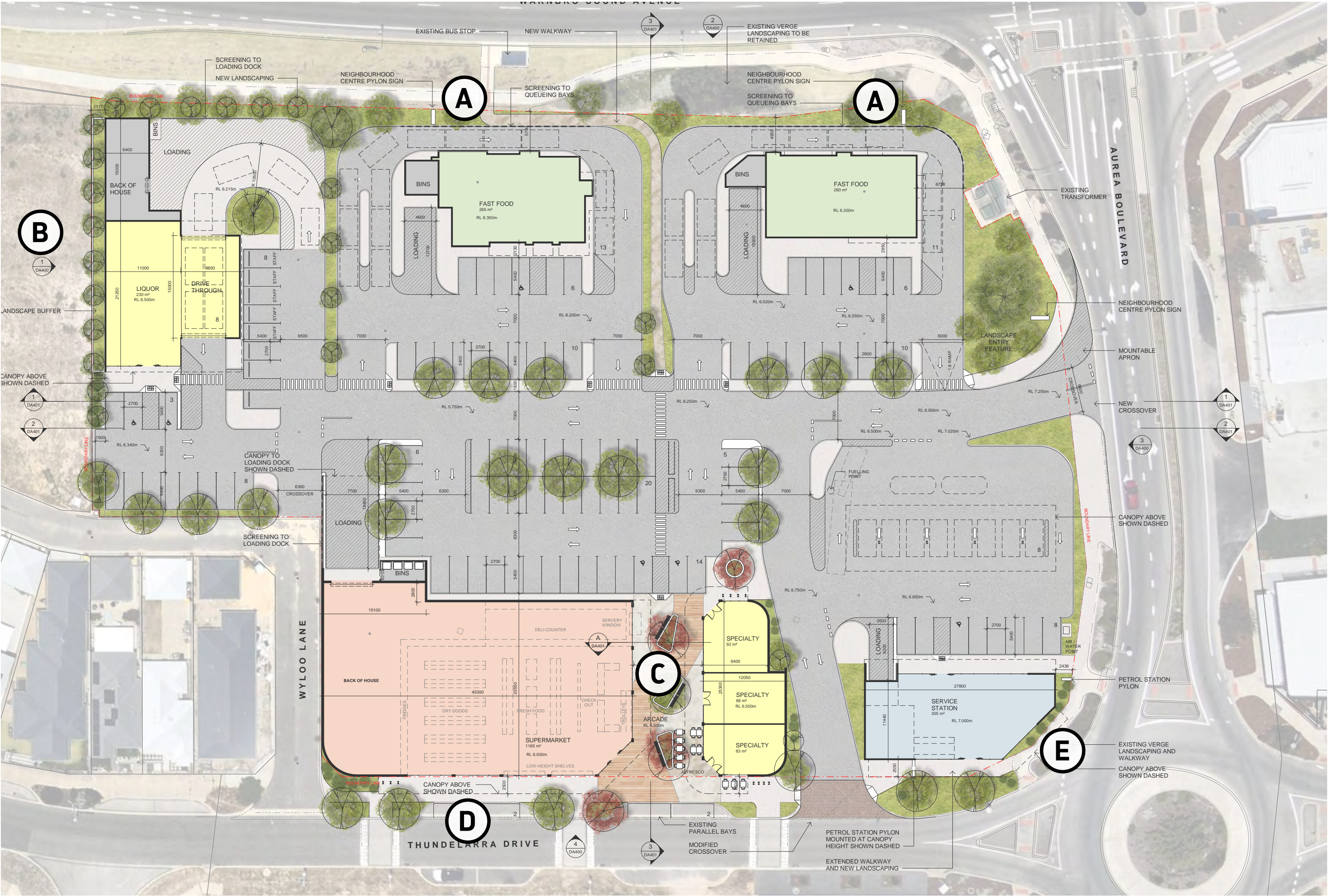


interfaces



DESIGN RESPONSE

proposed site plan



Screening to drive-through lanes incorporated as structural elements



Landscape setback strip with raised planters to create an articulated visual screen and buffer to **residential interfaces**



Pedestrian walkway connection from Warnbro Ave to Thundelarra Dr for enhanced accessibility to public transport

Arcade and piazza serve as a vibrant open space where the **community can gather, interact, and dine**



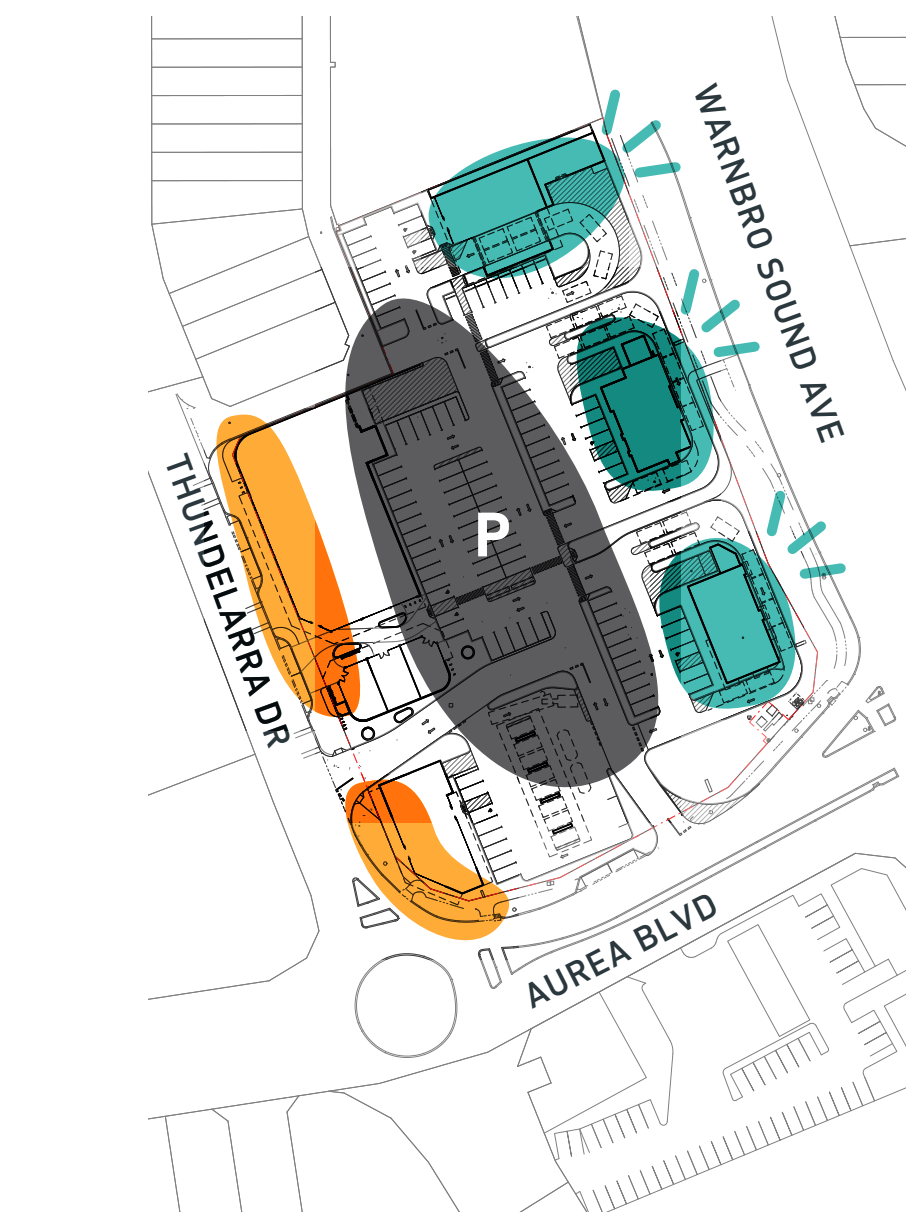
Supermarket and specialty glazed shopfronts and a public piazza **activating main street**






Dual-frontage service station adds to **main street activation** and creates a corner statement

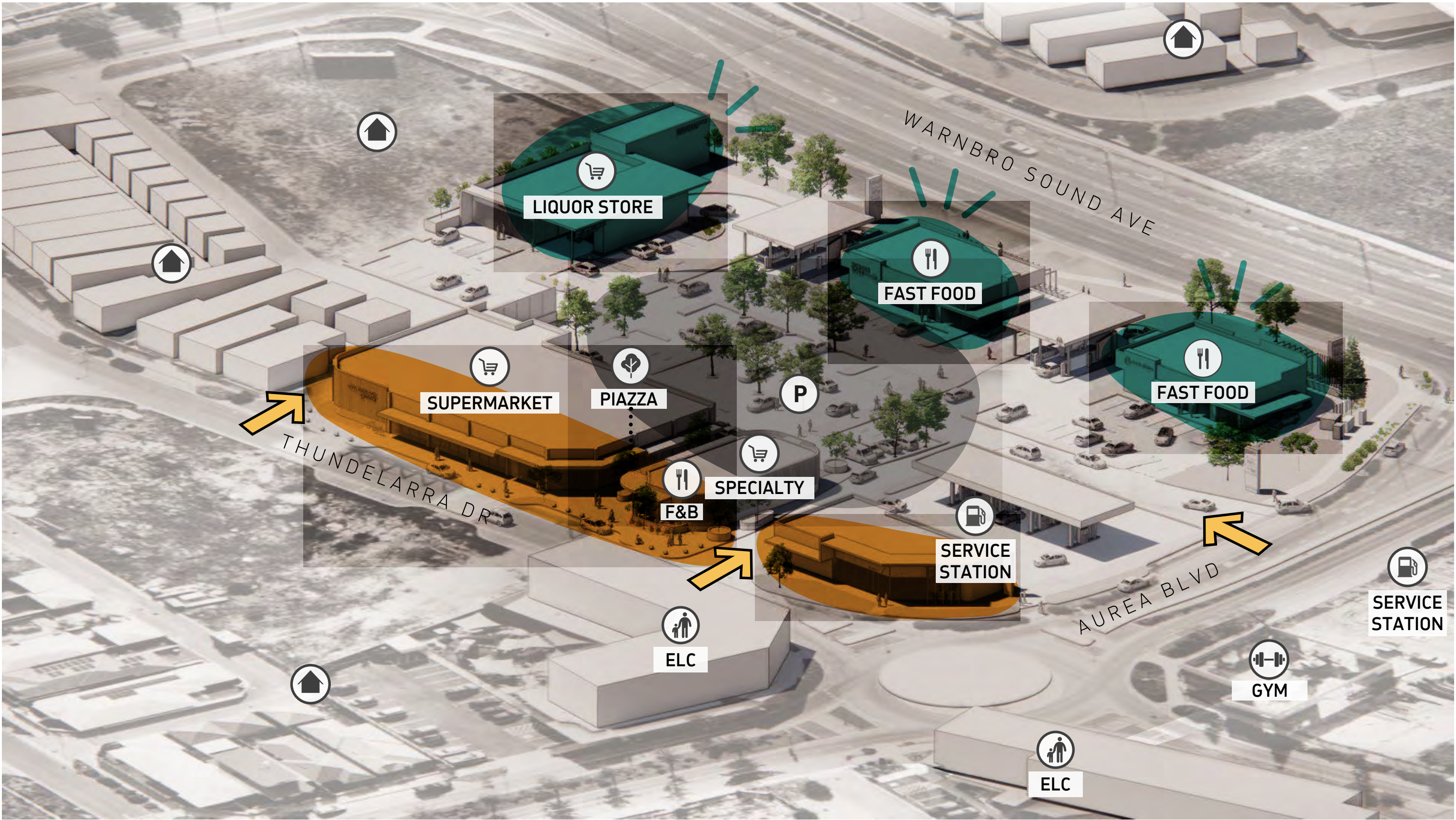
DESIGN RESPONSE

built form approach



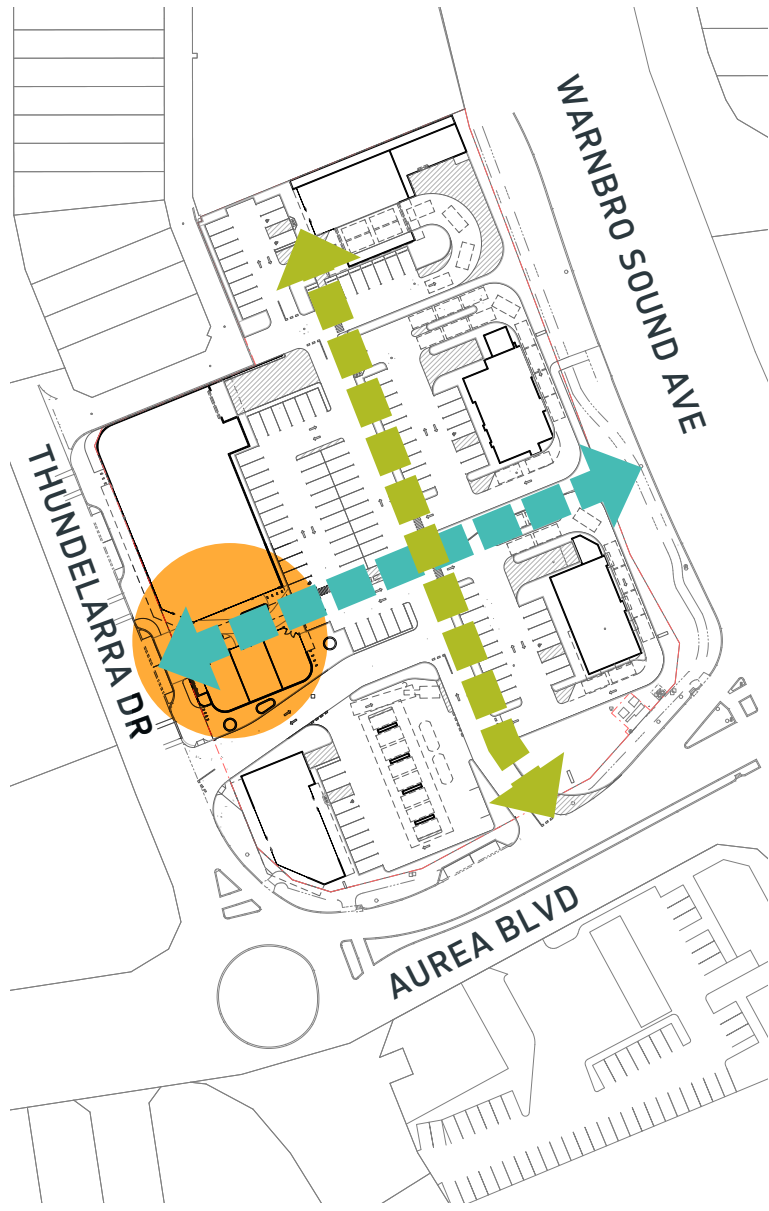
PLANNING APPROACH

-  ACTIVE USES PROVIDED ALONG THUNDELARRA DRIVE
-  EXPOSURE-BASED USES PROVIDED ALONG WARNBRO SOUND AVE WITH AN AESTHETIC EDGE
-  CAR PARKING AND ACCESSWAYS PROVIDED IN BETWEEN, SCREENED FROM PUBLIC REALM



DESIGN RESPONSE

public amenity + connections



PUBLIC AMENITY + CONNECTIONS



CLEAR PEDESTRIAN CONNECTION FROM AUREA BLVD TO NORTHERN END OF SITE



CLEAR PEDESTRIAN CONNECTION FROM WARNBRO SOUND AVE (BUS STOP) TO THUNDELARRA DRIVE



ARCADE AND PUBLIC PIAZZA SERVES AS A GREEN SPACE AND SOCIAL HUB FOR VISITORS



DESIGN RESPONSE

screening + corner statement



SCREENING + CORNER STATEMENT



USING GREEN BUFFERS AND SCREENING TO ADDRESS INTERFACES TO THE NEIGHBOURS



TREATING THE SERVICE STATION AS A RECOGNISABLE FEATURE OF THE SITE



FEATURE SCREENING TO ENTRY CORNER OF AUREA BLVD AND WARNBRO SOUND AVE



LANDSCAPE ENTRY STATEMENT AT AUREA BLVD CROSSOVER



ARTIST'S IMPRESSION OF SCREENING TO DRIVE THROUGH



ARTIST'S IMPRESSION OF AUREA BOULEVARD CORNER



ARTIST'S IMPRESSION OF SERVICE STATION VIEWED FROM ROUNDABOUT

DESIGN RESPONSE

landscaping



LOT 622(2) AUREA BOULEVARD, GOLDEN BAY

LANDSCAPE CONCEPT PLAN
APRIL 2023

JOB NO. 2215201
1:250 @ A1

C1.101
0 5 10 20 30 50m
REV E

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PLAN E



LANDSCAPE ARCHITECTS
414 ROKEBY RD SUBIACO WA 6008
T: (08) 9388 9566 E: mail@plane.com.au

KEY REFUSAL ISSUES OF RAR

refusal reason 1

Compatibility of service station with sensitive land uses based on emissions associated with benzene

refusal reasons 2 and 3

Aurea Boulevard crossover and elements of the Traffic Impact Assessment

service station emissions



town planning scheme no 2 zoning map

REFUSAL REASON 2 & 3

traffic and access



- + Existing left in left out crossover on Southern side of Aurea Boulevard, operating satisfactorily (RAR has not evidenced the contrary)
- + SIDRA analysis for Warnbro Sound Avenue signalised intersection indicates no queue back to proposed Aurea Boulevard crossover (RAR has not evidenced the contrary)
- + Conservative service station queue analysis shows 12 cars (8 at bowsters and 4 waiting) on a busy day. The forecourt can comfortably fit at least 16 vehicles (RAR has not evidenced the contrary)
- + All swept path movements involving service vehicles are satisfactory - lane correct exit movements and no kerb clashes (RAR has not evidenced the contrary)
- + Australian Standards compliant car park (RAR has not evidenced the contrary)
- + Slow moving traffic environment along Thundelarra Drive, combined with pedestrian-focused paving treatment at crossover ensures acceptable crossing
- + The “desired” removal of the Aurea Boulevard crossover would direct all development traffic and all service vehicle movements back onto Thundelarra Drive, unnecessarily compromising the pedestrian friendly environment

DRAFT CONDITIONS

requested amendments

CONDITION NO	REQUESTED AMENDMENTS
Condition 3	Modify to remove references to DWER approval
Condition 4	Replace 'landowner's cost' with 'proponent's cost'
Condition 5 (v)	Delete the words 'and enhancement'
Condition 7	Delete all wording inclusive of and after 'including but not limited to the following requirements'
Condition 11	Delete the last sentence
Condition 12	Replace 'at the cost of the applicant' with 'at the cost of the proponent'
Condition 13	Delete wording and replace with 'the paving material of the Thundelarra Drive crossover is to reinforce pedestrian priority and delineate pedestrian movement between pram ramps'
Condition 20	Delete 'with routine and monthly high pressure water cleaning to prevent any accumulations of litter, grime, or oily deposits' from condition wording
Condition 22	Delete '(including by means of dark or other tinting, shutters, curtains, blinds, posters, paint, roller doors, or similar)' and 'at all times' from condition wording
Condition 28	Delete condition
Condition 29	Change 'prior to issue of a building permit' to 'prior to the commencement of construction works'

WHY IS APPROVAL APPROPRIATE AND WARRANTED?

- + Will rectify a currently vacant/derelict site and substantially enhance the site's contribution to local amenity
- + An appropriate mixture of commercial land uses that will create a vibrant and multi-functional neighbourhood centre on land zoned Commercial under Town Planning Scheme No. 2
- + A contextually responsive layout that respects the Thundelarra Drive 'main street' and provides exposure-based uses along Warnbro Sound Avenue (a regional road)
- + A built form and design approach that is of a high architectural quality and will contribute toward the 'sense of place'
- + A meaningful and effective landscape architecture approach that improves neighbour interface, streetscape response, and a 'sense of arrival'
- + Expert assessments demonstrate acceptable traffic, acoustic, emissions outcomes, and offsite impacts that are entirely appropriate for land zoned for Commercial purposes



ARTIST'S IMPRESSION OF PROPOSED DEVELOPMENT

THANK YOU



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[Regulation 40\(3\)](#) and [DAP Standing Orders 2020](#) cl. 3.5

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Presenter Details

Name	Vladimir Baltic
Company (if applicable)	Transcore
Please identify if you have any special requirements:	YES <input type="checkbox"/> NO <input type="checkbox"/> If yes, please state any accessibility or special requirements: Click or tap here to enter text.

Meeting Details

DAP Name	Metro Outer JDAP
Meeting Date	10 th July 2023
DAP Application Number	DAP/23/02447
Property Location	Lot 622 (2) Aurea Boulevard, Golden Bay
Agenda Item Number	8.2

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3 July 2023

Metro Outer Joint Development Assessment Panel

Attention: Presiding Member and Panel Members

Dear Sirs and Madams,

**Re: LOT 622 (No.2) AUREA BOULEVARD, GOLDEN BAY
DAP REF NO. DAP/23/02447**

Transcore is acting as traffic engineers for Ladybug Twenty Pty Ltd with respect to the proposed neighbourhood centre at the abovementioned site.

Transcore prepared a Transport Impact Assessment (hereafter TIA) for the proposed Development Application in February 2023. Following review of the Development Application by City of Rockingham, the City provided a number of comments by email to Apex Planning in May 2023. Accordingly, Transcore prepared a detailed "Table of Responses" addressing each traffic-related comment by the City. This table was appended to the Revised TIA submitted to City in May 2023 (RTIA). A copy of this table of response is appended in **Attachment 1**.

Transcore is very familiar with the traffic conditions in this locality having previously worked on the existing 7-Eleven service station and commercial development located immediately south across Aurea Boulevard, which also involved preparation of a Road Safety Audit requested by the City.

The RTIA produced by Transcore for this development is detailed and comprehensive and has been refined in response to a range of traffic-related comments received from the City. Accordingly, the RTIA demonstrates that this proposal is entirely acceptable from a traffic engineering point of view.

The City of Rockingham officers has recommended refusal of the Development Application. The refusal is based on a number of reasons. The focus of this submission are traffic-related Reasons 2 and 3 which state that:

2. "The proposed Aurea Boulevard crossover is inconsistent with the approved Local Development Plan (LDP) for the Golden Bay Neighbourhood Centre, and will likely result in an unacceptable risk of traffic accidents given the proximity of the crossover to the Warnbro Sound Avenue/Aurea Boulevard signalised intersection; and the proposed crossover being immediately adjacent to the start of the left turn slip lane."

3. *“The amended Transport Impact Assessment (TIA) does not adequately address onsite design issues including swept path, blind aisle and Service Station stacking distances”.*

A review of the City’s RAR indicates that the City has not provided any new supporting technical comment or assessment which would disprove the analysis and conclusions presented in the RTIA.

The issue raised in Reason 2 of the refusal (provision of a left-in/left-out crossover on Aurea Blvd) was previously raised by the City as part of the development application for Lot 265 (no.40) Talisker Bend in Golden Bay (existing 7-Eleven service station and the commercial development), which is located immediately opposite of the subject site. This development has since been approved by JDAP, has been constructed and is now operating satisfactorily with a left-in/left-out crossover on Aurea Blvd in operation.

The issues identified in Reasons 2 and 3 of the refusal are reiteration of some of the issues raised by City in their email correspondences with Apex Planning in April 2023 which were addressed in Transcore’s table of response contained in **Attachment 1**.

Nevertheless, this submission focuses on addressing the traffic related issues identified in the RAR.

Issue 1: The proposed left-in, left-out crossover off Aurea Boulevard and its proximity to the Warnbro Sound Avenue intersection may result in queuing along Aurea Boulevard ahead of the signalised intersection, impacting the Aurea Boulevard crossover and access/egress from the site.

This issue was previously raised in the City’s comments on original TIA. This query has been comprehensively addressed in Revised TIA (refer Item 1 of Transcore’s table of response attached in Appendix A of the RTIA). The City has not undertaken or provided any analysis to justify this assertion. The proposed Aurea Boulevard crossover is only a left-in/left-out crossover with no conflicting movements. The SIDRA network analysis undertaken in the RTIA indicates no queue backs from Warnbro Sound Avenue signalised intersection to the proposed left-in/left-out crossover. The SIDRA analysis undertaken indicates that the crossover operates with good operational Level of Service during both AM and PM peak hours.

Issue 2: Inadequate vehicle queuing within the site, and line marking for the Service Station which may result in vehicles overflowing to Aurea Boulevard and impacting the surrounding road network.

This issue was also raised in the City’s comments on the original TIA. This query has been comprehensively addressed in Revised TIA (refer Item 3 of Transcore’s table of response attached in Appendix A of the RTIA). It is important to note that

the City has not provided an alternative queue assessment suggesting excessive queueing should be expected at the service station to support this assertion.

The service station queue analysis undertaken in the TIA using conservative dwell time assumptions indicates that, during a busy cheap fuel day, the 95th percentile queue (i.e., 95% of all cars in the queue) within the proposed service station will total 12 cars (8 cars at refuelling stations and 4 cars in waiting). The service station layout can comfortably accommodate this level of queueing. Furthermore, the access into the service station is set back approximately 20m from the Aurea Boulevard crossover securing sufficient space for any unexpected internal site queueing.

The City has not explained the issues with respect to the service station linemarking; however, any potential linemarking issue or requirement can be addressed during the subsequent detailed design stage of the project through liaison with the City.

Issue 3: Swept path analysis has identified concerns at a number of locations throughout the development.

This issue was also raised in the City's comments on the original TIA. This query has been comprehensively addressed in Revised TIA (refer Item 18 of Transcore's table of response attached in Appendix A of the RTIA).

A review of the turn paths analysis has demonstrated:

- The body of the fuel tanker or 12.5m truck does not encroach onto the right-turn lane on Aurea Boulevard when exiting the proposed left-in/left-out crossover; and,
- The body of the vehicle does not clash with the kerbs.

Issue 4: Design of blind aisles and inadequate turnaround in the vicinity of the Liquor Store has been identified.

This issue was also raised in the City's comments on the original TIA. This query has been comprehensively addressed in RTIA (refer Item 18 of Transcore's table of response attached in Appendix A of the RTIA).

In accordance with AS 2890.1 (Australian/New Zealand Standard – Parking Facilities – Part 1: Off-street car parking) the provision of a turnaround bay is not required because the length of the blind isle is less than six 90-degree bays plus 1m. Accordingly, there is no technical basis for City's comment.

Issue 5: The need for a pedestrian refuge within the Thundelarra Drive crossover given its 9m width.

This issue was also raised in the City's comments on the original TIA. This query has been comprehensively addressed in Revised TIA (refer Item 16 of Transcore's table of response attached in Appendix A of the RTIA).

The provision of a pedestrian refuge is not feasible in this instance as the fuel tanker requires the full width of the crossover to turn into the development from Thundelarra Drive (as permitted by AS 2890.1).

The 9.7m wide pedestrian crossing point is not excessively wide and with the combination of good sightlines and proposed pavement treatment would ensure a safe crossing environment.

Review of the Nearmap images indicates that there are currently no refuges at any of the T-intersections or crossovers in this locality (refer **Attachment 2**). All these crossovers and intersections have been approved by and/or constructed by City. Therefore, the pedestrian refuge at Thundelarra Drive crossover is not warranted.

Issue 6: General concerns about the accuracy of the modelling and associated assumptions, resulting in the TIA outcomes being considered unreliable.

The issues regarding the accuracy of the modelling and associated assumptions were raised in City's original comments and have been comprehensively addressed in Items 8, 9, 10, 11, 12, 13 and 14 of Transcore's table of response attached in Appendix A of the RTIA.

It should also be noted that the application has been referred to DPLH/WAPC and Main Roads WA. None of these agencies have not raised any issues regarding the traffic modelling and assumptions applied in the RTIA.

In light of the above information and in line with the outcome of the detailed traffic assessment undertaken and presented in the RTIA, in our view, reasons 2 and 3 of the refusal are not justified and it is respectfully requested that these reasons should be set aside and the proposed development should be approved.

Kind Regards,

Vladimir Baltic
Senior Traffic and Transport Engineer



Engineering a better future for over 20 years!

ATTACHMENT 1

Golden Bay Neighbourhood Centre | CITY OF ROCKINGHAM COMMENTS

02 May 2023

Note: responses in **green** are addressed in the revised TIA.

	CITY COMMENTS	STATUS/COMMENT
1	<p>Concerns over the proposed left-in, left-out off Aurea Boulevard and its proximity to the Warnbro Sound Avenue intersection – awaiting MRWA comments.</p> <p>Impact on the performance of surrounding intersections and increased traffic safety risks</p> <p>The stop line distance between the signalised intersection (Warnbro Sound Avenue/Aurea Boulevard/Adelong Avenue) and the roundabout (Aurea Boulevard/Thundelarra Drive) is approximately 95m which is considered too short to have an access located between the intersections. LDI is concerned that the introduction of an access off Aurea Boulevard would significantly impact the performance of the two existing intersections (queues from the traffic signal may block access to the site, queues from the proposed access may impact on the adjacent roundabout intersections, very short distance if needing to turn right into Warnbro Sound Avenue from the proposed crossover, etc.) as well as increases traffic safety risks. It should be noted that the Transport Assessment for the Golden Bay Comprehensive Development Plan estimates a daily traffic volume of 9,400 and 5,000 for Aurea Boulevard and Thundelarra</p>	<p>The crossover is a left in/ left out only and would be located before the 70-degree left turn slip lane on Aurea Blvd. Also, this crossover is important for effective and efficient circulation system for the development and in particular the land uses closest to the Aurea Boulevard.</p> <p>The SIDRA network analysis undertaken indicates no queue back from the signalised intersection or back to the roundabout intersection to the proposed left in/ left out crossover (refer Figures 15 and 16 of the TIA). The crossover also operates with good LOS during the AM and PM peak hours. Therefore, the provision of the proposed left in/ left out crossover would not undermine traffic operations in the immediate locality.</p> <p>The traffic projections for the Golden Bay Comprehensive Development Plan Update (prepared by Transcore, dated 1st April 2011) reflects the full development of the Golden Bay by year 2031. It is our understanding that it is unlikely that the Golden Bay Development Plan and the surrounding areas would be fully developed by year 2031 and the projected traffic volumes on Aurea Blvd and Thundelarra Drive would reach to the level that was reported for the full development of the Golden Bay Structure Plan. As a result, Transcore adopted the methodology of 2% annual growth on the existing</p>

<p>Drive respectively therefore an access off Thundelarra is recommended in order to minimise traffic safety risks.</p> <p>Insufficient separation distance between intersections to accommodate an access</p> <ul style="list-style-type: none"> Austroads' Guide to Road Design Part 4 – Intersections and Crossings – General recommends a minimum access spacing of 55m (based on "Stopping Sight Distance"). This suggests that the existing distance between the stop lines of the existing intersection should be at least 110m therefore an access is unlikely able to be located between the roundabout and traffic signal. The proposed vehicle crossover is located within the functional area of the traffic signal as well as the eastern wing is encroaching into the left turning slip lane. <p>Queue from the traffic signal impacting on the access</p> <ul style="list-style-type: none"> There is a concern that with heavy traffic expected on Aurea Boulevard (i.e. 9,400vpd), the vehicle queue length for the western approach to the traffic signal is likely to impact on the proposed access. The Golden Bay Village Centre – Revised Development Application Transport Impact Assessment – Addendum (Lot 622 Thundelarra Drive, prepared by Uloth dated 16th March 2018) had completed an intersection analysis for the traffic signal at Warnbro Sound Avenue/Aurea Boulevard/Adelong Avenue and the results suggest an expected queue length of 122m for the western approach. <p>The Transport Assessment for the existing child care (Lot 716 Aurea Boulevard, prepared by Cardo, dated 1st March 2017)</p>	<p>traffic volumes. According to the Golden Bay Comprehensive Development Plan Update (prepared by Transcore, dated 1st April 2011) Aurea Boulevard (between Warnbro Sound Avenue and Thundelarra Drive) is classified as "Integrator B". The intersection spacing on an "Integrator B" is recommended as 40m in accordance with LN Guidelines. Therefore, there is sufficient separation distance between the intersections. The LN or any other guidelines do not prohibit crossovers within this separation.</p> <p>The Austroads Guidelines Part 4 does provide guidelines on stopping sight distance however, the stopping distance is measured on a straight section of road and not on sections intersected by intersections which is the case here. Further, although Austroads and Liveable Neighbourhoods provide guidelines for intersection spacing, they do not prohibit provision of crossovers within that spacing.</p> <p>The location of the crossover with respect to an intersection is addressed in Australian Standards 2890.1. Section 3.2.3 and Figure 3.1 of the Standard provides guidelines on prohibited location of access driveways with respect to an intersection. Basically, an access driveway should be located at least 6m from the corner truncation of an intersection. The Aurea Boulevard crossover satisfies this requirement for both intersections at both ends of this road.</p> <p>The proposed left in/ left out crossover is located before the existing left turn slip lane at Aurea Blvd and therefore it is not located within the effective functional area of the traffic signal. A mountable apron is suggested for the exit of the trucks at this crossover. This apron ties into the proposed left turn slip lane at the signalised intersection.</p> <p>The traffic report by U&A and Cardno are now 5 and 6 years old. The SIDRA analysis results and site observations undertaken by Transcore in 2023</p>
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	<p>suggests an expected queue length of 49.4m for the western approach.</p> <p>The distance between the stop line for the traffic signal to the centre of the proposed access is approximately 45m. This suggests that the queue from the traffic signal is likely to impact on the proposed access.</p> <p>Neighbourhood Centre Detailed Area Plan</p> <p>The approved plan suggests that no access is to be provided off Aurea Boulevard and Warnbro Sound Avenue</p>	<p>indicate that the existing signalised and roundabout intersections presently operate satisfactorily (overall LoS C for signalised intersection and LoS A for roundabout intersection) with moderate queues and delays during both weekday peak hours for the signalised intersection and no queues and delays at the roundabout intersection. The SIDRA assessment for the 10-year post development scenario during the nominated peak periods rendered similar results to post-development scenario with marginal increases in delays and queues and no changes to the Level of Service for any of the movements of the intersections. Importantly, both intersections retain ample spare capacity for future traffic growth. For the 10-year post development analysis a 2% annual traffic growth was applied to the background traffic. The 2% annual growth reflects the current conditions. It is not clear what traffic projections has been used by Uloth and Cardno for preparation of the traffic reports prepared by these two consultants.</p> <p>The Golden Bay Neighbourhood Centre Detailed Area Plan is a guide for future development of the proposed neighbourhood centre. The DAP does not show any crossover on Aurea Blvd to the other side of the development however a left in/ left out crossover was approved and constructed on the other side of Aurea Boulevard for a similar development opposite the subject development. This constructed crossover has been operating with now traffic issues.</p>
2	Removal of the two on-street bays on Aurea Boulevard due to restricted sight lines at the vehicle crossover.	The two on-street bays on Aurea Boulevard have been removed in the updated development plan.
3	Concerns that queuing from the service station will spill out onto public roads, with additional queuing required – only 1 vehicle can be accommodated behind the bowser where a minimum of 2	The stacking capacity of the proposed service station have been assessed in the TIA. The outcome of the queue length analysis indicates that during a busy day the 95th percentile queue within the proposed service station is 12

	should be provided for. Vehicles are able to come into the bowser from other directions which is likely to reduce the efficiency of the restricted queuing space and the potential to block internal traffic flow, increasing risk that vehicle queuing from the service station may overflow onto public street	cars (8 cars refuelling and 4 cars waiting). The service station layout can comfortably accommodate this level of queuing. In order to investigate if four additional cars park behind four fill points, still a B99 car can navigate the site, Figure 4 in the revised TIA is prepared. This sketch shows that at worst case scenario that 2 cars park at both sides of the last two bowsers, still a B99 car can move around the parked cars.
4	Confusing arrangements regarding the hatched area for the service station due to location and geometry of bowser location – kerbing may be required.	The line marked kerb should be sufficient, however mountable kerb can also be provided if needs be. This is a design issue and can be addressed during the detailed design stage of the project.
5	The proposed HRV loading bay for the service station does not conform to AS2890.2. Confirmation is required in the TIA that the maximum commercial vehicle servicing the supermarket is a 12.5m HRV. Swept path analysis is required to demonstrate that it is possible to enter and exit the site in forward gear (without encroaching into the area where vehicles queue for the bowser, as well as no reversing movement along the parking aisle.	The proposed loading bay in the updated plan has been adjusted to conform to AS2890.2. An 8.8m truck is expected to service the loading bay. The updated turn paths indicates that an 8.8m truck can enter and exit the site in forward gear satisfactorily. The service trucks are expected to attend the site after hours to minimis the traffic conflict at the site. This type of operations is not unusual for service stations.
6	Provision for cars to turn around at the end of the blind aisle(s) near the liquor store, and drive out forward to be provided in accordance with AS2890.2	The provision of a turnaround bay is not required because the length of the blind isle is less than six 90-degree bays plus 1m as suggested by AS2890.1. Please note that the proposed liquor store drive through would also facilitate the turnaround for cars that enter the blind isle.
7	Advise how were differences in turning volumes sourced by using SCAT and video survey in determining the existing turning volumes for the two intersections	The video turning movement counts were undertaken for the existing roundabout intersection. The SCATS data was sourced for the signalised intersection. The video counts indicated slightly higher traffic volumes on Aurea Blvd. Therefore, the SCATS traffic data were factored up to match the outcome of the video traffic counts on Aurea Blvd, resulting in a robust assessment.
8	References used for trip generation rates, passing trade and	Transcore referenced ITE guidelines for trip rates. The City trip generation

	directional split are required to be provided in an extract to verify validity	<p>assessments provided to Transcore also used the same guideline and provide almost similar results to Transcore assessments when applying no cross trade to the trips (refer below table). As evident Transcore’s trip generation estimation for critical PM peak hour is higher than CoR and also DPLH (DPLH estimate is 503 trips during the PM peak hour). However, Transcore applied 25% cross trade in line with RTA NSW Guidelines to allow for internal trips between different land uses.</p> <table><tr><td></td><td>AM trips Transcore</td><td>AM trips COR</td><td>PM trips Transcore</td><td>PM trips COR</td></tr><tr><td>Fast food outlet with drive through</td><td>227</td><td>227</td><td>185</td><td>185</td></tr><tr><td>Liquor</td><td>0</td><td>0</td><td>41</td><td>41</td></tr><tr><td>Supermarket</td><td>19</td><td>48</td><td>186</td><td>116</td></tr><tr><td>Specialty</td><td>1</td><td>19</td><td>11</td><td>8</td></tr><tr><td>Service Station</td><td>100</td><td>100</td><td>112</td><td>112</td></tr><tr><td>Total</td><td>347</td><td>394</td><td>534</td><td>462</td></tr></table>		AM trips Transcore	AM trips COR	PM trips Transcore	PM trips COR	Fast food outlet with drive through	227	227	185	185	Liquor	0	0	41	41	Supermarket	19	48	186	116	Specialty	1	19	11	8	Service Station	100	100	112	112	Total	347	394	534	462
	AM trips Transcore	AM trips COR	PM trips Transcore	PM trips COR																																	
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Supermarket	19	48	186	116																																	
Specialty	1	19	11	8																																	
Service Station	100	100	112	112																																	
Total	347	394	534	462																																	
9	The reference for assuming 25% cross-trade is required	The RTA NSW Guidelines indicates a discount rate of 25% for centres less than 10,000 m2 GLFA.																																			
10	Trip distribution is to be shown on a plan – query why only small amount of traffic is associated with Warnbro Sound Avenue?	Figure 11 of the TIA shows the proposed development traffic for the AM and PM Weekday peak hours. According to this plan about 25% of the total trips have been distributed to the traffic signal and the balance have been distributed to the west of the Warnbro Sound Avenue. As the proposed centre is located to the west of Warnbro Sound Avenue, it is expected that mainly residents to the west of Warnbro Sound Avenue would access the site																																			

		via Thundelarra Drive and Aurea Blvd.
11	Plan showing passing and non-passing trade is required	The Figure 11 of the TIA is the summation of the passing and non-passing trip distribution and is sufficient for the purpose of TIA.
12	Number of vehicle trips entering and exiting the site does not appear to match with the external road links as shown in Figure 11	It matches. See below calculations extracted from Figure 11 of the TIA. It should be noted that passing trips already exists on the roads and would only appear at development crossovers. AM inbound = 35 + 95 = 130 PM inbound = 55 + 144 = 199 AM outbound = 96 + 34 = 130 PM outbound = 55 + 144 = 199
13	Validity of traffic assessment is queried (i.e. estimated daily traffic volumes are significantly different when compared with the approved Structure Plan for Golden Bay	The traffic projections for the Golden Bay Comprehensive Development Plan Update (prepared by Transcore, dated 1st April 2011) reflects the full development of the Golden Bay by year 2031. It is our understanding that it is unlikely that the Golden Bay Development Plan and the surrounding areas would be fully developed by year 2031 and the projected traffic volumes on Aurea Blvd and Thundelarra Drive would reach to the level that was reported for the full development of the Golden Bay Structure Plan. As a result, Transcore adopted the methodology of 2% annual growth on the existing traffic volumes. This approach was accepted as part of the approved and constructed development opposite the subject site on the other side of Aurea Boulevard.
14	Confirm whether SIDRA models been calibrated to match existing conditions	Yes, the SIDRA models were calibrated against the existing queues at the signalised and roundabout intersections. The outcome of the existing assessments is provided in Appendix B of the TIA.
15	Kerb ramps for universal access across site	The updated plan shows the Kerb ramps for universal access
16	Pedestrian refuge within Thundelarra crossover to be shown	The fuel tanker needs to full width of the crossover to turn in. Therefore, provision of a refuge may not be feasible. Also, review of the Nearmap images indicates that there are no refuges at any of the t-intersections or crossovers in this area. Therefore, the pedestrian refuge at Thundelarra crossover is not required. In any case, the updated development plan shows the crossover with red paving to indicate pedestrian priority at the crossover.
17	Relocation of bicycle parking so as not to restrict pedestrian flow	The proposed bicycle parking does not restrict pedestrian flow

18	<p>Concerns regarding swept path analysis:</p> <ul style="list-style-type: none"> o Encroaching into the opposing traffic lane o Clash with kerbing o Insufficient horizontal clearance to the kerb ramp o Reversing movement 	<p>1. The body of the fuel tanker or 12.5m truck would not encroach onto the right turn lane on Aurea Blvd when exiting the proposed LiLo crossover.</p> <p>2. The body of the vehicle would not clash with the kerbs;</p> <p>3. The clearance maybe insufficient at some kerbs but the body of the truck would not clash with the kerbs.</p> <p>4. the 12.5m truck reverse back to the supermarket loading bay for a short distance which would not undermine traffic operations or safety.</p> <p>It should be noted that service vehicles will visit the site infrequently and generally outside the peak operating times when the traffic on surrounding roads are lower and less activity is happening within the development.</p>
19	An independent trip generation exercise found that results are significantly different, especially during the AM peak hour (i.e. the City's generation volume is 52% more).	The 25% relates to the cross-trade which was assumed in Transcore calculations. Refer response to item 8 above.
20	The total number of trips entering and exiting does not appear to match with the external road links	Refer response to item 12 above.
21	Section 6.5 suggests that the proposed development will not increase traffic on any lanes by more than 100 vph however Figure 11 clearly suggests that some traffic lanes increase by more than 100 vph which suggests contradictory	The increase of just over 100vph per lane would happen during the PM peak hour for a short section of Thundelarra Dr between the roundabout and the development crossover which would result in total traffic projection of about 245vph or 2450vpd during the PM peak hour in 2033. The current standard of Thundelarra Dr as a neighbourhood connector B road would be able to comfortably accommodate the 2033 projected traffic volumes along this section of the road.

ATTACHMENT 2





Presentation Request Form

[Regulation 40\(3\)](#) and [DAP Standing Orders 2020](#) cl. 3.5

Must be submitted at least 72 hours (3 ordinary days) before the meeting

Presentation Request Guidelines

Persons interested in presenting to a DAP must first consider whether their concern has been adequately addressed in the responsible authority report or other submissions. Your request will be determined by the Presiding Member based on individual merit and likely contribution to assist the DAP's consideration and determination of the application.

Presentations are not to exceed **5 minutes**. It is important to note that the presentation content will be **published on the DAP website** as part of the meeting agenda.

Please complete a separate form for each presenter and submit to daps@dplh.wa.gov.au

Presenter Details

Name	John Hurley
Company (if applicable)	EAQ Consulting
Please identify if you have any special requirements:	YES <input type="checkbox"/> NO <input type="checkbox"/> If yes, please state any accessibility or special requirements: Click or tap here to enter text.

Meeting Details

DAP Name	Metro Outer JDAP
Meeting Date	10 th July 2023
DAP Application Number	DAP/23/02447
Property Location	Lot 622 (2) Aurea Boulevard, Golden Bay
Agenda Item Number	8.2

Presentation Details

I have read the contents of the report contained in the Agenda and note that my presentation content will be published as part of the Agenda:	YES <input checked="" type="checkbox"/>
Is the presentation in support of or against the <u>report recommendation</u> ? (<i>contained within the Agenda</i>)	SUPPORT <input type="checkbox"/> AGAINST <input checked="" type="checkbox"/>
Is the presentation in support of or against the <u>proposed development</u> ?	SUPPORT <input checked="" type="checkbox"/> AGAINST <input type="checkbox"/>
Will the presentation require power-point facilities?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> If yes, please attach



Presentation Content*

These details may be circulated to the local government and applicant if deemed necessary by the Presiding Member. Handouts or power points will not be accepted on the day.

Brief sentence summary for inclusion on the Agenda	<i>The presentation will address:</i> The reasons why this application should be approved.
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In accordance with Clause 3.5.2 of the [DAP Standing Orders](#), your presentation request must also be accompanied with a written document detailing the content of your presentation.

Please attach detailed content of presentation or provide below:

Refer to attached submission and presentation slides.

Submission to DAP

From:	Alessandro Stagno	Date:	6 July 2023
Subject:	Agenda item 8.2 – MOJDAP/257 – Golden Bay Neighbourhood Centre Lot 622 (2) Aurea Boulevard, Golden Bay (development site)		

Apex Planning is the applicant of the proposed Golden Bay Neighbourhood Centre. Our multi-disciplinary team of experts involved in formulating and refining this development proposal includes:

- Apex Planning – urban planning
- Hames Sharley – architecture and design
- Plan E – landscape architecture
- Transcore – traffic engineering
- Environmental Air Quality (**EAQ**) Consulting – airborne emissions scientist
- Lloyd George Acoustics – acoustic engineering

This submission forms a presentation request for Alessandro Stagno (Apex Planning) and Lisa Azhar (Hames Sharley), and should be read in conjunction with our presentation slides. We intend to deliver a joint presentation with John Hurley (EAQ) and Vladimir Baltic (Transcore) at the upcoming MOJDAP meeting on 10th July 2023.

Our team has carefully reviewed the agenda for MOJDAP/257 and are disappointed that this important and well-considered development proposal is not recommended for **approval**. This development is worthy of the Panel's support and warrants **approval**. In this regard, we have reviewed the draft conditions at Attachment 12 of the RAR and our response to the conditions is provided at **Appendix 1** of this note.

The development site is in a derelict state, and has been for a number of years. This is the result of a previously approved shopping village never completing construction, mainly for commercial viability reasons. Since 2017, this site has contained concrete slabs, steel frames, and a variety of weeds, offering nothing to the surrounding community.

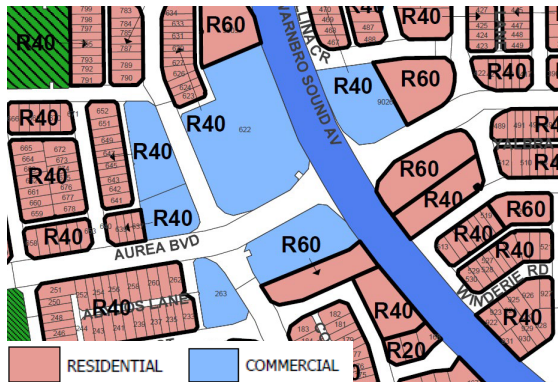
The development proposal before the Panel would establish a vibrant neighbourhood activity centre on the site with a mix of uses catering for the daily and weekly needs of the community. The layout and design appropriately responds to contextual characteristics, through:

- Respecting the local planning framework's intention to establish a pedestrian-oriented 'main street' along Thundelarra Crescent with street-edge active uses/development.
- Responding to the regional road traffic and exposure of Warnbro Sound Avenue with well-designed exposure-based uses/development.
- Siting the large car park in the centre (screened by development along road frontages).
- Integrating significant and meaningful landscaping to improve neighbour interface, streetscape response, and a 'sense of arrival' at Aurea Boulevard.

The above is illustrated in the supporting presentation slides which contain key extracts from application materials.

It is our respectful submission that the refusal reasons outlined in the RAR are fundamentally flawed. Our rationale for this is explained on the subsequent page.

REFUSAL REASON 1 (COMPATIBILITY OF SERVICE STATION)



The RAR fails to recognise the development site and both of the adjacent lots which contain child care premises are zoned **Commercial** under Town Planning Scheme No.2 (TPS2). *Note the R40 & R60 coding doesn't apply to commercial.*

A service station is inherently consistent with the intent and purpose of the commercial zone. From a statutory planning point of view, there is a baseline acceptance that development on land zoned for commercial purposes will be co-located with other commercial land uses.

If the City holds the view that any land uses contemplated in the Commercial zone are fundamentally incompatible with one another, then it is incumbent on them to amend TPS2.

Otherwise, to oppose development proposals on commercial land which are supported by rigorous, conservative, and site-specific technical assessments demonstrating an acceptable level of off-site impact is contrary to the principles of orderly and proper planning.

In this regard, the offsite impacts have been given detailed consideration, particularly through an emissions impact assessment by a technically adept and qualified air emissions scientist.

With the incorporation of vapour recovery systems, the assessment has demonstrated that there is no unacceptable risk to human health associated with airborne pollutants. The outcomes of this assessment were supported by an independent peer review by SLR (arranged by the local authority), where it was found the rates for modelling benzene exposure were 20x more conservative than those used by the Victoria EPA.

Insofar as this application is concerned, the parties with the correct level of qualification and expertise (being EAQ and SLR) have employed the best available and accepted methods of assessment to consider this issue and have determined compliant/acceptable outcomes.

REFUSAL REASONS 2 AND 3 (AUREA BOULEVARD ACCESS AND TIA)

There are a number of important observations in respect of refusal reasons 2 and 3:

- The RAR contains no technical commentary or analysis to disprove the conclusions presented in the TIA. What the Panel essentially has before it for consideration is:
 - A comprehensive TIA prepared by Transcore; and
 - Six dot points under point (e) on Page 33-34 of the RAR which list out, but do not justify, the “concerns” raised.
- The Aurea Boulevard crossover caters for left turn movements and is upstream of the Warnbro Sound Avenue signalised intersection (a very low risk traffic scenario). The TIA shows intersection queuing intersection doesn't reach the crossover.
- One of the stated “concerns” on Page 34 of the RAR is the lack of a pedestrian refuge within the Thundelarra Drive crossover. However, the “desired” removal of the Aurea Boulevard crossover would only direct all development traffic and service vehicle movements back onto Thundelarra Drive, unnecessarily and avoidably compromising the pedestrian friendly environment along this road. It is unclear whether this important implication has been given consideration by the local authority.

CONCLUSION

With due and proper consideration given to the points raised in this submission (and our presentation slides), as well as the submissions put forward by EAQ and Transcore, it is respectfully requested the Panel grant **approval** to this neighbourhood centre development.

In this regard, we reiterate that our response to the draft conditions is provided at **Appendix 1** of this note.

Our team looks forward to presenting in support of this proposal on Monday 10th July, and will be pleased to respond to any questions from the Panel.

ALESSANDRO STAGNO
APEX PLANNING

APPENDIX 1

RESPONSE TO DRAFT CONDITIONS

The conditions requested to be modified are **highlighted** and specific modifications are in **red text**, and Apex Planning comments are provided beneath the relevant condition in **blue text**.

Approve DAP Application reference DAP/23/02447 accompanying plans and the amended plans and supporting information received on 3 May 2023:

- DA001-DA003 – Perspective
- DA100 – Location and Survey Plan
- DA101 – Site Plan
- DA102 – Demolition Plan
- DA200 – Proposed Ground Floor Plan
- DA400 – Proposed Elevations – Streetside
- DA401 – Proposed Elevations – Internal
- DA900 Proposed Signage Schedule
- DA901 – DA902 – Material Schedule
- DA905 – Pedestrian Movement Diagram
- Landscape Concept Plan
- Landscape Piazza Concept Plan
- Development Application Report
- Traffic Impact Assessment (May 2023)
- Environmental Noise Assessment (Acoustic Report) (28 April 2023)
- Emissions Impact Assessment (EIA) (March 2023)

in accordance with Clause 68 of the Planning and Development (Local Planning Schemes) Regulations 2015 and the Metropolitan Region Scheme, subject to the following conditions:

The approval should make reference to the Metropolitan Region Scheme for completeness.

Conditions

1. This decision constitutes planning approval only, and is valid for a period of 4 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.
2. Prior to applying for a Building Permit, a Construction Management Plan (CMP) is to be submitted to and approved by the City of Rockingham addressing but not limited to:
 - (i) Hours of construction;
 - (ii) Temporary fencing;
 - (iii) Traffic management including a Traffic Management Plan addressing site access, egress and parking arrangement for staff and contractors;
 - (iv) Management of vibration and dust; and
 - (v) Management of construction noise and other site generated noise.
3. **Prior to applying for a Building Permit, a Stormwater Management Plan must be prepared by a suitably qualified engineering consultant showing how stormwater will be contained on-site, including with specific provision for the Service Station. Those plans must be submitted to the City of Rockingham and DWER for approval. All stormwater generated by the development must be managed in accordance with Planning Policy 3.4.3 - Urban Water Management to the satisfaction of the City of Rockingham. The approved plans must be implemented and all works must be maintained for the duration of the development.**

Condition 3: remove references to DWER for approval. DWER is a third party to this application and cannot be a clearance authority.

4. Prior to applying for a Building Permit, the Applicant must submit fully detailed civil engineering drawings showing the various footpaths, crossovers and car parking embayments to be adopted across the entire development site and adjoining road reserves, for review and approval by the City of Rockingham. Construction works in accordance with approved civil drawings are to be completed prior to occupation of the development, at the ~~landowner's~~ **proponent's** cost to the satisfaction of the City of Rockingham.

Condition 4: change reference from “landowner” to “proponent”, to more accurately reflect who is responsible.

5. Prior to applying for a Building Permit, a Landscaping Plan must be prepared and include the following detail to the satisfaction of the City of Rockingham:

- (i) The location, number and type of existing and proposed trees and shrubs (including street trees, shade trees within the car parking areas, and planting within verge areas), including calculations for the landscaping area;
- (ii) Any lawns to be established and areas to be mulched;
- (iii) Those areas to be reticulated or irrigated;
- (iv) Proposed upgrading to landscaping, paving and reticulation of the street setback area and all verge areas;
- (v) Protection ~~and enhancement~~ of existing vegetation within the verge areas of Warnbro Sound Avenue and Aurea Boulevard;
- (vi) Detailed landscape, irrigation, lighting and street furniture plans; and
- (vii) The paving material used for the footpaths shall be carried across driveways in order to maintain the visual continuity of the pedestrian network and aid pedestrian legibility.

The landscaping, paving and reticulation must be completed prior to the occupation of the development, and must be maintained at all times to the satisfaction of the City of Rockingham for the duration of the development.

Condition 5: there is no reasonable impetus for the existing vegetation within the verges of Warnbro Sound Avenue and Aurea Boulevard to be ‘enhanced’. The term is ambiguous and misinterpretation is possible. Requiring the protection of this vegetation is sufficient and reasonable.

6. Prior to occupation of the development, car parking areas must:
 - (i) provide a minimum of 148 car parking spaces, including 4 parking spaces within the Thundelarra Drive road reserve adjoining the development;
 - (ii) be designed, constructed, sealed, kerbed, drained and marked in accordance with User Class 3A of Australian/New Zealand Standard AS/NZS 2890.1:2004, Parking facilities, Part 1: Off-street car parking;
 - (iii) provide 7 car parking space(s) dedicated to people with disabilities, which are designed, constructed, sealed, kerbed, drained and marked in accordance with Australian/New Zealand Standard AS/NZS 2890.6:2009, Parking facilities, Part 6: Off-street parking for people with disabilities and which are linked to the main entrance of the development by a continuous accessible path of travel designed and constructed in accordance with Australian Standard AS 1428.1—2009, Design for access and mobility, Part 1: General Requirements for access—New building work;
 - (iv) be constructed, sealed, kerbed, drained and marked prior to the development being occupied and maintained thereafter; and
 - (v) comply with the above requirements for the duration of the development.

~~7. The Environmental Noise Assessment prepared by Lloyd George Acoustics dated 28 April 2023 (ref: 22117749-01A), shall be implemented in the design, construction and ongoing operation of the development at all times to the satisfaction of the City of Rockingham, including but not limited to the following requirements:~~

~~(i) The Supermarket loading bay to be screened as follows:~~

~~(a) A 3.0m acoustic screen wall to be constructed on the northern side of the Supermarket loading bay, and extended the length of the loading bay, of solid construction (no gaps) and of material with a minimum surface mass of 15kg/m².~~

~~(b) The design and finish of the screen wall to be designed, coloured and articulated to provide an attractive appearance to Wyloo Lane, to the satisfaction of the City of Rockingham.~~

~~(c) The loading bay overhead (roof) structure to extend at least 4m across the loading bay and be lined with an absorptive material such as anticon insulation. No gaps shall exist between the overhead section and the vertical acoustic screen wall.~~

~~(ii) A solid screen wall to be constructed in the vicinity of the Liquor Store bin area fronting Warnbro Sound Avenue, of minimum height 1.6m and of minimum surface mass of 4kg/m², and be free of gaps, as shown on the approved plans. The screening to be of a masonry construction and of a suitable design complementing the overall development, as illustrated in the Material Schedule, to ensure an attractive appearance to Warnbro Sound Avenue and internal to the site.~~

~~(iii) the to the satisfaction of the City of Rockingham, having regard to the high level of visibility of the screen wall to Warnbro Sound Avenue.~~

~~(iv) Acoustic screening around the northern and western edges of the Supermarket to airconditioning and refrigeration equipment in order to protect existing and future residential development from noise, in accordance with the *Environmental Protection (Noise) Regulations 1997*.~~

~~(v) Use of broadband type reversing alarms for delivery vehicles rather than standard tonal alerts.~~

~~(vi) Delivery vehicles are not allowed to idle within the loading bays, and are required to be switched off during loading and unloading periods.~~

~~(vii) Bin servicing via Wyloo Lane shall occur only between 7am and 6pm Mondays to Fridays and 9am to 5pm on Saturdays; and 7am to 7pm Mondays to Saturdays otherwise. No bin servicing shall occur on a Sunday.~~

~~(viii) Any external music or the like shall be low level and inaudible at residences;~~

~~(ix) Section 5 recommendations in the Environmental Noise Assessment for mechanical plant shall be implemented.~~

Condition 7: the condition is unnecessarily long and prescriptive. The condition requires implementation of the acoustic assessment, and the recommendations section of the acoustic assessment spells out all requirements. Simplification of the condition will result in the same outcome, and will ensure every party is referring back to the acoustic assessment at the time of condition clearance to avoid mishaps.

8. Deliveries via Wyloo Lane shall only occur between 6am to 6pm Monday to Friday, and 9am to 5pm on Saturdays. No deliveries are permitted on Sundays. Signage shall be positioned at the entry to the site from Wyloo Lane specifying delivery times, to minimise adverse impacts on the amenity of the adjacent residence(s);

9. Prior to the occupation of the development, a Final Acoustic Assessment must be prepared and provided to the City of Rockingham which demonstrates to City's satisfaction, that the completed development complies with the *Environmental Protection (Noise) Regulations 1997*.

The Final Acoustic Assessment must include the following information:

(i) Noise sources compared with the assigned noise levels as stated in the *Environmental Protection (Noise) Regulations 1997*, when the noise is received at the nearest "noise sensitive premises" and surrounding residential area;

- (ii) Tonality, modulation and impulsiveness of noise sources; and
- (iii) Confirmation of the implementation of noise attenuation measures.

Any further works must be carried out in accordance with the Acoustic Report and implemented as such for the duration of the development.

10. Prior to applying for a Building Permit, a Waste Management Plan must be prepared and include the following detail:
 - (i) For the Supermarket and specialty shops, include waste generation quantities, number, volume and type of bins, proposed collection frequency and cleaning and maintenance of the bin store. With at least one food business likely within the specialty shops, any liquid waste storage (eg. used oil) to also be addressed;
 - (ii) For all premises within the development:
 - (a) the location of bin storage areas and bin collection areas;
 - (b) the number, volume and type of bins, and the type of waste to be placed in the bins;
 - (c) management of the bins and the bin storage areas, including cleaning, rotation and moving bins to and from the bin collection areas;
 - (d) frequency of bin collections;
 - (e) regular rubbish collection patrols; and
 - (f) demonstration of compliance with the Acoustic Report prepared by Lloyd George Acoustics.

All works must be carried out in accordance with the Waste Management Plan and maintained at all times, for the duration of development.

11. Prior to occupation of the development, public rubbish bin facilities must be provided adjacent to the entry of the Supermarket premises so as to be convenient to pedestrians, but positioned so as not to obstruct pedestrian movements, to the satisfaction of the City of Rockingham. ~~Public rubbish bin facilities must be emptied daily, continuously maintained in good condition and the surrounding area kept free of litter thereafter for the duration of the development.~~

Condition 11: This element of waste management is already covered under Condition 10(ii). There is no need for repetition. The stipulated requirement is also too prescriptive and onerous to be covered under a condition – it is better enforced as part of the waste management plan.

12. Prior to the occupation of the development, any damage to existing City infrastructure within the road reservation including kerb, road pavement, turf, irrigation, bollards and footpaths is to be repaired to the satisfaction of the City of Rockingham, at the cost of the Applicant.

- ~~13. A pedestrian refuge being installed within the Thundelarra Drive crossover to assist pedestrian safety given the extended width required for this crossover to service the development. The paving material of the Thundelarra Drive crossover is to reinforce pedestrian priority and delineate pedestrian movement between pram ramps.~~

Condition 13: a pedestrian refuge is impossible, as the entire width of the crossover is needed for service vehicle movements. Notwithstanding this, a refuge is unnecessary given:

- Thundelarra Drive is a low order road with relatively low volumes.
- Thundelarra Drive is a low traffic speed environment with speed humps near the crossover and good sightlines.
- The use of paving treatment as an urban design measure can further calm traffic and reinforce pedestrian priority at the crossover.

14. Prior to the occupation of the development, an illumination report must be prepared which demonstrates to the satisfaction of the City of Rockingham, that the completed development complies with the requirements of Australian Standard AS/NZS 4282:2019 - *Control of the obtrusive effects of outdoor lighting*, and manages light spill to existing and future adjoining/nearby residential lots to the north, west and north-west of the site.
15. Prior to occupation of the development, fifteen (15) short-term bicycle parking spaces must be provided for the development. The bicycle parking spaces must be designed in accordance with AS2890.3—1993, *Parking facilities, Part 3: Bicycle parking facilities* and located within the development to the satisfaction of the City of Rockingham.
16. Prior to the occupation of the development, In accordance with Planning Policy 3.3.25 Percent for Public Art – Private Developer Contribution, the developer shall make a contribution to the City of Rockingham equal to 1% of the total construction value for the provision of public art, being \$110,000 in value.
17. Earthworks over the site associated with the development must be stabilised to prevent sand or dust blowing off the site, and appropriate measures must be implemented within the time and in the manner directed by the City of Rockingham in the event that sand or dust is blown from the site.
18. Bulk fuel deliveries to be limited to 7am – 7pm Monday to Saturday.
19. All plant and roof equipment and other external fixtures must be designed to be located away from public view/or screened for the life of the development, to the satisfaction of the City of Rockingham.
20. The mall area located between the Supermarket and specialty shops shall be maintained in a clean, tidy and sanitary condition ~~with routine and monthly high pressure water cleaning to prevent any accumulations of litter, grime or oily deposits,~~ to the satisfaction of the City of Rockingham.

Condition 20: the condition is overly prescriptive and onerous. The requirement to ensure the area is maintained in a clean, tidy and sanitary condition to the satisfaction of the City is sufficient and reasonable. The methods used by the proponent to keep the area clean should be at their own discretion.

21. Prior to applying for a Building Permit, the applicant must demonstrate to the satisfaction of the City of Rockingham that ground floor glazing of the Supermarket fronting Thundelarra Drive, along with the Specialty Shops facing Thundelarra Drive and all windows facing the mall, have a minimum visible light transmission rate of at least 79% and a maximum visible reflectivity rate of 9% in order ensure that a commercial, interactive frontage is available to the development from Thundelarra Drive and the mall. The glazing must be thereafter be installed and maintained to the satisfaction of the City of Rockingham for the duration of the development.
22. Entries and window frontages of the Supermarket and specialty shop tenancies facing Thundelarra Drive and the mall must contain clear, transparent glass, and not be covered, closed or screened off ~~(including by means of dark or other tinting, shutters, curtains, blinds, posters, paint, roller doors or similar),~~ to ensure that visibility and a commercial, interactive frontage is available between the development and Thundelarra Drive ~~at all times.~~

Condition 22: this condition must recognise that the key elevations of the supermarket and specialty tenancies face north (arcade) and west (Thundelarra Drive) and will be subject to harsh sun at various times of the day, which will result in avoidable solar gain within the building. Additionally, the ESD assessments at construction phase may potentially require some light tinting on windows to comply with Section J requirements. There should be some concession to this issue, to ensure the comfort of tenants and visitors is not compromised whilst still ensuring an interactive / open shopfront is achieved.

23. The internal layout of the Supermarket shall ensure Supermarket aisles do not extend to the windows fronting Thundelarra Drive, and shelving and storage be located to ensure no obstruction of windows occurs, in order to maintain the view between Thundelarra Drive and the Supermarket tenancy.
24. Trolley storage shall occur within the Supermarket tenancy or within designated trolley parking bays within the carparking area, and not within the mall or along the Thundelarra Drive frontage.

25. The awning in front of the specialty shops on Thundelarra Drive shall be extended south by 3.5m to provide weather protection for the bike parking area.
26. Bollards must be installed at both ends of the mall to ensure no vehicle access along the mall. All other parking bays to contain wheel stops to prevent vegetation damage, and prevent encroachment to the pedestrian movement network.
27. The proposed Service Station must incorporate Stage 1 and Stage 2 (VR1 and VR2) Vapour Recovery Systems (as agreed by the Applicant) which are to be installed and operated from the commencement of operation of the Service Station, and for the duration of its operation. These systems are to be operated at all times, and under a regular program of inspection and maintenance for the life of the development.

~~28. Following commencement of the use, the applicant must validate modelling in consultation with Department of Health criteria, through a period of 12 months monitoring to demonstrate compliance with National Environmental Protection Measure (NEPM) at or below criteria for benzene. This report must be submitted to the satisfaction of the City of Rockingham.~~

Condition 28: should be deleted, as it lacks a proper planning purpose and is unreasonable. In particular:

- There is no applicable planning instrument or otherwise which mandates monitoring of a service station following its establishment.
- It has been established that neither the Department of Health nor the City of Rockingham have the technical expertise to address airborne pollutants. To require monitoring to the satisfaction of either authority is not appropriate.
- The condition references Department of Health criteria. It is unlikely such criteria exists, having regard for the nature of referral advice provided by this authority.
- There is adequate information available for the decision-maker to be satisfied that offsite impacts are within the acceptable range, both through technical assessment and independent peer review arranged by the local authority, to **approve** this land use without monitoring.
- The submission from EAQ confirms monitoring of airborne pollutants is not a viable or useful exercise.

~~29. The existing, redundant steel frame and slab on site being removed prior to issue of a Building Permit prior to the commencement of construction works.~~

Condition 29: it is unreasonable and unnecessary to make the issue of a building permit conditional upon the removal of existing items on the site. Logically all existing improvements on the site need to be removed before new buildings can be constructed – hence the rationale for the proposed change which is more appropriate. . The condition in its current form would only create disruption in the flow on site work. The proponent is likely to arrange contracting teams on site in a coordinated way.

30. An Odour Management Plan for the Fast Food Outlets shall be prepared for the approval of the City's Environmental Health Services prior to issue of a Building Permit, demonstrating management of odour impact on surrounding existing and future residential properties.
31. Prior to applying for a Building Permit, a Sign Strategy must be prepared which must include the information required by Planning Policy 3.3.1: Control of Advertisements, to the satisfaction of the City of Rockingham, and it must thereafter be implemented for the duration of the development.

Advice Notes

1. The disposal of wastewater into the Water Corporation's sewerage system must be with the approval of the Water Corporation; the applicant and owner should liaise with the Water Corporation in this regard.
2. The development must comply with the *Food Act 2008*, the *Food Safety Standards* and Chapter 3 of the *Australian New Zealand Food Standards Code (Australia Only)*; the applicant and owner should liaise with the City's Health Services in this regard.

Golden Bay Neighbourhood Centre

3. A Building Permit must be obtained for the proposed works prior to commencement of site works. The applicant and owner should liaise with the City's Building Services in this regard.
4. The development must comply with the *Environmental Protection (Noise) Regulations 1997*; contact the City's Health Services for information on confirming requirements.
5. All works in the road reserve, including construction of a crossover, planting of street trees, and other streetscape works and works to the road carriageway must be to the specifications of the City of Rockingham; the applicant should liaise with the City of Rockingham's Engineering Services in this regard.
6. In regards to Condition 2(iv), Dust Management is to be in accordance with the *Department of Environment and Conservation Guideline: A guideline for managing the impacts of dust and associated contaminants from land development sites, contaminated sites remediation and other related activities*.
7. The Liquor Store is to comply with the Liquor Control Act 1988, all relevant approvals and licenses are to be sought prior to the occupation of the development in conjunction with the Department of Local Government, Sport and Cultural Industries (DLGSCI).
8. A site cannot store or sell fuel without first obtaining a licence from the Department of Mines Industry Regulation and Safety (DMIRS), which requires strict criteria to be met and assessed as part of the process regulated under the *Dangerous Goods Safety Act 2005*.
9. A separate Development Approval may be required for the occupation of any tenancy not specified in this approval, prior to the occupation of the tenancy. The City's Planning Services should be contacted to determine whether development approval is required.
10. Where a Development Approval has so lapsed, no development shall be carried out without further approval having first been sought and obtained, unless the Applicant has applied and obtained Development Assessment Panel approval to extend the approval term under regulation 17(1)(a) of the *Planning and Development (Development Assessment Panels) Regulations 2011*.



Environment | Air Quality

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6 July 2023

Alessandro Stagno

Principal

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Osborne Park, WA 6017

By email: Alessandro@apexplanning.com.au

[EAQ Project Reference: 22031]

Metro Outer Joint DAP Presentation: Golden Bay Neighbourhood Centre - Technical Response to Matters raised for proposed Aurea Boulevard Service Station

Dear Alessandro,

Environmental and Air Quality Consulting Pty Ltd (EAQ) provides this technical advice in relation to matters raised by the City of Rockingham (the City) in relation to a proposed Service Station (the Station) to be located at Aurea Boulevard, Golden Bay Western Australia.

The Station will form part of the overall “Golden Bay Neighbourhood Centre’ development site application (the Application).

Following additional information provided by EAQ to the City in relation to the Station and its operational emissions from re-fuelling activities, EAQ provides herein our technical advice that will furnish the Application which is scheduled to be decided by a Metropolitan Outer Joint Development Assessment Panel (MOJDAP) on 10 July 2023.

Matters of Dispute

The City has provided its advice to the MOJDAP, and in relation to vapour emissions from re-fuelling activities at the Station, the City advises that:

“The proposed development is not compatible with sensitive land uses in the locality, in particular, to the two Child Care Centres located in immediate proximity to the proposed Service Station, where the proposal presents an unacceptable health risk to children from benzene exposure”.

EAQ Technical Response

Service Station Design and Operational Background Summary

The accepted approach to the design and operations of service stations in Australia involves the use of vapour recovery technology, or VR.

VR 1 refers to the use of vapour recovery from the large fuel storage tanks. During re-filling of these tanks, the headspace is displaced, and vapours can escape. The VR 1 technology retrieves at least 90% of all vapours and returns these vapours to the storage tanks.

VR 2 refers to vapour recovery at the re-fuelling bowser and captures and returns vapours again by at least 90%.

For the purposes of design and operations of a service station throughout Australia and ignoring all other considerations of pollution such as light and noise, and local traffic impositions, the implementation of VR 1 and VR 2 are the best-practice approach by State regulators, and when implemented correctly provide optimal protection for human receptors from vapour exposure.

Intuitively, the human receptors most at risk of vapour exposure are those workers at the service stations, and those individuals that undertake the re-filling and re-fuelling activities. In the absence of re-filling and re-fuelling, the risk of vapour impacts is negligible to nil.

Assessment Method Background

Within Australia the scientific community working within airborne pollution has various tools for assessing the risk of a pollutant impact from emission sources.

In general terms there are widely accepted tools used to aid in determining these risks, to include dispersion modelling software (the Models). Those Models utilised the most in Australia include Aermid, Calpuff, Ausplume and CSIRO's TAPM.

Supplementing these Models is meteorological data that is developed using an array of techniques and formulae that scientific practitioners learn throughout their careers, typically through multi-level training courses and peer mentoring.

The combination of meteorological development and subsequent application of Models to derive ground level concentrations of pollutants is the basis of dispersion modelling predictions for making a risk assessment of a given activity.

The Station was modelled using Aermid, and supplemented by locally measured Bureau of Meteorological data and the use of TAPM to develop a full meteorological dataset that represents the locality of the proposed Station.

The vapour emissions were derived using state and federal guidelines that refer to international guidance for determining the mass of pollutants emitted from service stations, for example; the USEPA emission factor equations, and that of the NPI. The use of these emission factor equations is a current

recommendation from Australian jurisdictions, and these emission factor equations were derived by a multi-research effort from multiple jurisdictions (science, government, laboratory etc).

Overall, the methods used to undertake the risk assessment for the proposed Station followed all available State, National and International guidelines. The scientific assessment approach, and the regulatory methods utilised are not in dispute.

Alternative methods of assessment for service stations are yet to be developed by regulatory bodies.

Response to the City of Rockingham's Matters

The City engaged a peer reviewer to determine if the EAQ vapour assessment report used accepted methodologies and technical approaches. The peer reviewer was SLR. In summary:

- SLR arrived at the same outcomes and conclusions as EAQ and based on this review, the methodology used by EAQ was both scientific and sound;
- Additionally, SLR noted that the EAQ report utilised a vapour exposure criterion for Benzene that is **20x more conservative** than the current Victorian EPA criterion of which the Vic EPA has researched Benzene exposure risks to a higher degree than that of the WA EPA;
- SLR had essentially accepted the emissions assessment by EAQ, but provided some minor recommendations as is typically the case when peers review on another's work. EAQ welcomes those recommendations from SLR and will consider those in future assessment, however; the recommendations will not have a material outcome on the findings of the EAQ report as indicated by the SLR review.

The City recommended that site-specific pollutant sampling should be undertaken from the adjacent service station to verify the risk. This cannot be reasonably undertaken in the view of EAQ's Principal Scientist, given that:

- Any intent to sample pollutants in ambient air could only be reasonably achieved by utilising those workers within the service station itself;
- Modern service stations no longer provide attendants to "pump your fuel" and as such the risk of vapour exposure is on the user themselves;
- Designing an ambient pollutant sampling program for the purposes of determining the concentrations of key pollutants at downwind receptor locations would rely primarily on wind speed, direction, ambient humidity and ambient temperature, which would need to be measured and "matched" to those times of day when key receptors are exposed;
- Electrochemical instruments and similar analytical apparatus are not commercially available to reliably collect key petrol vapour pollutants where the measured concentrations are not subject to other ambient interferences such as vehicle exhaust, local fires, house fires, gas BBQ's and the like, and therefore:
 - It would be inherently difficult to quantify actual emissions versus real-time meteorological conditions, and those results would be unreliable and largely unverifiable given the emissions are extremely transient and subject to user interferences (e.g., stop-start nature of the bowser trigger, volume of fuel dispensed, etc.).

- Fuel Standards Australia regulates the “quality” of petrols ensuring that key chemistry within the fuels is at or below designated concentration levels to provide optimum protection for users.

The City sought advice from local regulators in the form of Department of Health (DoH) and the Department of Water and Environmental Regulation (DWER).

The DoH has stated on several occasions that they lack the expertise to review these types of airborne pollutant assessments and as a result suggest that they should not be relied upon. This is a contradiction given the lack of expertise as stated by the DoH.

EAQ holds the view that it is incumbent on the DoH to furnish themselves with the appropriate knowledge if their intent is to make a formal review of such pollutant assessments, and/or provide advice in relation to these types of assessments.

The DWER has consistently advised applicants and local authorities that they have no regulatory role in service stations, nor a policy position on land use conflicts with respect to these types of land uses.

From a precautionary perspective, the DWER has recently advised in March 2023 on a separate proposal involving a service station in Ellenbrook which was adjacent to multiple sensitive land uses, that VR 2 is one approach to manage the residual risk of vapour impacts from service stations. VR 1 is mandatory in all service stations.

The City stated that “modelling cannot be relied upon”. This is a short-sighted view and ignores those scientific tools available to inform stakeholders. There is currently no standardised assessment framework for service stations and assessors must therefore utilise those scientific tools available to them.

For this Application, dispersion modelling of vapours has not been solely relied upon, it has been used to inform risk. Notwithstanding, it is the only scientifically reasonable assessment approach to evaluating the risk of vapour impacts based on widely accepted assessment techniques, such as the use of emission factor equations as a direct tool for determining vapour emissions from service stations, as these were developed directly for the petrol industry.

The use of dispersion modelling, often and in this case built with conservatism, provides an opportunity to understand the risk of an impact from a given emission source. This approach is used to understand the risk of impacts of emissions from an array of industries such as asphalt plants, concrete batching plants, refineries, smoke from pizza ovens, cooking vapours from fast-food outlets, etc. The understanding of that risk informs stakeholders of “what is likely”.

Closing

There is no outcome from the EAQ report, inferred or otherwise, that there is a founded risk of pollutant impacts at the nearest sensitive receiver downwind of the proposed Station.

This is supported by the SLR review, and indirectly by the DWER given their position to provide no comment on the Application but have suggested and supported the use of VR2 in a recent comparable application. The implementation of VR 2 is the intent of the Applicant.

Regards

A handwritten signature in black ink, appearing to read "John Hurley".

John Hurley

(B.Sc [Chemistry/Biotechnology], CAQP)

Principal Consultant | Director

Environmental & Air Quality Consulting Pty Ltd



Presentation Request Form

[Regulation 40\(3\)](#) and [DAP Standing Orders 2020](#) cl. 3.5

Must be submitted at least 72 hours (3 ordinary days) before the meeting

Presentation Request Guidelines

Persons interested in presenting to a DAP must first consider whether their concern has been adequately addressed in the responsible authority report or other submissions. Your request will be determined by the Presiding Member based on individual merit and likely contribution to assist the DAP's consideration and determination of the application.

Presentations are not to exceed **5 minutes**. It is important to note that the presentation content will be **published on the DAP website** as part of the meeting agenda.

Please complete a separate form for each presenter and submit to daps@dplh.wa.gov.au

Presenter Details

Name	Alessandro Stagno
Company (if applicable)	Apex Planning
Please identify if you have any special requirements:	YES <input type="checkbox"/> NO <input type="checkbox"/> If yes, please state any accessibility or special requirements: Click or tap here to enter text.

Meeting Details

DAP Name	Metro Outer JDAP
Meeting Date	10 th July 2023
DAP Application Number	DAP/23/02447
Property Location	Lot 622 (2) Aurea Boulevard, Golden Bay
Agenda Item Number	8.2

Presentation Details

I have read the contents of the report contained in the Agenda and note that my presentation content will be published as part of the Agenda:	YES <input checked="" type="checkbox"/>
Is the presentation in support of or against the <u>report recommendation</u> ? (<i>contained within the Agenda</i>)	SUPPORT <input type="checkbox"/> AGAINST <input checked="" type="checkbox"/>
Is the presentation in support of or against the <u>proposed development</u> ?	SUPPORT <input checked="" type="checkbox"/> AGAINST <input type="checkbox"/>
Will the presentation require power-point facilities?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> If yes, please attach



Presentation Content*

These details may be circulated to the local government and applicant if deemed necessary by the Presiding Member. Handouts or power points will not be accepted on the day.

Brief sentence summary for inclusion on the Agenda	<i>The presentation will address:</i> The reasons why this application should be approved.
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In accordance with Clause 3.5.2 of the [DAP Standing Orders](#), your presentation request must also be accompanied with a written document detailing the content of your presentation.

Please attach detailed content of presentation or provide below:

Refer to attached submission and presentation slides.

DAP/23/02453 application has been postponed from meeting MOJDAP/257, 10 July 2023 due to an administrative error made by the Local Government and this will be rescheduled to 9:30am, 13 July 2023 via Zoom.

The Shire of Serpentine-Jarrahdale did not meet regulation 39 (1A) of the Planning and Development (Development Assessment Panels) Regulations 2011. The local government must, at least 7 days before the day of the DAP meeting, give written notice of the time, date and location of the DAP meeting, and the agenda for the meeting, to each person who made a written submission to the local government in relation to a DAP application to be considered at the meeting.

The Metro Outer DAP members, Local Government Officers and members of public were advised of this on 5 July 2023.

If you have any queries regarding this, please contact the Shire of Serpentine-Jarrahdale on info@sjshire.wa.gov.au or 08 9526 1111.

Lot 57 Briggs Road, Byford - Proposed Child-Minding Centre

Form 1 – Responsible Authority Report (Regulation 12)

DAP Name:	Metro Outer Joint Development Assessment Panel	
Local Government Area:	Shire of Serpentine Jarrahdale	
Applicant:	Apex Planning	
Owner:	DRB Developments Pty Ltd	
Value of Development:	\$2.05 million <input type="checkbox"/> Mandatory (Regulation 5) <input checked="" type="checkbox"/> Opt In (Regulation 6)	
Responsible Authority:	Shire of Serpentine Jarrahdale	
Authorising Officer:	Andrew Trosic Director Development Services	
LG Reference:	PA23/172	
DAP File No:	DAP/23/02453	
Application Received Date:	10 March 2023	
Report Due Date:	26 June 2023	
Application Statutory Process Timeframe:	90 Days	
Attachment(s):	1. Developments Plans 2. Schedule of Submissions and Applicant Response 3. Deemed Provisions Regulations Clause 67 Checklist 4. Environmental Acoustic Assessment 5. Updated Traffic Impact Assessment 6. Updated Bushfire Management Plan 7. Soil Site Evaluation Report 8. Council Report	
Is the Responsible Authority Recommendation the same as the Officer Recommendation?	<input type="checkbox"/> Yes	Complete Responsible Authority Recommendation section
	<input type="checkbox"/> No	Complete Responsible Authority and Officer Recommendation sections

Responsible Authority Recommendation

That the Metro Outer Joint Development resolves to:

- Accept** that the DAP Application reference DAP/23/02453 is appropriate for consideration as a "Child Minding Centre" land use and compatible with the objectives of the zoning table in accordance with Clause 3.2 of the Shire of Serpentine Jarrahdale 2 Town Planning Scheme No. 2.

2. **Approve** DAP Application reference DAP/23/02453 and accompanying plans (SK007) dated November 2022 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 Planning Scheme No. 2, subject to the following conditions:

Conditions

1. Pursuant to clause 26 of the Metropolitan Region Scheme, this approval is deemed to be an approval under clause 24(1) of the Metropolitan Region Scheme.
2. This decision constitutes planning approval only and is valid for a period of Four (4) 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 development is to be carried out in compliance with the plans and documentation listed below except where amended by other conditions of this consent

Plans and Specifications	Development Plans dated November 2022 Updated Transport Impact Statement dated April 2023 Environmental Acoustic Assessment dated 20 February 2023 Updated Bushfire Management Plan dated 9 May 2023 Soil Site Evaluation Report dated 16 February 2023
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4. The maximum number of children on the premises shall not exceed 104.
5. The operating hours shall be between 6:30am and 6.30pm, Monday to Friday.
6. Prior to the issue of a Building Permit for the development, the land required for the future construction of Indigo Parkway and the public open space (multiuse corridor) where it exists on the subject land, is to be precipitated as a road reserve and reserve for recreation and drainage respectively by subdivision of the subject land, as depicted within the 'Area D Briggs Larsen Precinct Local Structure Plan', to the satisfaction of the Shire of Serpentine Jarrahdale.
7. Prior to the issue of a Building Permit or approval of earthworks / civil plans (whichever comes first), updated development plans shall be submitted to and approved by the Shire of Serpentine Jarrahdale which depict the following being undertaken as part of the development:
 - (i) A new footpath being extended on the eastern side verge of Briggs Road to link the development to the existing footpath on Larsen Road;
 - (ii) The verge abutting the development site on the subject land being upgraded to an urban standard, to match the verge standard approved as part of the adjoining resident subdivision on the western side of the Briggs Road;

- (iii) The landscaping and drainage design of the multiuse corridor, in order to reflect the continuation of the design elements located west of the subject land, namely central living stream, offline vegetated swales, lighting and pathways;

Once approved, the applicant must undertake and complete all infrastructure upgrade works prior to the commencement of the development's operations.

8. Prior to the occupation of the development, vehicle parking areas, access ways and crossovers shall be designed, constructed, sealed, kerbed, drained and line marked in accordance with the approved plans and thereafter maintained to the satisfaction of the Shire of Serpentine Jarrahdale.
9. A minimum of one car parking bay is to be provided and marked for the exclusive use of vehicles displaying government issued disabled parking permits. Such bay shall be located conveniently to the principal building entrance and designed in accordance with the relevant Australian Standard.
10. Prior to issue of a Building Permit, the applicant shall submit a Noise Management Plan to the specifications and satisfaction of the Shire of Serpentine Jarrahdale. The Noise Management Plan shall be prepared to ensure appropriate measures are designed and implemented for the development to achieve compliance with the *Environmental Protection (Noise) Regulations 1997*, with particular regard to the following points:
 - (i) The design of the wall on the south side of the building;
 - (ii) The management of outdoor play areas;
 - (iii) The management of indoor activities;
 - (iv) The design and shielding of mechanical plant;
 - (v) Parking arrangement for drop off before 7:00am.

Once approved, the Noise Management Plan shall be implemented in its entirety to the satisfaction of the Shire. The plan shall demonstrate the development incorporating all design and operational recommendations as specified within the Environmental Acoustic Assessment, to the satisfaction of the Shire of Serpentine Jarrahdale where associated with construction requirements integrated into plans submitted for a building permit.

11. Prior to issue of a Building Permit, a Waste Management Plan shall be submitted to and approved by the Shire of Serpentine Jarrahdale. Once approved, the Waste Management Plan shall be implemented in its entirety to the satisfaction of the Shire.
12. Prior to issue of a Building Permit, an updated Soil Site Evaluation report is to be submitted to and approved by the Shire of Serpentine Jarrahdale on advice by the Department of Health. The updated report is required to be:
 - (i) Modelled during the wettest season times of the year (mid-July-August);
 - (ii) Demonstrate that stormwater management does not interfere with the efficacy of the effluent disposal area;
 - (iii) A plan detailing the proposed building area, trafficable areas, parking bays setback to land application areas and exclusion areas.

13. Prior to the issue of a Building Permit, a Landscape and Revegetation Plan shall be submitted to and approved by the Shire of Serpentine Jarrahdale. This is required to include the full extent of verge adjoining the development site, and the multiuse corridor. Once approved, the Landscape and Revegetation Plan shall be implemented in its entirety and maintained thereafter by the operator, to the Shire's satisfaction.
14. Prior to the issue of a Building Permit, a Stormwater Management Plan shall be submitted to and approved by the Shire of Serpentine Jarrahdale. All stormwater shall be directed so stormwater is disposed of within the property. Direct disposal of stormwater onto the road, neighbouring properties, watercourses and drainage lines is not permitted. Stormwater may be managed through either soak wells, raingardens or a combination of the two.
15. Prior to issue of a Building Permit, a Signage Strategy must be submitted to and approved by the Shire of Serpentine Jarrahdale. The Strategy shall demonstrate compliance with Local Planning Policy No 4.11 - Advertising Signs. Once approved, signage shall be displayed and maintained in accordance with the Strategy.
16. Prior to occupation of the development, the provision of percent for art being provided in accordance with Local Planning Policy 1.6 - Public Art for Major Developments to the satisfaction of the Shire.
17. Prior to issue of a Building Permit, the landowner/applicant contributing towards development infrastructure, pursuant to the Shire of Serpentine Jarrahdale Town Planning Scheme No. 2.
18. Prior to issue of a Building Permit, a Construction Management Plan is to be submitted to and approved by the Shire of Serpentine Jarrahdale. The Plan should address the following matters:
 - (i) Management of car parking, delivery vehicles and traffic associated with the construction of the development;
 - (ii) Management of dust and noise.
19. Within three months of the completion of the construction of Indigo Parkway and the eastern access road as depicted within the Subdivision Guide Plan of the 'Area D Briggs Larsen Precinct Local Structure Plan', the access arrangement onto Indigo Parkway will be required to be modified to exit only (left out) and a new full movement access/egress arrangement constructed to the access road to the east to the satisfaction of the Shire of Serpentine Jarrahdale.
20. Once the development is connected to sewer, the wastewater system is to be decommissioned to the satisfaction of the Shire of Serpentine Jarrahdale. The wastewater irrigation area is to be remediated prior to being used for any other purpose to the satisfaction of the Shire.
21. Prior to the issue of a Building Permit, a financial contribution of \$24,000 being made to the Shire, reflective of the costs to resurface the 160m section of Briggs Road relied upon for access by the development, with the contribution based upon the pro-rata generation of traffic emanating from the development.

Details: outline of development application

Region Scheme	Metropolitan Region Scheme
Region Scheme - Zone/Reserve	Urban Zone
Local Planning Scheme	Shire of Serpentine Jarrahdale Town Planning Scheme No. 2 (TPS2)
Local Planning Scheme - Zone/Reserve	Urban Development Zone
Structure Plan/Precinct Plan	Byford District Structure Byford Area D Larsen Precinct Local Structure Plan
Structure Plan/Precinct Plan - Land Use Designation	Residential
Use Class and permissibility:	Child Minding Centre is an 'SA' land use in the 'Residential' zone
Lot Size:	2,392m
Existing Land Use:	Residential
State Heritage Register	No
Local Heritage	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Heritage List <input type="checkbox"/> Heritage Area
Design Review	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Local Design Review Panel <input type="checkbox"/> State Design Review Panel <input type="checkbox"/> Other
Bushfire Prone Area	Yes
Swan River Trust Area	No

Proposal:

Proposed Land Use	Child Mind Centre
Proposed Net Lettable Area	NA
Proposed No. Storeys	One
Proposed No. Dwellings	NA

The development application is for a 'Child Minding Centre' on Lot 57 Briggs Road, Byford. The development proposes the construction of a new Child Minding Centre for 104 children, associated outdoor play areas, landscaping, signage and car parking.

Background:

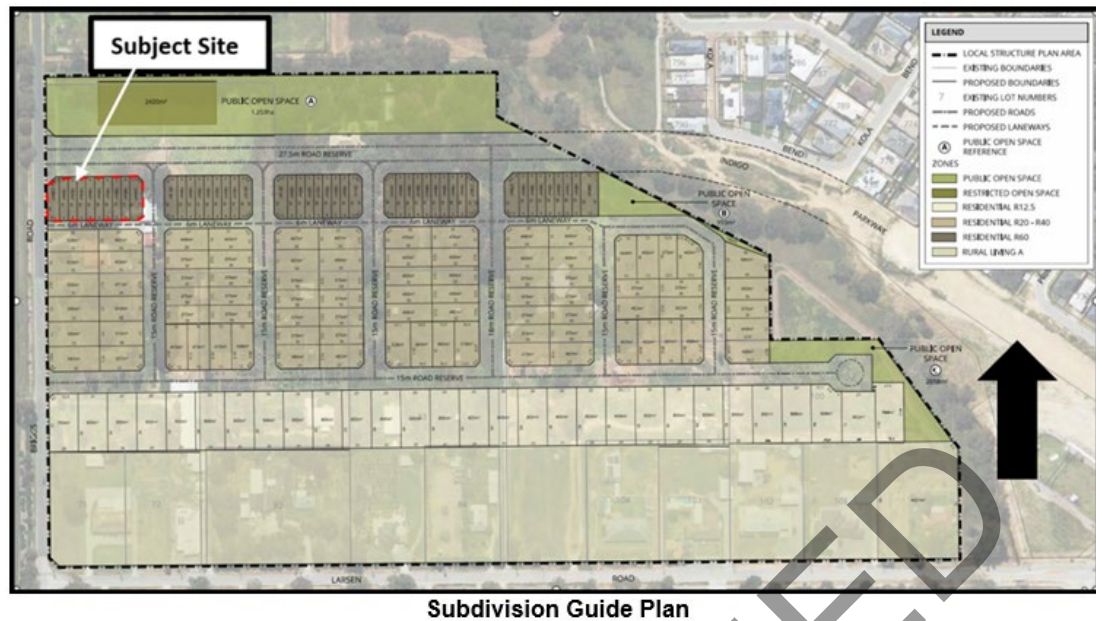
Existing Development

The subject site forms part of Lot 57 Briggs Road which has a total area of 2.0124ha. The site is currently designated as 'Residential' within the 'Area D Briggs Larsen Precinct Local Structure Plan' (LSP). It is bound by Briggs Road to the east and the road reserve for the future Indigo Parkway to the north. The Oaklands Main Drain runs parallel to the northern boundary.



The subject site is developed with a single-storey semi-rural dwelling with associated outbuildings, located to the south-western portion of the lot. The remainder of the land consists of large open grassed paddocks with mature vegetation along boundaries to the north and east. Land to the west is undergoing progressive urbanisation with ongoing subdivisions to facilitate low-medium density housing and road infrastructure being constructed.

The site is also subject to an indicative subdivision plan which was prepared as part of the LSP which provides an indicative layout of how the site would ultimately be subdivided. This can be seen following:



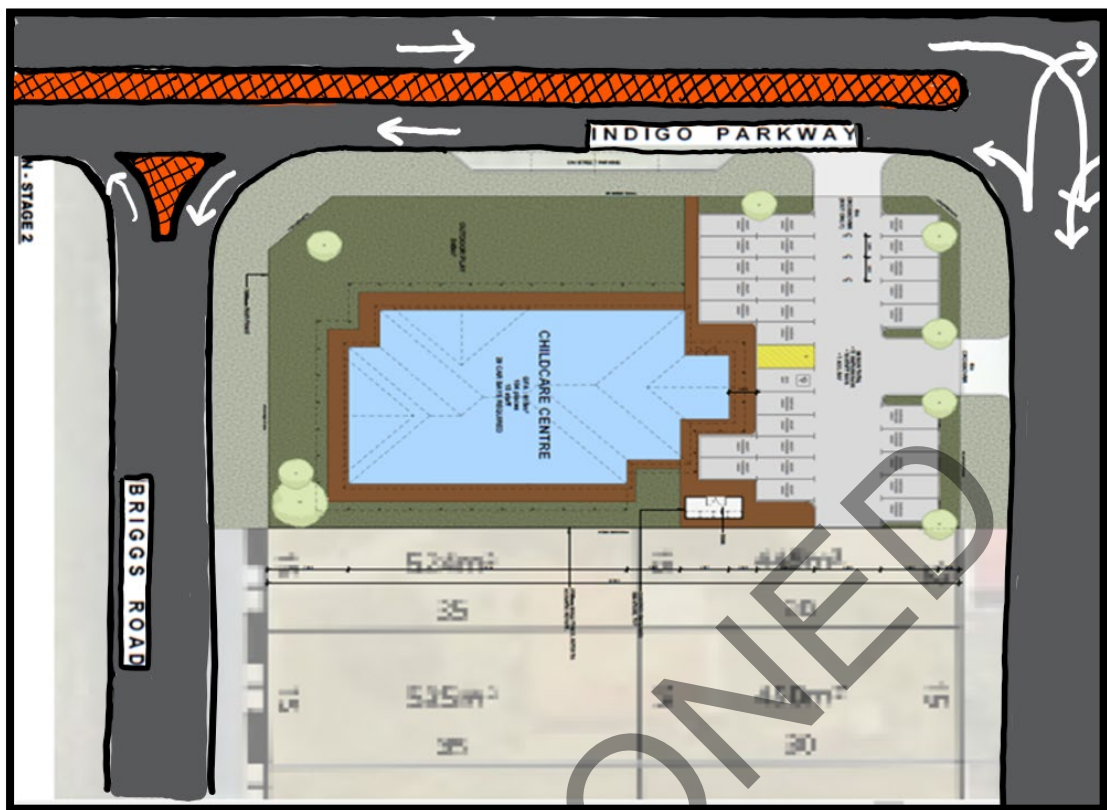
Proposed Development

The proposal seeks approval for the construction of a single storey purpose built 'Child Minding Centre'. The proposed development would occupy 2,392m² of the current overall land parcel of 2.024ha, which is identified as 'Residential' within the LSP for the site. The development is proposed to accommodate 104 children and 18 staff.

Vehicle access to the subject site is proposed to be in two stages. Stage 1 which is based on the current road network involves the construction of an interim driveway to Briggs Road. Stage 2 includes the ultimate development scenario as per the LSP, including the construction of Indigo Parkway (north of site) and an access road (to the east). This would result in a minor reconfiguration to access/egress arrangements of the site whereby Indigo Parkway will be an exit only (left out) and the access road to the east resulting in full movement. The two scenarios are shown following:



Stage 1



Stage 2

The Child Minding Centre is proposed to operate between the hours of 6:30am - 6:30pm Monday to Friday. The Child Minding Centre is expected to employ up to a maximum of 18 staff across the operations in varying shift times. The applicant provided information that the centre will accommodate children within the following age groups:

- 0-2 years: 24 places;
- 2-3 years: 20 places;
- 3+ years: 60 places.

Specifically, the proposal includes:

- Building comprising of a reception area, office, planning room, staff amenities, staffroom, kitchen, childrens toilets with storage areas, dining area, cots room, nap change/toilets, enclosure bin store, toilets, laundry and storage areas;
- Construction of Stage 1 car park with 31 car parking bays comprising of 12 spaces (visitors) for pick-up and drop-off, 18 staff car parking spaces including one universal access bay;
- Construction of a new six metre crossover on Briggs to provide direct full movement access to the stage 1 car parking area via an internal driveway;
- Construction of outdoor play areas with a total area of 845m² provided to the eastern, western and southern aspects of the building;

-
- Floor Plan Details:**
- Reception:** 25.80 m²
 - Office:** 7.45 m²
 - Kitchen:** 16.00 m²
 - Planning:** 18.51 m²
 - Staff:** 7.50 m² (2nd floor, 2nd floor)
 - Store:** 3.23 m²
 - Dry:** 10.64 m²
 - Laundry:** 10.64 m²
 - WC1:** 21.06 m²
 - WC2:** 15.09 m²
 - WC3:** 15.09 m²
 - WC4:** 15.09 m²
 - WC5:** 15.09 m²
 - WC6:** 15.09 m²
 - WC7:** 15.09 m²
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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 Assessment Panel) Regulations 2011
- Metropolitan Region Scheme

State Government Policies

- South Metropolitan Peel Sub-Regional Framework Towards Perth and Peel 3.5 Million
- Planning Bulletin 72/2009 - Child Care Centres
- Environmental Protection Authority Environmental Assessment Guideline for Separation Distances

Local Planning Framework

- Shire of Serpentine Jarrahdale Town Planning Scheme No. 2
- Draft Shire of Serpentine Jarrahdale Local Planning Scheme No. 3
- Shire of Serpentine Jarrahdale Local Planning Strategy
- Byford Area D Briggs Larsen Precinct Local Structure Plan

Local Planning Policies

- Local Planning Policy 1.4 - Public Consultation for Planning Matters (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 4.15 - Bicycle Facilities Policy (LPP 4.15)
- Local Planning Policy 4.16 - Landscape and Vegetation Policy (LPP4.16)
- Local Planning Policy 4.24 - Child Minding Centres (LPP4.24)

Consultation:

Public Consultation

The application was advertised for a period of 28 days from 20 March 2023 to 17 April 2023 to surrounding landowners within a 500m radius of the subject site, in accordance with LPP1.4 - Consultation for Planning Matters. The application was also advertised on the Shire's website for the same period.

At the conclusion of the consultation, 12 submissions consisting of six objections, three letters of concern and three letters of support were received. The objections and concerns relate to the following summarised issues, which are discussed in the relevant headings of the report and form part of the Officer assessment:

- Safety concerns due to potential localised traffic congestion from the proposal and from the future school and child care centre to the east;
- Traffic movements on the existing road network and potential unsafe traffic and pedestrian environment;
- An upgrade to the Briggs Road and Thomas Road intersection considered to be narrow and in poor condition to support additional traffic;
- Upgrade or widening of Briggs Road to be able to cater for additional traffic movements and potential congestion concerns;
- Inappropriate development in a semi-rural locality earmarked for R60 future residential dwellings thereby reducing the dwelling yield forecast in Byford;
- Lack of footpaths and street lighting along Briggs Road to support the development;
- Increased number of Child Minding Centres within the locality;
- Premature development is not in line with proper and orderly planning due to lack of the appropriate road infrastructure and reticulated sewerage to support the premises;
- Inconsistency of the proposed access way with the ultimate road network presented within the subdivision concept plan that does not provide direct lot access to Indigo Parkway;
- Potential for the intersection of Briggs Road and Indigo Parkway becoming an uncontrolled intersection for cars and pedestrians trying to cross Briggs Road;
- Proposal is not consistent with the Department of Planning, Lands, and Heritage (DPLH) Draft position statement: child care premises with regards to co-location;

Referrals/consultation with Government/Service Agencies

Department of Health (DoH)

The application was referred to the Department of Health who provided no in principle objections to the proposed Child Care Premises subject to ensuring the following are provided during the planning approval process.

Water Supply and Wastewater Disposal

In relation to the management of wastewater, the proposal is to install an onsite wastewater treatment system and disposal area. Unfortunately, the proposed location does not meet the Government Sewerage Policy 2019 objectives, that require a 100-metre setback from winter creeks or the seasonal brook. In addition, the site and soil evaluation (SSE) was not undertaken during the

wettest time of the year, but rather the warmest time of the year, being mid-January. This could significantly influence the minimum design criteria of the effluent disposal area.

DoH appreciates the lot is currently of significant size and should be able to manage wastewater onsite. Therefore, the department supports the proposal subject to ensuring the following are provided during the planning approval process.

As deep sewerage is surrounding the proposal, the DoH recommends connection to deep sewerage as the preferred option and seek costings and schedules for this option vs onsite wastewater treatment options and schedules; If it is not financially viable to connect to deep sewerage.

- Another specific site and soil evaluation (SSE) report is required for the above proposal that should be undertaken by a qualified consultant that is conducted during the wettest seasonal time of the year only (Mid-July/August) as per AS/NZS 1547:2012 requirements.
- As the proposed lot is within an environmentally sensitive area, the secondary treatment system (STS) should be engineer Certified detailing the requirements as specified on the DoH website certification for installation of wastewater treatment systems.

To ensure the stormwater catchment and diversion/disposal does not influence or interfere with the efficacy of the effluent disposal area.

- A plan detailing the proposed building envelopes, all trafficable areas, parking bays and land application area/s with setbacks, exclusion zones and measurements shown for the proposal.
- Each onsite wastewater treatment system and disposal area requires a formal application to be submitted to the respective local government for assessment and that will be forward onto the DoH for approval.

Public Health Impacts

- The site was a former farmhouse and out-buildings and portion of cleared bushland used for grazing. The submission provides no information on the age and construction of the existing buildings, the presence or absence of hazardous materials (including asbestos, fuel tanks, agricultural chemicals etc) or the measures to prevent the release of hazardous materials during any proposed demolition prior to development, causing land contamination.
- The site is not registered on the Department of Water and Environmental Regulation contaminated sites database. However, the proponent is advised to obtain a Basic Summary of Records to complete their enquiries
- Consideration should be given to the setback of the facility from the main road. There are currently no guidelines for setbacks of child-care premises from busy roads but there is consistent evidence of adverse short and long-term health outcomes in children exposed to traffic-related air pollution (TRAP). The DoH recommends a setback of at least 50m for the main buildings and play areas. The DoH also recommends vegetation barriers between the road and the site.

Food Act Requirements

- *All food related areas (kitchen, preparation areas, etc.) to comply with the provisions of the Food Act 2008 and related code, regulations and guidelines.*

Department of Water and Environmental Regulation (DWER)

The application was referred to the Department of Water and Environmental Regulation who provided no in principle objections to the proposed Child Care Premises, subject to the following key matters being given due consideration.

Government Sewerage Policy

Lot 57 Briggs Road is within a sewage sensitive area, as it is located with the Peel-Harvey coastal plain catchment. The requirements of the Government Sewerage Policy (GSP) (DPLH, 2019) apply including site requirements for on-site sewerage disposal.

It is acknowledged that a Site and Soil Evaluation (SSE) was included within the application and comments pertaining to the SSE. The SSE lacks detail to demonstrate Lot 57 can manage on-site wastewater treatment and disposal prior to the availability of reticulated sewerage associated with urbanisation of the surrounding area. It is recommended that the SSE is provided to the Department of Health for assessment.

Stormwater Management

DWER recommended for the car park stormwater drainage system to be designed, constructed and managed in accordance with the Stormwater Management Manual for Western Australia (DWER, 2022). Stormwater management within the site should be in accordance with Lots 57, 58 and 70 Briggs Road and Lots 53, 81, 83, 100 and 105 Larsen Road, Byford Local Water Management Strategy (360 environmental, October 2020).

The Department recommends that the first 15mm of stormwater runoff passes through a water quality treatment process, such as rain gardens or tree pits, before infiltration. Flush kerbing between the carpark and surrounding garden beds will assist in capturing stormwater.

Water Supply

Lot 57 is not currently connected to a reticulated potable water supply. An alternative water supply may be required for development on this lot if the proposed water main extension on Briggs Road/future Indigo Parkway (Byford Meadows Estate) has not been completed.

The proposed development area is located within the Serpentine Groundwater Area (Byford 3 sub area) which is proclaimed under the Rights in Water and Irrigation Act 1914. Any groundwater abstraction would be subject to licencing by the Department.

Noise Assessment Report

To be discussed in the noise assessment section of the report.

Water Corporation

The application was referred to Water Corporation who provided no in principle objections to the proposal and provided the following advice:

- *The proposed development does not appear to affect Water Corporation assets. If our assets are affected, the developer may be required to fund new works, or the upgrading of existing works and protection of all works associated with the Water Corporation. Water Servicing is available to the site, Wastewater servicing is not however. The proponent has stated in their planning report that will utilise onsite effluent disposal which is suitable for a lot of this size under the State Sewerage Policy.*
- *This proposal will require approval by our Building Services section prior to the commencement of works. Infrastructure Contributions and fees may be required to be paid prior to approval being issued.*

Department of Fire and Emergency Services (DFES)

DFES provided a submission requiring further clarification within the Bushfire Management Plan in relation to the following matters:

- Classification of vegetation within Plot 2 and Plot 3 and detail specifically how the Class G Grassland classification was derived.
- Correct reflection of the BAL ratings subject to correct vegetation classification
- Inconsistency of the APZ distance throughout the BMP

In response to concerns raised the applicant provided a revised BMP addressing concerns. Offices consider that the revised BMP complies with the policy measure outlined within the *State Planning Policy 3.7: Planning in Bushfire Prone Areas*.

Main Roads Western Australia (MRWA)

The application was referred to MRWA who had no objections to the proposal.

A summary of the submissions including applicant comments can be viewed in attachments.

Design Review Panel Advice

Not Applicable

Swan Valley Planning

Not Applicable

Other Advice

Not Applicable

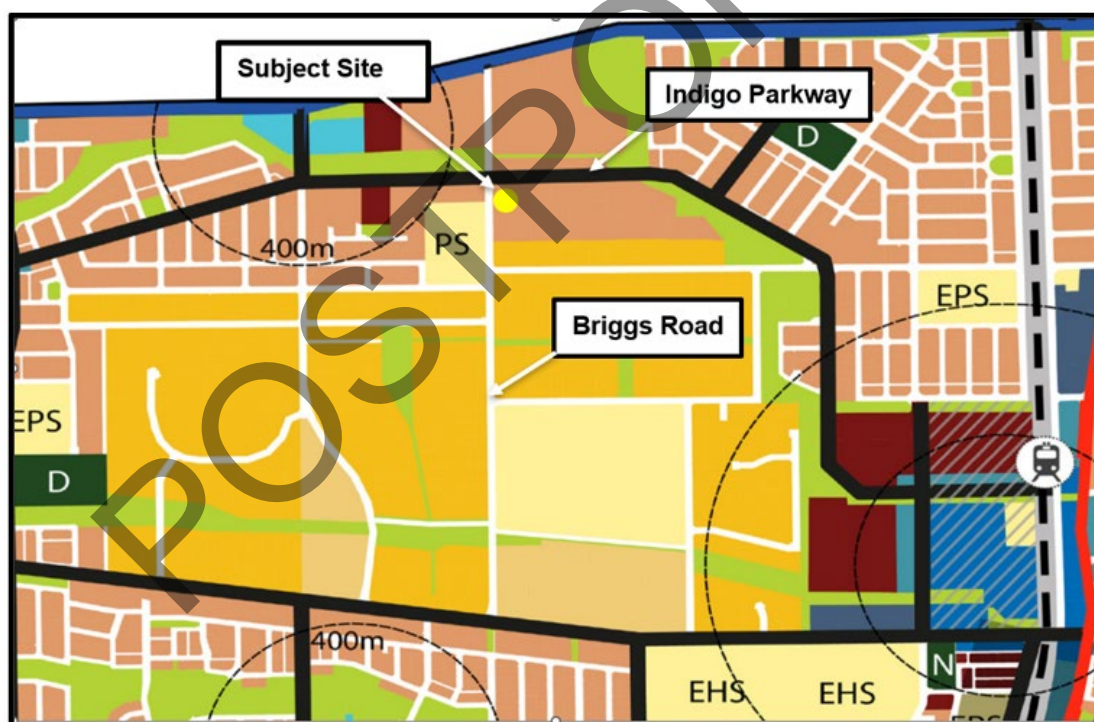
Planning Assessment:

The proposal has been assessed against the relevant legislative requirements of the Shire of Serpentine Jarrahdale No. 2, Draft Local Planning Scheme No.3 (LPS3), Local Planning Strategy (LPS), Byford District Structure Plan 2020, Byford Area D Larsen Precinct Local Structure Plan and State Policy and Local planning policies.

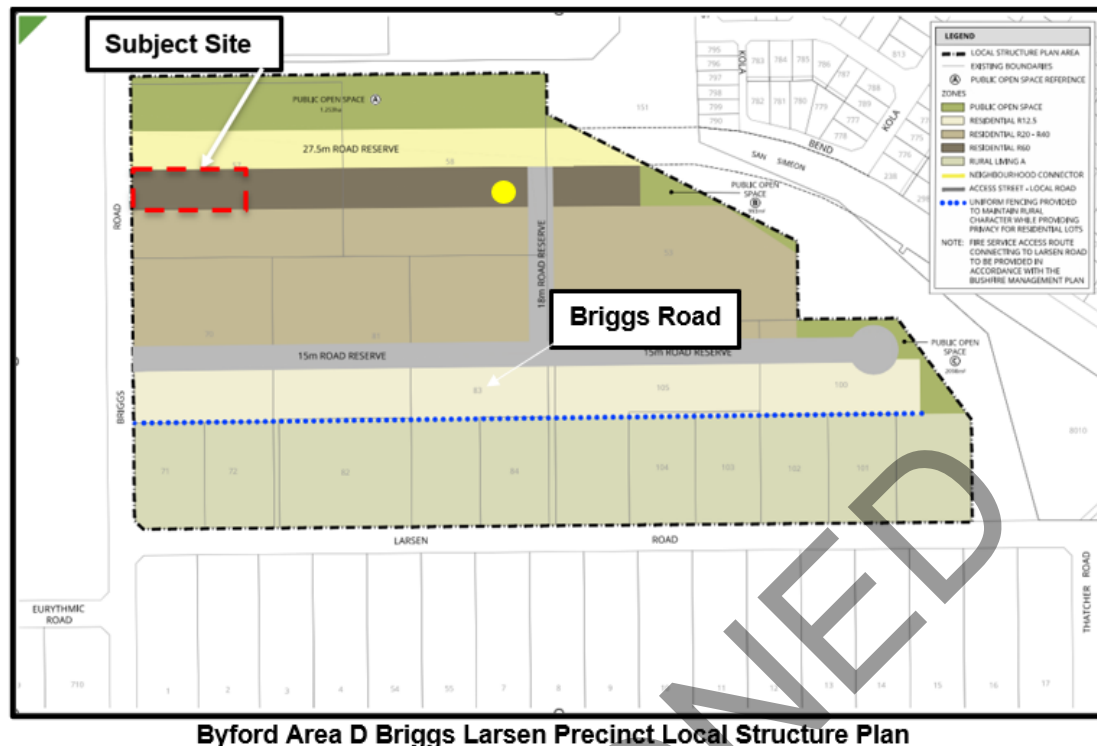
Town Planning Scheme No. 2 (TPS2)

The subject site is zoned 'Urban Development' under the Shire's TPS2. Clause 5.18 of TPS2 sets out the objective of the 'Urban Development' zone as *"to provide for the orderly planning of large areas of land in a locally integrated manner and within a regional context, whilst retaining flexibility to review planning with changing circumstances"*. This objective is facilitated through the preparation of Structure Plans, which guide land use permissibility and development.

The subject site is identified as 'Residential' within the Byford District Structure Plan 2020 (BDSP), and the LSP which provide the relevant land use permissibility and indicative land use designation applicable to the site. The proposed land use can be considered within the 'Residential' designation of the structure plans. The two structure plans, showing the land in question, are provided following:



Byford District Structure Plan



Byford Area D Briggs Larsen Precinct Local Structure Plan

Land Use

The proposal falls within the TPS2 definition of 'Child Minding Centre', which means:

"...land and buildings used for the daily or occasional care of children in accordance with the Child Welfare (Care Centres) Regulations, 1968 (as amended) but does not include a family care centre as defined by those regulations, or an institutional home".

The Child-Minding Centre is an 'SA' land use in the 'Residential' zone consistent with the residential designations of the structure plans. SA means, *"that Council may, at its discretion, permit the use after notice of the application has been given in accordance with Clause 64 of the Deemed Provisions."* An 'SA' land use requires the Shire to consider all submissions received and the broader planning framework in applying its discretionary powers to determine an application for approval.

Officers consider that the development, by way of scale, height, orientation intensity and form of development is consistent with the current and intended future amenity of the area. In addition to the future primary school and child minding centre to the west, the locality will be characterised by land uses that attract a higher level of activity compared to other locations within the structure plan area thereby forming an edge to the neighbourhood. Placement of these higher activity generating land uses on the edge of the neighbourhood allows effective management of current and future amenity for the area.

Officers further consider that the design of the development is sympathetic to the existing and the future residential development as it seeks to incorporate design elements such as verandahs, soft tones, pitched roofs and gable

features to the building which, when viewed from the street, would appear residential in form. This will provide a high degree of compatibility with adjoining and nearby medium residential density developments located within the broader locality of the Byford Meadows and Redgum Brook estates.

During the consultation period, concerns were raised regarding the land use permissibility of a child minding premises within the 'Urban Development' zone. In that regard, Officers consider that the proposed land use is consistent with the stated purpose and intent of the 'Urban Development' zone, as guided by the relevant structure plans.

Draft Local Planning Scheme No.3 (LPS3) and Local Planning Strategy (LPS

The zoning of the subject site under draft Local Planning Scheme No.3 (LPS3) would remain zoned 'Urban Development'. The proposal will fall under the land use of 'Child Care Premises' which is defined as:

"means premises where -

- (a) *an education and care service as defined in the Education and Care Services National Law (Western Australia) Section 5(1), other than a family day care service as defined in that section, is provided; or*
- (b) *a child care service as defined in the Child Care Services Act 2007 section 4 is provided".*

The use is a discretionary use, subject to advertising within the 'Residential' zone of the structure plans as discussed above.

The land use is consistent with the stated purpose and intent of the 'Urban Development' zone, as guided by the relevant Structure Plans. The 'Residential' zone objective under LPS3 supports a range of non-residential uses, which are compatible with and complementary to residential development, encouraging high quality design, built form and streetscapes throughout residential areas which is appropriate to the climate. The design is considered to reflect such objectives.

Planning Bulletin 72/2009 - Child Care Centres

Location:

During the consultation process, concerns were raised in relation to the compatibility of the child minding centre in this locality. One of the objectives of Planning Bulletin 72/2009 - Child Care Centres is to *"locate child care centres appropriately in relation to their surrounding service area"*.

The bulletin provides guidance of planning considerations in relation to the location and development of child care centres. It states that broadly, child care centre activities are located in residential areas and that the ever-increasing demand for child care centres and the strong focus on their appropriate distribution and location is closely linked to demographic change. The objectives of the policy are to:

- a) *locate child care centres appropriately in relation to their surrounding service area;*

condition is therefore recommended to ensure a new footpath being extended on the eastern side verge of Briggs Road to link the development to the existing footpath on Larsen Road.

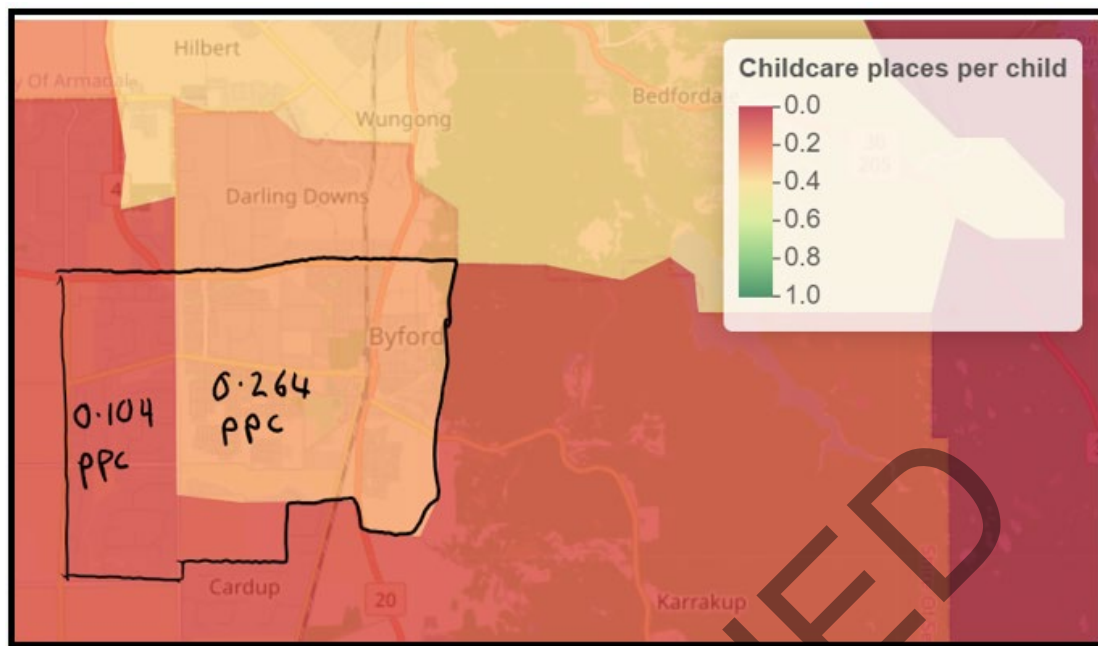
The bulletin also states that it is important in limiting the impact a 'Child Minding Centre' may have on surrounding activities and amenity of existing residential areas. In this regard, the development has been designed in such a way that the outdoor play area is located such that noise impacts to the adjoining future properties are reduced, by minimising the extent of playscape along the southern boundary and locating the youngest age groups in this area. The proposal demonstrates a configuration of development to moderate and manage as best possible noise impacts associated with the development. Noise is also later discussed in the report

During the consultation period, concerns were raised regarding the increasing number of child minding centres in the locality having an excess of four within 1km of the proposed. The planning framework does not specifically limit the number of business types to an area, recognising competitive neutrality as an important component of a market led economy.

Notwithstanding this, it is important for Council to consider the current situation pertaining to a lack of available childcare places, measured as a portion of theoretical places available per child. A recent study undertaken by Victoria University mapped the whole of Australia to determine supply gaps in the provision of childcare. It found that:

1. About 9 million Australians, 35% of the population, live in neighbourhoods classified as *childcare deserts* – populated areas where there are more than three children per childcare place.
2. The map below shows the accessibility of childcare across Australia. Areas in orange and red indicate suburbs more likely to have childcare deserts.

This reveals in respect of Byford:



Map showing childcare places per child

About two thirds of the suburb has only 0.26 childcare places available per child, with the remaining one third about 0.1 places per child. This is a significant issue, given the Shire is the fastest growing local government in Western Australia, and Byford the third fastest growing suburb in total numbers recently reported. Byford experienced the fourth largest number of new born children in WA in 2022 (394), as also recently reported in the regional growth statistics of the ABS. Lack of access to childcare correlates with primary carers having a lack of employment opportunities (particularly mothers). This has an adverse economic impact on both household and local income generation potential.

Overall, the proposal is considered consistent with Planning Bulletin 72/2009.

Car Parking

Clause 67(s) of the Deemed Provisions requires consideration be given to the adequacy of provision for parking of vehicles. As such, a car parking assessment has been undertaken against the requirements from TPS2 and draft LPS3.

Table V of TPS2 sets out the parking requirements for different land uses. The minimum number of car parking bays for a 'Child Minding Centre' is one space per five children accommodated. Accordingly, as the proposal seeks to accommodate up to 104 children, a minimum of 21 parking bays would need to be provided. The plans provided indicate that the proposal is compliant with the minimum TPS2 parking requirements, as it incorporates a total of 31 on-site parking bays including one disabled access bay for Stage 1 and a total of 29 on-site parking bays including one disabled access bay for Stage 2. Two bays will be removed for Stage 2 to allow for addition of a crossover for the future access road.

In terms of draft LPS3, the table below summarises the parking requirements:

Land Use	Parking Requirement	No of Children/Staff	Parking Required	Proposed Bays
Child Minding Centre	1:10 children, plus 1:1 employee	104 18	10.4 (11) bays 18 bays	13 18
Total			31	31

The proposal complies with the parking requirements under LPS3 for both the Stage 1 and Stage 2 scenarios. Officers have also considered that public transport is conveniently located nearby the subject land, leading to this mode of transport being available for use by families and staff alike. The bus stops would be accessible via a footpath along Briggs Road, which forms a recommended condition of approval.

Development Requirements

Clause 7.10 and table 2 of TPS2 sets out the development standards and site requirements for development. Consideration has been given to the requirements as they apply to the 'Residential' zone, which the land is designated as under the LSP.

Table 11 TPS2 set out site requirements for selected uses in the 'Residential' Zone

Child Minding Centre	Required	Provided	Complies
<u>Setbacks</u>			
Front (Briggs Road)	7.5m	7.5m to building 4.5 to verandah	Yes
Side (Future Indigo Parkway)	3.0m	9.8m to verandah 12.75m to building	Yes
Rear (Future access road)	7.5m	20m	Yes
Plot Ratio (ratio of the gross total of the areas of all internal floors of a building to the area of site)	0.5	0.26	Yes
Site Coverage (how much of site is covered by roofed area)	0.3	0.38	No

The development slightly exceeds the prescribed site coverage requirements of TPS2. Officers have considered that the slight exceedance on the site coverage would not adversely impact on the available open space or appear as if the site is overdeveloped. The development features three outdoor playscapes fronting Briggs Road, future Indigo Parkway and future access (east) street frontages that will ameliorate the bulkiness of the building. The minor variation is not considered to present the development as bulky or overbearing when viewed from the street frontage due to the design of the

building particularly the open verandahs which reduces the building bulk. The proposed permeable fencing along Briggs Road and Indigo Parkway boundaries will maintain a sense of openness between the street and the development, removing the presence of bulk.

Form of Development

Part VII of TPS2 provides general development standards. Clause 7.1 of TPS2, relating to the general appearance of buildings and preservation of amenity, requires consideration of architectural style, colour, use of materials and the general appearance of buildings to ensure the exterior design is not out of harmony with existing buildings or likely to impact the amenity of the locality.

Below are the set of elevations, as viewed from the north (Indigo Parkway) east (Briggs Road) west future access road and from the south abutting future residential properties.



In terms of the visual impacts of the development, the proposed building which covers an area of 615m² incorporates design elements intended to reflect residential development within the immediate locality, noting the site is designated as under the LSP. The design elements include the use of timber looking decking boards, coloured feature walls, composite cladding, linear textured sheets, brickwork features and Colourbond roof sheets.

The contemporary style building is architecturally designed in response to its corner location. The verandahs, soft colour tones, and gable features will add visual interest to street frontages. The built form and playscapes are oriented

toward key street frontages. The scale, height, orientation and appearance of the development is sensitive to the existing and future characteristics of the locality.

The site is designated as R60 under the LSP. During the consultation period concerns were raised with regard development to the compatibility of the proposal within a semi-rural locality which earmarked for R60 future residential dwellings and its potential to reduce the dwelling yield forecast in Byford. Although the development is not residential in nature and is not required to comply with the density designation, it has been designed to be sympathetic to the R60 density requirements, especially in terms of setbacks and open space to further ensure the development is sympathetic to the existing and future residential development within the locality. The proposal has been designed to address all street frontages to ensure surveillance of the street and to ensure an enhanced streetscape.

Local Planning Policy 4.24 - Child Minding Centres (LPP 4.24)

LPP4.24 seeks to provide guidance for child minding centres in relation to matters such as location, siting, design, traffic, and amenity. The objectives of the policy are as follows:

- *To provide guidance for the location of child minding centres to best take advantage of the surrounding natural environment and provide a compatible setting with the locality.*
- *To ensure that amenity impacts, including noise and traffic, are managed appropriately.*
- *To promote a design of child minding centres which reflect the rural and natural character of the Shire.*
- *To provide guidance for the consideration of convenient access and layout.*

LPP4.24 sets out particular criteria for child minding centres. Development that complies with the 'Acceptable' criteria will generally be supported. Proposals falling within 'Performance Based' are required to demonstrate acceptability in relation to the specific criteria. The application has been assessed against the policy criteria below and generally complies.

Acceptable Development	Performance Based	Officer Comment
Location		
<p>Child minding centres located within easy walking distance of activity centre or recreational nodes.</p> <p>Located within a walkable catchment for the local neighbourhood.</p> <p>Larger child minding centres being encouraged to locate</p>	<p>The chosen location is appropriate to the proposed scale of the child minding centre, and such location benefits from integration with the surrounding natural and built environment.</p>	<p>Acceptable - Proposal located within 400m of a Neighbourhood Centre.</p> <p>It is located within a walkable distance from existing and future</p>

Acceptable Development	Performance Based	Officer Comment
near or within activity centres.		residential development.
The location is close to or adjoins public open space.	Located within a walkable distance to a public open space/recreational area with good quality pathways.	Acceptable - Proposal abuts the Public Open Space to the north of Indigo Parkway as identified on the LSP.
<p>Child minding centres are adequately separated from any incompatible nearby uses, with this supported by a suitably qualified risk assessment forming part of an application. Such risk assessment is to consider elements such as dangerous goods, hazardous materials and public health considerations.</p> <p>Potentially incompatible uses (taking into account design and layout) may include, for example, outlets selling petroleum, fast-food, and alcohol or tobacco products.</p>	Where child minding centres are located within 200m of any incompatible use, such proposal demonstrates that the potential for adverse health impacts is removed. Such demonstration to be in the form of a suitably qualified consultant study.	Acceptable - No incompatible land uses within 200m of the subject site.
Parking		
<p>Parking meets the requirements of the Local Planning Scheme, and demonstrates how this meets the operational aspects of the development. Internal driveways having two-way movement.</p> <p>Landscaped parking areas in accordance with the Local Planning Scheme.</p> <p>Parking areas located so as to provide a separation between surrounding</p>	<p>Suitably demonstrates that there is sufficient parking onsite in the form of a traffic and parking assessment.</p> <p>Design and layout demonstrates safe movement of vehicles and pedestrians internally.</p> <p>Parking areas incorporate layers of landscaping and Water Sensitive Urban Design.</p>	Acceptable - Proposal is compliant with TPS2 and draft LPS3 car parking requirements. Refer to parking section of the report.

Acceptable Development	Performance Based	Officer Comment
dwelling and outdoor play spaces.		
Traffic		
<p>Traffic generation poses an increase of no more than 10% of the current recorded daily volumes on the roads which the development adjoins. This is confirmed by a traffic impact statement.</p> <p>Development facilitates full movement access to and egress from the site.</p>	<p>Demonstrates that traffic impacts can be managed through the submission of a Traffic Management Plan. This demonstrates how traffic will be managed to not represent an adverse safety or amenity impact on the adjoining road environment.</p> <p>Demonstrate that access and egress to the site will not result in unsafe manoeuvring due to the lack of full movement access.</p>	Acceptable - refer to the traffic section of the report.
Infrastructure Requirements		
Designated pedestrian footpaths from the street to the centre and the car park to the centre.	Demonstrate that pedestrians can safely navigate to and around the site, with dedicated pathways.	Acceptable - A condition will be imposed to ensure footpath will be constructed to link the with the existing network.
Car parking visible from the street to discourage verge parking.	Signage or other means to discourage verge or unsafe parking.	Acceptable - refer to the car parking section of the report.
Amenity		
<p>Outdoor play areas located in a safe place within the site, providing adequate shade, and separated from noise sensitive premises.</p> <p>Waste service areas appropriately screened from public areas.</p> <p>Setbacks to side and rear boundaries and the</p>	<p>Outdoor play areas are arranged so as to demonstrate such will not adversely impact sensitive receptors. This is confirmed by an acoustic impact assessment and subsequent noise management plan.</p>	Acceptable - The outdoor play areas are located such that noise impacts to the adjoining future properties is reduced by minimising the extent of playscape along

Acceptable Development	Performance Based	Officer Comment
<p>orientation of openings to indoor play areas located to minimise noise impacts.</p> <p>Acoustic impact assessment submitted demonstrates how noise will be managed, particularly from:</p> <ul style="list-style-type: none"> - Indoor and outdoor play areas; - Car parking areas and the impulsive noise that comes from car access (especially staff arriving before opening and departing after closure), opening and closing of car doors, arrangement of car parking bays (staff versus visitor). 	Noise levels are demonstrated to be consistent with the level of amenity currently afforded to an area.	the southern boundary and locating the youngest age groups in this area.
Hours of operation 7:00am to 7:00pm Monday to Friday.	Demonstrate that operation hours outside of these times would not impact amenity of the area through an acoustic impact assessment and subsequent noise management plan.	Performance - the proposed hours of 6:30.am - 6:30am operation comply. While staff and children arriving prior to 7:00am, the use of the outdoor play areas will not occur until after 7:00am to comply with the acoustic report.
Child minding centres are not subject to unacceptable noise that could impact the health and wellbeing of children.	An acoustic impact assessment and subsequent noise management plan demonstrate that noise external to the site would not adversely impact on the wellbeing of children.	Acceptable - refer to the amenity section of the report.
Sites in residential areas greater than 1,000m ² in areas.	Demonstrate that sites in residential areas will be able to accommodate all activities (including	Acceptable - the site is greater than 1,000m ²

Acceptable Development	Performance Based	Officer Comment
A maximum site coverage of 60%, in order to mimic typical residential form and to provide future ability to recede back to a residential development should that occur.	parking and play areas) required on the site.	
Landscaping		
On site landscaping and landscape of all adjoining verge areas, in accordance with the Scheme, to provide an attractive setting and contribute to the streetscape.	A reduction in the on-site landscaping requirement is associated with additional verge landscaping.	Acceptable - Proposed landscaping is consistent with the policy. Refer to the built form section of the report.
Design		
Development has the appearance of natural materials i.e. recycled clay face brick, vertical and horizontal patterns of timber cladding, rammed earth construction, earth block features, natural stone elements for columns, sheltering gable roof. Measures should be taken to ensure that play areas are large enough and of such dimensions to be useful as play areas and positive outdoor space. Side setback and leftover building areas are not included for such purpose.	Demonstrate that the development includes natural features to elevate the rural and natural character of the Shire. Demonstrate that the proposal is in keeping with the surrounding built and natural environment. Development in residential areas mimics residential urban patterns (front yard, central placed building, driveway to one side and rear backyard).	Acceptable - refer to Built Form section of report.

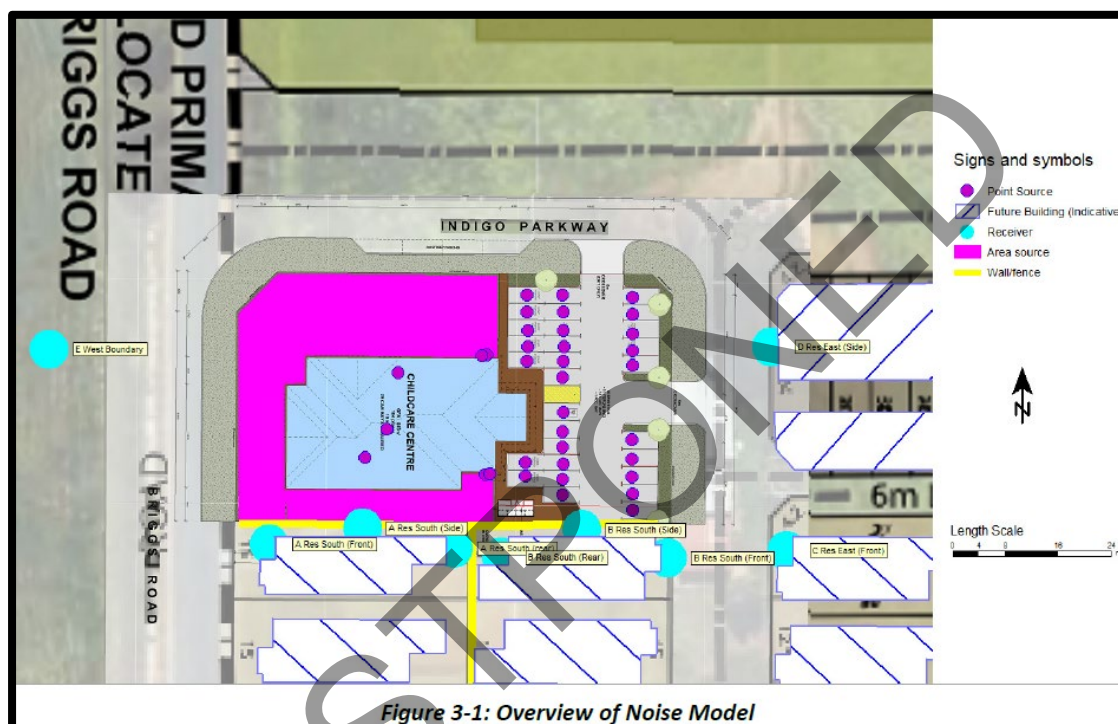
Amenity

Clause 67 of the Deemed Provisions, namely clause (n), requires the Local Government to consider the amenity impacts of a development. Noise generated from the proposal has the potential to impact upon the amenity of the area, given the proximity of the proposal to future neighbouring residential dwellings surrounding the subject site (sensitive receptors).

To address noise, the applicant submitted an Environmental Noise Assessment (ENA) in accordance with the *Environmental Protection (Noise) Regulations*

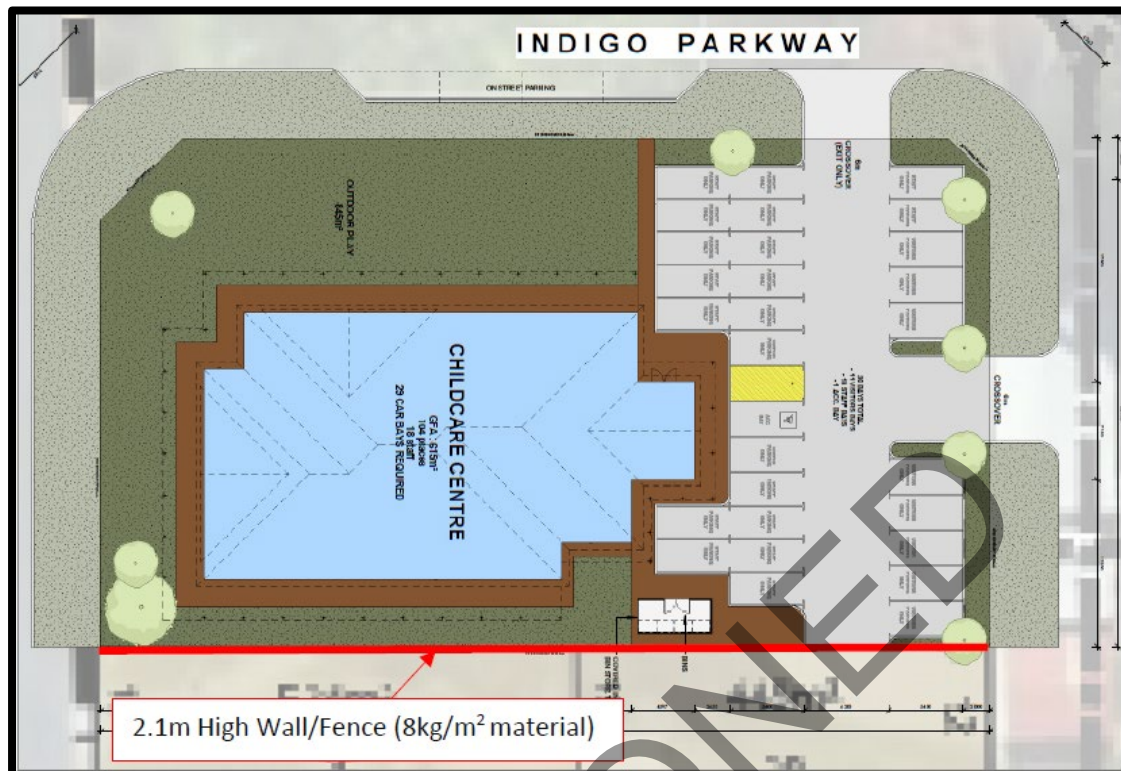
1997 (the Regulations). The report assesses noise emissions from indoor and outdoor child play areas, car doors closing in the car park, and mechanical plants (air conditioning units and exhaust extraction fans), against the prescribed standards the Regulations.

The Regulations set out the maximum allowable noise level that may be received at nearby sensitive receptors. In this case, computer modelling using the noise modelling program SoundPlan 8.2 was used to predict noise emissions from the development at all noise receivers (sensitive receptors identified as shown below and demonstrated within the ENA).



The predicted noise levels received at the future residential properties (sensitive receptors) within the ENA for the major noise sources, have been tabulated in Tables 4.1 to 4.3 of the ENA. The location of these sensitive receptors and noise receivers at this location have been captured in the above diagram.

In terms of the outdoor child play assessment, the ENA assessment demonstrates that all noise receivers will comply with the assigned levels under the regulations with zero exceedance. The acoustic modelling of outdoor play noise was based on the worst-case scenario of all children of any age group of children playing simultaneously within the outdoor play areas shown in the site plan. The noise modelling has been based on construction of a 2.1m solid wall along the southern boundary enclosing the southern outdoor play area and carpark as shown in the site plan following.



The applicant has provided information that whilst the proposed facility would open at 6.30am which is before 7:00am (i.e. during the night period as set in the Regulations) for drop offs, the outdoor play area would only be used after 7:00am thereby restricting outdoor play times. In addition, the applicant has provided information that play time would generally be staggered and therefore not all children would be playing outside at once for extended periods of time. As such, Officers are satisfied that outdoor play area noise received at the neighbouring future residences to the south from the outdoor play area would comply with the assigned and maximum noise levels. The proposal has been designed in such a way that the large footprint of the outdoor play area is located to the north which abuts the future Indigo Parkway and public open space. As such, Officers are satisfied that outdoor play area noise received at the neighbouring future residences to the south and east from the outdoor play area would comply with the assigned and maximum noise levels.

The assessment of noise emitted from the mechanical plant was based on the assumptions relating to the number, location, size and type of mechanical plant. In that regard, the ENA demonstrates that all existing noise receivers predominantly sensitive receptors, comply with the assigned levels under the Regulation. Officers note that adjusted predicted noise levels at future sensitive receptors located to the south meet the threshold limit of the assigned levels which arguably presents a risk of exceedance. To ensure full compliance, the applicant has provided information that mechanical plant noise (specific AC unit types) is to be reviewed by a qualified acoustic consultant during detailed design, to ensure that noise attenuation is applied to achieve compliance with the future sensitive receptors to the south. This will include measures such as acoustic shielding of the units on all sides by a suitable barrier. This has been

conditioned accordingly and required to be met prior to the issue of a building permit.

In respect to car doors opening and closing, ENA demonstrates that all noise receivers will comply with the assigned levels under the regulations based on the construction of a 2.1m high solid wall to the south.

In terms of the indoor child play assessment, the ENA demonstrates that all noise receivers will comply with the assigned levels under the regulations based on the following:

- Internal noise levels within activity rooms would not exceed those from outdoor play for each age group, regardless of windows being open or closed; and
- Any music played within the internal activity areas would be 'light' music with no significant bass content and played at a relatively low level.

Overall, the ENA demonstrates that all noise receivers will comply with the assigned levels under the Regulations. Officers will be recommending a Noise Management Plan be submitted to address all activities associated with outdoor play and indoor child play to further reduce noise emissions from the development and to include the recommendations within ENA. Officers are satisfied that the development can be undertaken without adversely impacting upon the amenity of the locality. Officers are satisfied that the implementation of recommendations within the ENA would result in the development not adversely detracting from the existing amenity of the area currently afforded to occupiers of the area.

Traffic and Access

The category of the vehicles associated with the proposed development will predominantly comprise of small passenger vehicles dropping off and picking up children, as well as staff and waste vehicles. During the consultation period concerns were raised over the impacts of increased traffic movements on Briggs Road and whether its current state would be capable to accommodate additional traffic generated by the proposal.

As discussed above, vehicle access to the subject site is proposed in two stages based on the current road network and the future road network which includes the delivery of roads through the gradual subdivision of land within the LSP area. Vehicle access for Stage 1 of this development is proposed via a single full movement crossover on Briggs Road via an internal driveway to the carpark area as shown below.



The proposed six metre wide crossover on Briggs Road will provide access to the main car park consisting of 31 bays (inclusive of one ACROD bay) as shown in the previous image.

To assess the increased traffic movements on the road network and potential safety issues, a Transport Impact Statement (TIS) was provided with the application, which can be viewed in attachments to this report. The TIS assessed traffic generated by the proposed development and its potential impact on the overall performance of the existing and future surrounding local road network. This includes the current state of Briggs Road and the future Indigo Parkway. Briggs Road is an Access Road and Indigo Parkway a Local Distributor Road. Based on the approved LSP covering the site, Indigo Parkway will thus be upgraded to a Local Distributor Road, with a cross section comprising a single lane of traffic in either direction and central median for boulevard tree planting and drainage management.

Consistent with the planning for Byford and protection of the Byford Trotting Complex, Briggs Road is not intended to function as a Local Access Road, for access into and out of the Byford Trotting Complex.

Existing Network

The findings on the volume of traffic likely to be generated by the proposal to the site, based on the existing network was estimated using available trip generation rates from the Institute of Transportation Engineers (ITE). The TIS identifies that the development will generate 452 vehicle trips per day within the local catchment. The AM peak period generating 83 vehicle trips to the site and a PM peak flow of 73 trips generated. The focused distribution of traffic flows associated with the development is expected to be as follows:

- 60% to/from the north via Briggs Road
- 40% to/from the south via Briggs Road



section of Briggs Road, that is designated as 'Very Poor' according to the 2023 asset data capture. The section of concern is shown following:



Without a suitable upgrade, the very poor section of Briggs Road will, in the opinion of Officers, be a risk exacerbated by the intensification of traffic proposed by the development. Officers are of the opinion that the road upgrade at least needs to comprise resurfacing, similar to the recent resurfacing of Briggs Road completed by the Shire south of Larsen Road. Accordingly, a condition is recommended to require a financial contribution to resurfacing of the road, based upon the following formula:

A. Cost to resurface 160m section:	\$120,000
B. Number of child care centres proposed:	Two
C. Portion of traffic emanating south:	40%
Formula to calculate financial contribution:	$(A/B) \times C$
Upgrade contribution:	\$24,000

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

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

In Officers assessing this aspect of the TIS, the actual deteriorated section of Briggs Road does not represent a current infrastructure standard that can safely manage the planned increase in traffic. To address this aspect, a road upgrade

is needed to enable the proposed development to safely operate based on the expected traffic demands which show in the interim period 40% of traffic coming from the south. A financial contribution towards this, based on generated traffic, is recommended to be conditioned.

Upgrade of Footpath

As shown in the following image, the site will be isolated from a safe pedestrian path, and Officers consider that this needs to be addressed as part of approval of the development, by including a footpath on the eastern verge of Briggs Road that connects south to the existing network along Larsen Road.



As such, a condition has been included to secure the required footpath infrastructure that adjoins the frontages of this lot, which also extends to link to the footpath network (existing) on Larsen Road. This is important in order to facilitate safe pedestrian access to the proposed development. Consistent with the planning framework to ensure that all modes of transport are catered for.

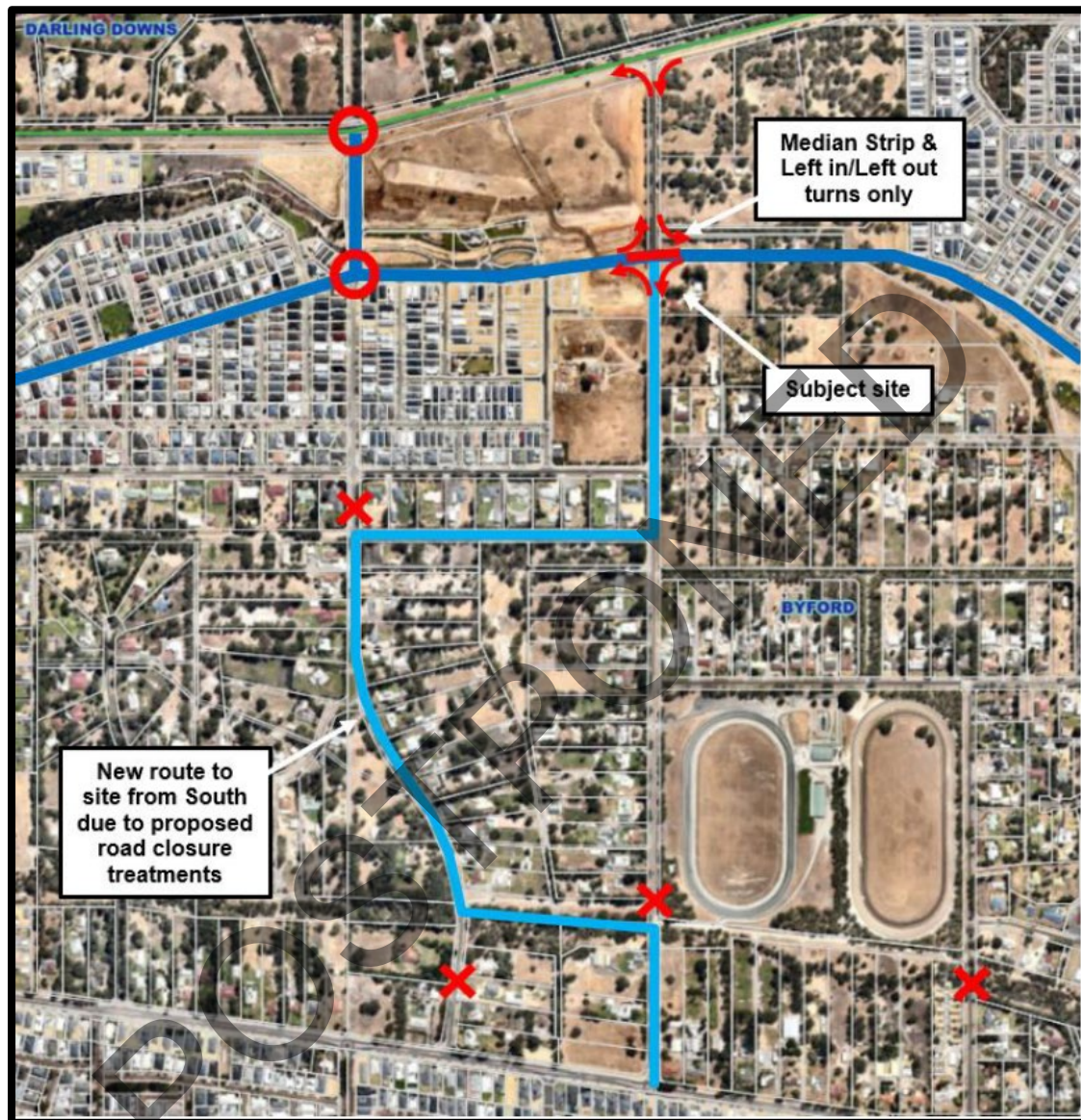
Future network

In the longer term, various proposed changes to the surrounding road network will redistribute the child minding centre traffic. This is based upon the approved Byford DSP, which depicts the ultimate network structure which aims to avoid traffic flows running through the Byford Trotting Complex along Briggs Road and Malarkey Road.

The changes to the network in the future are as follows:

- Thomas Road / Briggs Road intersection will be modified to only allow left turns.
- Briggs Road north of Abernethy Road will be modified to limit through traffic in the Byford Trotting Complex.
- Malarkey Road will be extended north to Thomas Road, and new roundabouts will be constructed on Thomas Road at Malarkey Road/Master Road and Kardan Boulevard.

- The Thomas Road / Plaistowe Boulevard intersection will be signalised.
- The median strip along Indigo Parkway will be extended across Briggs Road to block right turns and through movements along Briggs Road.



Based on the long-term changes to the road network depicted in the previous diagram, a median is expected to be constructed on Indigo Parkway, allowing only LILLO movements from/to Briggs Road. It is considered that in the longer term traffic would be evenly distributed through the creation of roads from the gradual subdivision process of the LSP area as depicted within the subdivision concept plan. Furthermore, as a result of the construction of Indigo Parkway in an eastbound direction towards the town centre.



Subdivision Guide Plan

Based on the future scenario it is unlikely that the development will increase traffic on any particular section of road by more than 100 vehicles per hour. Provided the previously mentioned condition of a contribution to upgrading the 160m section of Briggs Road occurs, the development is unlikely to have an adverse impact on the road network in the future.

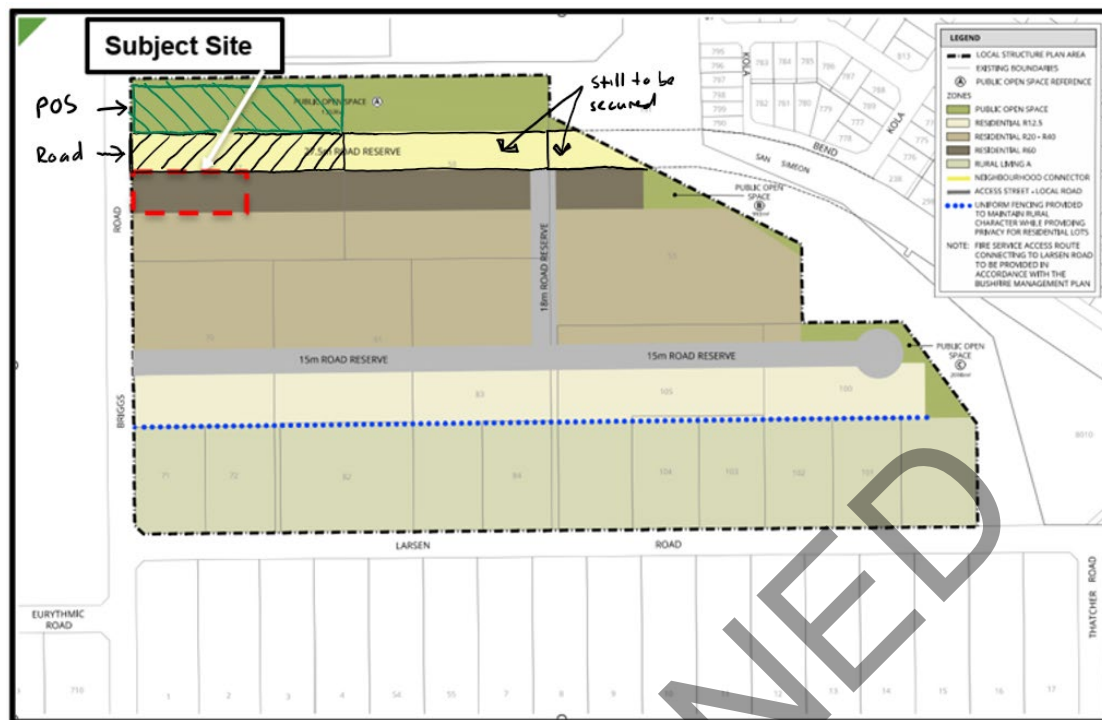
In terms of the Stage 2 access/egress arrangements, the development would be accessed via a full movement crossover to the future eastern access road and an exit only crossover to Indigo Parkway. A condition of approval ensuring the works associated with the modified access/egress arrangements are undertaken at the completion of both Indigo Parkway and the access road.

Ceding of land for Indigo Parkway and Public Open Space (POS)

The role of the structure plan is to attempt to coordinate landowners in subdividing their land, such that land parcels may be subdivided jointly in a coordinated process to layout in a logical manner where roads, POS and development will occur.

It is expected that the road reservation required for the extension of Indigo Parkway and POS Reservation as shown within the LSP is secured through the process of subdivision or a development application, whichever precedes the other. Officers consider that as development of the site has occurred first, ceding of the land for the purposes of a road reservation and the POS corridor is required to occur as part of this process. The POS portion of the land will include provision for drainage, and the portion of road reserve will likely be required for coordinated construction of the Indigo Parkway link around the 2025/2026 financial year. This is conditioned accordingly and shown in the following image.

It is conditioned to construct the POS, whereas it is not conditioned to construct Indigo Parkway given all land required for the link is yet to be secured. The remaining land portion to be secured are also shown following:



Local Structure Plan

Local Planning Policy 1.6 - (LPP 1.6) - Public Art for Major Developments

The objective of LPP1.6 is to facilitate per cent for art to enhance public enjoyment, engagement and understanding of places through the integration of public art. The policy sets out the requirements for physical and financial contributions for public art for any development valued at \$1 million or greater.

Officers note that the applicant has not provided any details for a public art feature within the design of the development. Should the application be approved, a percentage for art condition of development approval would be recommended by way of a condition, consistent with the policy.

Local Planning Policy 4.11 (LPP4.11) - Advertising

Local Planning Policy LPP 4.11 - Advertising sets out development standards and requirements for advertisements. The plans, as submitted, have identified nominal wall signage for the proposal integrated into the façade of the development. No detailed drawings of the signage were provided with the application.

If the application is approved, a signage plan will be required to be prepared and approved prior to operation of the development, to ensure any signage is compliant with the policy.

Local Planning Policy 4.15 (LPP4.15) - Bicycle Facilities

LPP4.15 provides guidance to developers on the design and requirements of bicycle parking and end of trip facilities for each specific land use. In accordance with the policy, bicycle facilities are to be provided in accordance with Schedule 1 of the policy. Officers note that the applicant has not provided any details or provisions for a bicycle rack. If the application were to be

approved, the applicant would be required to comply with the requirements of the policy.

Local Planning Policy 2.4 - Water Sensitive Design

LPP2.4 aims to maximise water efficiency by encouraging best practice urban water management methods. The policy aims to ensure water sensitive design best management practices are implemented for new developments with the Shire.

A Stormwater and Drainage Management Plan (SMP) will be required, demonstrating how stormwater is managed and shall be provided prior to issue of a Building Permit.

Local Planning Policy 24 (LPP24) - Designing Out Crime

LPP24 encourages commercial development to incorporate principles of Crime Prevention through Environmental Design (CPTED). LPP24 sets out five key crime prevention principles that are to be applied to different levels of the planning framework according to the policy. A development application needs to be assessed against the principles of the policy. The principles relate to surveillance, access control, territorial reinforcement, target hardening, management, and maintenance.

It is considered that the corner location of the site affords the site with a high level of passive surveillance. In addition, proposed activity spaces and outdoor play areas face public streets and facilitate passive surveillance over the public realm.

State Planning Policy 3.7 - Planning in Bushfire Prone Areas

SPP3.7 provides the requirements and guidelines for development within areas identified as bushfire prone. The subject site is located within a designated bushfire prone area in accordance with the Department of Fire and Emergency Services (DFES) Map of Bushfire Prone Areas. SPP3.7 seeks to ensure the risk of bushfire to developments is considered and mitigated through the development assessment process.

Pursuant to the provisions of SPP3.7, the application included a Bushfire Management Plan (BMP) for the subject site. The BMP which can be viewed in attachments states that on completion the proposed childcare center is expected to achieve a compliant BAL-29 or lower outcome, under the vegetated scenario.

As a Child-Minding Centre is a vulnerable land use, the application has been referred to DFES for assessment. DFES has recommended modifications to be undertaken to the submitted Bushfire Management Plan. These modifications primarily relate to the justification on the classification of vegetation plots and will be conditioned accordingly.

Government Sewerage Policy (2019)

This policy set out the guidelines relating to the provision of sewerage services through the planning and development of land. The policy generally requires connection of new subdivision and development to reticulated sewerage to protect public health and amenity.

The site is not proposed to be connected to deep sewerage surrounding the subject site which can be readily connected. The applicant has proposed an interim alternative effluent disposal system until such a time when the site is fully developed due to costs associated with the deep connection. During the consultation period concerns were raised regarding the lack of reticulated sewerage to support the development and the potential health impacts of the proposed alternative effluent disposal system.

The application and the accompanying Site Soil Evaluation (SSE) report was referred to the DoH. The DoH have recommended connection to deep sewer as their preference, however, are satisfied that the site can manage wastewaters onsite. The DoH have requested an updated SSE to be submitted which is undertaken during the wettest seasonal time of the year (mid-July-August) as per Australian/New Zealand Standard 1547:2012 requirements as part of a condition of approval. Furthermore, more specific details of the development to wastewater management areas (irrigation areas) of the site and confirmation that stormwater and wastewater management will not interact.

To address DoH comments, a condition has been recommended requiring an updated SSE to be submitted to reflect DoH comments. The SSE to be submitted to the Shire for approval on advice by the DoH. It should be noted that subject to a separate approvals process, the wastewater system will have to be approved by the DoH in conjunction with the Shire. This provides a second assessment process to ensure the system is compatible with the land and broader area.

In terms of future sewer connection, once land within the LSP area begins to be subdivided and sewer moves closer to the LSP area, the wastewater treatment system will be decommissioned, and the development will be connected to sewer. Currently the closest connection is 330m away from the development. A condition requiring the irrigation area of the development to be remediated to the satisfaction of the Shire once the development has been connected to sewer.

Development Contributions (DCA1)

This development falls within the development contribution area DCA1 (Area A) and as such is required to contribute towards the cost of common infrastructure under the Byford Traditional Development Contribution Plan. The development contribution area was introduced by way of Amendment 108 to TPS2, and recently updated under Amendment 208.

Under a development application (as opposed to a subdivision), contributions are calculated on the current lot area on which the development is situated, giving a lot “yield” for the site. The liability to pay the contribution is triggered at the building permit stage, and thus the DCP payment will be applied as a development condition needing to be met prior to the issue of a Building Permit. The condition of approval for the applicant to contribute towards the costs of providing common infrastructure is expected to address concerns that were raised during the consultation period.

Conclusion

This report is presented to Council to endorse a Responsible Authority Reports for the Metro Outer Development Assessment Panel for a 'Child Minding Centre' development in the western portion of Byford. Officers consider that the development is consistent with the planning framework, provided conditions are imposed to address the relevant incidental matters that relate to the proposed development. The proposed development will increase the child care services and provide employment opportunities for the local community that will assist to support the population growth within the Shire. Officers are satisfied that the conditions recommended will address concerns raised during public submissions and it is considered to not adversely impact upon the existing amenity of the area.

Alternatives

In accordance with clause 17(4) of the Regulations, the JDAP may determine an application by either approving the application (with or without conditions) or refusing the application.

Should the JDAP resolve to refuse the application, this determination needs to be made based on valid planning considerations as outlined under clause 67 of the Planning and Development (Local Planning Schemes) Regulations 2015 and as set out in the Development Assessment Panel Practice Notes: Making Good Planning Decisions.

Officer Recommendation

Reasons for Officer Recommendation



SITE PLAN - STAGE 1
SCALE: 1 : 200



SITE PLAN - STAGE 2
SCALE: 1 : 200

SITE CRITERIA

1. Site Area		
a. Site Area		2,392m²
2. Landscaping		
a. Required 10% of Site Area		239.2m²
b. Provided		623m²
Soft		218m²
Hard		845m² (35.2%)
Total		
3. Floor Area (GFA)		615m²
4. Carparking		
i. Cars Required		
As per Draft LPS 3		
1:10 Kids		11 Cars
1:1 Staff		18 Cars
ii. Cars Provided		29 Cars

CHILD CARE CRITERIA

1. Centre capacity		
a. Number of places		104 places
2. Outdoor Play		
a. Required 7m² : 1 child		728m²
b. Provided		842m²
Total m² provided per child		8.09 m²
3. Floor Area (GFA)		
a. Area required		338m²
b. Area provided		352.3 m²
4. Room distribution		
a. Room 0-12 m		12 Places
Number of places		
Staff required	1:4 Staff	3 Staff
Staff provided		
b. Room 0-12 m		12 Places
Number of places		
Staff required	1:4 Staff	3 Staff
Staff provided		
c. Room 24 - 36 m		20 Places
Number of places		
Staff required	1:5 Staff	4 Staff
Staff provided		
d. Room +3y		30 Places
Number of places		
Staff required	1:10 Staff	3 Staff
Staff provided		
e. Room +3y		30 Places
Number of places		
Staff required	1:10 Staff	3 Staff
Staff provided		
Total places		104 Places
Total Staff (+2 Staff (Chef, Manager))		18 Places

Landscaping
A. Hard Landscaping
Defined as paved walkways either open or covered.
B. Soft Landscaping
Defined as vegetative landscaping.
Gross Floor Area - GFA
A. All Floor Areas on this plan are shown as GROSS FLOOR AREA.
Unless otherwise noted as Net Floor Area.
B. Definition of Gross Floor Area is defined as:
i. GROSS FLOOR AREA OF TENANCY:
Gross Floor Area of an individual Tenancy is defined as the area contained between the centre line of common tenancy walls and the outside edge of external walls.
ii. GROSS FLOOR AREA OF A BUILDING:
Gross Floor Area of a Building is defined as the total area contained between the outside edge of external walls.
Net Floor Area - NFA
A. Net Floor Area of a Tenancy on this plan is defined as the area between external or tenancy dividing walls.
B. This area is inclusive of toilets if the toilets are exclusive to the Tenancy.

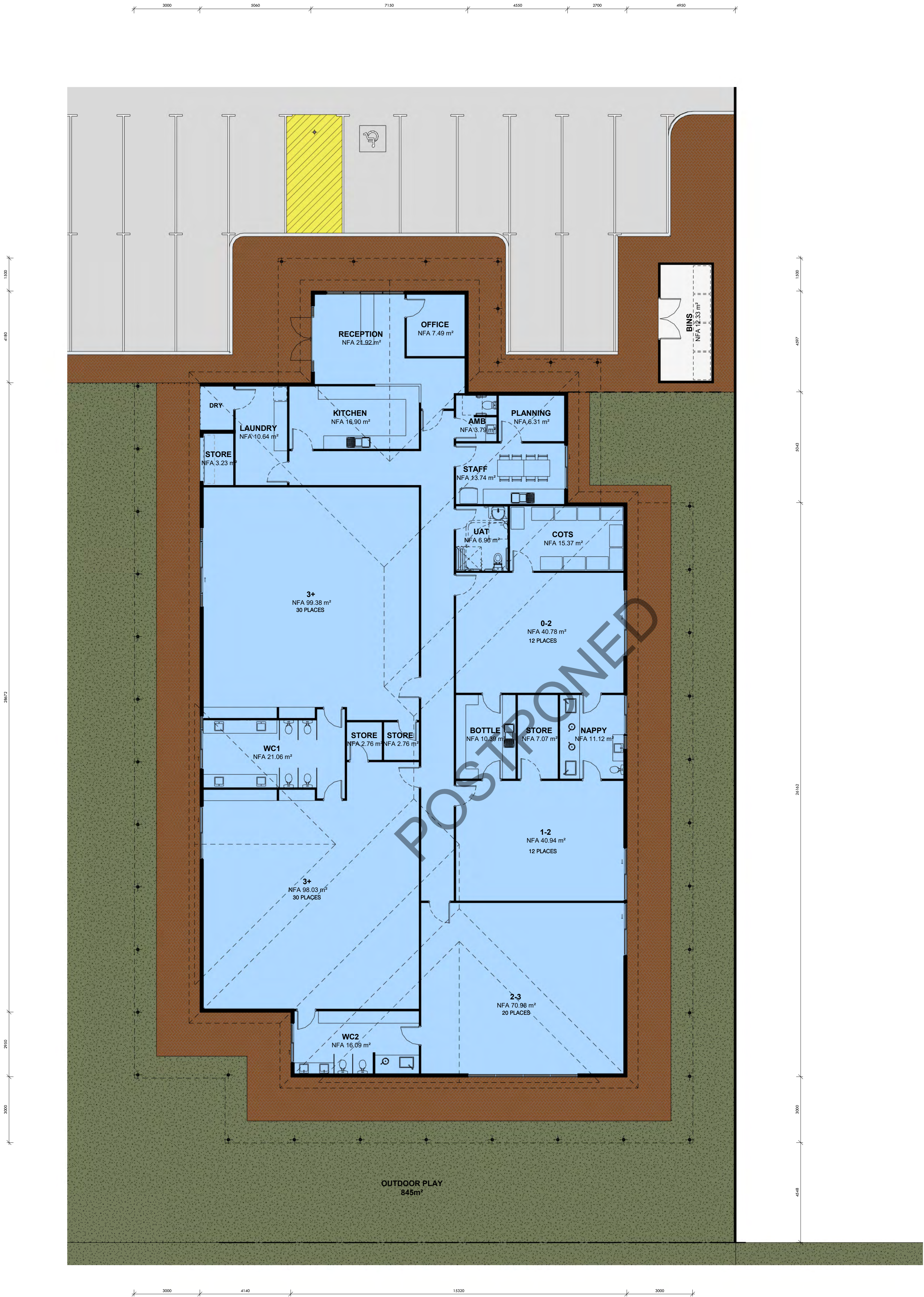
SITE DESIGN CHECKLIST

- ☐ 1. SEWER MAINS LOCATION TO BE DETERMINED
- ☐ 2. FIRE MAINS PRESSURE TEST REQUIRED
- ☐ 3. FIRE TANKS OR PUMPS TO BE DETERMINED
- ☐ 4. WESTERN POWER TRANSFORMER LOCATION TO BE DETERMINED
- ☐ 5. FULL FEATURE SITE SURVEY REQUIRED
- ☐ 6. DIAL BEFORE YOU DIG REQUIRED
- ☐ 7. BUSHFIRE ATTACK LEVEL (BAL) TO BE DETERMINED
- ☐ 8. STREET POWER POLES TO BE DETERMINED
- ☐ 9. SITE ZONING & USE TO BE DETERMINED

NOTE: Any of the following items that do not have an 'X' in the provided square require determination.

LEGEND

- ☐ BUILDING FOOTPRINT - SHOWROOM / WAREHOUSE / FACTORY
- ☐ BUILDING FOOTPRINT - OFFICE
- ☐ EXTENT OF CONCRETE HARDSTAND
- ☐ EXTENT OF ROADBASE HARDSTAND
- ☐ EXTENT OF BITUMEN PAVING
- ☐ EXTENT OF CERAMIC TILES
- ☐ EXTENT OF BRICK PAVING / CONCRETE PAVING
- ☐ EXTENT OF LANDSCAPING



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Number of places		20 Places
Staff required	1:5 Staff	4 Staff
d. Room +3y		
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- ☐ 8. STREET POWER POLES TO BE DETERMINED
- ☐ 9. SITE ZONING & USE TO BE DETERMINED

NOTE: Any of the following items that do not have an 'X' in the provided square require determination.

LEGEND

- BUILDING FOOTPRINT - SHOWROOM / WAREHOUSE / FACTORY
- BUILDING FOOTPRINT - OFFICE
- EXTENT OF CONCRETE HARDSTAND
- EXTENT OF ROADBASE HARDSTAND
- EXTENT OF BITUMEN PAVING
- EXTENT OF CERAMIC TILES
- EXTENT OF BRICK PAVING / CONCRETE PAVING
- EXTENT OF LANDSCAPING

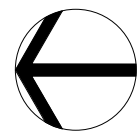
FLOOR PLAN

SCALE: 1 : 100

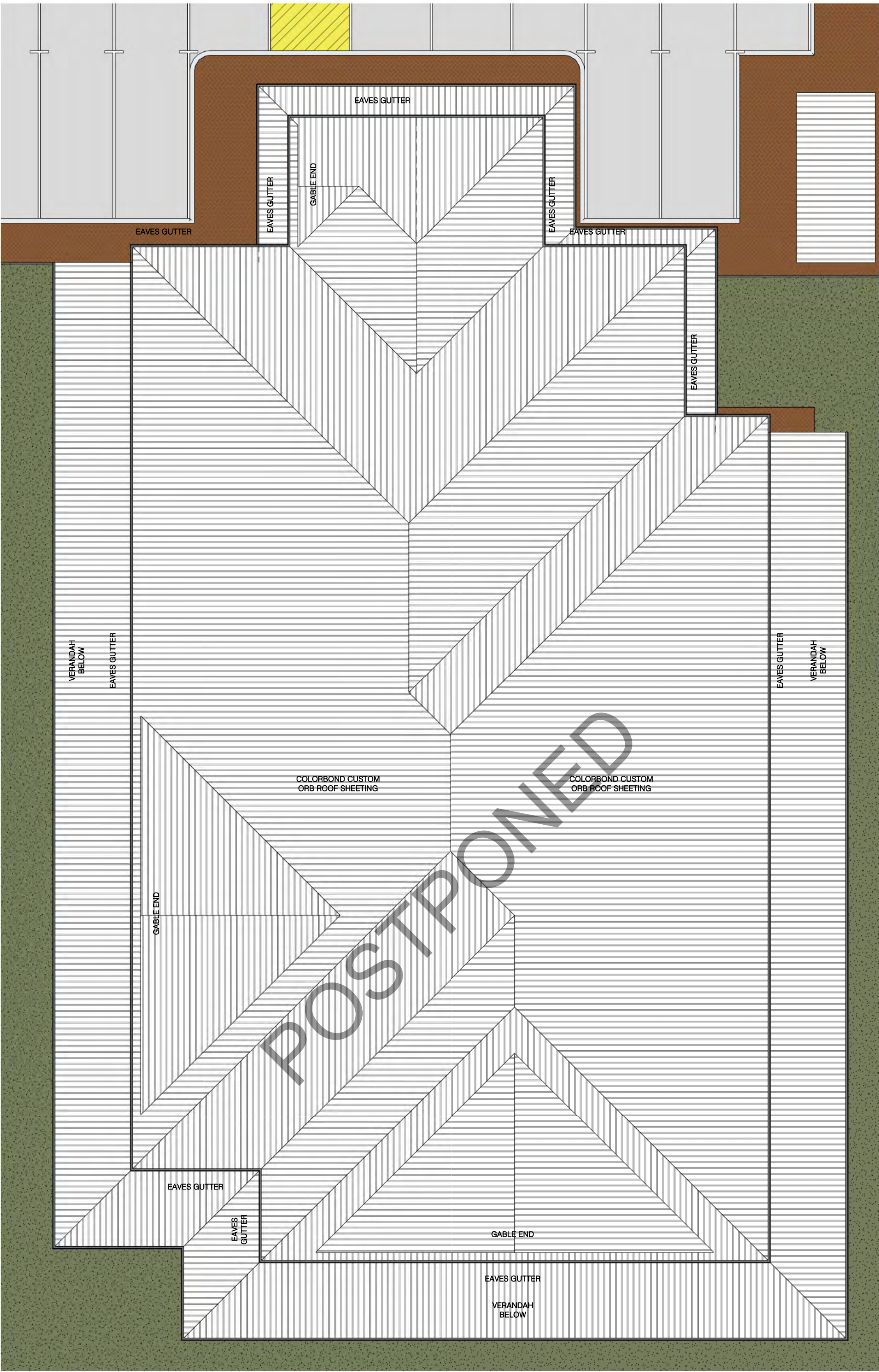
meyer
shircore
architects

CHILD CARE CENTRE

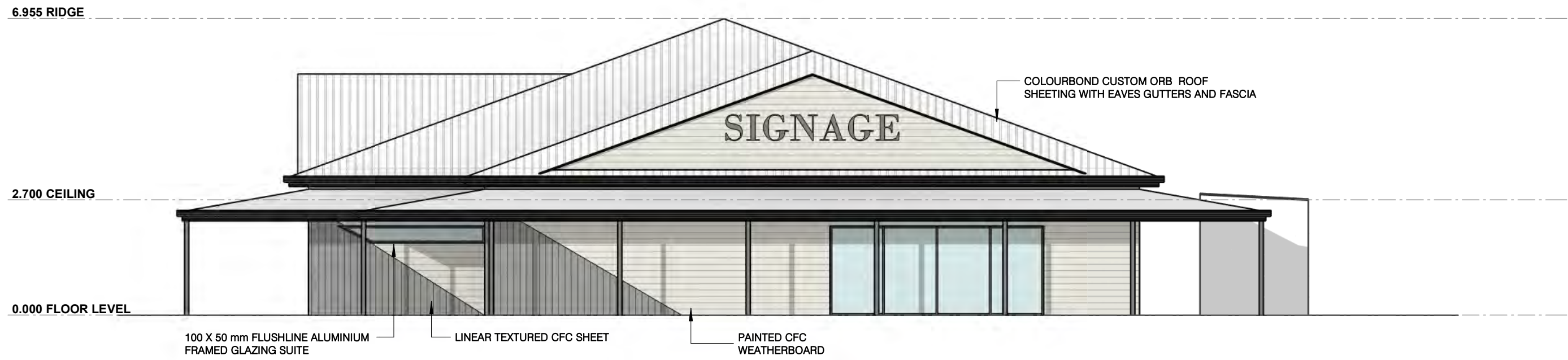
LOCATION : LOT 57 BRIGGS ROAD, BYFORD
FOR : BLOKK PROPERTY



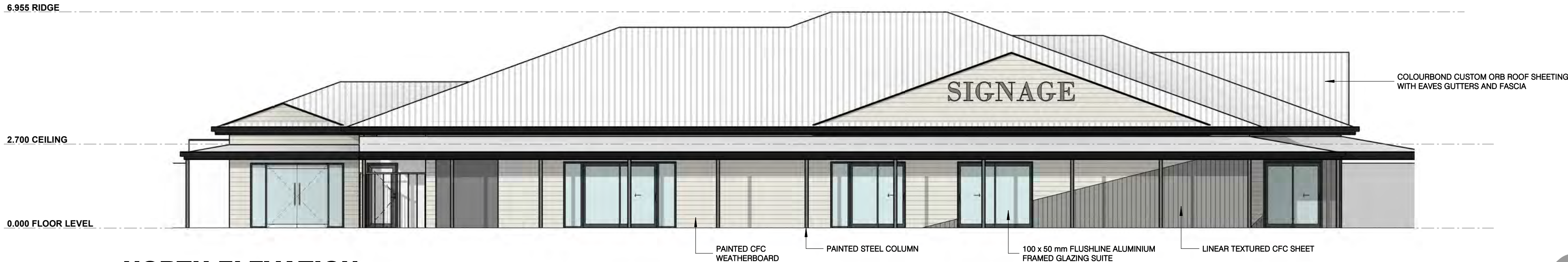
DATE: NOV 2022 PROJECT NUMBER
REVISION: SK007 22-9099
SHEET: A - 2000
SCALE: 1 : 100 @A3
© Meyer Shircore & Associates ACN 115 189 216
Suite 2, Ground Floor 437 Roberts Road, Subiaco WA 6008
PO Box 1294 Subiaco WA 6904
t: 08 9381 9511 e: msa@meyershircore.com.au



ROOF PLAN
SCALE: 1 : 100



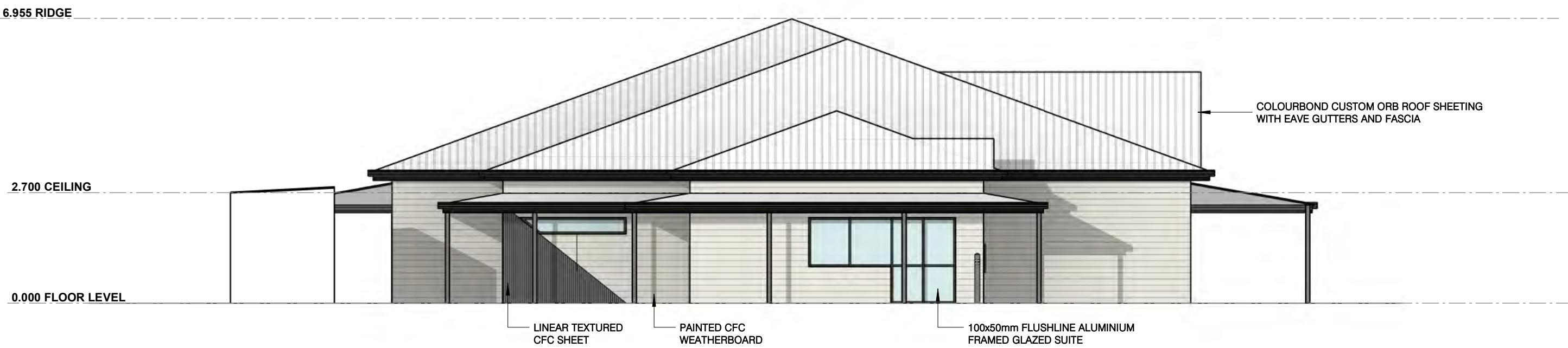
WEST ELEVATION
SCALE: 1 : 100



NORTH ELEVATION
SCALE: 1 : 100

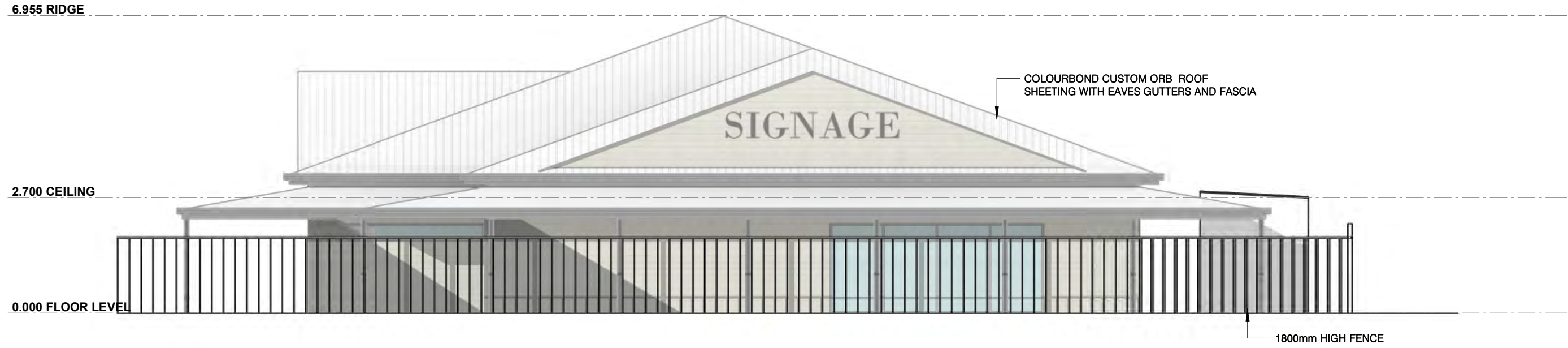


SOUTH ELEVATION
SCALE: 1 : 100

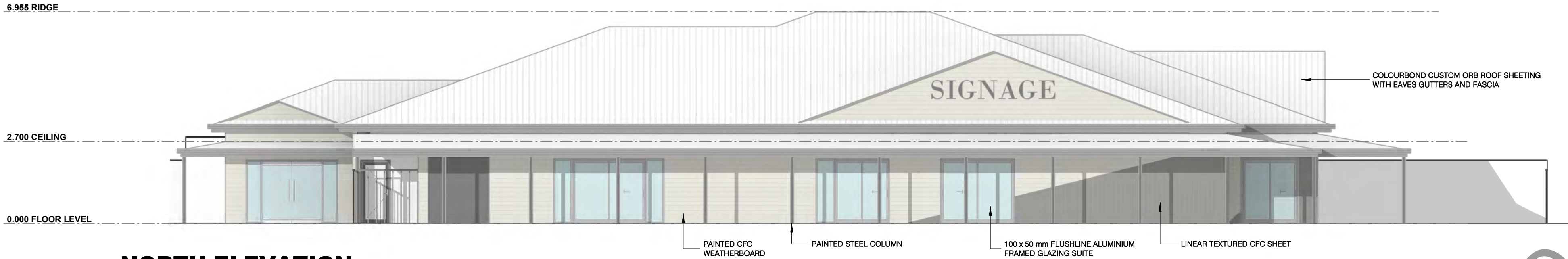


EAST ELEVATION
SCALE: 1 : 100

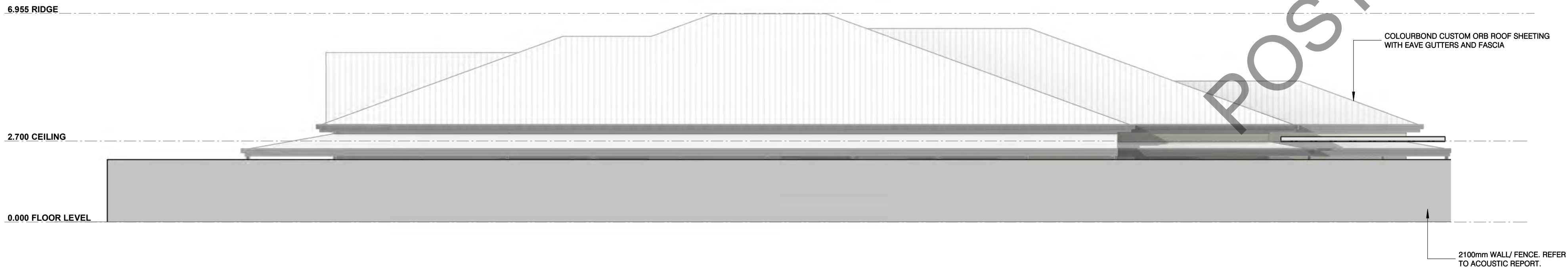
POSTPONED



EAST ELEVATION
SCALE: 1 : 100



NORTH ELEVATION
SCALE: 1 : 100



SOUTH ELEVATION
SCALE: 1 : 100



WEST ELEVATION
SCALE: 1 : 100



SUMMARY OF SUBMISSIONS

PA23/172 – Lot 57 Briggs Road, Byford – JDAP – Proposed Child Care Centre

Submitter	No	Submitter Comments	Applicant Comment	Officer Recommendation
Water Corporation		<p>Thank you for your letter dated 9th March 2023 requesting comment on the proposed development at Lot 57 Briggs Road, Byford.</p> <p>The proposed development does not appear to affect Water Corporation assets. If our assets are affected, the developer may be required to fund new works, or the upgrading of existing works and protection of all works associated with the Water Corporation. Water Servicing is available to the site, Wastewater servicing is not however. The proponent has stated in their planning report that will utilize onsite effluent disposal which is suitable for a lot of this size under the State Sewerage Policy. Water Corporation has no objections.</p> <p>This proposal will require approval by our Building Services section prior to the commencement of works. Infrastructure Contributions and fees may be required to be paid prior to approval being issued.</p> <p>For further information about building applications, please follow this link: https://www.watercorporation.com.au/Developing-and-building/Building/Lodging-a-building-application</p> <p>The information provided above is subject to review and may change. If the proposal has not proceeded within six months, it is recommended that the developer contacts us to confirm whether or not the above information is still valid.</p>	Noted, in particular comments confirming water servicing is available and that onsite effluent disposal is suitable for a lot this size.	Conditions have been included to ensure that issues raised will be addressed.
MRWA		<p>MRWA Reference: D23#255030 - File: 23/2039</p> <p>Please be advised that Main Roads has no objections in relation to the above proposal.</p>	Noted.	Noted
DWER		The Department has identified that the proposed childcare centre will impact on environment and/or water resource values. The Department therefore has concerns with the proposal in its current form. Key issues and	<u>Government Sewerage Policy</u>	As discussed in the main report a condition has been

SUMMARY OF SUBMISSIONS

PA23/172 – Lot 57 Briggs Road, Byford – JDAP – Proposed Child Care Centre

Submitter	No	Submitter Comments	Applicant Comment	Officer Recommendation
		<p>recommendations are provided below, and these matters must be addressed to the satisfaction of the Department.</p> <p>Issue</p> <p>Government Sewerage Policy</p> <p>Advice</p> <p>Lot 57 Briggs Road is within a sewage sensitive area, as it is located with the Peel-Harvey coastal plain catchment. The requirements of the Government Sewerage Policy (GSP) (DPLH, 2019) apply including site requirements for on-site sewerage disposal.</p> <p>It is acknowledged that a Site and Soil Evaluation (SSE) was included within the application and comments pertaining to the SSE are detailed in Attachment 1. The SSE lacks detail to demonstrate Lot 57 can manage on-site wastewater treatment and disposal prior to the availability of reticulated sewerage associated with urbanisation of the surrounding area. Further guidance on what is required in a SSE is found within the Department of Health's https://www.health.wa.gov.au/~media/Files/Corporate/general%20documents/water/Wastewater/Site-Soil-Evaluation.pdf (DoH, 2021).</p> <p>It is recommended that the SSE is provided to the Department of Health for assessment.</p> <p>Issue</p> <p>Stormwater Management</p> <p>Advice</p> <p>The development proposal should give due regard to https://www.sjshire.wa.gov.au/documents/30/lpp-24-water-sensitive-design (Shire of Serpentine Jarrahdale, 2018).</p> <p>Stormwater management within the site should be in accordance with Lots 57, 58 and 70 Briggs Road and Lots 53, 81, 83, 100 and 105 Larsen Road,</p>	<p>In reviewing the comments provided by DWER in Attachment 1 of its letter, it is evident that the matters raised can be addressed as part of a revised SSE which can be provided as part of a suitably worded condition of planning approval.</p> <p>With regard to item 3, we confirm the onsite effluent disposal system is proposed entirely within Lot 57.</p> <p><u>Stormwater Management</u></p> <p>A stormwater management plan can be provided at detailed design stage, in accordance with a suitably worded condition of planning approval (as per standard practice).</p> <p><u>Water Supply</u></p> <p>Water Corp has responded confirming that a water supply is available to the</p>	<p>recommended requiring an updated Site Soil Evaluation (SSE) to be submitted to reflect Department of Health (DoH). The SSE to be submitted to the Shire for approval on advice by the DoH.</p> <p>The main report recommends that a Stormwater and Drainage Management Plan (SMP) be submitted demonstrating how stormwater is managed and shall be provided prior to issue of a Building Permit.</p>



SUMMARY OF SUBMISSIONS

PA23/172 – Lot 57 Briggs Road, Byford – JDAP – Proposed Child Care Centre

Submitter	No	Submitter Comments	Applicant Comment	Officer Recommendation
		<p>Byford Local Water Management Strategy (360 environmental, October 2020).</p> <p>Stormwater within the carpark area should be managed in accordance with the https://www.wa.gov.au/government/publications/decision-process-stormwater-management-western-australia (DWER, 2017) and the https://www.wa.gov.au/government/publications/stormwater-management-manual-western-australia (DWER, 2022). Consistent with these documents, the Department recommends that the first 15mm of stormwater runoff passes through a water quality treatment process, such as rain gardens or tree pits, before infiltration. Flush kerbing between the carpark and surrounding garden beds will assist in capturing stormwater. It is not evident from the Application for Planning Approval (Landscape Plan) or Servicing Report (Stormwater Drainage) if these features are proposed.</p> <p>Issue</p> <p>Water Supply</p> <p>Advice</p> <p>Lot 57 is not currently connected to a reticulated potable water supply. An alternative water supply may be required for development on this lot if the proposed water main extension on Briggs Road/future Indigo Parkway (Byford Meadows Estate) has not been completed.</p> <p>The proposed development area is located within the Serpentine Groundwater Area (Byford 3 sub area) which is proclaimed under the Rights in Water and Irrigation Act 1914. Any groundwater abstraction would be subject to licencing by the Department.</p> <p>Please note that groundwater in the Superficial, Leederville and Cattamarra Coal Measures aquifers in this subarea are currently fully (or near to fully) allocated resulting in no resource being available for new applications. Alternative sources of water will likely need to be sought to satisfy any non-</p>	<p>development. This matter will be addressed at detailed design stage.</p> <p><u>Noise</u></p> <p>The comments of DWER in relation to the noise assessment are generally supportive. The recommendations contained within the acoustic assessment can be enforced through appropriately worded conditions of planning approval.</p>	

SUMMARY OF SUBMISSIONS

PA23/172 – Lot 57 Briggs Road, Byford – JDAP – Proposed Child Care Centre

Submitter	No	Submitter Comments	Applicant Comment	Officer Recommendation
		<p>potable water requirements or the applicant can seek a water trade agreement from another groundwater user in the area.</p> <p>Please contact the water licensing section on 9550 4222 for further advice on water availability.</p> <p>Issue</p> <p>Noise Assessment Report</p> <p>Advice</p> <p>Please refer to Attachment 2 for the Department's technical review of the Environmental Noise Assessment – Childcare Centre dated 20 February 2023 prepared by Lloyd George Acoustics Pty Ltd.</p> <p>In the event there are modifications to the proposal that may have implications on aspects of environment and/or water management, the Department should be notified to enable the implications to be assessed.</p> <div style="text-align: center;">  <p>Environmental Noise Branch Techni</p> </div>		
DFES		<p>This advice relates only to State Planning Policy 3.7: Planning in Bushfire Prone Areas (SPP 3.7) and the Guidelines for Planning in Bushfire Prone Areas (Guidelines). It is the responsibility of the proponent to ensure the proposal complies with relevant planning policies and building regulations where necessary. This advice does not exempt the applicant/proponent from obtaining approvals that apply to the proposal including planning, building, health or any other approvals required by a relevant authority under written laws.</p>	<p>The BMP has been revised in response to the DFES comments. The proposal will comply with <i>State Planning Policy 3.7: Planning in Bushfire Prone Areas</i>.</p> <div style="text-align: center;">  <p>submission v2 Briggs Rd CCC.pdf</p> </div>	<p>The applicant provided an updated Bushfire management Plan response to DFES concerns.</p>

SUMMARY OF SUBMISSIONS

PA23/172 – Lot 57 Briggs Road, Byford – JDAP – Proposed Child Care Centre

Submitter	No	Submitter Comments	Applicant Comment	Officer Recommendation
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Assessment

- Further clarification is required within the BMP of the requirements of SPP 3.7, and the supporting Guidelines as outlined in our assessment below.

1. Policy Measure 6.5 a) Preparation of a BAL assessment

Issue	Assessment	Action
Vegetation Classification	<p>Figure 3 (Vegetation Classification) is difficult to interpret. In particular:</p> <ul style="list-style-type: none"> • The southern P1/Ex label appears to be out of position as it is located on an area classified as Grassland. Others may also be, which contributes to poor legibility; • Plot 2 and Plot 3 are difficult to distinguish with no clear outlines/boundaries; and • There are areas of vegetation within the area coloured as Grassland that are outlined separately and do not appear to be Grassland. Specifically the drainage reserve, trees to the east and west of Briggs Road, trees around the existing property and trees to the south of the proposed development site (discussed further below). 	Modification to the BMP is required

SUMMARY OF SUBMISSIONS

PA23/172 – Lot 57 Briggs Road, Byford – JDAP – Proposed Child Care Centre

Submitter	No	Submitter Comments	Applicant Comment	Officer Recommendation
		<p>Figure 3 appears to combine both current classification and future (post development) classification. For clarity</p> <p>Noting comment above, vegetation Plots 2 and 3 cannot be substantiated as Class G Grassland in their entirety with the information and photographic evidence available.</p> <p>In particular:</p> <ul style="list-style-type: none"> • Photos 2.1 and 2.3 appear to show areas of mature trees around the development site, which do not appear to fit the classification of Class G Grassland; • Photo 3.1 does not clearly support Class G Grassland as the visibility is obscured by trees; • Photo 3.2 does not support the proposed classification as Class G Grassland. The drainage reserve appears to comprise Class A Forest vegetation. It is noted that the drainage reserve and the future Public Open Space to the north are described as Forest within the BMP (recognising the future state) 	<p>Modification to the BMP is required</p>	

SUMMARY OF SUBMISSIONS

PA23/172 – Lot 57 Briggs Road, Byford – JDAP – Proposed Child Care Centre

Submitter	No	Submitter Comments	Applicant Comment	Officer Recommendation
		<p>however this is not clearly depicted on the classification plan or the BAL Contours.</p> <ul style="list-style-type: none"> • Phot 3.5 does not appear to support Class G Grassland and it is not clear what the trees shown have been classified as. • The orchards shown in Photo 3.6 would only be excludable (i.e. only the grassland would be classified) under AS3959 if they are maintained to a low threat condition. The images provided do not clearly support this and evidence of management would be required. <p>The BMP should detail specifically how the Class G Grassland classification was derived.</p> <p>If unsubstantiated, the vegetation classification should be revised to consider the vegetation at maturity as per AS3959:2018, or the resultant BAL ratings may be inaccurate.</p>		
		2. Policy Measure 6.5 c) Compliance with the Bushfire Protection Criteria		

SUMMARY OF SUBMISSIONS

PA23/172 – Lot 57 Briggs Road, Byford – JDAP – Proposed Child Care Centre

Submitter	No	Submitter Comments	Applicant Comment	Officer Recommendation
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Element	Assessment	Action		
Location	<p>A1.1 – not demonstrated</p> <p>The BAL ratings cannot be validated for the reasons outlined in the above table.</p> <p>Figure 5a (BAL Contour) shows the play area impacted by BAL40/FZ. DFES recommends that the area considered as vulnerable uses includes the entire development site and therefore that the APZ should extend from the boundary of the development. While it is noted that an APZ specifically relates to habitable buildings, due to the size of the lot, it is considered that greater hazard separation would be achievable and beneficial at this site (noting future development to the north will comprise road reserve).</p>	Modification to the BMP required.		
Siting and Design	<p>A2.1 - not demonstrated</p> <p>It has not been demonstrated that the child care centre can achieve BAL-29 or below.</p> <p>The APZ distance is inconsistent throughout the BMP with Section</p>	Modification to the BMP is required.		

SUMMARY OF SUBMISSIONS

PA23/172 – Lot 57 Briggs Road, Byford – JDAP – Proposed Child Care Centre

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		<table><tr><td></td><td>2.2 referencing 8m, Figure 5a referencing 9m in the key and 12m on the map. It is unclear if the APZ can be achieved within the boundary on west side and future expected boundary on the south</td><td></td></tr></table>		2.2 referencing 8m, Figure 5a referencing 9m in the key and 12m on the map. It is unclear if the APZ can be achieved within the boundary on west side and future expected boundary on the south						
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		<table><tr><th>Issue</th><th>Assessment</th><th>Action</th></tr><tr><td>Bushfire Emergency Evacuation Plan (BEEP)</td><td>The referral has included a 'Bushfire Emergency Evacuation Plan' for the purposes of addressing the policy requirements. Consideration should be given to the Guidelines Section 5.5.4 'Developing a Bushfire Emergency Evacuation Plan'. This contains detail regarding what should be included in a BEEP and will ensure the appropriate content is detailed when finalising the BEEP to the satisfaction of the Shire.</td><td>Comment only</td></tr></table>	Issue	Assessment	Action	Bushfire Emergency Evacuation Plan (BEEP)	The referral has included a 'Bushfire Emergency Evacuation Plan' for the purposes of addressing the policy requirements. Consideration should be given to the Guidelines Section 5.5.4 'Developing a Bushfire Emergency Evacuation Plan'. This contains detail regarding what should be included in a BEEP and will ensure the appropriate content is detailed when finalising the BEEP to the satisfaction of the Shire.	Comment only		
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		<p><u>Recommendation – Compliance with Acceptable Solutions not demonstrated – modifications required</u></p> <p>It is critical the bushfire management measures within the BMP are refined to ensure they are accurate and can be implemented to reduce the vulnerability of the development to bushfire.</p>								

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PA23/172 – Lot 57 Briggs Road, Byford – JDAP – Proposed Child Care Centre

Submitter	No	Submitter Comments	Applicant Comment	Officer Recommendation
		<p>The proposed development design has not demonstrated compliance to –</p> <p style="padding-left: 40px;">Element 1: Location, and</p> <p style="padding-left: 40px;">Element 2: Siting and Design.</p> <p>As this planning decision is to be made by a Joint Development Assessment Panel, please forward notification of the decision to DFES for record keeping purposes.</p>		
Department of Health		<p>The DoH provides the following comment:</p> <p>1. Water Supply and Wastewater Disposal</p> <p>In relation to the management of wastewater, the proposal is to install an onsite wastewater treatment system and disposal area. Unfortunately, the proposed location does not meet the Government Sewerage Policy 2019 objectives, that require a 100-metre setback from winter creeks or the seasonal brook. In addition, the site and soil evaluation (SSE) was not undertaken during the wettest time of the year, but rather the warmest time of the year, being mid-January. This could significantly influence the minimum design criteria of the effluent disposal area.</p> <p>The DoH appreciates the lot is currently of significant size and should be able to manage wastewater onsite. Therefore, the department supports the proposal subject to ensuring the following are provided during the planning approval process.</p> <ul style="list-style-type: none"> • As deep sewerage is surrounding the proposal, the DoH recommends connection to deep sewerage as the preferred option and seek costings and schedules for this option vs onsite wastewater treatment options and schedules; If it is not financially viable to connect to deep sewerage. • Another specific site and soil evaluation (SSE) report is required for the above proposal that should be undertaken by a qualified consultant that is conducted during the wettest seasonal time of the year only (Mid-July/August) as per AS/NZS 1547:2012 requirements. 	<p>The Department of Health has supported the proposal, subject to the SSE being revised during the wettest months of the year.</p> <p>The author of the SSE has responded as follows:</p> <ul style="list-style-type: none"> • AS1547 does not require an SSE to be prepared during the wettest months of the year. • There is no need to undertake an SSE during the wet months, as the constant head permeability test saturates the soil to capacity and then 	<p>The site is not proposed to be connected to deep sewerage at this time which surrounds the subject site but is approximately 300m away.</p> <p>The DoH have recommended connection to deep sewer as their preference, however, are satisfied that the site can manage wastewaters onsite. The SSE to be submitted to the Shire for approval on advice by the DoH. It should be noted that subject to a separate approvals process, the</p>

SUMMARY OF SUBMISSIONS

PA23/172 – Lot 57 Briggs Road, Byford – JDAP – Proposed Child Care Centre

Submitter	No	Submitter Comments	Applicant Comment	Officer Recommendation
		<ul style="list-style-type: none"> As the proposed lot is within an environmentally sensitive area, the secondary treatment system (STS) should be engineer Certified detailing the requirements as specified on the DoH website: https://ww2.health.wa.gov.au/Articles/A_E/Certification-for-installation-of-wastewater-treatment-systems <p>To ensure the stormwater catchment and diversion/disposal does not influence or interfere with the efficacy of the effluent disposal area.</p> <ul style="list-style-type: none"> A plan detailing the proposed building envelopes, all trafficable areas, parking bays and land application area/s with setbacks, exclusion zones and measurements shown for the proposal. Each onsite wastewater treatment system and disposal area requires a formal application to be submitted to the respective local government for assessment and that will be forward onto the DoH for approval. <p>2. Public Health Impacts</p> <p>The site was a former farmhouse and out-buildings and portion of cleared bushland used for grazing. The submission provides no information on the age and construction of the existing buildings, the presence or absence of hazardous materials (including asbestos, fuel tanks, agricultural chemicals etc) or the measures to prevent the release of hazardous materials during any proposed demolition prior to development, causing land contamination.</p> <p>The site is not registered on the Department of Water and Environmental Regulation contaminated sites database. However, the proponent is advised to obtain a Basic Summary of Records to complete their enquiries: https://www.der.wa.gov.au/images/documents/your-environment/contaminated-sites/Forms/Form-2.pdf</p> <p>Consideration should be given to the setback of the facility from the main road. There are currently no guidelines for setbacks of child-care premises from busy roads but there is consistent evidence of adverse short and long-term health outcomes in children exposed to traffic-related air pollution</p>	<p>measures the rate of infiltration. The test requires the wicking ability of the soil to get a result. In simple terms, the test simulates rainy conditions and completely saturates the soil as if it is a wet season.</p> <ul style="list-style-type: none"> The other items relating to the STS and details of building envelopes, trafficable areas, parking etc will be addressed at detailed design stage of the development. 	<p>wastewater system will have to be approved by the DoH in conjunction with the Shire.</p>

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PA23/172 – Lot 57 Briggs Road, Byford – JDAP – Proposed Child Care Centre

Submitter	No	Submitter Comments	Applicant Comment	Officer Recommendation
		<p>(TRAP). The DoH recommends a setback of at least 50m for the main buildings and play areas. The DoH also recommends vegetation barriers between the road and the site.</p> <p>3. Food Act Requirements</p> <p>All food related areas (kitchen, preparation areas, etc.) to comply with the provisions of the Food Act 2008 and related code, regulations and guidelines. Details available for download from: https://ww2.health.wa.gov.au/Articles/S_T/Starting-a-food-business-in-WA</p>		
A398230	1	<p>I look to object to this plan for childcare centre on Lot 57 Briggs Road Byford. Reason for my objection is that I bought into this area due to its special zoning, to keep it like the way it is. There are so many places to open child care centre. We already have almost 5 to 6 child care centre in Byford district. To keep Byford suburb, we have got mix of everything. This acre property lots are part of Byford, so they should be kept it is. It is pocket in Byford, that I wouldn't change so please reject this proposal.</p>	<p>The land is zoned Urban Development under the Shire's LPS2 and is subject to the Byford Area D Briggs Larsen Precinct Local Structure Plan, which contemplates the urbanisation of the site and its surroundings.</p>	<p>The 'Child-Minding Centre' is a discretionary land use in the 'Residential' zone consistent with the residential designations of the structure plans. This means that the land use can be considered as discussed in the main report.</p>
A398408	2	<p>To Whom it may concern</p> <p>I am writing this submission in response to the info pack dating 20 March 2023. It is to do with a school zone and also a childcare centre. I live at 152 Larsen Road and already find this road very busy. Especially at school times. With another school and childcare centre there, it will increase traffic again. Larsen road at school times is already a race track. There is also the problem of traffic trying to get onto the South West Highway. There is one day going to be a serious accident there with people trying to cross the road. The road needs to be widened and also lights or a roundabout. The council</p>	<p>The land is zoned Urban Development under the Shire's LPS2 and is subject to the Byford Area D Briggs Larsen Precinct Local Structure Plan, which contemplates the urbanisation of the site and its surroundings.</p>	<p>A Child Minding Centre can be considered in the location as discussed in the main report</p>

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PA23/172 – Lot 57 Briggs Road, Byford – JDAP – Proposed Child Care Centre

Submitter	No	Submitter Comments	Applicant Comment	Officer Recommendation
		needs to continue George Street through to relieve traffic from the h/way. We also bought our property because of the fact it was rural and that blocks needed to be 1 acre. Now right behind our property you have drawn in small blocks. This is NOT in rural plans. It also increases the risk of break-ins as people will be jumping the fences. My wife and I certainly DO NOT support the blocks behind the 1 acre properties on Larsen Road. This submission is all about the council trying to get more blocks in and rates, when they should be trying to enhance the country lifestyle we and lots of other people bought our properties in Byford for. Surely from the previous submission we received last year you as council would have found that the people on Larsen Road do NOT support the subdivision behind their properties.	The application is supported by a traffic assessment prepared by a suitably qualified / experienced traffic engineer, demonstrating minimal impact to the surrounding road network. It is also understood the Shire is intending to address local traffic conditions as part of future detailed planning.	
A202312	3	I am all for progress and have nothing against the proposal. My problem is Briggs Road not having footpaths and adequate lighting to host these changes for the kids and cars expected to use it.	Footpaths and urban infrastructure will be delivered as part of subdivision / development occurring in accordance with local structure plans.	This matter has been discussed in the traffic section of the report. To address the concerns raised a condition of approval has been recommended to require footpaths to be constructed. The footpaths should be extended to link to the footpath network (existing) on Larsen Road.

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PA23/172 – Lot 57 Briggs Road, Byford – JDAP – Proposed Child Care Centre

Submitter	No	Submitter Comments	Applicant Comment	Officer Recommendation
A404541	4	<p>We do not object to this proposal in principle, however, we think there needs to be an upgrade to the Briggs Road and Thomas Road intersection, and Briggs Road itself to Abernethy Road for the below reasons;</p> <ul style="list-style-type: none"> The childcare centre proposed for the site along Briggs Road is bound to place more traffic volume through the already dangerous intersection of Briggs Road and Thomas Roads, Briggs Road is also very narrow and in poor condition The upgrade to the above mentioned roads would hopefully also encourage traffic which currently use Eurythmic Road, Marlarkey Road, Ballawara Avenue and Kardan Avenue as a 'rat run' from Thomas Road through to the Abernethy Road schools and shops area to use a newly created more streamlines option A reduction or at least no increase in traffic along 4 suburban streets and intersections is surely a safety positive 	<p>The application is supported by a traffic assessment prepared by a suitably qualified / experienced traffic engineer, demonstrating minimal impact to the surrounding road network. It is also understood the Shire is intending to address local traffic conditions as part of future detailed planning.</p>	<p>This has been discussed in the traffic section of the report.</p>
A398341	5	<p>1st - Why do we need another child care centre within meters of the proposed site lot 9511. Two centres literally across the road from each other will only cause major traffic congestion for Briggs Road.</p> <p>2nd – will Briggs Road be widened as it is only a single lane carriage way with table drains on either side, making it dangerous to overtake a turning vehicle, our concern lies with the congestion of traffic</p>	<p>The application is supported by a traffic assessment prepared by a suitably qualified / experienced traffic engineer, demonstrating minimal impact to the surrounding road network. It is also understood the Shire is intending to address local traffic conditions as part of future detailed planning.</p>	<p>This has been discussed in the traffic section of the report. A condition of approval is recommended to require a financial contribution to resurfacing of the road, to ensure that the very bad section of Briggs Road would be upgraded.</p>

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Submitter	No	Submitter Comments	Applicant Comment	Officer Recommendation
A400670	6	<p>No complaints here.</p> <p>Perhaps when centre and proposed school is finished it may well reduce the speed limit for a safer community.</p>	Noted.	
A398231	7	<p>This letter is written in comment to the Proposed Child Minding Centre-Lot 57 Briggs Road, Byford.</p> <p>As the owner of property on Larsen Road Byford I wish to comment that I am not in favour of the proposal.</p> <p>The proposal is too much for the area considering there are in excess of four Child Minding Centres already withing 1km of the proposed. There are already two on Larsen Rd, one directly across the South Western Highway and multiple more on the west side of the site also.</p> <p>The proposal hence creates an overall planning layout of proposed new blocks directly behind our larger Rural Living A lots and is not a good design as these properties are quite large and have sheds, animals, etc already established on them and so having small properties directly behind and next to these will create trouble and privacy issues for these properties. It should be proposed that another row of larger blocks as proposed in the plan can back onto the existing Rural Living A blocks and then have the access road in front of them. This will create good privacy for both existing and new proposed lots.</p> <p>This needs to be addressed as this proposal and overall structure plan will create a lot of problems for these larger blocks, that are already existing, and to maintain the existing privacy of these larger blocks with the higher density living, the proposed Child Minding Facility in this location is not supported. This proposal will adversely affect these existing properties, which should not be allowed considering that these properties have been established in place for many years already and the new proposed plan</p>	<p>The perceived oversupply of a land use is not a relevant planning consideration. Child Care Premises is a use contemplated on the site by virtue of its Residential zoning allocation under the Byford Area D Local Structure Plan. The proposed development is consistent with the applicable planning framework and warrants approval.</p> <p>The subdivision layout shown on the proposed plans is not proposed by this application. The layout was taken from the subdivision guide plan contained in the Byford Area D Local Structure Plan.</p>	<p>The planning framework does not specifically limit the number of business types to an area, recognising competitive neutrality as an important component of a market led economy.</p> <p>As discussed in the main report the current situation pertaining to a lack of available childcare places has been considered.</p>

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PA23/172 – Lot 57 Briggs Road, Byford – JDAP – Proposed Child Care Centre

Submitter	No	Submitter Comments	Applicant Comment	Officer Recommendation
		<p>needs to provide minimal disruption and changes to these existing properties.</p> <p>If you require any further information or comment relating to this comment please feel free to contact me.</p> <p>I trust that these comments will be taken into consideration and not dismissed as it should be the right of us to make comment and changes made accordingly if required.</p>		
A398407	8	<p>This letter is written in comment to the Proposed Child Minding Centre-Lot 57 Briggs Road, Byford.</p> <p>As owners of property on Larsen Road Byford I wish to comment that I am not in favour of the proposal.</p> <p>The proposal is too much for the area considering there are in excess of four Child Minding Centres already withing 1km of the proposed. There are already two on Larsen Rd, one directly across the South Western Highway and multiple more on the west side of the site also.</p> <p>The proposal hence creates an overall planning layout of proposed new blocks directly behind our larger Rural Living A lots and is not a good design as these properties are quite large and have sheds, animals, etc already established on them and so having small properties directly behind and next to these will create trouble and privacy issues for these properties. It should be proposed that another row of larger blocks as proposed in the plan can back onto the existing Rural Living A blocks and then have the access road in front of them. This will create good privacy for both existing and new proposed lots.</p> <p>This needs to be addressed as this proposal and overall structure plan will create a lot of problems for these larger blocks, that are already existing, and to maintain the existing privacy of these larger blocks with the higher density living, the proposed Child Minding Facility in this location is not supported. This proposal will adversely affect these existing properties,</p>	Refer comments above.	<p>The planning framework does not specifically limit the number of business types to an area, recognising competitive neutrality as an important component of a market led economy.</p> <p>As discussed in the main report the current situation pertaining to a lack of available childcare places has been considered.</p> <p>Potential amenity impact to future residential lots have been discussed in the main report.</p>

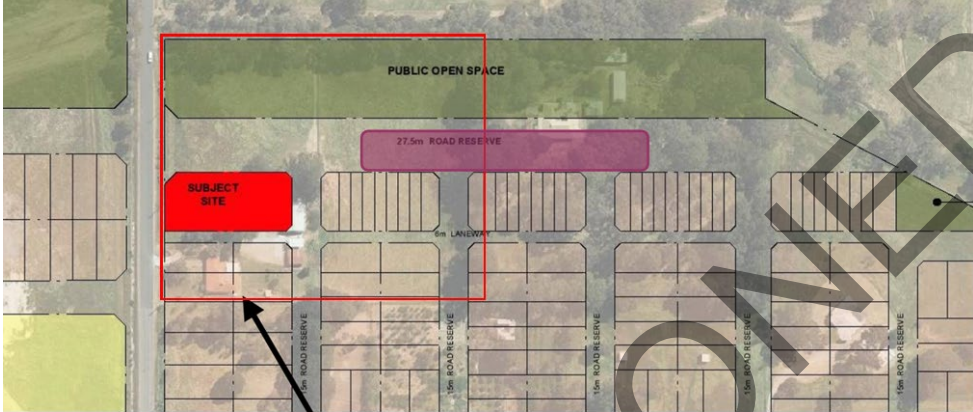
SUMMARY OF SUBMISSIONS

PA23/172 – Lot 57 Briggs Road, Byford – JDAP – Proposed Child Care Centre

Submitter	No	Submitter Comments	Applicant Comment	Officer Recommendation
		<p>which should not be allowed considering that these properties have been established in place for many years already and the new proposed plan needs to provide minimal disruption and changes to these existing properties.</p> <p>If you require any further information or comment relating to this comment please feel free to contact me.</p> <p>I trust that these comments will be taken into consideration and not dismissed as it should be the right of us to make comment and changes made accordingly if required.</p>		
A6119	9	<p>I am a longstanding landowner and ratepayer within the Shire.</p> <p>I <u>strongly object</u> to the proposed Child Minding Centre.</p> <p>On the whole, the development is premature as the appropriate infrastructure is not or will not be in place to support the facility. The development is not in line with proper and orderly planning.</p> <p>Issues with the lack of sewer and the Site Soil Evaluation (SSE)</p> <p>The Byford Area D Briggs Larsen Precinct LSP (the LSP) contemplates that the site will be serviced by reticulated sewer however the application is not proposing to connect to sewer. I consider the development should not be permitted without the connection to sewer.</p> <p>The application proposes the use of a Land Application Area (LAA) which is not in compliance with the Government Sewerage Policy (2019) and this is a critical flaw.</p> <p>Only a portion of Lot 57 is planned for this development (i.e., childcare centre) – with all other areas of the site being earmarked for either residential lots, road reserves and public open space (refer image below) – the subject site is shaded red, with the red square indicating the approximate Lot 57 boundary. The purple shading is the currently proposed LAA.</p>	<p>The proposed development has been designed in a manner which allows it to be established under current site conditions and ultimate site conditions.</p> <p>The SSE was produced by a suitably qualified and experienced scientist, and has been reviewed by external authorities. Some minor comments were received which are entirely capable of being addressed during detailed design stage as necessary.</p> <p>The approach of adopting a temporary onsite</p>	<p>As discussed in the main report a condition has been recommended requiring an updated Site Soil Evaluation (SSE) to be submitted to reflect Department of Health (DoH). The SSE to be submitted to the Shire for approval on advice by the DoH. It should be noted that subject to a separate approvals process, the wastewater system will have to be approved by the DoH in conjunction with the Shire. This provides a second assessment process to ensure the</p>

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		 <p>Given the future land use planned for the site, the proposed LAA has been positioned underneath a future road reserve and is also extending into the neighbouring Lot 58. Given the area requirements, the LAA would also be unable to be accommodated within the subject site (i.e. the childcare centre site). Table 4 of Schedule 2 of the Government Sewerage Policy (2019) details the minimum site requirements, which are considered not to be met:</p> <ul style="list-style-type: none"> • The land application area includes the area restricted to the distribution of treated sewage only and should be kept free of any temporary or permanent structures. • Activities within the land application area should not interfere with the function of the current and future land application system and people should avoid potential contact with effluent residues. • Unless specifically allowed for in the design, the land application area should: <ul style="list-style-type: none"> o Not be built on or paved in a manner that precludes reasonable access 	<p>effluent disposal system is entirely appropriate.</p> <p>It is important to recognise that the use of onsite effluent disposal is a temporary measure. When subdivision and urbanisation of Lot 57 occurs, the onsite effluent system will be decommissioned and a sewer connection created. This would occur at the time the adjoining roads are constructed, as future services are understood to be planned as part of the future road network.</p> <p>The application is supported by a traffic assessment prepared by a suitably qualified / experienced traffic engineer, demonstrating minimal impact to the surrounding road network. It is also understood the Shire is intending to address local</p>	<p>system is compatible with the land and broader area.</p>

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		<ul style="list-style-type: none"> o Not be subject to vehicular traffic (other than a pedestrian controlled lawnmower) o Not be subject to regular foot traffic such as pathways and clothes line areas; and o Should be kept in a manner which enables servicing and maintenance of the disposal system. <p>In consideration of the above and the current development plan provided in the SSE, the critical flaw in this proposal is that the LAA cannot be accommodated in the subject site, nor can it reasonably be accommodated in the remaining area within Lot 57 due to the planned future land uses.</p> <p>There are a number of other issues with the SSE.</p> <p>The site is located within a sewerage sensitive area “Estuary Catchment of the Swan Coastal Plain” and as such requires a groundwater separation distance of 1.5 m from the highest known / demonstrated groundwater level encountered at the site to the LAA.</p> <ul style="list-style-type: none"> • The SSE incorrectly explained the site is not within a sewerage sensitive area and only requires 0.6 – 1 m groundwater clearance beneath the LAA. • As such, the report also fails to detail the requirement that wastewater needs to be treated via a secondary treatment system with additional nutrient removal. <p>All fieldwork was undertaken in January 2023. The Government Sewerage Policy (2019) requires field investigations to be conducted at the end of winter to be able to demonstrate the likely maximum groundwater level at the site when there is insufficient groundwater data – given the time of year the investigations were undertaken and the lack of any other groundwater data – this has not been adequately demonstrated.</p> <p>Given the excavator encountered refusal at depths of 1.3 and 1.4 meters below ground level – it could be reasonably assumed that this geology may</p>	<p>traffic conditions as part of future detailed planning.</p>	

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		<p>result in perching of infiltrated water. This has not been considered with respect to clearance to groundwater in the LAA design.</p> <p>The site investigation test pits were not conducted in the location of the proposed LAA – this presents some uncertainty in the overall findings.</p> <p>Traffic and Road Issues</p> <p>The centre is proposed to be developed before the adjacent road network is completed.</p> <p>The application is proposing temporary access to Briggs Road until Indigo Parkway is constructed on the east side of Briggs Road.</p> <p>This interim access is located broadly opposite the new Briggs / Indigo intersection. Australian Standards AS2890 provides advice on the appropriate location of access driveways and advises against locating driveways within the area of an intersection.</p> <p>I do not believe sufficient consideration or justification has been provided for the interim access.</p> <p>The Transport Impact Statement for the application states “[t]his report will mainly focus on the Stage 1 of this development, where only Childcare Centre and an interim driveway access to Briggs Road are completed ...”. The application does not adequately address how the development will fit within the ultimate road network.</p> <p>The LSP states in Part Two, Section 5.5.2 that “direct lot access to Indigo Parkway is not provided”. The proposal seems to be inconsistent with the LSP as it references that under the ultimate road network, an exit only crossover to Indigo Parkway is proposed. No explanation has been given for the inconsistency.</p>		<p>As discussed in the main report the e predicted AM/PM trip generation peak periods fall under the ‘moderate impact’ category according to WAPC Transport Impact Assessment Guidelines.</p>

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		Developer Contribution Arrangements <p>In the event the development is permitted (despite my view that it should not be permitted in its current form), it is expected that the appropriate developer contribution arrangements would be levied on the developer.</p> <p>I look forward to my comments being considered and appropriately addressed by the Shire.</p>		
A400875	10	Support the proposal - May be there will be an increase in morning traffic.	Noted.	Noted
A406347	11	<p>Object to the proposal.</p> <p>I strongly object to the proposed Child Care Centre on the portion of Lot 57 Briggs Road, Byford for the following reasons:</p> <ol style="list-style-type: none"> 1. The proposal is inappropriately located on the eastern side of Briggs Road where parents and children have to cross over a busy Briggs Road to get to and from a future primary school (bounded by Caspian Chase, Briggs Road, Eurythmic Road, and Delianuova Street). This will create traffic congestion, traffic conflicts, and traffic chaos in the immediate local area causing confusion and an unsafe traffic and pedestrian environment. The intersection of Briggs Road and Indigo Parkway will become an uncontrolled intersection for cars and pedestrians trying to cross Briggs Road. It is unsafe, dangerous, and a recipe for accidents. 2. Byford is in need of a childcare centre. However, the location of this proposal is contrary to the orderly and proper planning for a childcare centre. It is on the wrong side of a future primary school. It is impractical for any parents to either drop their primary school-aged children at the future primary school and then hop in their cars to drop the younger children for child care, or vice versa. Doing it any other way would require crossing over a busy Briggs Road. 3. It is unacceptable for the proposal to be connected to an alternative effluent disposal system when the sewer is available in the area and can 	<p>The application is supported by a traffic assessment prepared by a suitably qualified / experienced traffic engineer, demonstrating minimal impact to the surrounding road network. It is also understood the Shire is intending to address local traffic conditions as part of future detailed planning.</p> <p>Briggs Road is currently constructed to a rural standard. It will be upgraded to an urban standard as urbanisation occurs in the locality, which will enhance connectivity between the</p>	

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PA23/172 – Lot 57 Briggs Road, Byford – JDAP – Proposed Child Care Centre

Submitter	No	Submitter Comments	Applicant Comment	Officer Recommendation
		<p>be readily connected. It is totally unacceptable for our children to be exposed to treated wastewater through irrigation be it surface spray or dripline. A Child Care Centre is a highly sensitive land use and must be treated with the highest level of scrutiny. A childcare centre must be connected to a deep sewer. For the protection of the children's health, the proposal cannot be serviced by other alternative effluent disposal system.</p> <p>4. The proposal is located in a non-established part of Byford. With the approval of the Local Structure Plan, there will be many disruptions and construction activities, and lots of infrastructure construction activities causing traffic, noise, dust and negative impacts on the health, safety and well-being of young children.</p> <p>5. The proposal is contrary to the Department of Planning, Lands, and Heritage (DPLH) Draft Position Statement: Child Care Premises as it is NOT co-locating with schools, is not part of the development of childcare premises during the preparation of a Local Structure Plan. The proponent has not adequately demonstrated that the proposed development will not create unsafe conditions for the children and families, or pedestrians, cyclists and vehicles using the roads near childcare premises. The proponent has not prioritised children's health and safety by reference to the Act and Regulations that apply guidance and standards for existing and future childcare premises.</p> <p>6. The proposal will take away the Residential R60 density earmarked for future residential dwellings thereby reducing the dwelling yield forecast in Byford. The site is unsuitable and not well-planned for a child care centre as it was not envisaged and planned during the preparation of the local structure plan. It is an afterthought and probably tied up in a contract to purchase from the current landowner. The Shire is the custodian of making sure the approved Local Structure Plans are implemented as per the approval. That means the proposed child care centre east of Briggs Rd should not be approved without the Indigo</p>	<p>child care facility and the surrounding areas.</p> <p>The approach of adopting a temporary onsite effluent disposal system is entirely appropriate, given a sewer connection is not currently feasible or possible.</p> <p>It is important to recognise that the use of onsite effluent disposal is a temporary measure. When subdivision and urbanisation of Lot 57 occurs, the onsite effluent system will be decommissioned and a sewer connection created. This would occur at the time the adjoining roads are constructed, as future services are understood to be planned as part of the future road network.</p> <p>The Byford Area D LSP guides the detailed planning for the locality, and is to be given due regard in the assessment</p>	

SUMMARY OF SUBMISSIONS

PA23/172 – Lot 57 Briggs Road, Byford – JDAP – Proposed Child Care Centre

Submitter	No	Submitter Comments	Applicant Comment	Officer Recommendation
		Parkway alignment issue being resolved together with its construction, the roundabout at Briggs Rd / Indigo Parkway must also be built (because this proposal triggers the need and nexus), the construction and contribution of Public Open Space. It is emphasised that all the requirements of the approved Local Structure Plan will have to be imposed on the proposed development if approval were contemplated to ensure the Public Open Space contribution, construction of a roundabout at Indigo Parkway and Briggs Road together with all the Development Contribution Plan requirements for the east side of Briggs Road to be fulfilled and satisfied.	of this application. The proposed child care premises is a use capable of consideration in the Residential zone which is allocated to the site and is consistent with the applicable planning framework.	
A407904	12	My comments to your planning site in Byford as long as your intention is good for the community and have more benefit to the natural beauty of our area. I think no problem. Hope it's nice to live here.	Noted and agreed.	Noted

Deemed Provisions – CI 67 Matters to be considered by local Government

Land Use:

a) The aims and provisions of this Scheme and any other local planning scheme operating within the area	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>
<p>Comment: The proposed development is considered to be generally consistent with the aims and provisions of the Scheme. The proposal falls within the TPS2 definition of 'Child Minding Centre', which means:</p> <p><i>"Child Care Centre – means land and buildings used for the daily or occasional care of children in accordance with the Child Welfare (Care Centres) Regulations, 1968 (as amended) but does not include a family care centre as defined by those regulations, or an institutional home".</i></p> <p>The Child-Minding Centre' land use is a 'SA' land use in the 'Residential' zone which means, "that Council may, at its discretion, permit the use after notice of the application has been given in accordance with Clause 64 of the Deemed Provisions."</p>			
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 <i>Planning and Development (Local Planning Schemes) Regulations 2015</i> or any other proposed planning instrument that the local government is seriously considering adopting or approving	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>
<p>Comment: The proposed development is considered to be generally consistent with the Draft Local Planning Scheme No.3 and the Local Planning Strategy. The zoning of the subject site under draft Local Planning Scheme No.3 (LPS3) will remain 'Urban Development'. The proposal would still fall under the land use of 'Child Care Premises' which is defined as:</p> <p><i>"means premises where –</i></p> <p><i>(a) an education and care service as defined in the Education and Care Services National Law (Western Australia) Section 5(1), other than a family day care service as defined in that section, is provided; or</i></p> <p><i>(b) a child care service as defined in the Child Care Services Act 2007 section 4 is provided".</i></p>			
c) any approved State planning policy	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>
<p>Comment: Planning Bulletin 72/2009 – Child Care Centres. The proposal is generally consistent with the provisions of the bulletin. The proposal is in close proximity to land identified for a future school site to the west and is located approximately 400m from the Byford Meadows Neighbourhood Centre Precinct within a medium density housing environment. It is serviced by Transperth bus routes on Eurythmic Boulevard west of Briggs Road which is within walking distance from the site. As discussed in the report the overall, the proposal is considered consistent with Planning Bulletin 72/2009.</p>			

d) any environmental protection policy approved under the <i>Environmental Protection Act 1986</i> section 31(d)	YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Comment:			

e) any policy of the Commission	YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>
Comment:			

f) any policy of the State	YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Comment:			

g) any local planning policy for the Scheme area	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>
Comment: <ul style="list-style-type: none"> Local Planning Policy 1.6 – Public Art for Major Developments (LPP 1.6) Local Planning Policy 4.11 – Advertising Policy (LPP4.11) Local Planning Policy 2.4 – Water Sensitive Design (LPP2.4) Local Planning Policy 24 (LPP24) – Designing Out Crime Local Planning Policy 4.16 – Landscape and Vegetation Policy (LPP4.16); Policy 1.4 – Public Consultation on Planning Matters; Local Planning Policy 4.24 - Child Minding Centres (LPP4.24) <p>The proposal has been assessed against these policies as discussed in the main report.</p>			

h) any structure plan, activity centre plan or local development plan that relates to the development	YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>
Comment: <ul style="list-style-type: none"> Byford District Structure Plan 2020 Draft Shire of Serpentine Jarrahdale Local Planning Scheme No.3; Local Planning Strategy. <p>As discussed in the main report the proposal is compatible to the future residential development as it seeks to incorporate design elements to the building which, when viewed from the street, would appear residential in form.</p>			

i) any report of the review of the local planning scheme that has been published under the <i>Planning and Development (Local Planning Schemes) Regulations 2015</i>	YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
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 <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Comment:			

Development:

k) the built heritage conservation of any place that is of cultural significance	YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
--	--	---------------------------------------	---

Comment:

l) the effect of the proposal on the cultural heritage significance of the area in which the development is located	YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
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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 <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>
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Comment: As discussed in the main report Officers consider that the development, by way of scale, intensity and form of development is consistent with the current and intended future amenity of the area.

n) the amenity of the locality including the following – I. Environmental impacts of the development II. The character of the locality III. Social impacts of the development	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>
--	---	---------------------------------------	--

Comment:

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 <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>
--	---	---------------------------------------	--

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 <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>
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Comment: The proposal includes areas of landscaping. A condition of approval has been included.

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 <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>
--	---	---------------------------------------	--

Comment: The proposal is supported by a Bushfire Management Plan.

r) the suitability of the land for the development taking into account the possible risk to human health or safety	YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>
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Comment:

s) the adequacy of –	YES	NO	N/A
I. The proposed means of access to and egress from the site; and	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
II. Arrangements for the loading, unloading, manoeuvring and parking of vehicles			

Comment: The proposed access arrangements are generally in accordance with the current and future planning framework.

t) the amount of traffic likely to be generated by the development, particularly in relation to the capacity of the road system in the locality and the probable effect on traffic flow and safety	YES	NO	N/A
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comment: A Traffic Impact Statement has been provided, which demonstrated traffic generation and predicted volumes can be adequately accommodated on the existing road network. The proposed development will not increase the traffic volume on any particular section of the road by more than 100 vehicles per hour.

u) the availability and adequacy for the development of the following –	YES	NO	N/A
I. Public transport services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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			

Comment: The proposed development is conveniently located. The site is serviced by Transperth bus routes on Eurythmic Boulevard west of Briggs Road, approximately 350 metres walking distance from the site. There is a section of Briggs Road, that is designated as 'Very Poor' according to the 2023 asset data capture. Without a suitable upgrade, the very poor section of Briggs Road will, in the opinion of Officers, be a risk exacerbated by the intensification of traffic proposed by the development. Officers are of the opinion that the road upgrade at least needs to comprise resurfacing, similar to the recent resurfacing of Briggs Road completed by the Shire south of Larsen Road. Accordingly, a condition is recommended to require a financial contribution to resurfacing of the road, based upon the following formula:

A. Cost to resurface 160m section: \$120,000

B. Number of child care centres proposed: Two

C. Portion of traffic emanating south: 40%

Formula to calculate financial contribution: $(A/B) \times C$

Upgrade contribution: \$24,000

To address this aspect, a road upgrade is needed to enable the proposed development to safely operate based on the expected traffic demands which show in the interim period 40% of traffic coming from the south. A financial contribution towards this, based on generated traffic, is recommended to be conditioned.

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
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comment:

w) the history of the site where the development is to be located	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>
Comment: The history of the site has been detailed in the report.			

x) the impact of the development on the community as a whole notwithstanding the impact of the development on particular individuals	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>
Comment: The proposed development is intended to provide for child minding centre needs of the direct community. The current situation pertaining to a lack of available childcare places, measured as a portion of theoretical places available per child has been discussed in the main report.			

y) any submissions received on the application	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>
Comment: Submissions received have been discussed within the report.			

Za) the comments or submissions received from any authority consulted under clause 66	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>
Comment: Department of Education (DoE), Department of Water and Environmental Regulation (DWER), Water Cooperation and Main Roads Western Australia (MRWA have no in principle objections to the proposal.			

Zb) any other planning consideration the local government considers appropriate	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>
Comment:			

Environmental Noise Assessment - Childcare Centre

Lot 57 Briggs Road, Byford

Reference: 23017822-01

Prepared for:
Blok Property Pty Ltd

Reference: 23017822-01

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Date	Rev	Description	Author	Verified
20-Feb-23	0	Issued to Client	Matt Moyle	Terry George

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EXECUTIVE SUMMARY

Lloyd George Acoustics was engaged by Blokk Property Pty Ltd to undertake a noise assessment for a proposed childcare centre (CCC) to be located at Lot 57 Briggs Road, Byford. This report considered noise emissions from the proposed childcare centre to surrounding properties by way of noise modelling of child play, mechanical plant and car door closings.

The predicted noise from all children playing outside and car door closings is compliant provided walls are constructed on the south side boundary common with residential lots. The wall is to be 2.1 metres high and must be solid, free of gaps and of minimum surface mass 8 kg/m^2 . Such material can be brick, limestone with double sheeted *Colorbond* also permissible. For areas where visual permeability is required, sound-rated plexiglass can be used. Mechanical plant noise was also calculated to be compliant, however once the plant has been designed and selected, this should be further reviewed to ensure compliance prior to Building Permit.

POSTPONED

1. INTRODUCTION

Lloyd George Acoustics was engaged by Blokk Property Pty Ltd to undertake an environmental noise assessment for a proposed childcare centre (CCC) to be located at Lot 57 Briggs Road, Byford (refer *Figure 1-1*) with the site plan shown in *Figure 1-2* and Development Application (DA) plans provided in *Appendix A*. The purpose of this report is to consider noise emissions from the proposed childcare centre to surrounding future properties.



Figure 1-1: Subject Site Location (Source: Meyer Shircore Architects)

The proposed childcare centre will be open Monday to Friday, 6.30am to 6.30pm and consist of the following:

- Five internal teaching spaces capable of accommodating up to 104 children, grouped as follows:
 - Activity 1: 12 places for children aged 0-1 years;
 - Activity 2: 12 places for children aged 1-2 years;
 - Activity 3: 20 places for children aged 2-3 years;
 - Activity 4 & 5: 60 places for children aged 3-5 years.
- Outdoor play areas;
- Amenities and associated mechanical plant such as:
 - Kitchen exhaust fan assumed to be located on roof above;
 - Various exhaust fans (toilets, laundry, nappy room) assumed to be located on the roof above;
 - Air-conditioning (AC) plant, assumed to be located on the ground in the yard as shown on the DA Plans;
- Car parking on the east side of the lot.

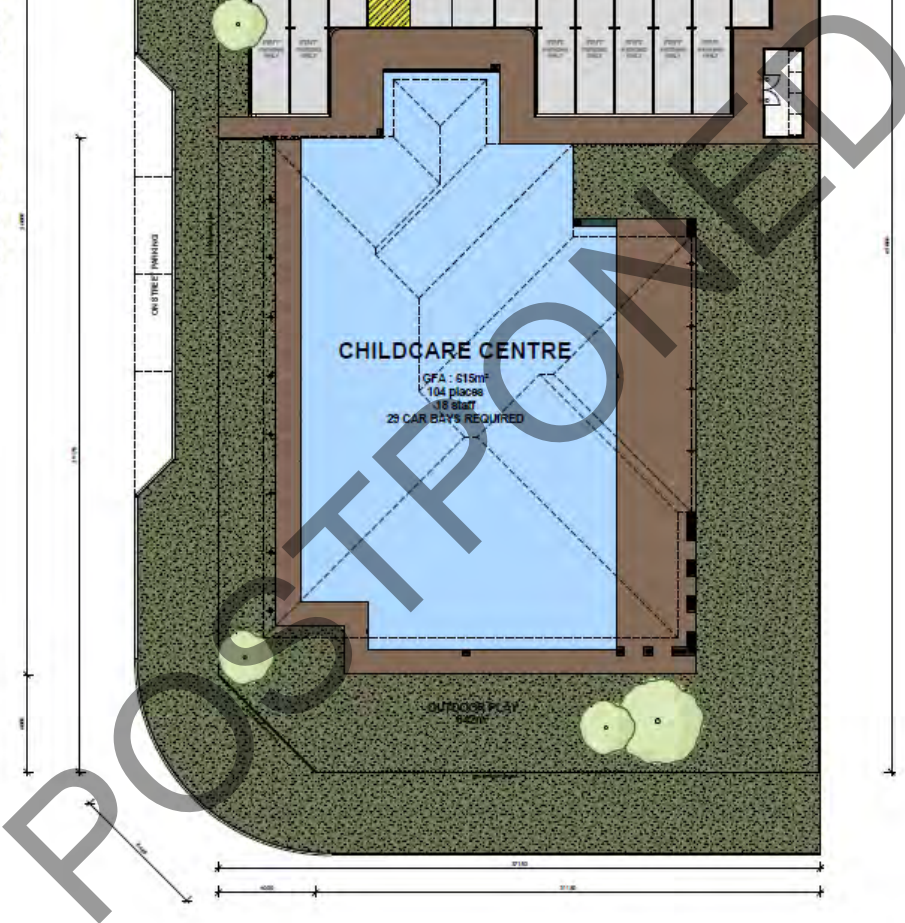


Figure 1-2: Proposed Site Plan

With regard to noise emissions, consideration is given to noise from child play, mechanical services and closing car doors at neighbouring properties, against the prescribed standards of the *Environmental Protection (Noise) Regulations 1997*.

Appendix C contains a description of some of the terminology used throughout this report.

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 defines the prescribed standard for noise emissions applicable to child play, mechanical services and car door closing 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 B*). 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.

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 0 dB, with the surrounding land uses being either rural or residential (urban development) in nature. *Table 2-3* shows the assigned levels applicable at the receiving locations.

Table 2-3 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	55	65
	0900 to 1900 hours Sunday and public holidays (Sunday)	40	50	65
	1900 to 2200 hours all days (Evening)	40	50	55
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night)	35	45	55

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. Where this was not possible to be achieved due to the close proximity of existing buildings and/or fences, the noise emissions were assessed at a point within 1 metre from building facades and a -2 dB adjustment was made to the predicted noise levels to account for reflected noise.

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 childcare centre 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.

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.

3. METHODOLOGY

Computer modelling has been used to predict the noise emissions from the development to all nearby receivers. The software used was *SoundPLAN 8.2* with the ISO 9613 algorithms (ISO 171534-3 improved method) selected, as they include the influence of wind and are considered appropriate given the relatively short source to receiver distances. 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 adapted from publicly available information (e.g. *Google*) in the form of spot heights and combined with the site plan.

Surrounding future buildings (as suitable for the subdivision) were also incorporated in the noise model, as these can provide noise shielding as well as reflection paths. Single storey future residential buildings are assumed and modelled with a height of 3.5 metres with receivers 1.4 metres above ground.

The area will be suburban in nature with boundary fencing assumed to be *Colorbond*. Whilst *Colorbond* fencing is 1.8 metres high, it is modelled as 1.6 metres high to take into account the lightweight nature of the product and potential lesser acoustic performance of a denser product.

The childcare centre building is incorporated in the noise model as per the *Appendix A* plans. Fencing to the south of the child play area is modelled as being 2.1 metres high. This fencing is to be solid, free of any gaps and of minimum surface mass 8 kg/m^2 . Such material can be brick, limestone, concrete with double sheeted *Colorbond* also permissible. For areas where visual permeability is required, sound-rated plexiglass can be used. All other fencing has been assumed as open style (acoustically permeable).

Figure 3-1 shows a 2D overview of the noise model with the location of all relevant receivers identified. Pink dots represent point sources in the noise model (car doors, mechanical plant) with the pink polygon representing child play.

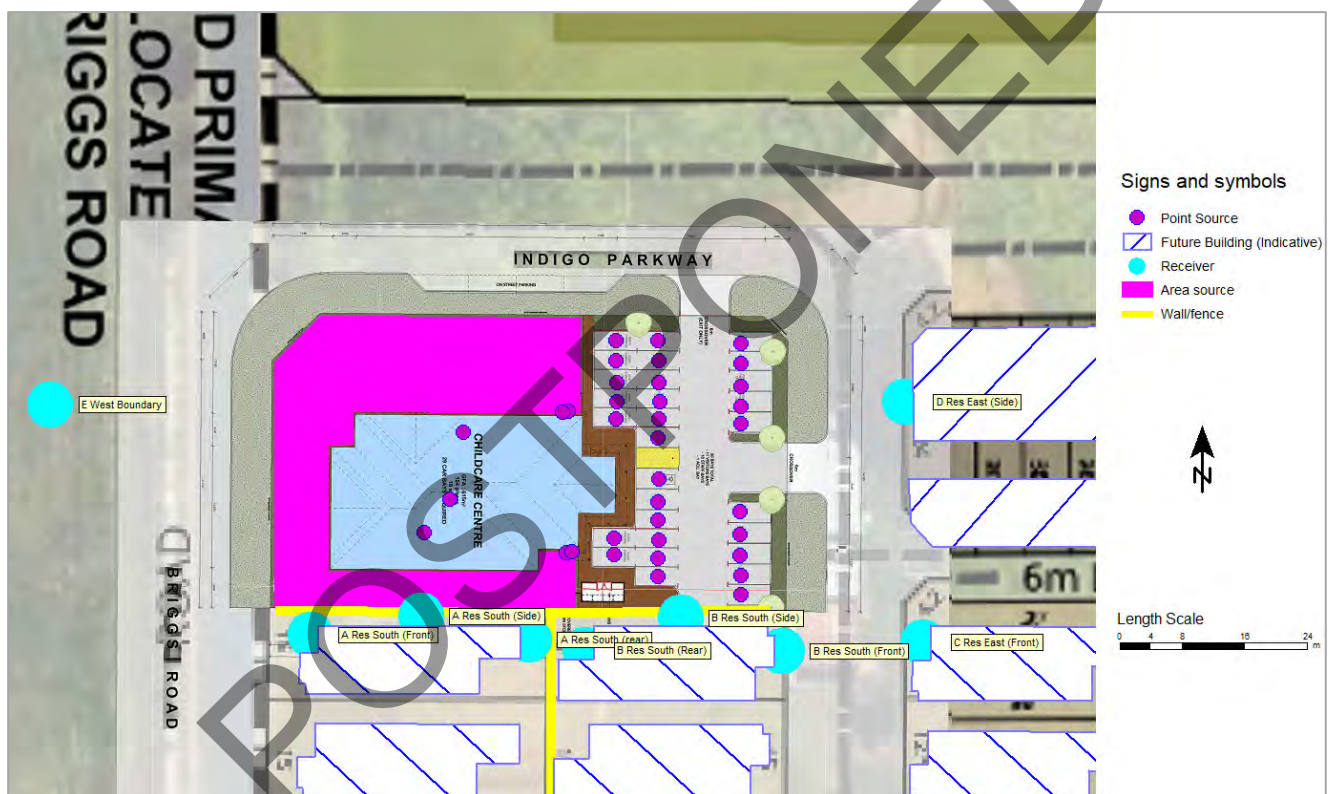


Figure 3-1: Overview of Noise Model

3.3. Ground Absorption

The ground absorption has been assumed to be 0.0 (0%) for the roads, 0.5 (50%) outside of the roads and 1.0 (100%) for the play areas, 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*.

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	
Babies Play Aged 0-2 Years (10 kids), L_{10}	48	54	60	66	72	74	71	67	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
AC Plant, double fan unit (each), L_{10}	72	74	68	69	63	61	53	47	70
General Exhaust Fans (each), L_{10}	60	65	62	63	60	61	56	53	67
Kitchen Exhaust Fan, L_{10}	50	64	61	70	69	66	62	50	73
Closing Car Door (each), L_{max}	71	74	77	81	80	78	72	61	84

The following is noted in relation to *Table 3-2*:

- 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-metre above ground level. The sound power levels used in the model were scaled as follows:
 - 24 children aged 0-2 years = 81 dB(A);
 - 20 children aged 2-3 years = 88 dB(A);
 - 60 children aged 3+ years = 94 dB(A).
- Based on the AAAC Guideline 3.0, source sound power levels for AC condensing units were assumed. Medium sized (double fan) outdoor units were deemed appropriate with two (2) modelled as point sources at 1.0m above ground level in the drying area and another two outside the Planning Room.
- Other mechanical plant includes four (4) exhaust fans (toilets and laundry) and one kitchen exhaust fan. All were modelled as point sources approximately 0.5 metres above roof level and above the area serviced.
- Car doors closing were modelled as a point source 1.0 metre above ground level. Since noise from a car door closing is a short term event, only the L_{Amax} level is applicable.

4. RESULTS AND ASSESSMENT

4.1. Outdoor Child Play Noise

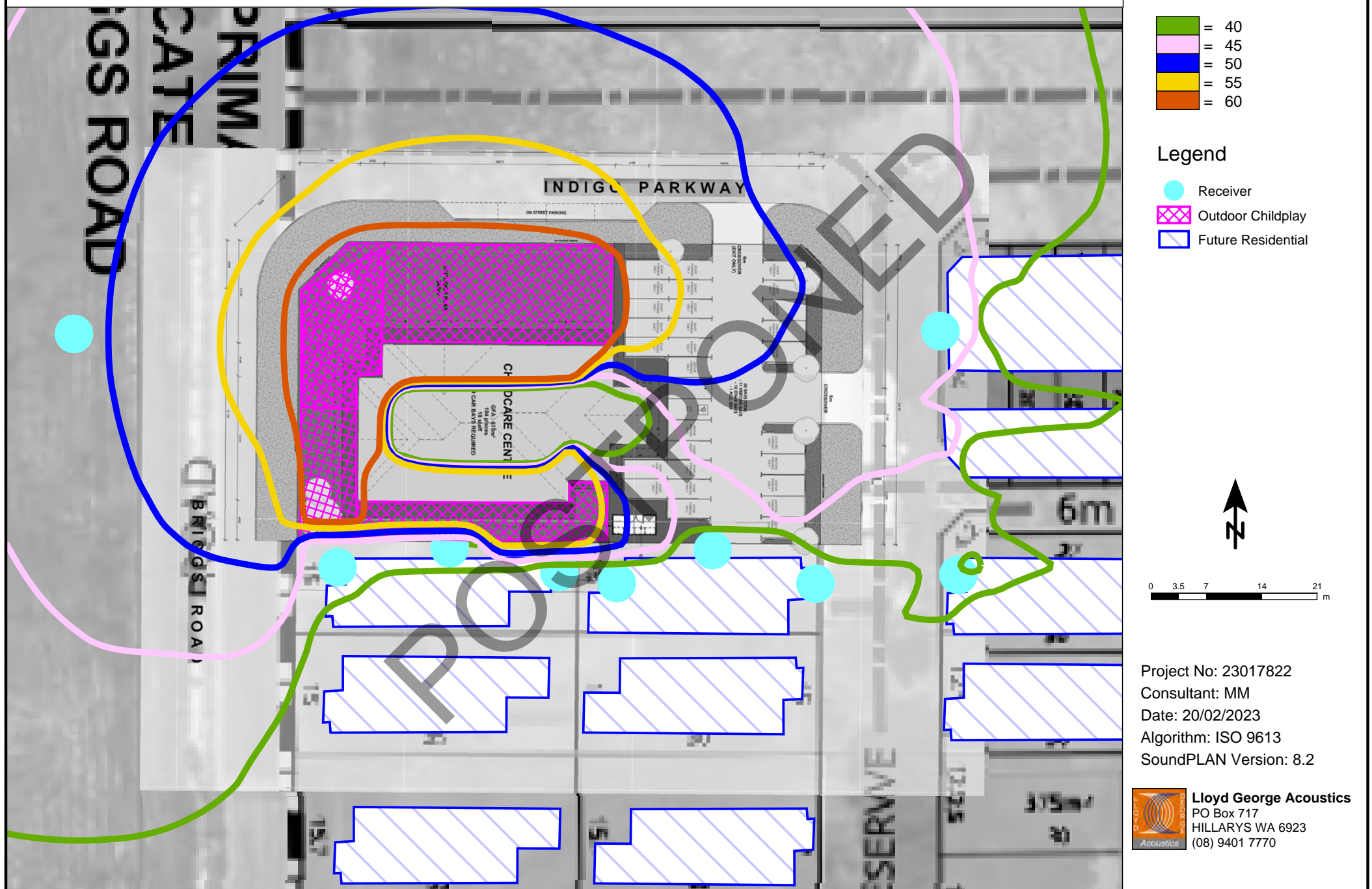
The childcare development will host up to 104 children. It is noted play time is generally staggered and therefore not all children would be playing outside at once for extended periods of time. However, noise levels were conservatively predicted for all children playing simultaneously, as a worst-case scenario with the results provided and assessed in *Table 4-1*. The critical assigned level is during the day, as whilst the childcare centre will open at 6.30am, child play will not commence until after 7.00am. Noise from child play is not considered to contain annoying characteristics within the definition of the Regulations and therefore no adjustments are made to the predicted noise levels. A noise contour plot is also provided in *Figure 4-1* showing noise levels at ground floor.

Table 4-1: Child Play Noise Predicted Levels and Assessment, dB(A)

Receiver	Babies (0-2 yo)	Toddler (2-3 yo)	Kindy (3+ yo)	Total	Assigned Level	Assessment
A Res South (Front)	30	41	39	43	45	Complies
A Res South (Rear)	35	23	28	36	45	Complies
A Res South (Side)	38	32	28	39	45	Complies
B Res South (Front)	23	18	27	29	45	Complies
B Res South (Rear)	34	23	28	35	45	Complies
B Res South (Side)	31	25	27	33	45	Complies
C Res East (Front)	28	22	39	40	45	Complies
D Res East (Side)	33	32	45	45	45	Complies
E West Boundary	30	44	48	49	60	Complies

Based on a conservative scenario of all 104 children playing outside simultaneously, the assessment demonstrates compliance is achieved during the day.

Figure 4-1 Outdoor Child Play Noise Ground Floor (1.5m AGL), dB L_{A10}



4.2. Mechanical Plant Noise

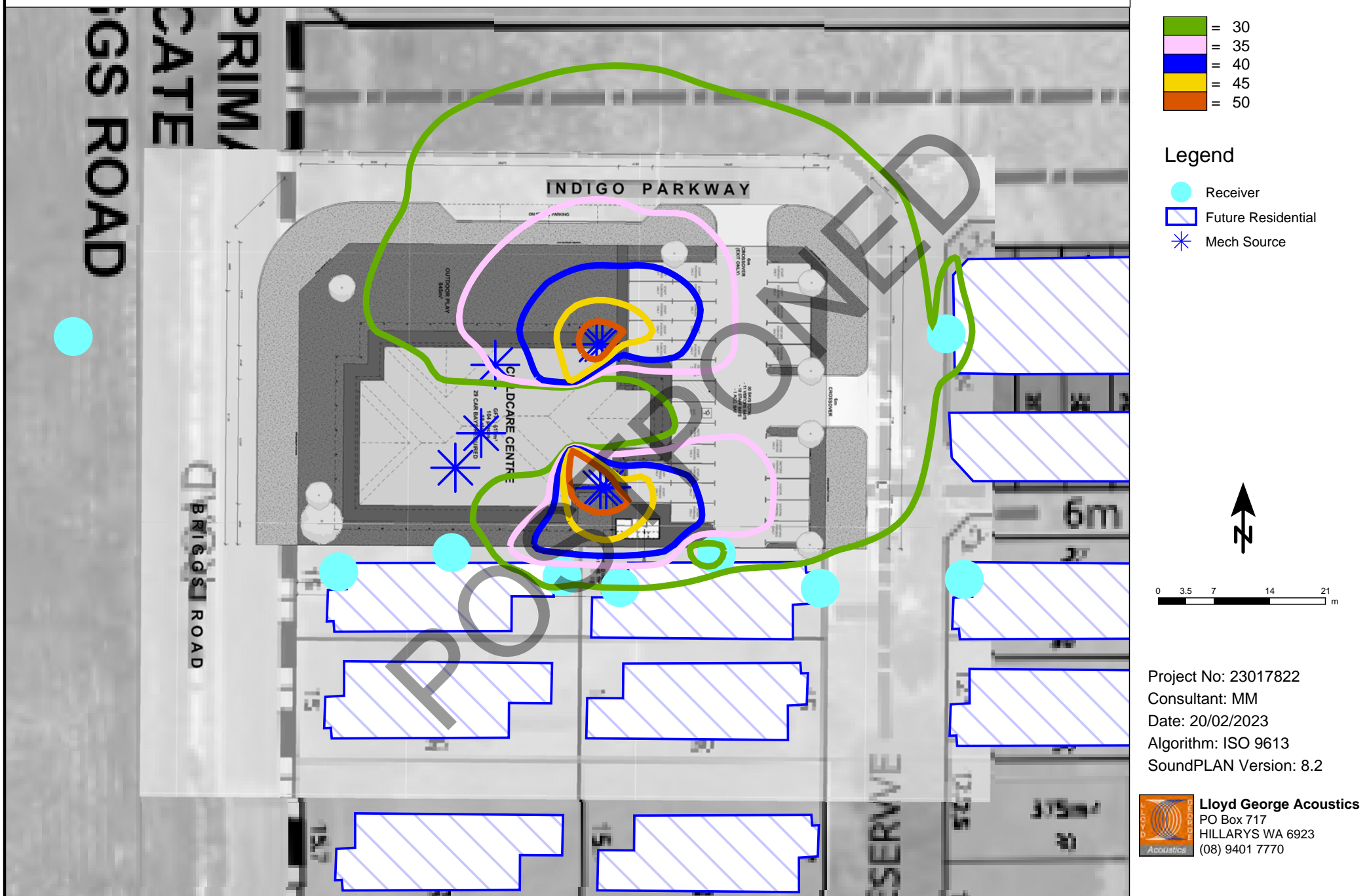
Mechanical plant noise consists of the outdoor AC condensing units and exhaust fans. Predicted and assessed noise levels are provided in *Table 4-2*. The critical assigned level is during the night, as the plant may operate prior to 7.00am. An adjustment of + 5 dB is included for tonality, since this may be present for such noise sources. A noise contour plot is also provided in *Figure 4-2* showing noise levels at ground floor.

Table 4-2: Mechanical Plant Noise Predicted Levels and Assessment, dB(A)

Receiver	AC	Exhaust Fans	Total	Total Adjusted	Assigned Level	Assessment
A Res South (Front)	10	<10	12	17	35	Complies
A Res South (Rear)	30	13	30	35	35	Complies
A Res South (Side)	16	11	17	22	35	Complies
B Res South (Front)	15	10	15	20	35	Complies
B Res South (Rear)	30	14	30	35	35	Complies
B Res South (Side)	27	10	27	32	35	Complies
C Res East (Front)	28	12	28	33	35	Complies
D Res East (Side)	29	14	30	35	35	Complies
E West Boundary	19	12	20	25	60	Complies

The calculations show compliance at all receiver locations. It must be noted that the assessment is based on assumptions in relation to the number, location, size and type of mechanical plant. Therefore, once the mechanical plant has been designed and selected, noise is to be reviewed by a suitably qualified acoustical consultant.

Figure 4-2 Mechanical Plant Noise Ground Floor (1.5m AGL), dB L_{A10}



4.3. Car Door Closing Noise

Predicted and assessed noise levels for car doors closing are provided in *Table 4-3* being the maximum noise level from the worst-case car bay for each receiver. The critical assigned level is during the night, as car door closings will occur prior to 7.00am. An adjustment of + 10 dB is included for impulsiveness, since this may be present for such noise sources. A noise contour plot is also provided in *Figure 4-3* showing noise levels at ground floor.

Table 4-3: Car Door Closing Noise Predicted Levels and Assessment, dB(A)

Receiver	Staff Car Door	Visitor Car Door	Max Adjusted	Assigned Level	Assessment
A Res South (Front)	18	15	28	55	Complies
A Res South (Rear)	37	33	47	55	Complies
A Res South (Side)	31	30	41	55	Complies
B Res South (Front)	41	43	53	55	Complies
B Res South (Rear)	39	32	49	55	Complies
B Res South (Side)	41	41	51	55	Complies
C Res East (Front)	42	44	54	55	Complies
D Res East (Side)	45	45	55	55	Complies
E West Boundary	30	29	40	80	Complies

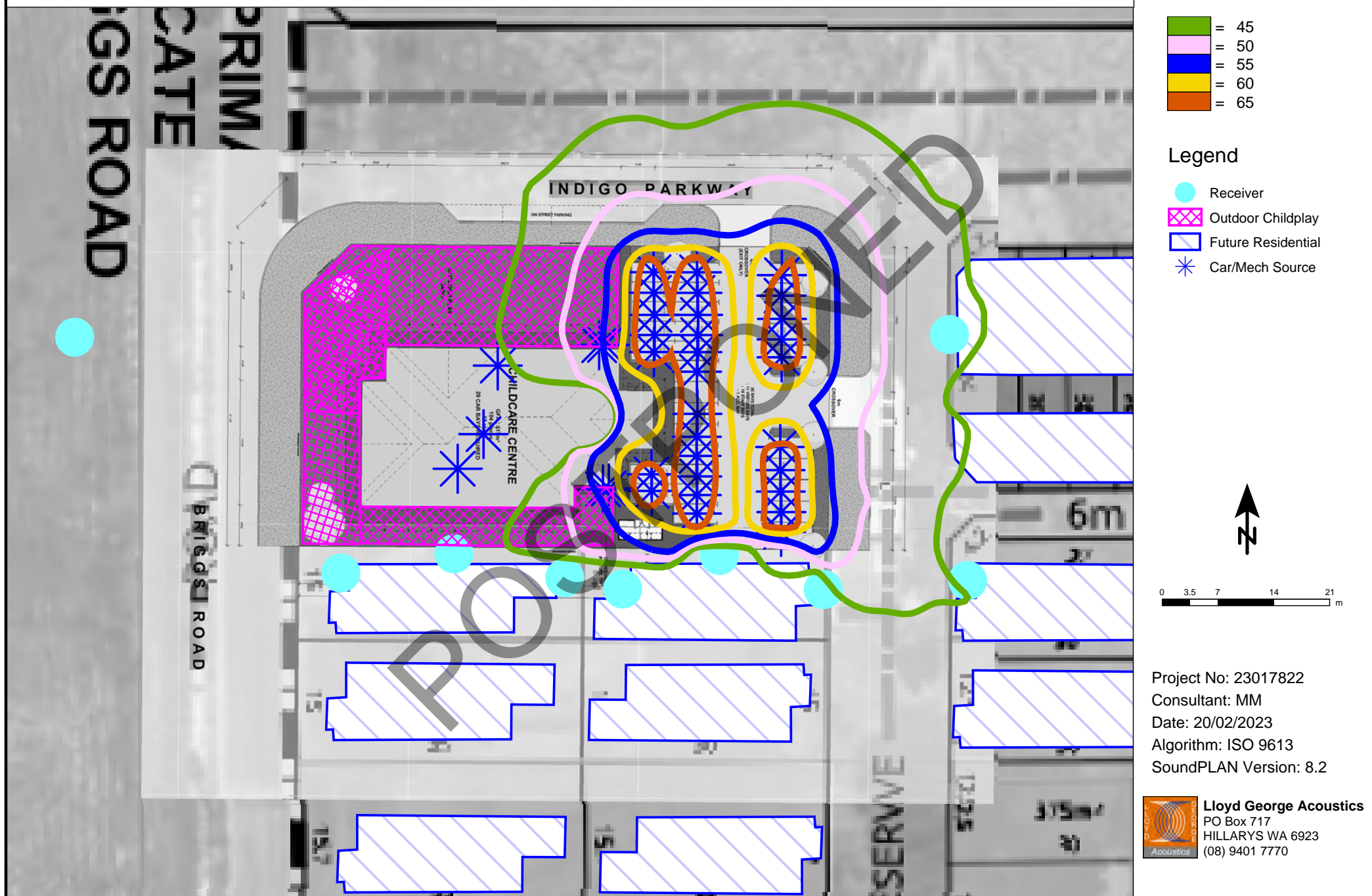
Noise from car doors is predicted to comply at all nearest receivers during the critical night period.

4.4. Indoor Child Play

An assessment of noise levels from indoor child play was carried out and the resulting noise levels at all locations were predicted to be well below that of outdoor child play considered in *Section 4.1*. This assessment was carried out based on the following considerations:

- Internal noise levels within activity rooms would not exceed those from outdoor play for each age group, regardless of windows being open or closed; and
- Any music played within the internal activity areas would be 'light' music with no significant bass content and played at a relatively low level.

Figure 4-3 Car Park Noise Ground Floor (1.5m AGL), dB L_{Amax}



5. RECOMMENDATIONS

5.1. Child Play

The predicted noise from all children playing outside is compliant provided the south wall/fence as shown on the DA Plans is constructed to be minimum 2.1 metres high and must be solid, free of gaps and of minimum surface mass 8 kg/m^2 . Such material can be brick, limestone with double sheeted *Colorbond* also permissible. For areas where visual permeability is required, sound-rated plexiglass can be used.

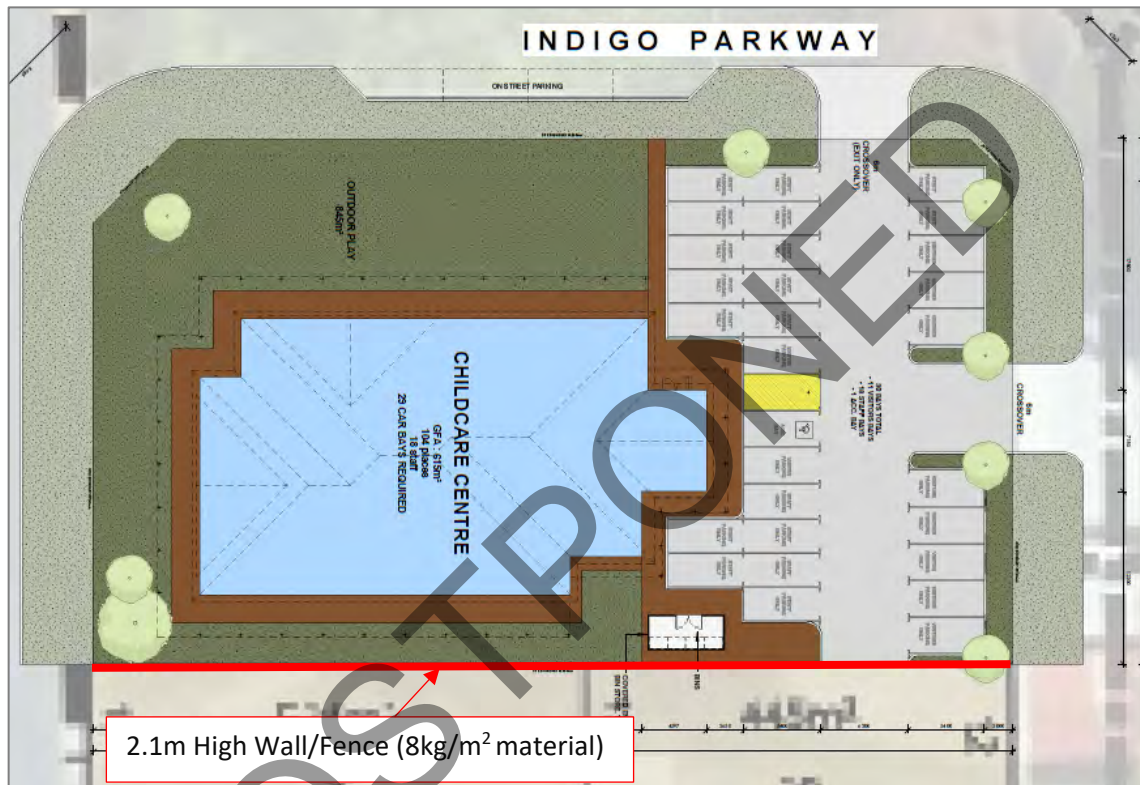


Figure 5-1: Required Noise Mitigation

Whilst not necessarily required for compliance, to further minimise noise impacts as part of best practice, the following are provided:

- 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;
- Favour soft balls and rubber wheeled toys;
- Crying children should be taken inside to be comforted;
- Child play to be staggered;
- No amplified music to be played outside;
- Any music played within the internal activity areas to be 'light' music with no significant bass content and played at a relatively low level;
- Car park drainage grates or similar to be plastic or metal with rubber gasket and secured to avoid excess banging.

5.2. Mechanical Plant

For mechanical plant, the following are recommended:

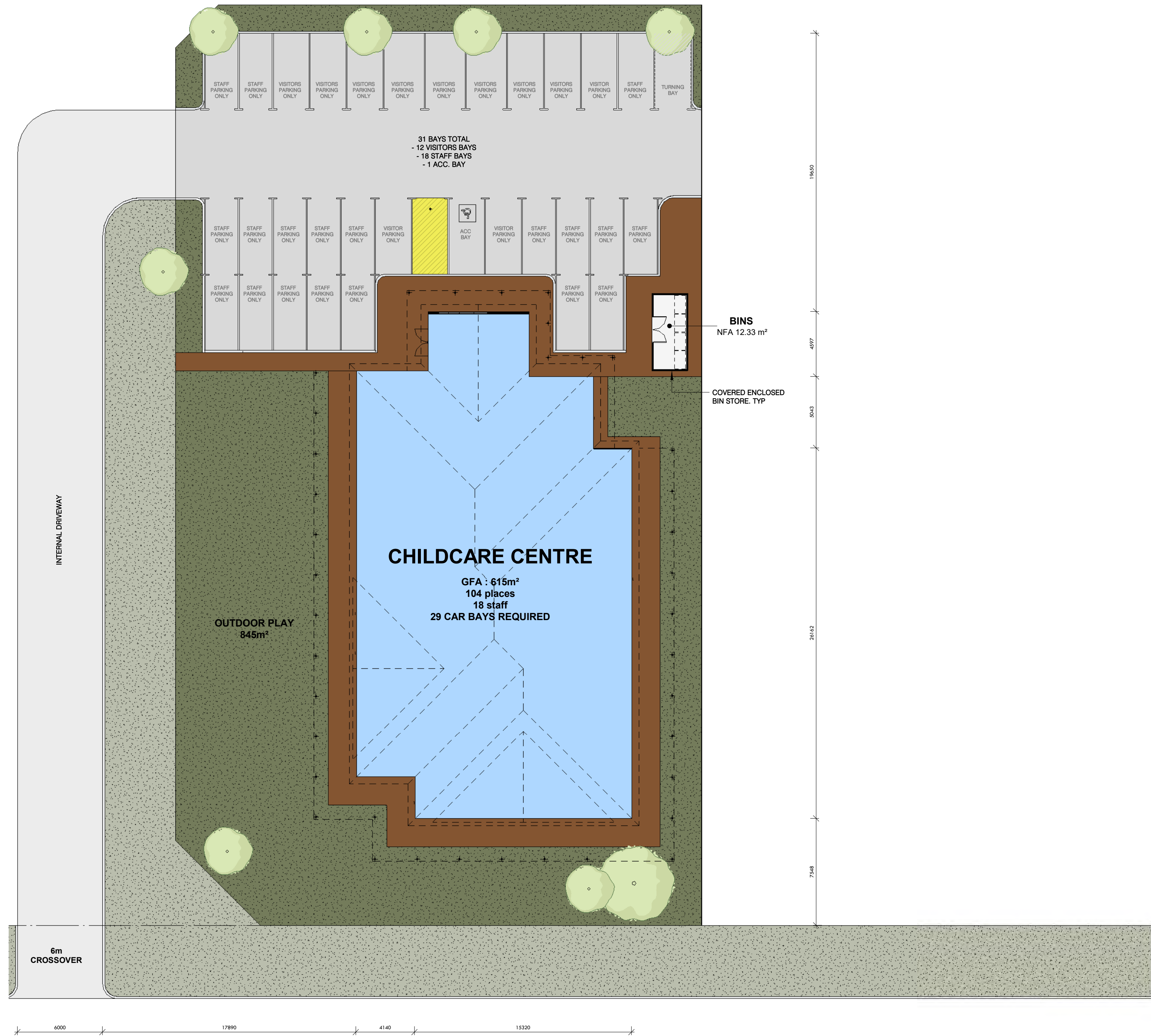
- Once the mechanical plant has been designed and selected, the noise levels shall be reviewed prior to Building Permit;
- All exhaust fans shall be located inside the ceiling void and shall be axial fan type, allowing the incorporation of an attenuator if required;
- All fans shall be variable speed drive so that maximum speed is only occurring when necessary with demand;
- Air-conditioning shall have a 'night' / 'quiet' mode option, in case required for prior to 7.00am operation, subject to final detailed analysis;
- All plant shall be selected taking into consideration noise levels. That is, when comparing manufacturers of equivalent equipment, select the quieter model;
- All plant is to be appropriately vibration isolated to 95% isolation efficiency.

5.3. Car Doors

The predicted noise from car door closings is compliant provided the walls described in *Section 5.1* are constructed.

Appendix A – Development Plans

POSTPONED



BRIGGS ROAD

SITE PLAN - STAGE 1

SCALE: 1 : 200



BRIGGS ROAD

SITE PLAN - STAGE 2

SCALE: 1 : 200

SITE CRITERIA

1. Site Area		
a. Site Area		2,392m²
2. Landscaping		
a. Required 10% of Site Area		239.2m²
b. Provided		623m²
Soft		213m²
Hard		845m² (35.2%)
Total		
3. Floor Area (GFA)		615m²
4. Carparking		
i. Cars Required		
As per Draft LPS 3		1:10 Kids 11 Cars
	1:1 Staff	18 Cars
ii. Cars Provided		29 Cars

CHILD CARE CRITERIA

1. Centre capacity		
a. Number of places		104 places
2. Landscaping		
a. Required 7m² : 1 child		728m²
b. Provided		842m²
Total m² provided per child		8.09 m²
3. Floor Area (GFA)		
a. Area required		338m²
b. Area provided		352.3 m²
4. Room distribution		
a. Room 0-12 m		12 Places
Number of places		
Staff required	1:4 Staff	3 Staff
Staff provided		
b. Room 0-12 m		12 Places
Number of places		
Staff required	1:4 Staff	3 Staff
Staff provided		
c. Room 24 - 36 m		20 Places
Number of places		
Staff required	1:5 Staff	4 Staff
Staff provided		
d. Room +3y		30 Places
Number of places		
Staff required	1:10 Staff	3 Staff
Staff provided		
e. Room +3y		30 Places
Number of places		
Staff required	1:10 Staff	3 Staff
Staff provided		
Total places		104 Places
Total Staff (+2 Staff (Chef, Manager))		18 Places

Landscaping
A. Hard Landscaping
Defined as paved walkways either open or covered.
B. Soft Landscaping
Defined as vegetative landscaping.
Gross Floor Area : GFA
A. All Floor Areas on this plan are shown as GROSS FLOOR AREA.
Unless otherwise noted as Net Floor Area
B. Definition of Gross Floor Area is defined as:
i. GROSS FLOOR AREA OF TENANCY:
Gross Floor Area of an individual Tenancy is defined as the area contained between the centre line of common tenancy walls and the outside edge of external walls.
ii. GROSS FLOOR AREA OF A BUILDING:
Gross Floor Area of a Building is defined as the total area contained between the outside edge of external walls.
Net Floor Area : NFA
A. Net Floor Area of a Tenancy on this plan is defined as the area between external or tenancy dividing walls.
B. This area is inclusive of toilets if the toilets are exclusive to the Tenancy.

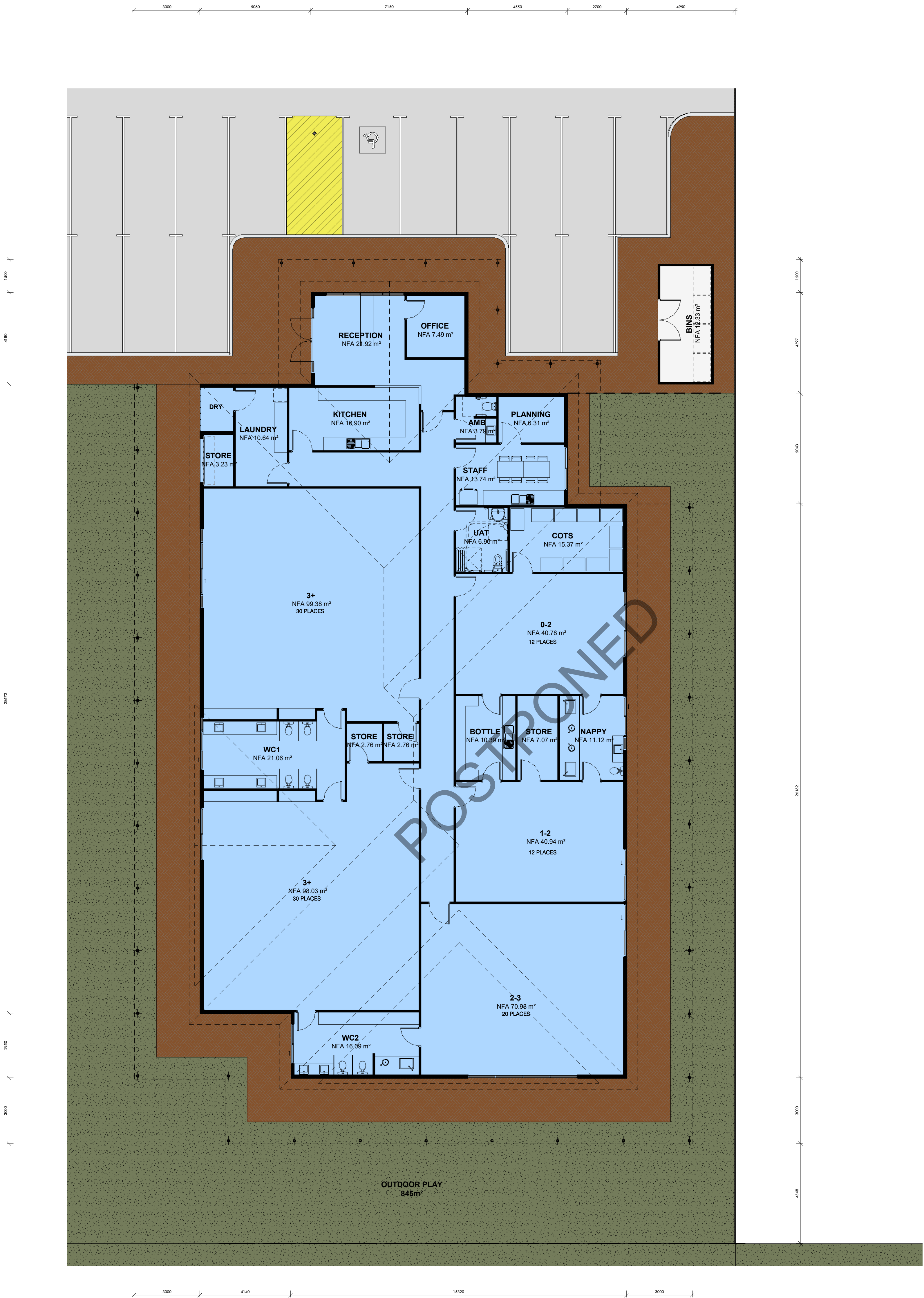
SITE DESIGN CHECKLIST

- ☐ 1. SEWER MAINS LOCATION TO BE DETERMINED
- ☐ 2. FIRE MAINS PRESSURE TEST REQUIRED
- ☐ 3. FIRE TANKS OR PUMPS TO BE DETERMINED
- ☐ 4. WESTERN POWER TRANSFORMER LOCATION TO BE DETERMINED
- ☐ 5. CROSSOVER & ACCESS TO STREET TO BE DETERMINED BY LOCAL AUTHORITY
- ☐ 6. FULL FEATURE SITE SURVEY REQUIRED
- ☐ 7. DIAL BEFORE YOU DIG REQUIRED
- ☐ 8. BUSHFIRE ATTACK LEVEL (BAL) TO BE DETERMINED
- ☐ 9. STREET POWER POLES TO BE DETERMINED
- ☐ 10. SITE ZONING & USE TO BE DETERMINED

NOTE: Any of the following items that do not have an 'X' in the provided square require determination.

LEGEND

- BUILDING FOOTPRINT - SHOWROOM / WAREHOUSE / FACTORY
- BUILDING FOOTPRINT - OFFICE
- EXTENT OF CONCRETE HARDSTAND
- EXTENT OF ROADBASE HARDSTAND
- EXTENT OF BITUMEN PAVING
- EXTENT OF CERAMIC TILES
- EXTENT OF BRICK PAVING / CONCRETE PAVING
- EXTENT OF LANDSCAPING



SITE CRITERIA

1. Site Area		
a. Site Area		2,392m ²
2. Landscaping		
a. Required 10% of Site Area		239.2m ²
b. Provided		623m ²
Soft		219m ²
Hard		845m ² (35.2%)
Total		
3. Floor Area (GFA)		615m ²
4. Carparking		
i. Cars Required		
As per Draft LPS 3		
	1:10 Kids	11 Cars
	1:1 Staff	18 Cars
ii. Cars Provided		29 Cars

CHILD CARE CRITERIA

1. Centre capacity		
a. Number of places		104 places
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Staff provided		3 Staff
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Number of places		12 Places
Staff required	1:4 Staff	3 Staff
Staff provided		3 Staff
c. Room 24 - 36 m		
Number of places		20 Places
Staff required	1:5 Staff	4 Staff
Staff provided		4 Staff
d. Room +3y		
Number of places		30 Places
Staff required	1:10 Staff	3 Staff
Staff provided		3 Staff
e. Room +3y		
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Staff required	1:10 Staff	3 Staff
Staff provided		3 Staff
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SITE DESIGN CHECKLIST

- ☐ 1. SEWER MAINS LOCATION TO BE DETERMINED
- ☐ 2. FIRE MAINS PRESSURE TEST REQUIRED
- ☐ 3. FIRE TANKS OR PUMPS TO BE DETERMINED
- ☐ 4. WESTERN POWER TRANSFORMER LOCATION TO BE DETERMINED
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- ☐ 10. SITE ZONING & USE TO BE DETERMINED

NOTE: Any of the following items that do not have an 'X' in the provided square require determination.

LEGEND

	BUILDING FOOTPRINT - SHOWROOM / WAREHOUSE / FACTORY
	BUILDING FOOTPRINT - OFFICE
	EXTENT OF CONCRETE HARDSTAND
	EXTENT OF ROADBASE HARDSTAND
	EXTENT OF BITUMEN PAVING
	EXTENT OF CERAMIC TILES
	EXTENT OF BRICK PAVING / CONCRETE PAVING
	EXTENT OF LANDSCAPING

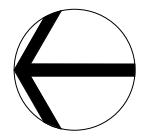
FLOOR PLAN

SCALE: 1 : 100

meyer
shircore
architects

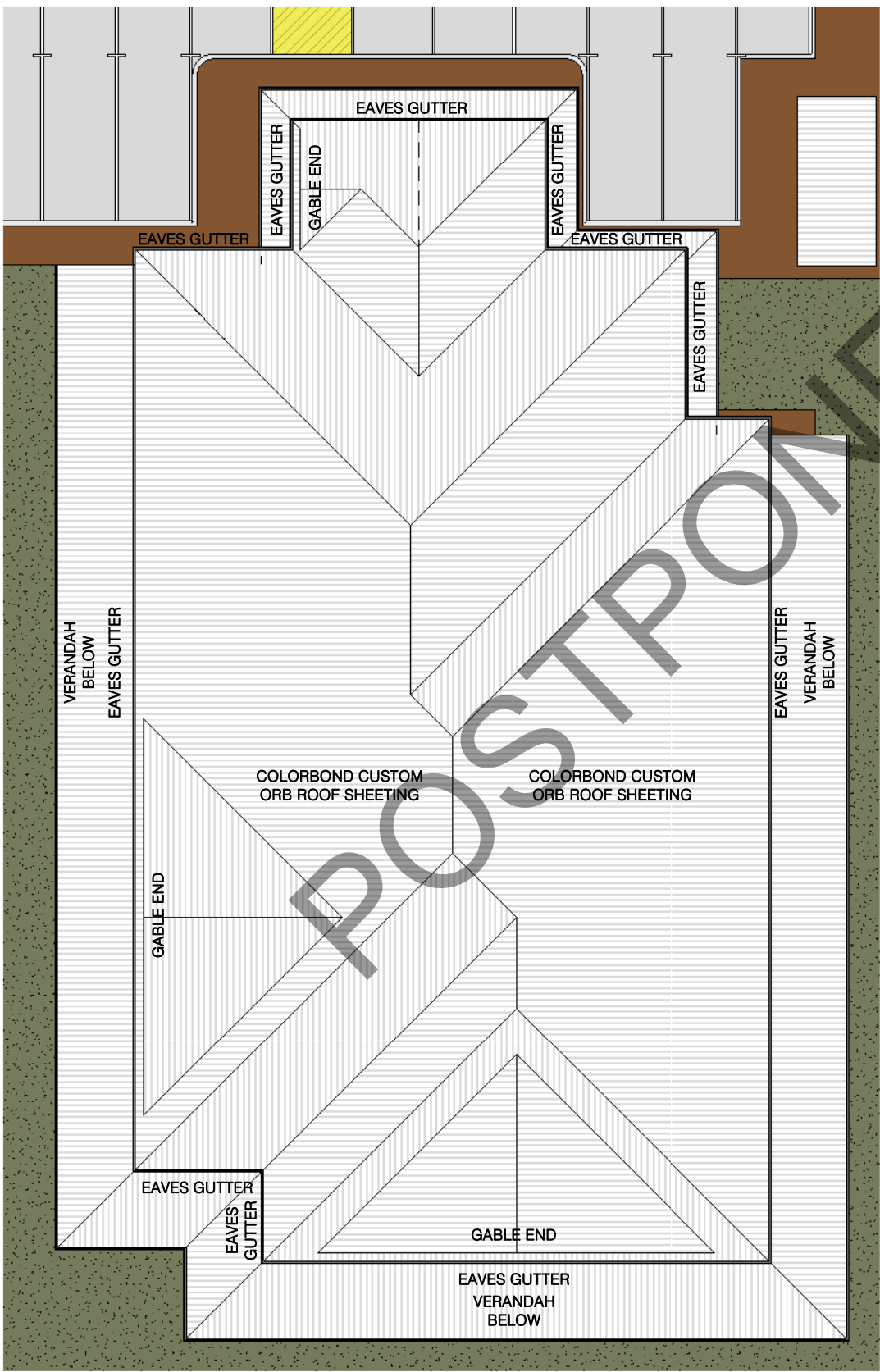
CHILD CARE CENTRE

LOCATION : LOT 57 BRIGGS ROAD, BYFORD
FOR : BLOKK PROPERTY



DATE: NOV 2022 PROJECT NUMBER
REVISION: SK007 **22-9099**
SHEET: A - 2000
SCALE: 1 : 100 @A3

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PO Box 1294 Subiaco WA 6904
t: 08 9381 5511 e: msa@meyershircore.com.au

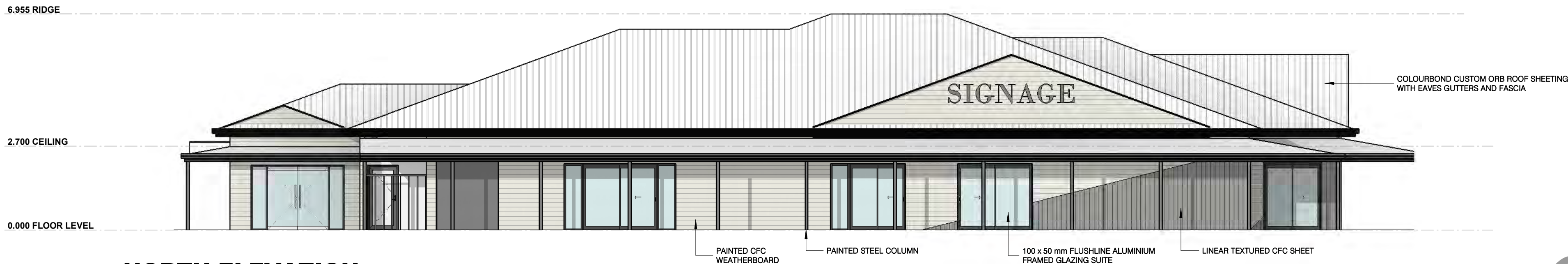


ROOF PLAN

SCALE: 1 : 200



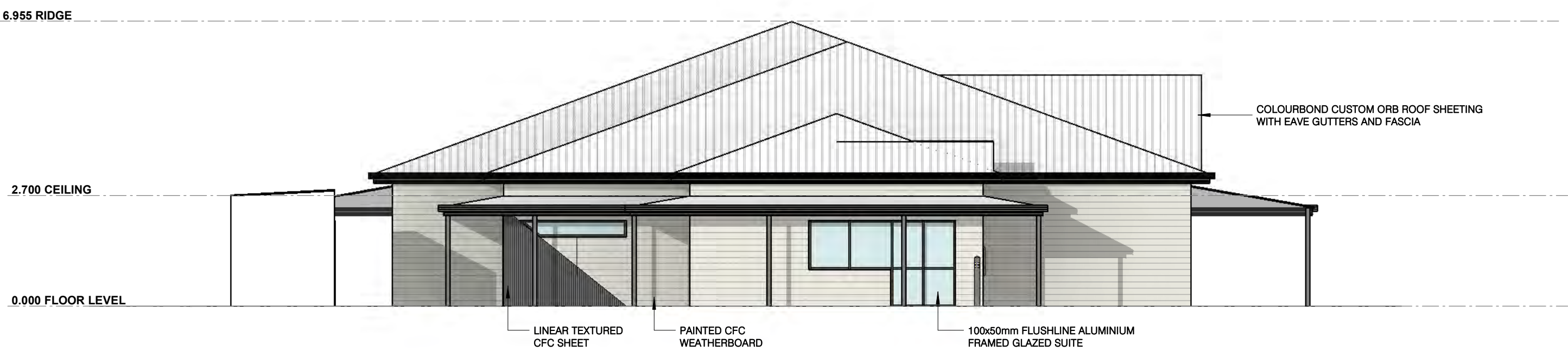
EAST ELEVATION
SCALE: 1 : 100



NORTH ELEVATION
SCALE: 1 : 100



SOUTH ELEVATION
SCALE: 1 : 100



WEST ELEVATION
SCALE: 1 : 100

POSTPONED



Appendix B – Terminology

POSTPONED

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.

- **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.

• 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.

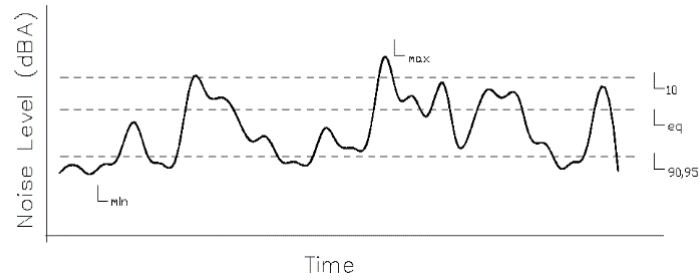
• Major Road

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.

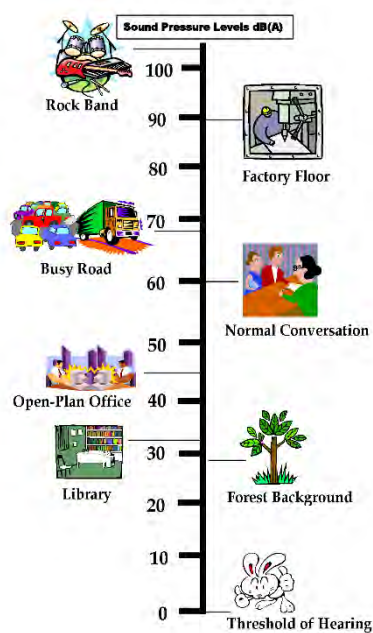
- Chart of Noise Level Descriptors



- Austroads Vehicle Class

VEHICLE CLASSIFICATION SYSTEM AUSTROADS	
CLASS	DESCRIPTION
1	Light Vehicle Car, van, light truck, utility vehicle, motorbike
2	Light Vehicle Truck, trailer, motorbike
3	Heavy Vehicle Two axle truck or bus < 12 tonnes
4	Heavy Vehicle Three axle truck or bus < 12 tonnes
5	Heavy Vehicle Four axle truck or bus < 12 tonnes
6	Heavy Vehicle Three axle articulated > 12 tonnes
7	Heavy Vehicle Four axle articulated > 12 tonnes
8	Heavy Vehicle Five axle articulated > 12 tonnes
9	Heavy Vehicle Six axle articulated > 12 tonnes
10	Heavy Vehicle Seven axle articulated > 12 tonnes
11	Heavy Vehicle Eight axle articulated > 12 tonnes
12	Heavy Vehicle Nine axle articulated > 12 tonnes

- Typical Noise Levels



TRANSPORT IMPACT STATEMENT

Lot 57 Briggs Road

Byford

April 2023

Rev D

KCtt

HISTORY AND STATUS OF THE DOCUMENT

Revision	Date issued	Reviewed by	Approved by	Date approved	Revision type
Rev A	9.02.2023	M Kleyweg	M Kleyweg	10.02.2023	Issued for Review
Rev B	23.02.2023	M Kleyweg	M Kleyweg	23.02.2023	Amended in Accordance with the Received Comments
Rev C	12.04.2023	M Kleyweg	M Kleyweg	12.04.2023	Amended in Accordance with the Received Comments
Rev D	27.04.2023	M Kleyweg	M Kleyweg	27.04.2023	Amended in Accordance with the Received Comments

DISTRIBUTION OF COPIES

Revision	Date of issue	Quantity	Issued to
Rev A	10.02.2023	1 (PDF)	Darren Blowes (Blokk Property)
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Appendices

Appendix 1 - The layout of the proposed development

Appendix 2 - Transport Planning and Traffic Plans

Appendix 3 - Vehicle Turning Circle Plans

1. Executive Summary

Site Context

- The project location is Lot 57 Briggs Road, Byford. The subject site is currently occupied by a single residence.
- The subject lot is a part of the Byford Area D Local Structure Plan.
- Stage 1 includes the construction of the Childcare facility with an interim driveway access to Briggs Road.
- Stage 2 includes the ultimate development scenario around the site as per the local structure plan, including the delivery of Indigo Parkway (north) and local access road (east). This will involve the minor reconfiguration of crossovers to the car park.
- The proposed development will be a childcare centre with a capacity for 104 children and 18 staff members.

Technical Findings

- The proposed development is expected to generate up to 452 vehicular trips per day, 83 vehicle trips in the AM peak and 73 vehicular trips in the PM peak.
- According to WAPC this is considered as a moderate traffic impact to the surrounding road network.
- Two major routes are expected to be utilised for access to development:
 - To/from the north via Briggs Road
 - To/from the south via Briggs Road

Relationship with Policies

- According to the Shire of Serpentine – Jarrahdale TPS No. 2 requirements, the proposed development requires 21 carparking bays. According to the Draft Local Planning Scheme No.3 the proposed development would require 29 parking bays.
- The subject development will propose 31 parking bays in stage 1 and 29 in Stage 2.
- Therefore, the proposed development will meet the requirement in both Stages and in accordance with both relevant parking requirement documents.
- Building Code of Australia ACROD Provision – the proposed development will meet the requirement for 1 ACROD bay.

Conclusion

- As stated above the additional traffic attracted to the subject site is expected to increase by a maximum of 452 vehicular trips per day and 83 vehicular trips in the peak hour.
- Briggs Road is classified as Local Distributor as per MRWA classification with the maximum desirable volume of 6,000 vehicles per day. Available traffic counts show approximately 3,900 VPD on Briggs Road south of Thomas Road. Therefore, with the added traffic from the subject site the street would remain well under the maximum desirable traffic volume for Local Distributor roads.
- Other surrounding roads would absorb significantly less traffic than Briggs Road, moreover, the traffic would be dispersed so that the impact can be considered negligible.
- In summary KCTT believe that the proposed development will not have a negative impact on the surrounding road network.

2. Transport Impact Statement

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2.1 Location

Lot Number	57
Street Number	/
Road Name	Briggs Road
Suburb	Byford
Description of Site	The subject site is currently occupied by a single residence. The proposed development will be a childcare centre with a capacity for 104 children and 18 staff members.

2.2 Technical Literature Used

Local Government Authority	Shire of Serpentine-Jarrahdale
Type of Development	Individual Development – Childcare Centre
Is the NSW RTA Guide to Traffic Generating Developments Version 2.2 October 2002 (referenced to determine trip generation / attraction rates for various land uses) referenced?	YES
Which WAPC Transport Impact Assessment Guideline should be referenced?	Volume 4 - Individual Developments
Are there applicable LGA schemes for this type of development?	YES
<i>If YES, Nominate:</i>	
Name and Number of Scheme	Town Planning Scheme No. 2
Are Austroads documents referenced?	YES

2.3 Review of the Available Planning Documents

Which Structure Plan / Subdivision is the development part of?

Byford Area D – Briggs Larsen Precinct Local Structure Plan (Document by Rowe Group Design – March 2021)



Describe the major changes of the surrounding area associated with the completion of the Structure Plan

- Byford Area D is expected to include 161 residential dwellings.
- Indigo Parkway, currently located to the west of Briggs Road without an intersection with this road is expected to be extended to the east side of Briggs Road.
- Additional internal road will be constructed to intersect with Briggs Road. This road will provide access to Briggs Road for residential developments within Byford Area D.

Describe the expected changes to the proposed development

The proposed development will have an additional crossover to the new road perpendicular to Indigo Parkway.

This will allow for a more comfortable manoeuvring within the internal driveway while keeping the minimum required carparking bays.

Changes to the surrounding road network

Based on the information from the Shire of Serpentine-Jarrahdale, a median is expected to be constructed on Indigo Parkway, allowing only LILLO movements from/to Briggs Road. The timeframe of this amendment is currently unknown.

Furthermore, travel to the south towards Briggs Road will be rerouted as Briggs Road is expected to be closed between Saddle Lane and unnamed path below the training complex.

This report will mainly focus on the Stage 1 of this development, where only Childcare Centre and an interim driveway access to Briggs Road are completed, as the timeframe of Byford Area D completion is not mentioned in the Local Structure Plan document.

2.4 Land Uses

Are there any existing Land Uses YES
 If YES, Nominate: 1 single residence

Proposed Land Uses

How many types of land uses are proposed? One (1)
 Nominate land use type and yield Childcare Centre
 - 104 children
 - 18 staff members

Are the proposed land uses complementary with the surrounding land-uses? YES

2.5 Local Road Network Information

How many roads front the subject site? One (1)

Name of Roads Fronting Subject Site / Road Classification and Description:

Road Name

Number of Lanes two way, one lane (no linemarking), undivided
 Road Reservation Width 20m
 Road Pavement Width 7m
 Classification Local Distributor
 Speed Limit 50kph
 Bus Route NO
 On-street parking NO

2.6 Traffic Volumes

Road Name	Location of Traffic Count	Vehicles Per Day (VPD)	Vehicles per Peak Hour (VPH)				Heavy Vehicle %	Date of Traffic Count	If older than 3 years multiply with a growth rate
			AM Peak Time	AM Peak - Peak VPH	PM Peak Time	PM Peak - Peak VPH			
Briggs Road	South of Thomas Road	3,829	08:00	449	15:15	411	3%	Mar 2022	—
Thomas Road	West of Briggs Road	11,373	08:00	1,020	15:15	1,040	8%	Mar 2022	—
	East of Briggs Road	8,362	08:00	671	15:15	689	10%	Mar 2022	—

Note - These traffic counts have been obtained from the MRWA Traffic Map*

2.7 Vehicular Crash Information

Is Crash Data Available on Main Roads WA website?

NO

If YES, nominate important survey locations:

Location 1

Briggs Road [SLK 1.20 – 1.53]

Period of crash data collection

01/01/2017 - 31/12/2021

Comment

No crashes were reported for the above location in the 5-year collection period

2.8 Vehicular Parking

Local Government

Shire of Serpentine-Jarrahdale

Local Government Document Utilised

Town Planning Scheme No. 2;

Draft Local Planning Scheme No. 3

Description of Parking Requirements in accordance with Scheme:

TPS No. 2:

Child Minding Centre - 1 space per 5 children accommodated

Draft LPS No. 3:

Child Care Premises - 1 per 10 children accommodated under maximum occupancy and 1 bay per employee with a minimum of 3 spaces*

Calculation of Parking in Accordance with TPS No. 2

Land Use	Requirements	Yield	Total Parking
Childcare Centre	1 space per 5 children	104	21
Total Car Parking Requirement			21
Total Volume of Parking Provided by Proponent			31 in Stage 1; 29 in Stage 2

Calculation of Parking in Accordance with Draft LPS No. 3

Land Use	Requirements	Yield	Total Parking
Childcare Centre	1 space per 10 children; 1 bay per employee	104 children; 18 staff members	29
Total Car Parking Requirement			29
Total Volume of Parking Provided by Proponent			31 in Stage 1; 29 in Stage 2

Justification

According to the Shire of Serpentine – Jarrahdale TPS No. 2 requirements, the proposed development requires 21 carparking bays.

According to the Draft Local Planning Scheme No.3 the proposed development would require 29 parking bays.

The subject development will propose 31 parking bays in stage 1 and 29 in Stage 2 (two bays will be deleted to allow for addition of a crossover).

Therefore, the proposed development will meet the requirement in both Stages and in accordance with both relevant parking rates.

Have Vehicle Swept Paths been checked for Parking? YES

If YES, provide description of performance:

The layout for the proposed development has been checked with a B99 Passenger Vehicle (5.2m) and a Service/Waste Vehicle (8.8m). The waste vehicle will have to enter the site after hours of operations as it will require to use the empty carparking bays for manoeuvring.

No navigability issues have been presented. Refer to Appendix 3 for swept path drawings.

2.9 Compliance with AS2890.1:2004 and AS2890.6

Number of Parking Bays on-site

29

Are Austroads documents referenced?

YES

If YES, Nominate:

- Australian/New Zealand Standard, Parking facilities, Part 1: Off-street car parking - Originated as AS 2890.1—1986.
- Australian/New Zealand Standard, Parking facilities, Part 6: Off-street parking for people with disabilities - Originated as AS2890.6

Proposed development User Class

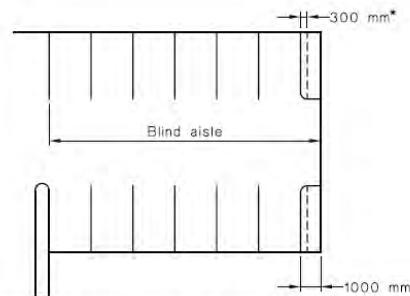
User Class 1A (Residential, domestic and employee parking)
 User Class 3 (visitors' parking)
 User Class 4

AS2890.1:2004 Off-street car parking AS2890.6 Off-street parking for people with disabilities						
Parking Bay Type	Parking Bay Length		Parking Bay Width		Aisle Width	
	Required	Proposed	Required	Proposed	Required	Proposed
All bays at 90° (User Class 1A)	5.4m	5.4m	2.4m	2.4m	5.8m	6.2m
All bays at 90° (User Class 3)	5.4m	5.4m	2.6m	2.6m	5.8m	6.2m
ACROD Parking	5.4m	5.4m	2.4m-ACROD 2.4m-shared space	2.4m-ACROD 2.4m-shared space	5.8m	6.2m

Name the other requirements in the AS2890.1:2004 document.

'At blind aisles, the aisle shall be extended a minimum of 1 m beyond the last parking space, as shown in Figure 2.3, and the last parking space widened by at least 300 mm if it is bounded by a wall or fence.

In car parks open to the public, the maximum length of a blind aisle shall be equal to the width of six 90 degree spaces plus 1 m, unless provision is made for cars to turn around at the end and drive out forwards."



*Additional widening required if there is a wall or fence at the side of the last space, see Clause 2.4.1(b)(ii).

DIMENSIONS IN MILLIMETRES

FIGURE 2.3 BLIND AISLE EXTENSION

KCTT comment:

Blind aisle

Extended by a minimum of 1 m

Reversing bay

Provided

Does the parking area meet the requirements set in AS2890.1:2004?

KCTT reviewed the proposed development layout and concluded that dimensions of all car parking bays and aisle width comply with the Australian Standard AS/NZS 2890.1/2004.

Does the parking area meet the requirements set in AS2890.6?

YES

2.10 Bicycle Parking

Local Government

Shire of Serpentine-Jarrahdale

Reference Document Utilised

Local Planning Policy 4.15: Bicycle Facilities Policy

Description of Parking Requirements in accordance with the Relevant Document:

No requirements

Justification

The Shire's Local Planning Policy 4.15: Bicycle Facilities Policy applies to the proposed development. LPP 4.15, Schedule 1 specifies rates for the provisions of bicycle parking facilities for certain land uses. A 'Child Minding Centre' is not included in Schedule 1.

Given the location of the proposed development, it is unlikely that the residents or staff members arrive to the Child Care Centre using bicycles.

2.11 ACROD Parking

Class of Building

Class 9b

Does this building class require specific provision of ACROD Parking?

YES

Reference Document Utilised

Building Code of Australia

Description of Parking Requirements:

Class 9b — (b) Other assembly building — (i) up to 1000 carparking spaces; - 1 space for every 50 carparking spaces or part thereof

Parking Requirement in accordance with regulatory documents

Land Use	Requirements	Yield	Total Parking
Childcare Centre	<i>1 space for every 50 carparking spaces or part thereof</i>	29	1
Total Volume of ACROD Parking Required			1
Total Volume of ACROD Parking Provided by Proponent			1

Justification

The proposed development meets the requirement for 1 ACROD bay.

2.12 Delivery and Service Vehicles

Guideline Document used as reference

NSW RTA Guide to Traffic Generating Developments

Requirements

Other uses - 1 space per 2,000m²

Parking Requirement in accordance with regulatory documents

Land Use	Minimum Requirements	Yield	Total Parking
Childcare Centre	<i>1 space per 2,000m²</i>	615m ²	1
Total Volume of Service and Delivery Parking Required			1
Total Volume of Service and Delivery Parking Provided by Proponent			N/A

Justification

The proposed development will not require a dedicated delivery parking bay.

Waste vehicle is expected to enter the development outside of hours of operation and turnaround on site using empty parking spaces.

2.13 Calculation of Development Generated / Attracted Trips

What are the likely hours of operation?	06:30 - 18:30
What are the likely peak hours of operation?	AM peak 07:30 - 08:30 PM peak 16:30 - 17:30
Do the development generated peaks coincide with existing road network peaks?	YES
If YES, Which:	Partially AM peak
Guideline Document Used	NSW RTA Guide to Traffic Generating Developments

Rates from above document:

Child Day Care:

- 0.8 trips in AM Peak per child
- 0.7 trips in PM Peak per child

It should be noted that these rates are given for a 2-hour peak period. For the purposes of this report KCTT will use the worst-case scenario where the two-hour traffic volume will be attracted to the development within one hour.

Given that the WAPC Transport Assessment Guidelines and NSW RTA Guide to Traffic Generating Developments do not offer daily vehicular trip generation rate for these land uses KCTT have assumed the following to apply:

Childcare centres vehicular daily trips can be assumed to be 4 VPD per child and 2 VPD per employee. Each parent will make 2 vehicular trips when dropping off the child to the day care centre and 2 vehicular trips when picking the child up. Employees will make 1 vehicular trip arriving to work, and another vehicular trip when leaving work. For the calculations below, a conservative approach has been applied **showing the theoretical maximum number of children, under assumption that all children are driven to school, there are no siblings in the centre and there are no sick children absent from the centre.**

Land Use Type	Rate above	Yield	Daily Traffic Generation	Peak Hour Traffic Generation	
				AM	PM
Childcare Centre	4 VPD per child+2 VPD per employee 0.8 VPH AM Peak per child 0.7 VPH PM Peak per child	104 children 18 staff members	452	83	73

Does the site have existing trip generation / attraction?	YES Single residence 9 vehicular trips per day; 1 vehicular trip per hour in both Peak Hours
What is the total impact of the new proposed development?	The proposed development is expected to generate 443 vehicular trips per day, 82 vehicle trips in the AM peak and 72 vehicular trips in the PM peak (deduction of existing traffic from the proposed traffic). According to WAPC this is considered as a moderate traffic impact to the surrounding road network.

2.14 Traffic Flow Distribution

How many routes are available for access / egress to the site? Two (2)

Route 1 / Movement 1

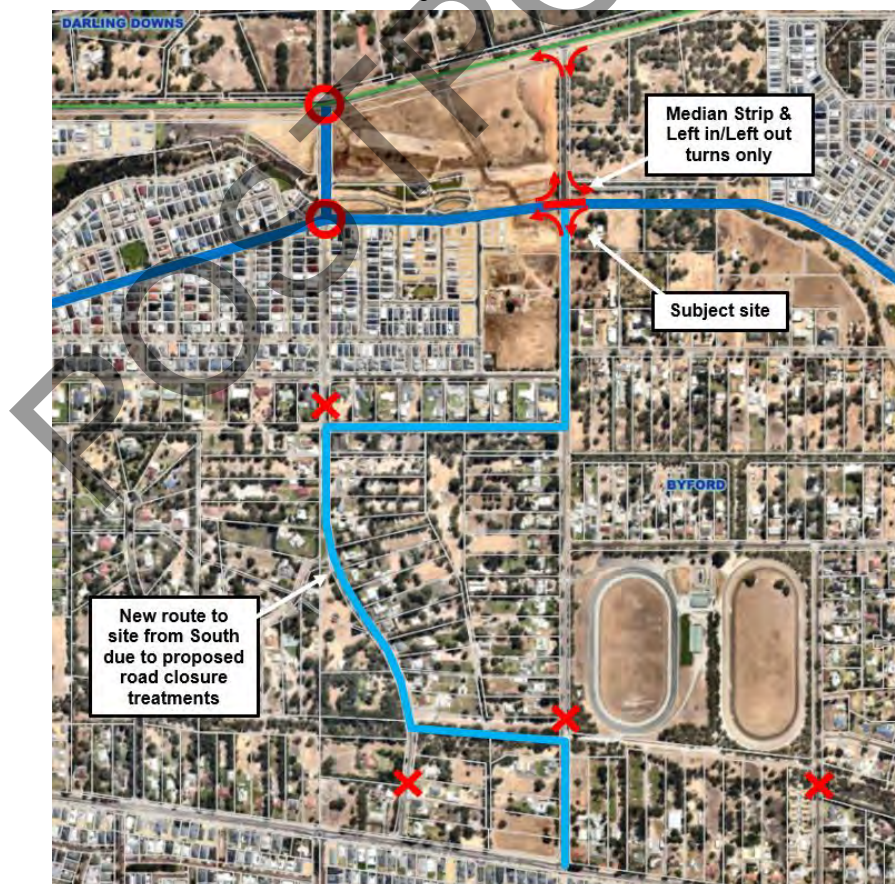
Provide details for Route No 1 To/from the north via Briggs Road
 Percentage of Vehicular Movements via Route No 1 60% [271 VPD; AM 50 VPH; PM 44 VPH]

Route 2 / Movement 2

Provide details for Route No 2 To/from the south via Briggs Road
 Percentage of Vehicular Movements via Route No 2 40% [181 VPD; AM 33 VPH; PM 29 VPH]

Note* - The distribution is likely to change after complete development of the Local Structure Plan and Subdivisions, including the extension of Indigo Parkway. Furthermore, based on the information from the Shire of Serpentine-Jarrahdale, a median is expected to be constructed on Indigo Parkway, allowing only LILLO movements from/to Briggs Road. This amendment would change the traffic distribution to future routes which would be available for reaching the site. For example, for reaching Thomas Road, vehicles would go through via Indigo Parkway and via future extension of Malarkey Road.

However, the timeframe of this amendment is currently unknown and there is limited information on how the traffic would reroute to reach the site. Therefore, this report and Appendix 2 show the traffic distribution with a full movement intersection of Briggs Road and Indigo Parkway (extended driveway). Below is a screenshot showing the future amendments to the surrounding road network.



Screenshot received from the Shire of Serpentine-Jarrahdale.

2.15 Surrounding Area Developments

Nominate the significant developments in the vicinity of the proposed development.

Future Childcare centre for 110 children on Lots 367 to 373 of the Byford Meadows Stage 7 Development Plan.

This lots are fronting Indigo Parkway (west of Briggs Road), Briggs Road and Caspian Chase

This proposed development will be located directly across the proposed childcare centre which is the subject of this report.

What is the expected traffic impact from the nominated development

As per Shawmac's TIS report (February 2023), the proposed childcare will generate up to 450 vehicular trips per day and 87 vehicular trips per hour in peak hours.

Will the peak hours of the developments coincide?

Yes. The two childcare centres will have similar traffic impact and given it is the same land use, peak hours will coincide.

Impact on Briggs Road

KCTT believe that having two childcare centres on opposite sides of Briggs Road will not have a negative impact on the traffic flow conditions and traffic safety of this road section.

Both childcare centres will have their access points away from Briggs Road.

The childcare centre west of Briggs Road will have two crossovers and two connections with Briggs Road:

- 1 LILO crossover from/to Indigo Parkway
- 1 full movement crossover from/to Caspian Chase.

Therefore, traffic will be dispersed from Indigo Parkway / Briggs Road intersection as vehicles will have to use Caspian Chase crossover to reach Briggs Road.

Conclusion

KCTT believe that Briggs Road will successfully absorb both childcare centres' generated traffic.

After the expected addition of median on Indigo Parkway (timeframe unknown), traffic volume on Briggs Road will significantly decrease as there will be no direct route via Briggs Road to Thomas Road.

2.16 Vehicle Crossover Requirements

Are vehicle crossovers required onto existing road networks?

YES

How many existing crossovers?

One (1)

How many proposed crossovers?

One full movement crossover will be proposed in the Stage 1 (before the completion of the entire Structure Plan area)
 One additional full movement is envisioned for the ultimate scenario.

How close are proposed crossovers to existing intersections?

More than 50m

Does this meet existing standards?

YES

2.17 Public Transport Accessibility

How many bus routes are within 400 metres of the subject site? One (1)
 How many rail routes are within 800 metres of the subject site? None

Bus Route	Description	Peak Frequency	Off-Peak Frequency
254	Armadale Station – Byford via Kardan Boulevard	15 minutes	60 minutes

Walk Score Rating for Accessibility to Public Transport

22 | Minimal Transit. It is possible to get on a bus.

2.18 Pedestrian Infrastructure

Describe existing local pedestrian infrastructure within a 400m radius of the site:

Currently there is no pedestrian path on Briggs Road.

It is expected that pedestrian path will be added within Byford Area D works on both existing Briggs Road and Indigo Parkway extension.

What is the Walk Score Rating?

2 | Car-Dependent. Almost all errands require a car.

2.19 Cyclist Infrastructure

Are there any PBN Routes within an 800m radius of the subject site? YES

If YES, describe:

Classification	Road Name
“Other Shared Path (Shared by Pedestrians and Cyclists)”	Thomas Road
“Good Road Riding Environment”	Masters Road
Are there any PBN Routes within a 400m radius of the subject site?	NO
Does the site have existing cyclist facilities?	NO
Does the site propose to improve cyclist facilities?	The bicycle infrastructure is likely to improve with the completion of the entire Byford Area D.

2.20 Site-Specific Issues and Proposed Remedial Measures

How many site-specific issues need to be discussed? One (1)

Site-Specific Issue No 1

Traffic Impact

Remedial Measure / Response

As stated above the additional traffic attracted to the subject site is expected to increase by a maximum of 452 vehicular trips per day and 83 vehicular trips in the peak hour.

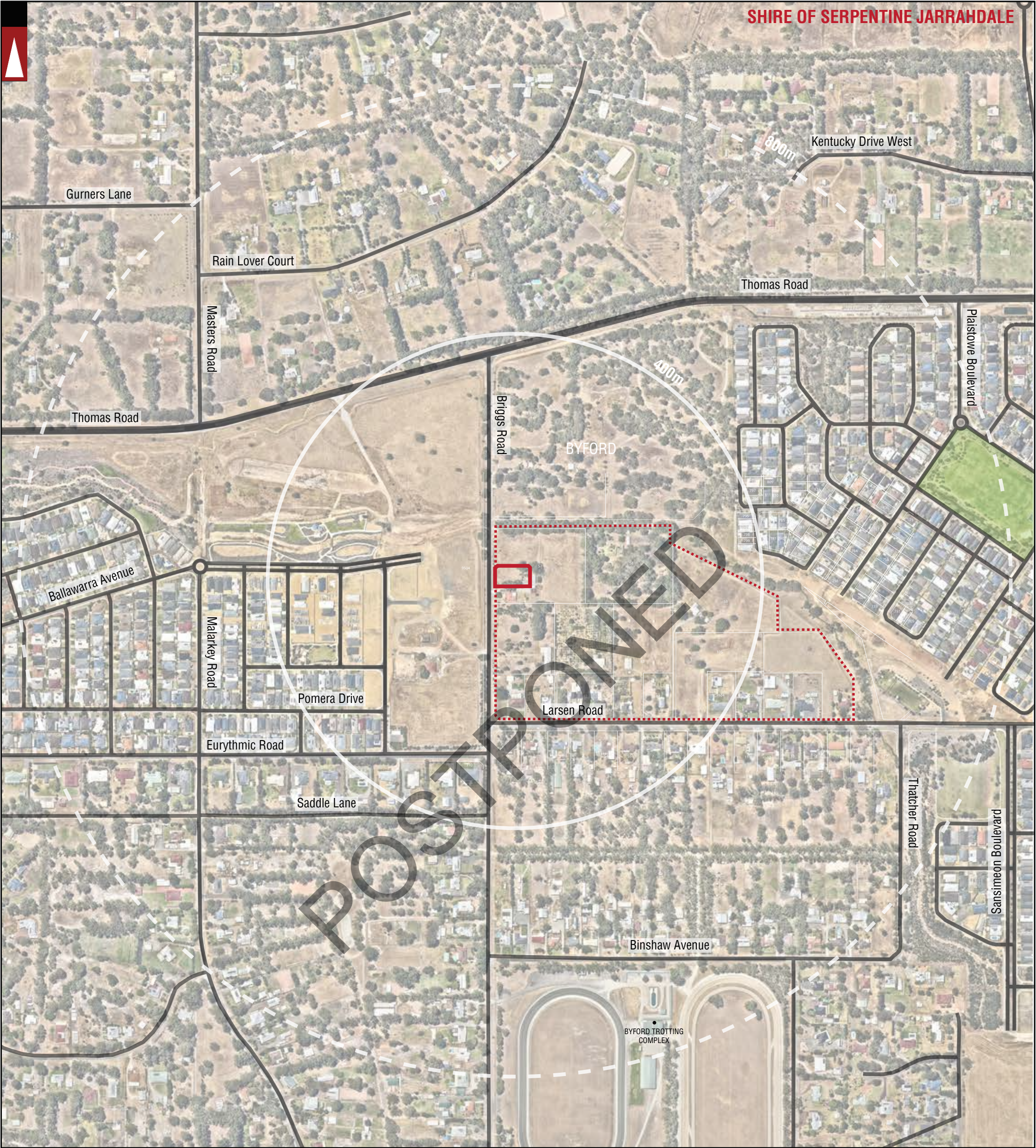
Briggs Road is classified as Local Distributor as per MRWA classification with the maximum desirable volume of 6,000 vehicles per day. Available traffic counts show approximately 3,900 VPD on Briggs Road south of Thomas Road. Therefore, with the added traffic from the subject site the street would remain well under the maximum desirable traffic volume for Local Distributor roads.

Other surrounding roads would absorb significantly less traffic than Briggs Road, moreover, the traffic would be dispersed so that the impact can be considered negligible.

Appendix 2

Transport Planning and Traffic Plans

POSTPONED



PARKS AND RECREATION

ROAD

Hay Street

STREET NAME

SUBJECT SITE

STRUCTURE PLAN AREA

DISTANCE FROM LOCATION

SHIRE OF SERPENTINE JARRAHDALE

LOCAL GOVERNMENT NAME

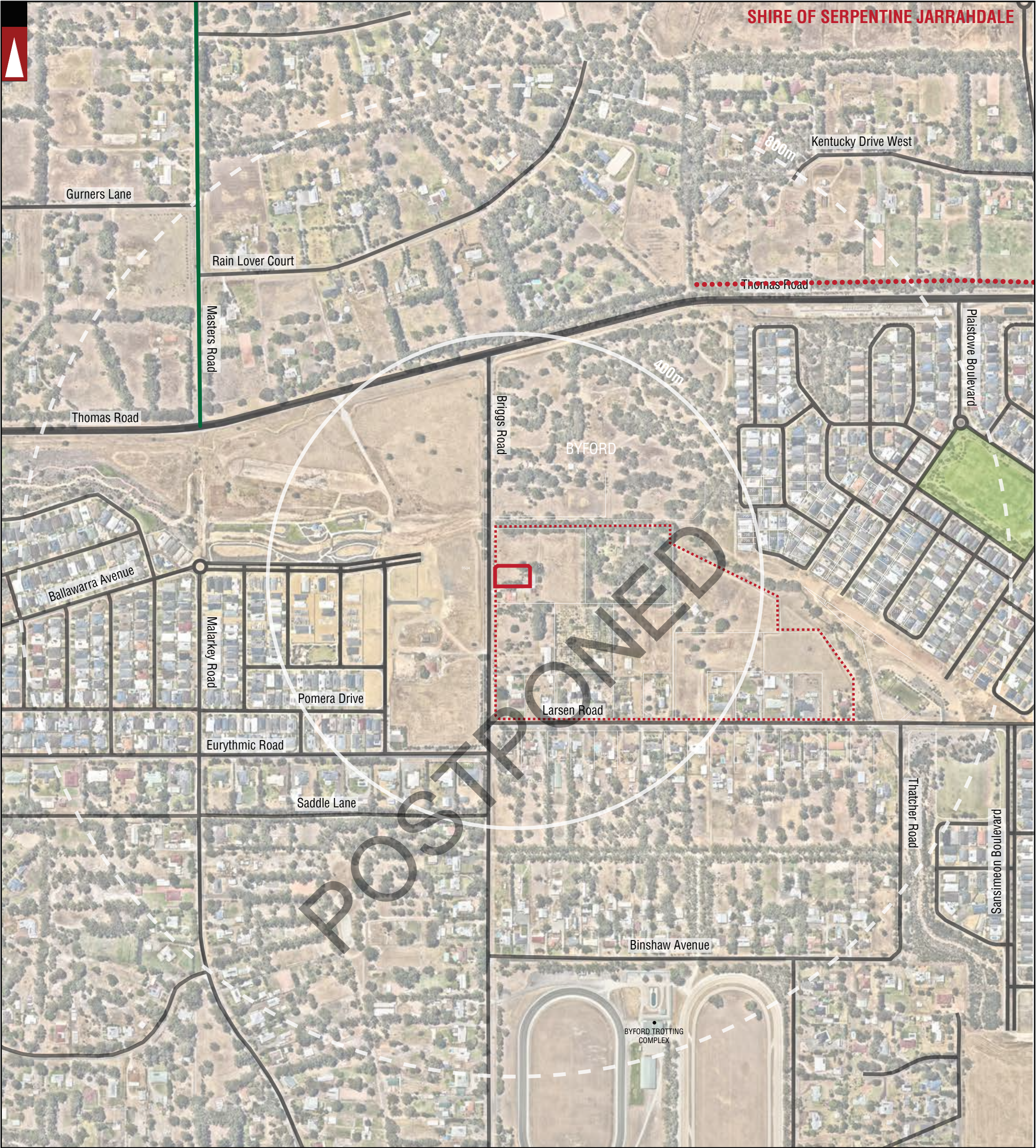
BYFORD

SUBURB NAME

LEGEND

			PROJECT: LOT 57 BRIGGS ROAD, BYFORD	DRAWN BY:	Civil & Traffic Engineering Consultants KCTT (Trading as KC Traffic and Transport Pty Ltd) PO Box 1456 Scarborough WA 6922 PH: 08 9441 2700 WEB: www.kctt.com.au	
			TITLE: LOCALITY PLAN - 800M RADIUS			
A	08-02-2023	ISSUED FOR REVIEW	DRAWING NUMBER: KC01522.000_ S01	A.M.		
No	DATE	AMENDMENT				





PARKS AND RECREATION

ROAD

Hay Street

STREET NAME

SUBJECT SITE

STRUCTURE PLAN AREA

DISTANCE FROM LOCATION

SHIRE OF SERPENTINE JARRAHDALE

LOCAL GOVERNMENT NAME

BYFORD

SUBURB NAME

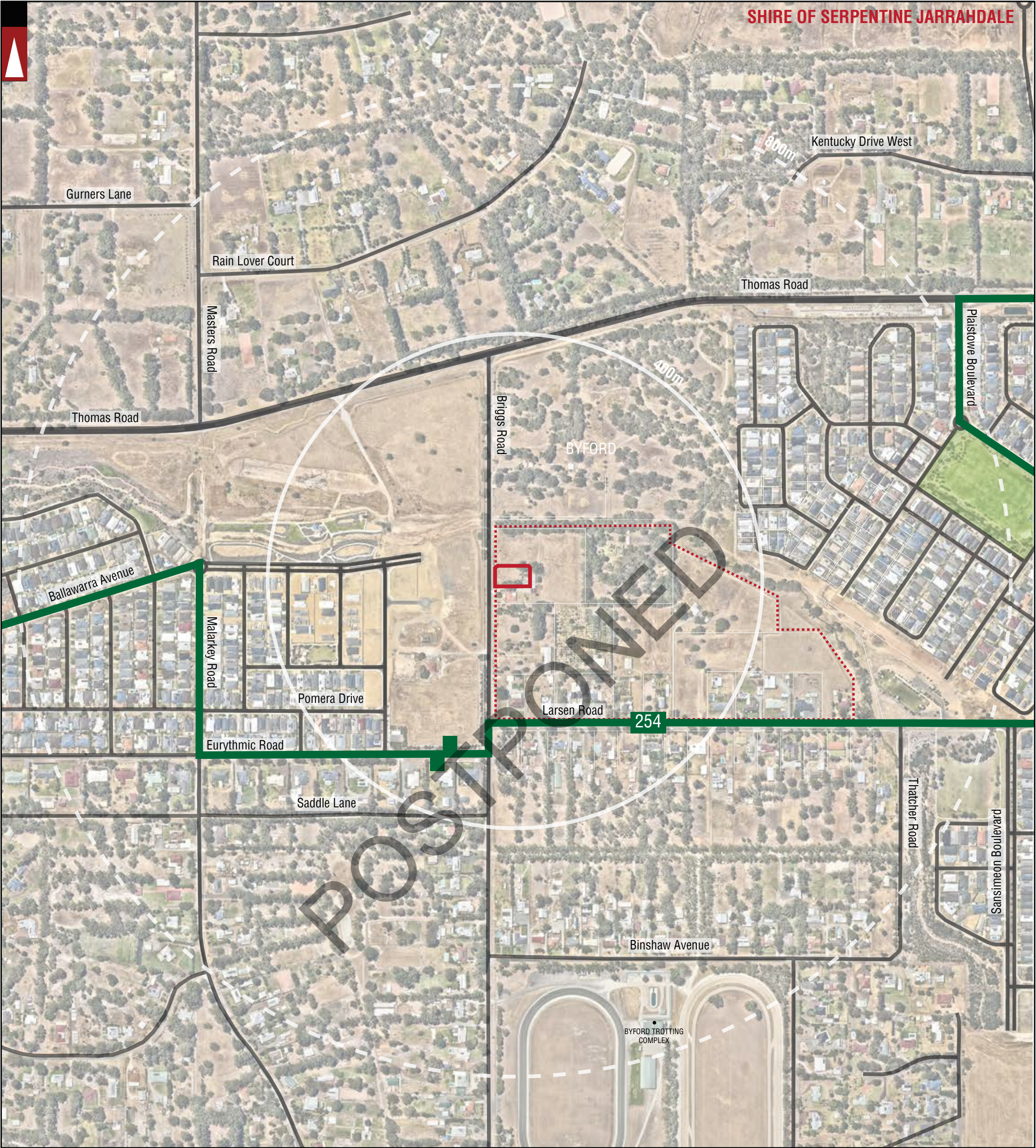
OTHER SHARED PATH (SHARED BY PEDESTRIANS & CYCLISTS)

GOOD ROAD RIDING ENVIRONMENT

LEGEND

			PROJECT: LOT 57 BRIGGS ROAD, BYFORD	DRAWN BY:	Civil & Traffic Engineering Consultants KCTT (Trading as KC Traffic and Transport Pty Ltd) PO Box 1456 Scarborough WA 6922 PH: 08 9441 2700 WEB: www.kctt.com.au	kctt
			TITLE: BICYCLE NETWORK PLAN - 800M RADIUS			
A	08-02-2023	ISSUED FOR REVIEW	DRAWING NUMBER: KC01522.000_ S02	A.M.		
No	DATE	AMENDMENT				





PARKS AND RECREATION

ROAD

Hay Street

STREET NAME

SUBJECT SITE

STRUCTURE PLAN AREA

DISTANCE FROM LOCATION

SHIRE OF SERPENTINE JARRAHDALE

LOCAL GOVERNMENT NAME

BYFORD

SUBURB NAME

BUS ROUTES

BUS STOPS (WITHIN 400M)

103

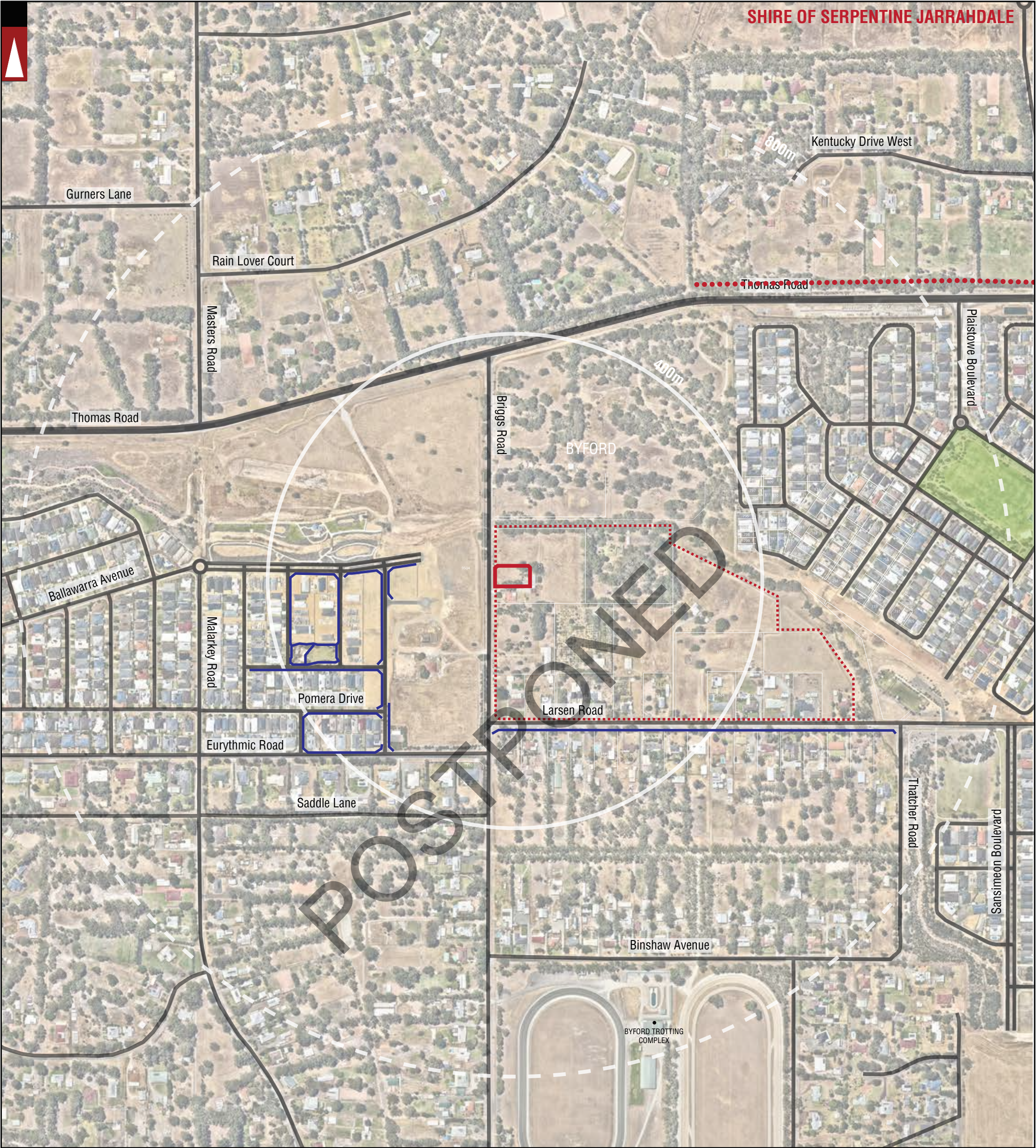
BUS ROUTE NUMBER

NOTE : FOR MORE INFORMATION REGARDING THE DESCRIPTION OF BUS ROUTES AND THEIR INDICATIVE PEAK AND OFF-PEAK FREQUENCIES REFER TO THE REPORT.

LEGEND

			PROJECT: LOT 57 BRIGGS ROAD, BYFORD	DRAWN BY:	Civil & Traffic Engineering Consultants KCTT (Trading as KC Traffic and Transport Pty Ltd) PO Box 1456 Scarborough WA 6922
			TITLE: PUBLIC TRANSPORT PLAN - 800M RADIUS	A.M.	<div><div>PH: 08 9441 2700 WEB: www.kctt.com.au</div><div>kctt</div></div>
A	08-02-2023	ISSUED FOR REVIEW	DRAWING NUMBER: KC01522.000_ S03		
No	DATE	AMENDMENT			





PARKS AND RECREATION

ROAD

Hay Street

STREET NAME

SUBJECT SITE

STRUCTURE PLAN AREA

DISTANCE FROM LOCATION

SHIRE OF SERPENTINE JARRAHDALE

LOCAL GOVERNMENT NAME

BYFORD

SUBURB NAME

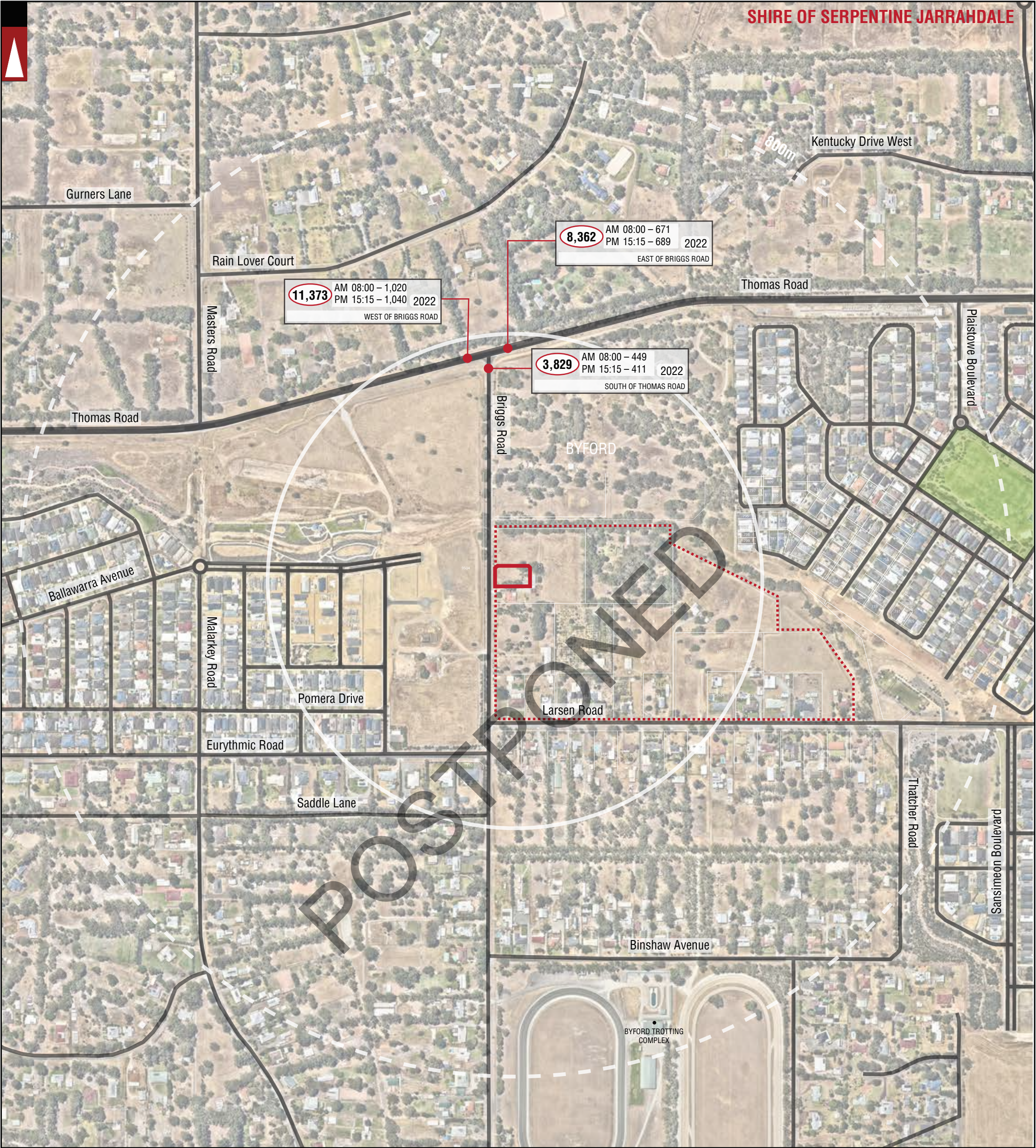
OTHER SHARED PATH (SHARED BY PEDESTRIANS & CYCLISTS)

PEDESTRIAN PATH

LEGEND

			PROJECT: LOT 57 BRIGGS ROAD, BYFORD	DRAWN BY:	Civil & Traffic Engineering Consultants KCTT (Trading as KC Traffic and Transport Pty Ltd) PO Box 1456 Scarborough WA 6922 PH: 08 9441 2700 WEB: www.kctt.com.au	
			TITLE: PEDESTRIAN PATHS PLAN - 800M RADIUS			
A	08-02-2023	ISSUED FOR REVIEW	DRAWING NUMBER: KC01522.000_ S04	A.M.		
No	DATE	AMENDMENT				





PARKS AND RECREATION

ROAD

Hay Street

STREET NAME

SUBJECT SITE

STRUCTURE PLAN AREA

DISTANCE FROM LOCATION

SHIRE OF SERPENTINE JARRAHDALE

LOCAL GOVERNMENT NAME

SUBURB NAME

5,512

NUMBER OF VEHICLES PER DAY

AM 1145 – 381
PM 1630 – 480

NUMBER OF VEHICLES PER AM PEAK HOUR
NUMBER OF VEHICLES PER PM PEAK HOUR

2014

YEAR

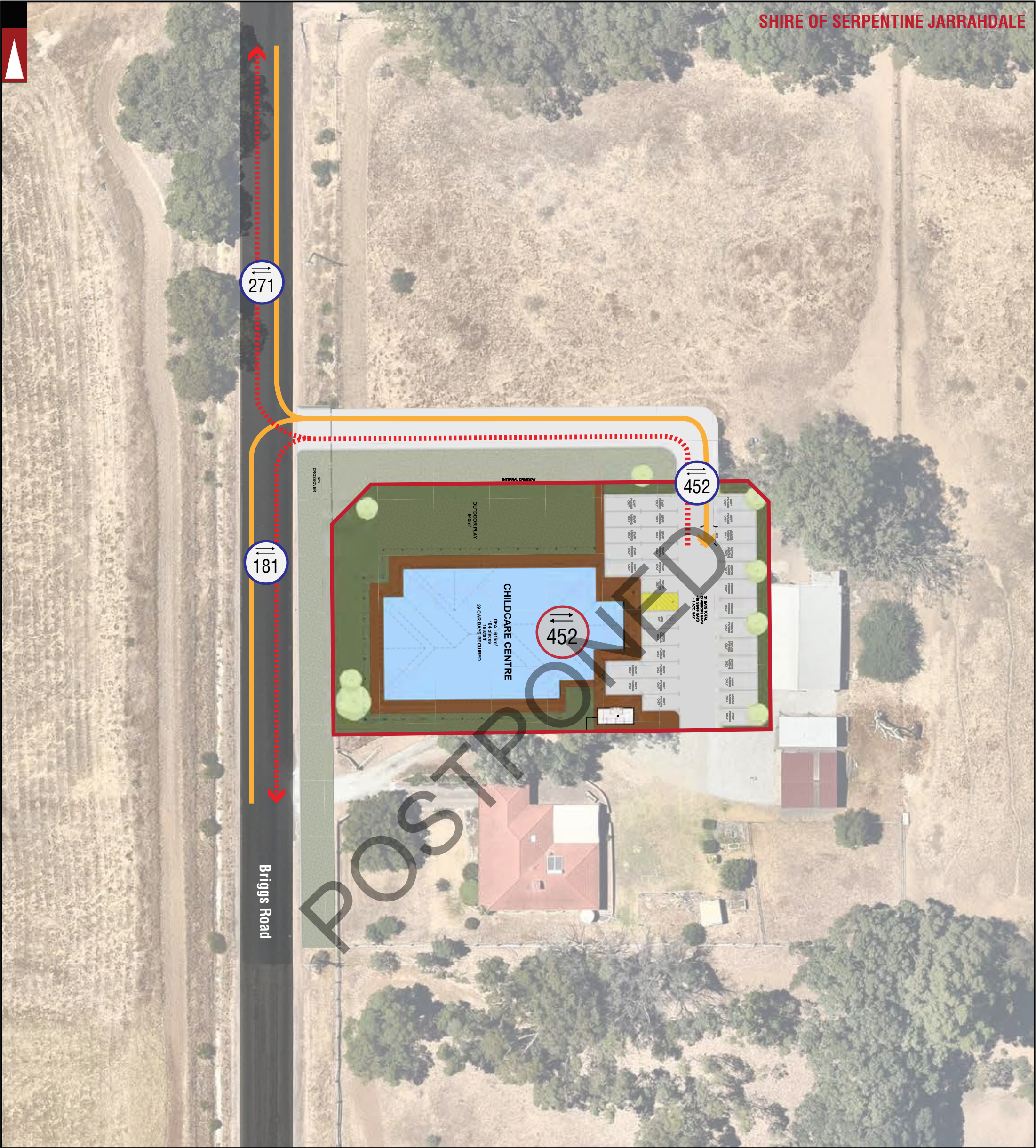
EAST OF HARLOW ROAD

LOCATION

LEGEND

			PROJECT: LOT 57 BRIGGS ROAD, BYFORD	DRAWN BY:	<div>Civil & Traffic Engineering Consultants KCTT (Trading as KC Traffic and Transport Pty Ltd) PO Box 1456 Scarborough WA 6922</div> <div>PH: 08 9441 2700 WEB: www.kctt.com.au</div> <div>kctt</div>
			TITLE: EXISTING TRAFFIC COUNTS - 800M RADIUS		
A	08-02-2023	ISSUED FOR REVIEW	DRAWING NUMBER: KC01522.000_ S05	A.M.	
No	DATE	AMENDMENT			





LOCATION
BOUNDARY

ROAD
(VARIED WITH ROAD WIDTH)

Lewis Road

ROAD NAME

1,389

Total Expected Traffic Generation from the proposed development


503

Total Expected Traffic Generation from Subject Site on the specific section of road - **IN** and **OUT** direction

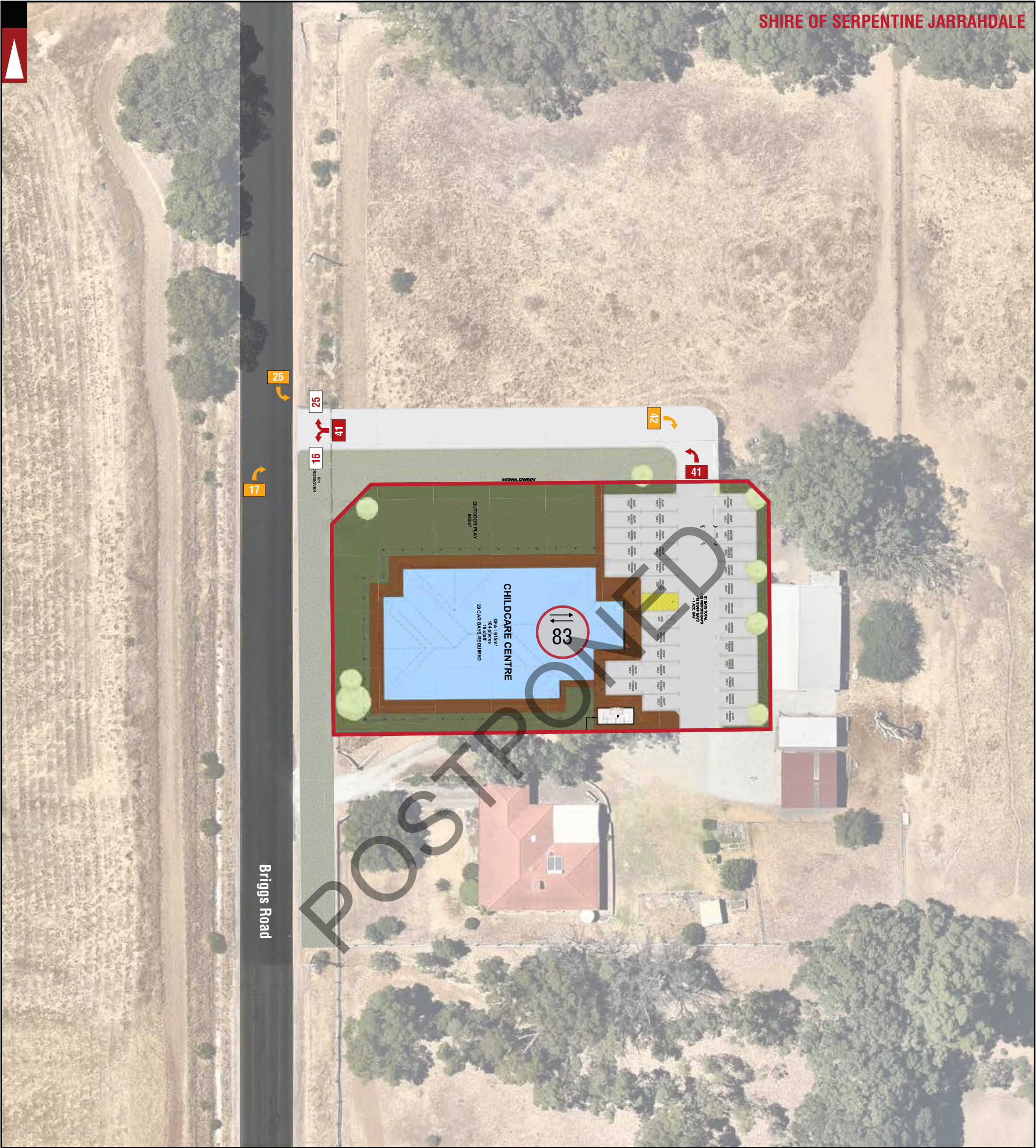
Traffic Flow IN Direction

Traffic Flow OUT Direction

LEGEND

			PROJECT: LOT 57 BRIGGS ROAD, BYFORD	DRAWN BY:	Civil & Traffic Engineering Consultants KCTT (Trading as KC Traffic and Transport Pty Ltd) PO Box 1456 Scarborough WA 6922 PH: 08 9441 2700 WEB: www.kctt.com.au	
			TITLE: TRAFFIC FLOW DIAGRAM	A.M.		
A	08-02-2023	ISSUED FOR REVIEW	DRAWING NUMBER: KC01522.000_S06			
No	DATE	AMENDMENT				





LOCATION
BOUNDARY

ROAD
(VARIED WITH ROAD WIDTH)

Lewis Road

ROAD NAME

000

000

000

Traffic Flow IN Direction

000

000

000

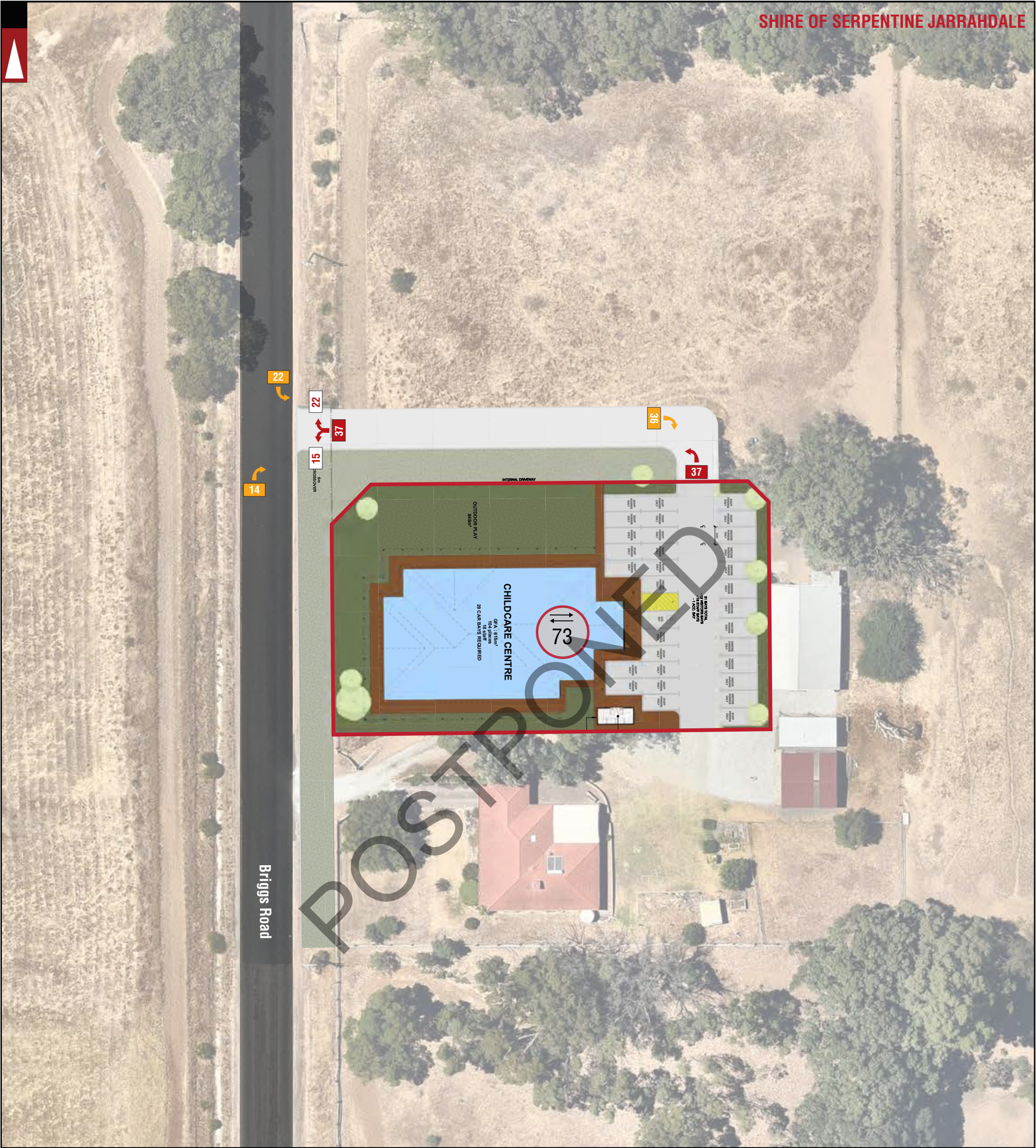
Traffic Flow OUT Direction

1,389

Total Expected Traffic Generation from the
proposed development - AM peak

LEGEND

			PROJECT: LOT 57 BRIGGS ROAD, BYFORD	DRAWN BY:	Civil & Traffic Engineering Consultants KCTT (Trading as KC Traffic and Transport Pty Ltd) PO Box 1456 Scarborough WA 6922 PH: 08 9441 2700 WEB: www.kctt.com.au kctt
			TITLE: TRAFFIC FLOW DIAGRAM - AM PEAK	A.M.	
A	08-02-2023	ISSUED FOR REVIEW	DRAWING NUMBER: KC01522.000_S07		
No	DATE	AMENDMENT			



LOCATION
BOUNDARY

ROAD
(VARIED WITH ROAD WIDTH)

Lewis Road

ROAD NAME

000

000

000

Traffic Flow IN Direction

000

000


000

Traffic Flow OUT Direction

1,389

Total Expected Traffic Generation from the
proposed development - PM peak

LEGEND

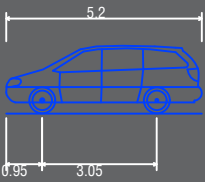
			PROJECT: LOT 57 BRIGGS ROAD, BYFORD	DRAWN BY:	Civil & Traffic Engineering Consultants KCTT (Trading as KC Traffic and Transport Pty Ltd) PO Box 1456 Scarborough WA 6922 PH: 08 9441 2700 WEB: www.kctt.com.au	
			TITLE: TRAFFIC FLOW DIAGRAM - PM PEAK	A.M.		
A	08-02-2023	ISSUED FOR REVIEW	DRAWING NUMBER: KC01522.000_S08			
No	DATE	AMENDMENT				



Appendix 3

Vehicle Turning Circle Plan

POSTPONED

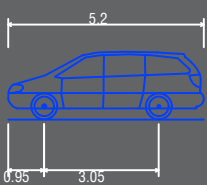
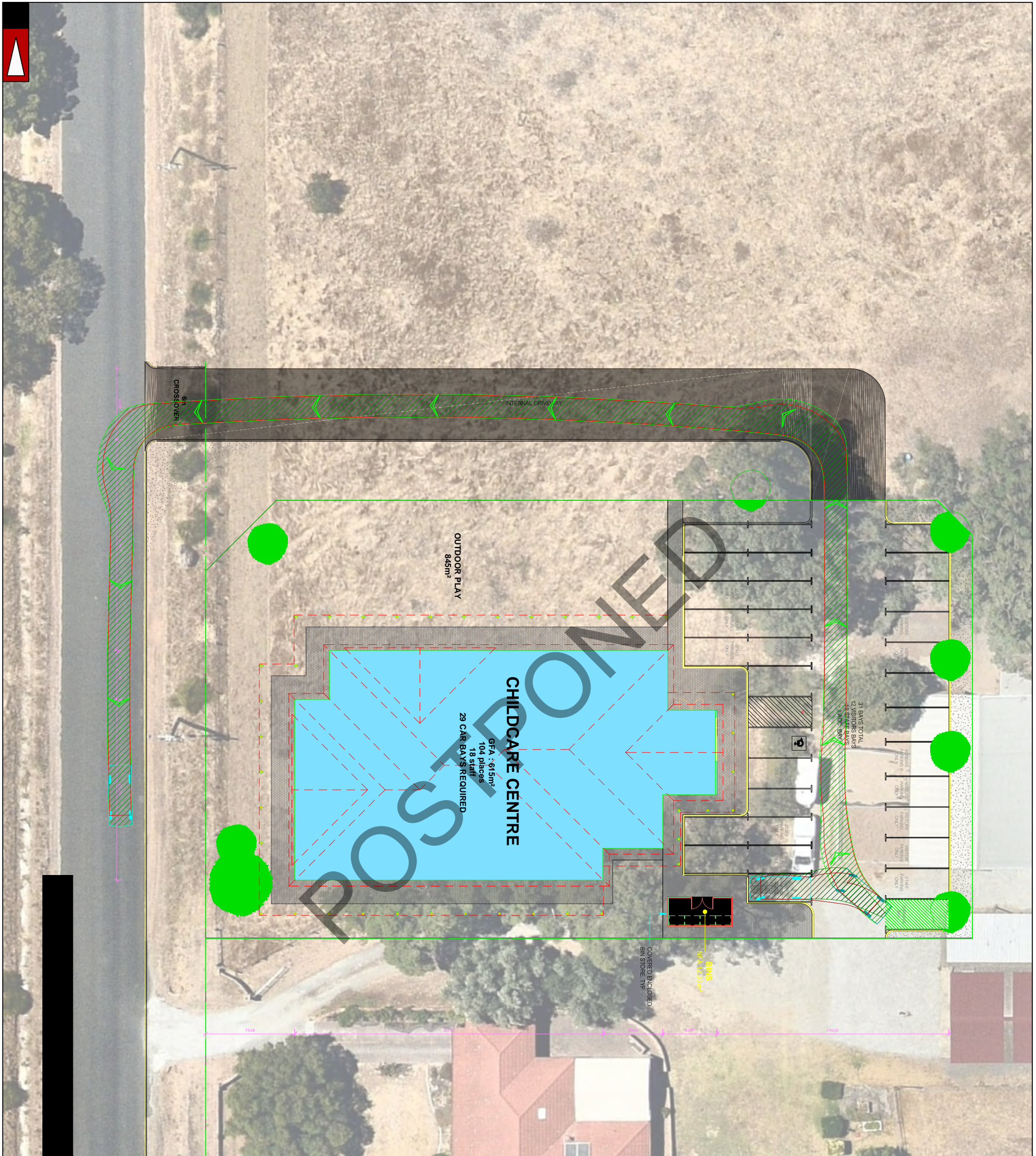


Passenger vehicle (5.2 m)
Overall Length 5.200m
Overall Width 1.940m
Overall Body Height 1.804m
Min Body Ground Clearance 0.295m
Track Width 1.840m
Lock to Lock Time 4.00s
Kerb to Kerb Turning Radius 6.300m

Lot boundary
Wheel Path (Forward Vehicle Motion)
Vehicle Chassis Envelope (Forward Vehicle Motion)
Wheel Path (Reverse Vehicle Motion)
Vehicle Chassis Envelope (Reverse Vehicle Motion)

LEGEND

			PROJECT: Lot 57 Briggs Road, Byford	DRAWN BY:	Civil & Traffic Engineering Consultants PO Box 1456 Scarborough WA 6922 PH: 08 9441 2700 WEB: www.kctt.com.au	
			TITLE: Vehicle Turning Circle Plan - B99 Passenger Vehicle (5.2m)			
			DRAWING NUMBER: KC01522.000_S20			
A	09-02-2023	ISSUED FOR REVIEW		N.M.		
NO	DATE	AMENDMENT				



Passenger vehicle (5.2 m)
Overall Length 5.200m
Overall Width 1.940m
Overall Body Height 1.804m
Min Body Ground Clearance 0.295m
Track Width 1.840m
Lock to Lock Time 4.00s
Kerb to Kerb Turning Radius 6.300m

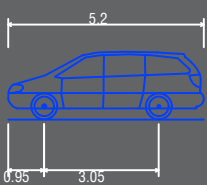
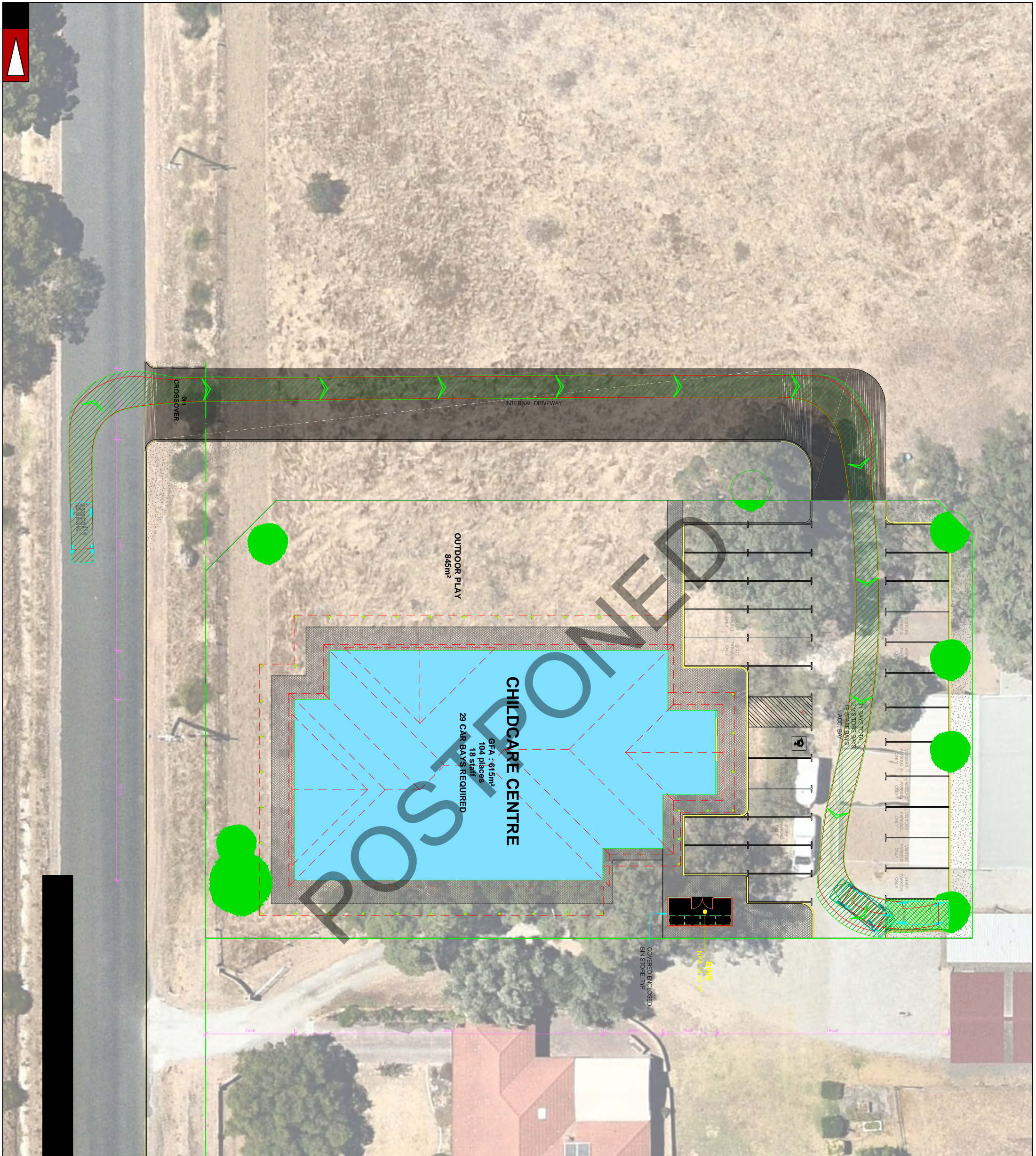
- Lot boundary
- Wheel Path (Forward Vehicle Motion)
- Vehicle Chassis Envelope (Forward Vehicle Motion)
- Wheel Path (Reverse Vehicle Motion)
- Vehicle Chassis Envelope (Reverse Vehicle Motion)

LEGEND

DRAWN BY:	Civil & Traffic Engineering Consultants PO Box 1456 Scarborough WA 6922
N.M.	PH: 08 9441 2700 WEB: www.kctt.com.au

kctt

			PROJECT: Lot 57 Briggs Road, Byford	DRAWN BY:
			TITLE: Vehicle Turning Circle Plan - B99 Passenger Vehicle (5.2m)	
A	09-02-2023	ISSUED FOR REVIEW	DRAWING NUMBER: KC01522.000_S21	
NO	DATE	AMENDMENT		

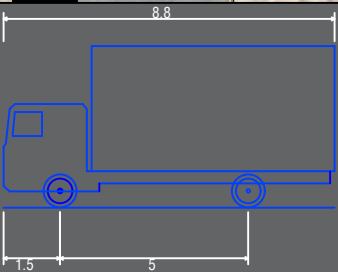
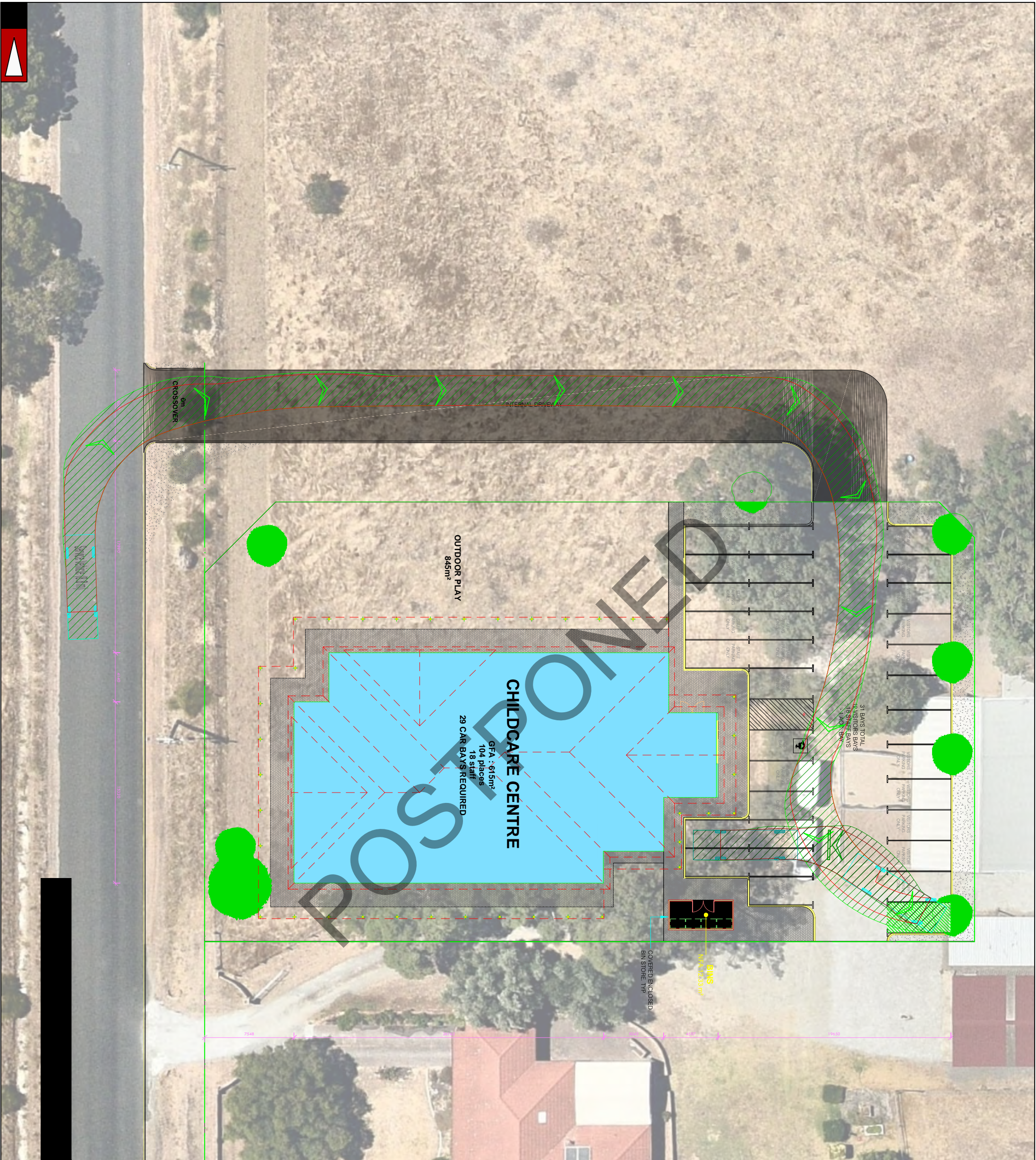


Passenger vehicle (5.2 m)
Overall Length 5.200m
Overall Width 1.940m
Overall Body Height 1.804m
Min Body Ground Clearance 0.295m
Track Width 1.840m
Lock to Lock Time 4.00s
Kerb to Kerb Turning Radius 6.300m

- Lot boundary
- Wheel Path (Forward Vehicle Motion)
- Vehicle Chassis Envelope (Forward Vehicle Motion)
- Wheel Path (Reverse Vehicle Motion)
- Vehicle Chassis Envelope (Reverse Vehicle Motion)

LEGEND

			PROJECT: Lot 57 Briggs Road, Byford	DRAWN BY:	Civil & Traffic Engineering Consultants PO Box 1456 Scarborough WA 6922 PH: 08 9441 2700 WEB: www.kctt.com.au	
			TITLE: Vehicle Turning Circle Plan - B99 Passenger Vehicle (5.2m)			
			DRAWING NUMBER: KC01522.000_S22			
A	09-02-2023	ISSUED FOR REVIEW		N.M.		
NO	DATE	AMENDMENT				



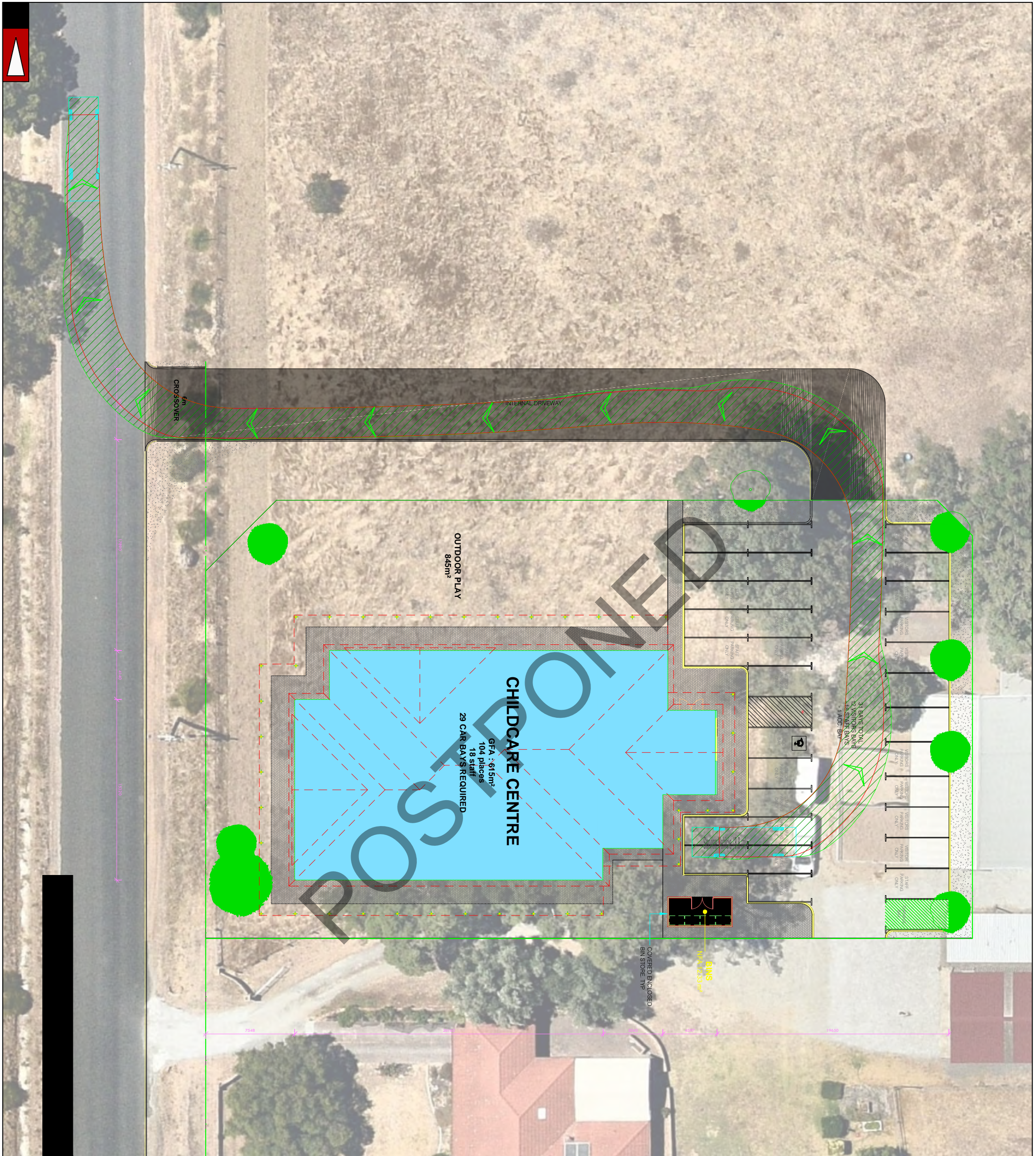
Service Vehicle (8.8 m)	
Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	12.500m

- Lot boundary
- Wheel Path (Forward Vehicle Motion)
- Vehicle Chassis Envelope (Forward Vehicle Motion)
- Wheel Path (Reverse Vehicle Motion)
- Vehicle Chassis Envelope (Reverse Vehicle Motion)

LEGEND

			PROJECT: Lot 57 Briggs Road, Byford	DRAWN BY:	Civil & Traffic Engineering Consultants PO Box 1456 Scarborough WA 6922 PH: 08 9441 2700 WEB: www.kctt.com.au
			TITLE: Vehicle Turning Circle Plan - Service Vehicle (8.8m)		
A	09-02-2023	ISSUED FOR REVIEW	DRAWING NUMBER: KC01522.000_S24	N.M.	
NO	DATE	AMENDMENT			





Service Vehicle (8.8 m)	8.800m
Overall Length	2.500m
Overall Width	4.300m
Overall Body Height	0.427m
Min Body Ground Clearance	2.500m
Track Width	4.00s
Lock to Lock Time	12.500m
Kerb to Kerb Turning Radius	

Lot boundary	---
Wheel Path (Forward Vehicle Motion)	---
Vehicle Chassis Envelope (Forward Vehicle Motion)	---
Wheel Path (Reverse Vehicle Motion)	---
Vehicle Chassis Envelope (Reverse Vehicle Motion)	---

LEGEND

			PROJECT: Lot 57 Briggs Road, Byford	DRAWN BY:	Civil & Traffic Engineering Consultants PO Box 1456 Scarborough WA 6922 PH: 08 9441 2700 WEB: www.kctt.com.au	
			TITLE: Vehicle Turning Circle Plan - Service Vehicle (8.8m)			
A	09-02-2023	ISSUED FOR REVIEW	DRAWING NUMBER: KC01522.000_S25	N.M.		
NO	DATE	AMENDMENT				

Bushfire Management Plan

PROPOSED CHILDCARE CENTRE

Lot 57 Briggs Road, Byford

May 2023



LIMITATIONS STATEMENT

This Bushfire Management Plan ('BMP') has been for a childcare to be established at Lot 57 Briggs Road Byford. The site is located within the Shire of Serpentine Jarrahdale.

Envision Bushfire Protection

ABN: 90958370365

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Ph: 0428 066 147

Email: admin@envisionbp.com.au

Version Control

Lot 57 Briggs Road Byford			
Version	Date	Author	
V1	28 February 2023	Anthony Rowe	submission
V2	9 May 2023	Anthony Rowe	Revised Figure 3

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Disclaimer

In undertaking this work, the authors have made every effort to accurately apply the available information at the time of writing following the instructions of the regulatory authorities and applying best practice as described by the Fire Protection Association Australia. Any conclusions drawn or recommendations made in the report are made in good faith, and the consultants take no responsibility for how this information and the report are subsequently used.

Envision Bushfire Protection accepts no liability for a third party's use of, or reliance upon, this specific report.

Envision Bushfire Protection accepts no liability for the inaction of the owner to provide or maintain the bushfire protection measures identified in this report. Vegetation is dynamic, building materials may distort, and the accumulation and the location of flammable materials near the building may affect the potential for damage or loss of a building to occur.

Failure to maintain the property and/or building to these standards may compromise an insurance policy if currently covering any of your assets or those of any third party that may be consequentially affected due such failure. If not insured, and if you are seeking insurance, this report may not influence the decision of any insurer not to offer cover.

Importantly the measures contained in this report cannot guarantee human safety or an absence of harm or that the building will not be damaged or would survive a bushfire event on every occasion. This is due to the unpredictable nature of fire behaviour (knowledge in this field continues to develop) and the unpredictable nature of extreme weather conditions.

Scope of this report

Envision Bushfire Protection has been engaged to provide assessment of a proposed childcare centre.

Envision Bushfire Protection has not been engaged to assess the compliance of the site and the construction standard of the building in accordance with its planning and building approvals.

The scope of the advice has been to assess the proposal for compliance with the policy measures described in State Planning Policy 3.7.

The investigations and mitigation measures identified in the BMP, has, in turn, formed the basis for the preparation of a Bushfire Emergency Evacuation Plan.

Client relationship

I was engaged to provide expert bushfire safety and planning advice. My relationship with the client is a standard commercial contract, and no private, personal, or other matter has influenced the content of the BMP or my findings.

STATEMENT OF CONFORMITY – PLANNING AND DEVELOPMENT ACT 2005



Anthony Rowe Level 3 - BPAD36690

Principal



The signatory declares that this Bushfire Management Plan meets the requirements of State Planning Policy 3.7 and the Guidelines for Planning in Bushfire Prone Areas V.1.4.

EXECUTIVE SUMMARY

Preface

This report investigates the suitability of a childcare centre to be established at Lot 57 Briggs Road Byford with the Western Australian Bushfire Protection Guidelines.

The site is located in the Shire of Serpentine Jarrahdale, the decision maker. It is within a declared bushfire prone area and State Planning Policy 3.7 Planning in Bushfire Prone Areas applies.

In accordance with SPP 3.7 the planning authority in determining an application in a declared bushfire prone area must be satisfied the proposal is consistent with the Policy intent, ***to preserve life and reduce the impact of bushfire on property and infrastructure.***

State Planning Policy 3.7 and Guidelines for Planning in Bushfire Prone Areas (WAPC, v.1.4 December 2021) identifies a childcare facility to be classed as a 'vulnerable' development. A 'vulnerable' development in addition to the usual assessment information, is required is also to have a Bushfire Emergency Evacuation Plan (BEEP). The Bushfire Emergency Evacuation Plan in turn follows the options identified in the Bushfire Management Plan.

This BMP has been prepared in accordance with SPP 3.7 and Appendix Five in the Guidelines v.1.4 and the Department of Planning Lands and Heritage (DPLH) *BMP Template for a complex development application*; the following summary has followed the structure (heading topics) illustrated in the DPLH template.

1. Proposal details (addressed in Section 1)

The development site is a 2400 m² and part of a larger 2 ha lot (Lot 57 Briggs Road Byford) **(the site)**.

The larger lot (site) is 2 ha, flat and occupied by a single dwelling with gardens, and outbuildings as part of a rural residential land use. The development site is at the western end of the lot and is flat and clear of trees except along the western fence line.

The site is within an area identified as residential (Local Structure Plan) **(Plate 3)**. Under the plan, a public open space is also proposed north of the site, including a drainage channel. It is to be separated from the north boundary of the childcare site by a proposed public road. It is assumed the POS will be vegetated as forest.

The site will also join a public through road at the east boundary which will be followed by residential development. Land south of the boundary will be developed as residential and across Briggs Road (west) will be residential development. Also across Briggs Road and south west of the site is a public purpose reserve. It has been assumed to be developed as forest.

The site has access to a reticulated water supply and a fire hydrant is located in Briggs Road.

2. Environmental considerations (addressed in Section 2)

A review of Landgate ecological data base in accordance with the DPLH template has been undertaken to identify any potential restriction (regulated vegetation) upon the implementation of bushfire protection measures, that may require the modification or removal of vegetation and any planned ecological rehabilitation.

The site does not contain any specifically identified regulated vegetation. It is within a general area identified as habitat for the Carnaby Black Cockatoo.

The proposal and a 122 m Asset Protection Zone will only displace grassland. The existing stand of trees at the south boundary and north west to the carpark can be retained within the Asset Protection Zone standard.

3. Bushfire assessment results (addressed in Section 3)

A Bushfire Attack Level assessment following Method 1 AS 3959:2018, and the DPLH *Visual guide for bushfire risk assessment in Western Australia*, and using an FFDI of 80, has been undertaken.

The assessment is illustrated at Figure 5a. It has assumed an Asset Protection Zone can be created around the childcare building within the site to achieve a BAL not exceeding BAL-19. This is required in the interim until the grassland is replaced by residential development.

When the surrounding land is developed the building will be within a BAL-19 area. The future development is illustrated in figure 5b.

Identification of bushfire hazard issues (addressed in Section 4)

The site is within a Mediterranean climate, with cool, wet winters (June to August) followed by a mild spring (September-November), and hot, dry summers (December to February) leading into autumn (March-May).

The bushfire season is typically from the beginning of December through to the end of March each year.

The site is within an area identified as bushfire prone due to vegetation within large residential lots. This may overestimate the risk in this instance because the presence of buildings and gardens fragments the continuity of bushfire fuels.

The site is also within an area that will be developed for medium density residential purposes. In the interim the BAL affecting the building from the immediate land is predominantly from grassland. It requires the shortest separation (12 m) to achieve BAL-19 at the building.

The proposed subdivision layout has the Childcare adjoining residential development surrounded by residential development. It is separated by 40 m from the public open space (public purpose and park - recreation and conservation) to the north of the site and separated by a road. The PoS is assumed to be developed as forest and a retained bushfire threat in the long term.

The road at the east of the site will provide an opportunity to evacuate into a BAL Low area.

A childcare building under NCC 2019 has no bushfire construction requirement and it is at the applicant's discretion to apply a bushfire construction standard. Notwithstanding the childcare will be located within BAL-19 it is recommended the Childcare Building adopt the construction standards for BAL-29, to provide resistance to a bushfire occurring in the reserve north of the site.

During a bushfire the peak radiant heat, upon which the BAL is determined lasts only a short time, typically 2 minutes, with the heat rapidly decaying after the firefront (peak) has passed.

Notwithstanding BAL-29 is the acceptable construction standard it is a fatal exposure level for humans; 10 kWm² is the maximum short term exposure to evacuate by a vehicle.

In the event of a bushfire the childcare centre should be evacuated, but evacuation will not be able to continue during the peak. Shelter in the building will be required at this time and this is a reason to construct the building to a standard commensurate to the level of bushfire attack.

The BAL-29 construction standard does not account for a direct flame contact. It is important that the grounds are maintained to prevent secondary fires at the site, by the location of flammable objects, that may subject the building to direct flame contact.

Seasonal preparations are described in the Bushfire Emergency Evacuation Plan as a risk treatment, as well as pre-emptive evacuation if there is a fire within 5 km.

4. Assessment against the bushfire protection criteria (addressed in Section 5)

The proposal was compared with the four Bushfire Protection Criteria Elements: Location, Siting and Design, Access, and Water.

Acceptable Solution

Element 1 Location - requires development avoid areas of extreme Bushfire Hazard level and can achieve BAL-29 at completion.

The site is within an establishing residential built out area, transitioning from rural living and pasture grass. The site is within a predominantly a Moderate Bushfire Hazard Level.

The Childcare will achieve BAL-19 at completion.

The proposal is compliant with Element 1.

Element 2 Siting and Design – requires that a planning application should demonstrate the habitable buildings will not be exposed to a BAL greater than BAL-29.

The development site is within a larger ownership responsible for the management of the land, enabling the APZ separation to be created from classified grassland to achieve BAL-19 at the building. This will be required until the adjoining land is subsequently developed for residential purposes, and roadways, both excluded as a threat by AS3959, s.2.2.3.2(e).

The proposal achieves BAL-19 and is compliant with the acceptable solution A2.1.

It is however recommended the building is constructed to BAL-29 standard.

Element 3 Vehicle Access – requires the site has access to a through road to provide alternate routes of escape and access for fire fighters.

The site is initially accessed from Briggs Road which is a through road.

When the adjoining land is developed the carpark will be accessed from a new through road (unnamed) that will be established at the east boundary to the carpark.

The site has access to a public through road, initially and into the future.

The proposal is compliant with Element 3.

Element 4 Water – requires the availability of water for firefighting purposes.

The proposal will be connected to the reticulated water supply. Public hydrants are located on along Briggs Road within 100 m of the site.

Additional Bushfire Management Strategies (addressed in section 5.2)

Additional Bushfire Management Strategies are provided through the Bushfire Emergency Evacuation Plan following planning preparation, response and recovery.

Existing risk controls, external to control by the applicant, are expected to be maintained. This includes public notification of bushfire, the provision of emergency services for the community, the maintenance of public roads, and the capacity of the reticulated water supply.

Spatial representation of the bushfire management strategies (Figure EX 1)

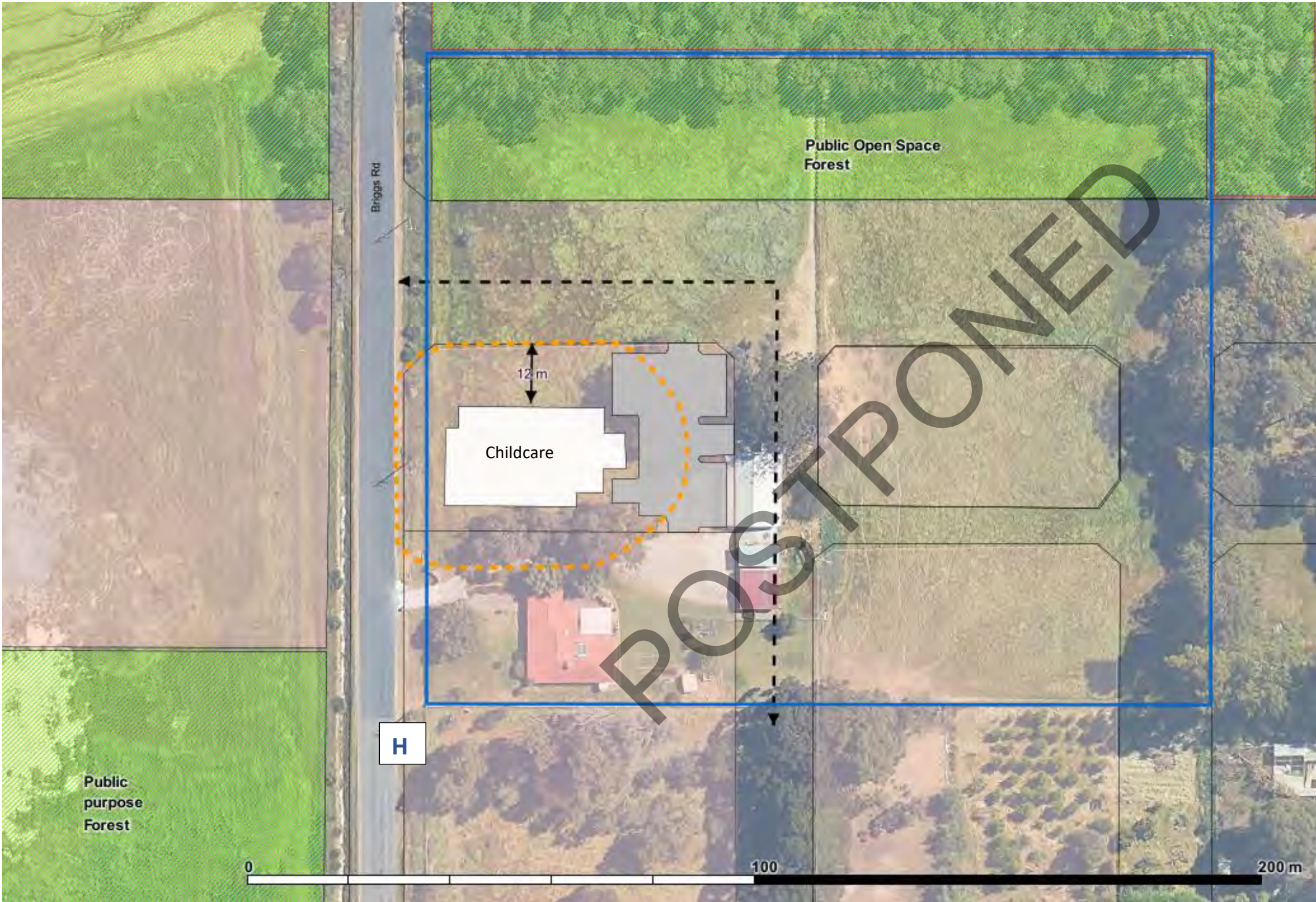
The key features demonstrating compliance with the bushfire protection measures are identified on the *Spatial representation of the bushfire management strategies*.

These actions are reflected in the following *Responsibilities for implementation and management of the bushfire measures*.

5. Responsibilities for implementation and management of the bushfire measures

The *Responsibilities for Implementation and Management of the Bushfire Measures*, addressed in section 6 of the BMP and summarised in Figure EX1 supersede or are additional to the details included within the development application.






Figure Ex 1 - Spatial representation of the proposed risk management strategies - Lot 57 Briggs Road Byford



Responsibilities for implementation and management of the bushfire measures

1. The childcare building Asset Protection Zone (12 m) is to be maintained in accordance with the Asset Protection Zone standard described in the *Guidelines for Planning in Bushfire Prone Areas v1.4*.
2. The childcare building is to be constructed in accordance with the BAL 29 building construction requirements prescribed in sections 3 and 7 in AS3959:2018
3. In furtherance of any *Building Act 2011* requirement, the Childcare is to be connected to the towns reticulated water, and fire hoses are to be provided at capable of applying water to all external surfaces of the building and up to 10 m around the building.

LEGEND

-  Site Boundary
-  Asset Protection Zone 12 m
-  Future roads
-  Future residential area
-  Hydrant

Site assessment Date: 17 November 2022
Prepared: Anthony Rowe
Accreditation Level: BPAD L3
Accreditation Number: 36690

EMERGENCY EVACUATION DIAGRAM

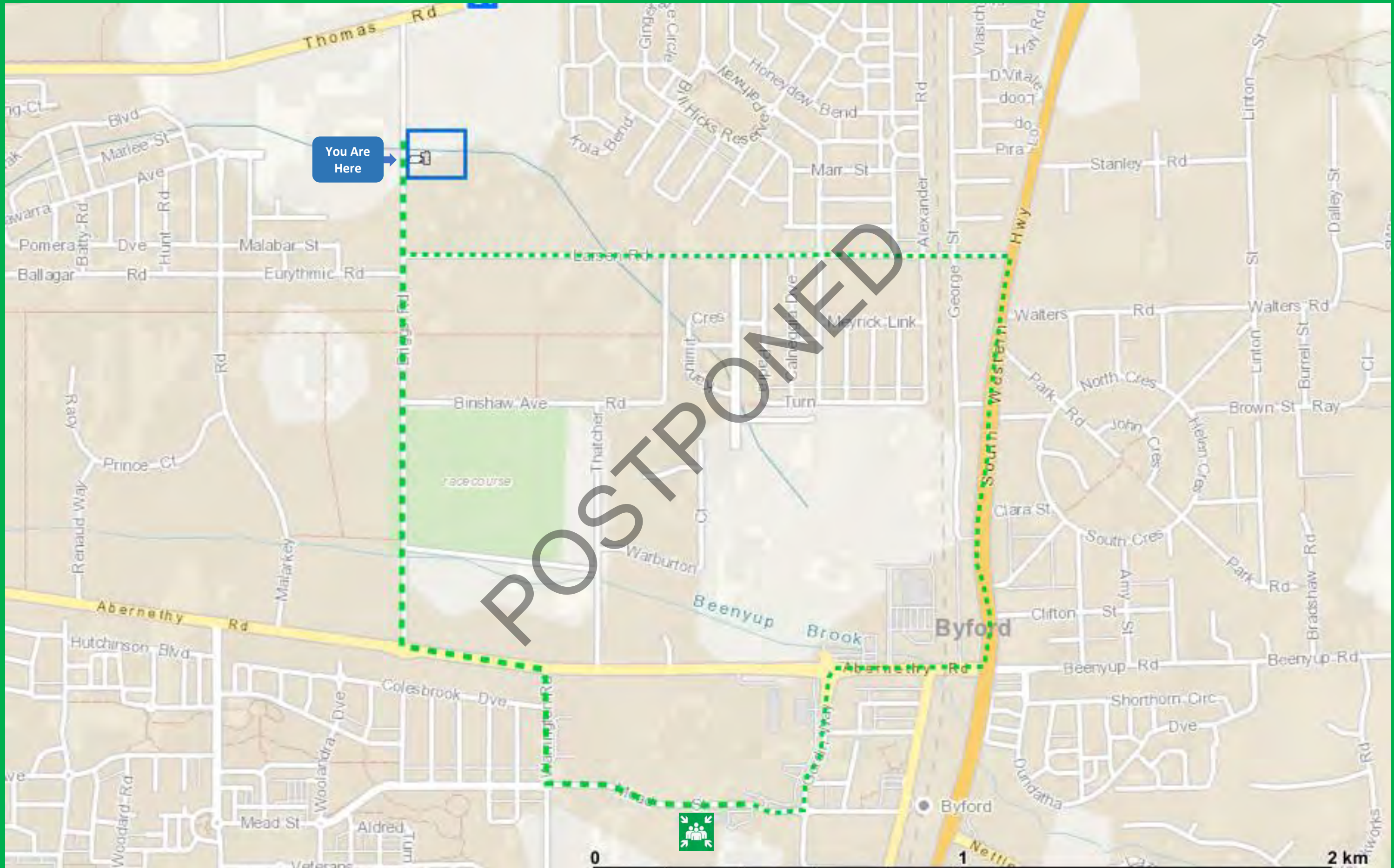


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PROPOSAL DETAILS

1.1 Introduction

Envision Bushfire Protection has been commissioned to provide bushfire consultancy services, in the preparation of a development proposal compliant with the State Planning Policy 3.7, *Planning in Bushfire Prone Areas*, for a proposal to construct a childcare centre at Lot 57 Briggs Road Byford (Plate 1).

The site is located in the Shire of Serpentine Jarrahdale, which is the decision maker.

The subject land is within a declared bushfire prone area (Plate 2).

In accordance with SPP 3.7 the planning authority in determining an application in a declared bushfire prone area must be satisfied the proposal is consistent with the SPP 3.7 Policy Intent, **to preserve life and reduce the impact of bushfire on property and infrastructure**.

Purpose of this Plan

The purpose of this BMP is to assess the suitability of the proposal and its location for the intended use, to assess the bushfire risk and identify the risk treatments that satisfy the objectives to avoid an increase in the threat of bushfire and reduce the vulnerability of people and property (to the degree necessary) from potentially significant adverse bushfire impacts.

Site and Proposal Description

Address	Lot 57 Briggs Road Byford			
Local Government Area	Shire of Serpentine Jarrahdale			
Local Planning Scheme Zone	(Draft) Local Planning Scheme 3 – Urban Development Local Structure Plan (see Plate 3)			
Bushfire Season	Shire of Serpentine Jarrahdale 1 December – 12 May (precise dates may vary annually)			
Development proposal	Commercial Building (Plate 4)			
Building class	Class 9b – the construction standard is at the discretion of the applicant NCC 2019, but provisions apply when NCC 2022 becomes operational.			
Site area	Development site 2236 m ²			
Adjoining Land uses	North	East	South	West
Within 150 m	Urban	Woodland	Urban	Urban
Within 2.5 km	Pasture (grassland)	Forest (isolated<5%)	Pasture (grassland) Forest	Urban
Road Access	Briggs Road (Local distributor road)			
Water supply	The site has access to a reticulated water supply. The nearest hydrant is immediate to the site on Briggs Road.			

Tele communications	The site is within the Telstra 4G - 5G network
Emergency services	The nearest fire brigades are Byford Volunteer Bush Fire Brigade, Clara Street Byford (2.6 km) Oakford Volunteer Fire Brigade, 1099 Nicholson Rd, Oakford (8 km)
Minor Development	N/A
Unavoidable development	N/A
Vulnerable Development	Yes – Bushfire Emergency Evacuation Plan provided
High risk land use	N/A



Plate 1: Site in Locality (National Map)

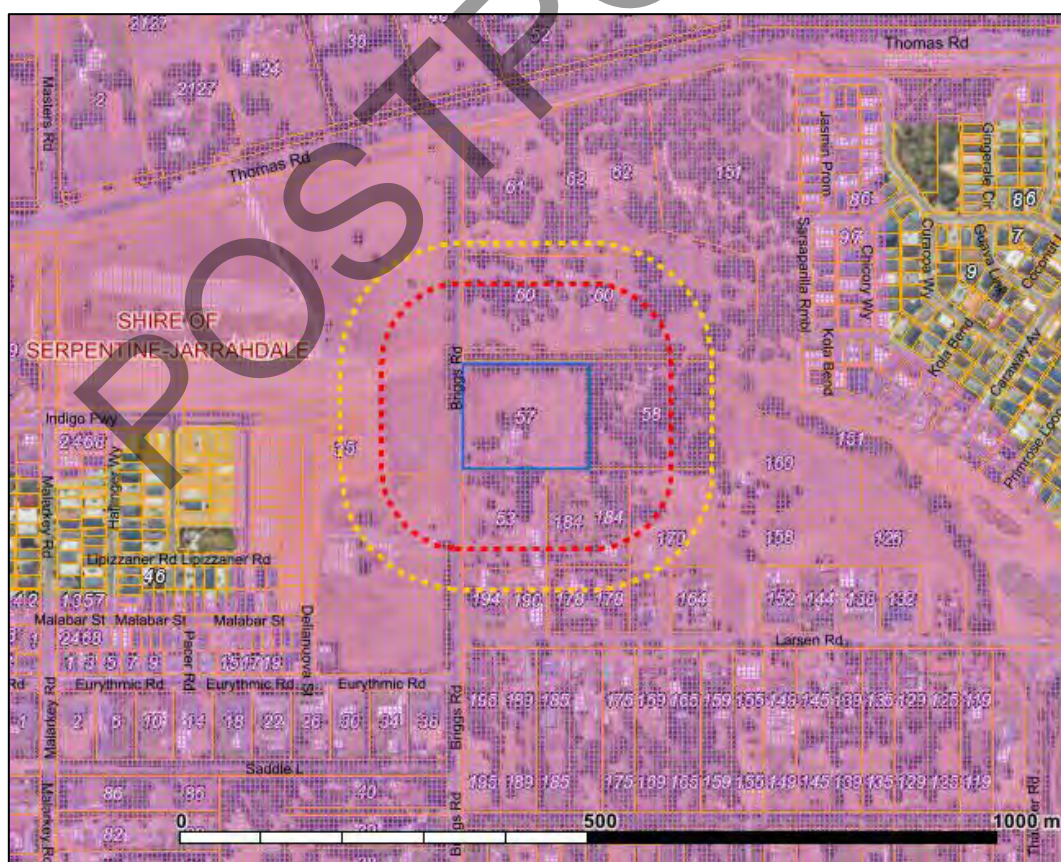


Plate 2: OBRM Bushfire Prone Area (Pink area)

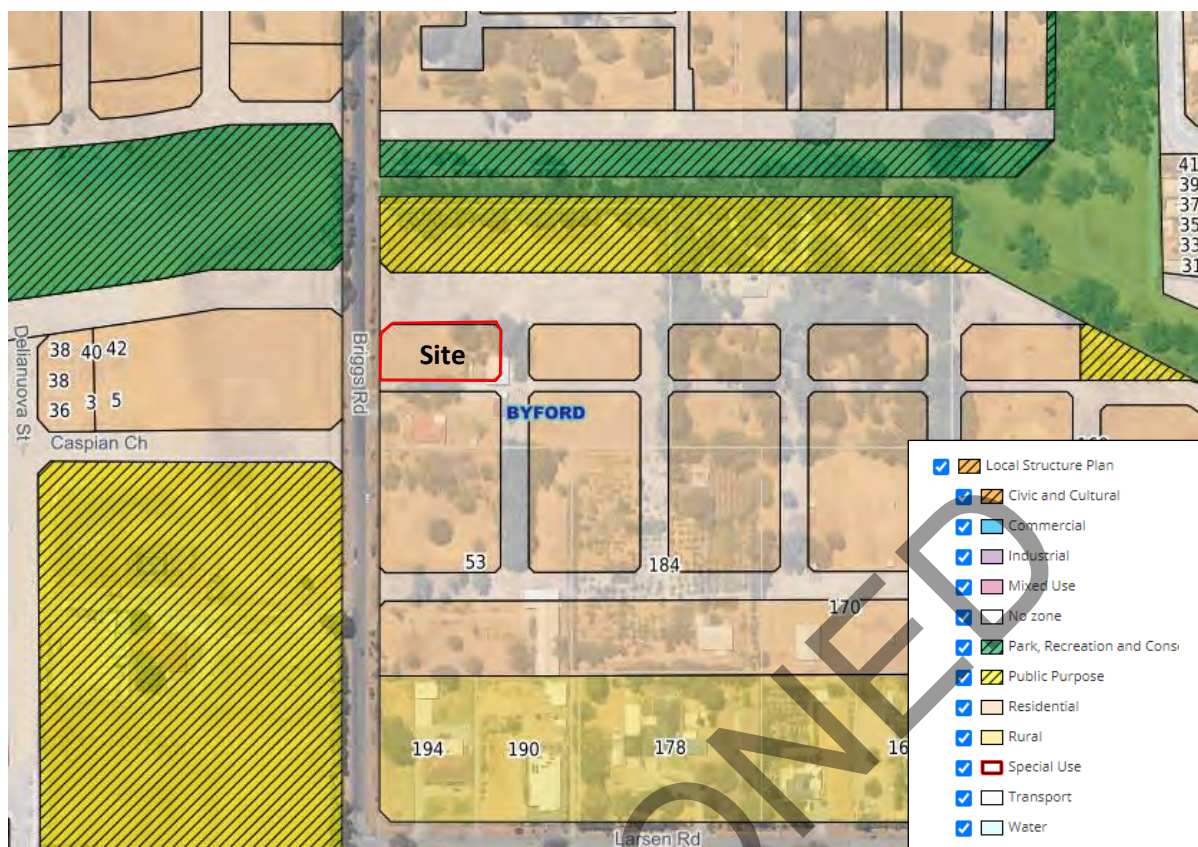


Plate 3: Local Structure Plan



1.2 Regulatory Compliance Requirements

Planning and Development Act 2005 - SPP 3.7

On 7 December 2015, the State Government introduced by Gazette, a state map of Bushfire Prone Areas by order under the *Fire and Emergency Services Act 1998* and introduced development controls in Bushfire Prone Areas through the *Planning and Development Act 2005*. These controls were authorised by State Planning Policy 3.7 (Planning in Bushfire Prone Areas) regulations introduced under Part 10A Schedule 2 of the *Planning and Development (Local Planning Scheme) Regulations 2015* and guided by the *Guidelines for Planning in Bushfire Prone Areas*.

The State Planning Policy, Regulations, and Guidelines now form the foundation for fire risk management planning in WA at a community and land development level. The Policy Intent of SPP 3.7 is ***to preserve life and reduce the impact of bushfire on property and infrastructure***.

The relevant Policy Objectives of SPP 3.7 are to:

5.1 Avoid any increase in the threat of bushfire to people, property, and infrastructure. The preservation of life and the management of bushfire impact are paramount. (Matters that may increase the threat of a bushfire include increasing available fuels or increasing the likelihood of ignition).

5.2 Reduce vulnerability to bushfire through the identification and consideration of bushfire risks in decision-making at all stages of the planning and development process. (Risk is the combination of likelihood and consequence, and reducing vulnerability is the identification of mitigation measures: see Bushfire Protection Criteria and Additional Bushfire Management Strategies).

Applicable clause from SPP 3.7, include:

SPP 6.2: A development application within a bushfire prone area has or will, on completion, have a moderate BHL and/or where BAL-12.5 to BAL-29 applies, may be considered for approval. *In this instance the proposal will not exceed BAL 29 refer to Figure 5a.*

SPP 6.5: A development application in a bushfire protection area is to be accompanied by an assessment against the bushfire protection criteria contained within the Guidelines, demonstrating compliance within the boundary of the development. *The proposed development requires no imposition beyond its site.*

SPP 6.7: A development that will result in the introduction or intensification of development or land use in an area that has or will, on completion, have an extreme BHL and/or BAL-40 or BAL-FZ will not be supported. *The proposal will not exceed BAL 29 refer to Figure 5a.*

SPP 6.10: The decision-maker may impose a 'notice on title' advising that the site is located in a bushfire prone area and is subject to a Bushfire Management Plan. *Routinely imposed as a condition of planning approval.*

SPP 6.11: Precautionary Principle if a landowner/proponent cannot satisfy the performance principles of the relevant policy measures (intent) through either the acceptable solutions outlined in the Guidelines, or through the alternative solutions (Performance Principle) the application may not be approved. *The proposal achieves compliance with the Acceptable solutions.*

Vulnerable Land Uses (Guidelines for Planning in Bushfire Prone Areas cl.5.5.1)

Typically, *Vulnerable* land uses are those where persons may be less able to respond in a bushfire emergency; this includes childcare centres.

An additional requirement provided by SPP 3.7 and its Guidelines, is that a proposal classified as a 'vulnerable development' is to be accompanied by a (Bushfire) Emergency Evacuation Plan,

comprising the details described at cl.5.5.4 of the Guidelines V1.4 and in accordance with the DPLH A Guide to developing a Bushfire Emergency Evacuation Plan 2019.

Building Act 2011

The proposal is a Class 9b building for the purpose of the *Building Act 2011*. The Building Act 2011, utilising the National Construction Code 2019 applies AS 3959:2018 construction requirements only upon class 1, 2, 3, and 10a buildings. *The construction requirements in AS 3959:2018 are often exceeded by the construction requirement for other classes of buildings. In instances where it does not, then a higher standard can be volunteered.*

National Construction Code 2022, to become operational in May 2023 has construction requirements 'to the degree necessary' applicable to Class 9 buildings, including Childcare buildings, in a bushfire prone area the degree necessary is attributable to the requirement for the building to provide shelter in a bushfire.

In this instance the proposal does not advocate shelter, as the primary response, other than to wait the passing of the peak flaming period.

Bush Fires Act 1954

Section 33 of the *Bush Fires Act 1954* recognises the responsibility of all landowners to prevent the spread of bushfire. The Local Government issues a Firebreak Notice annually. It can also issue a notice upon the landowner, at any time, to act as and when specified in the notice with respect to anything (stored materials) which in the opinion of the local government's authorised officer, is or is likely to be, conducive to the outbreak of a bushfire, or the spread or extension of a bushfire.

An owner who fails to comply with a notice is guilty of an offence (Penalty: \$5,000). The local government may in addition carry out the required works of the notice and recover the costs incurred by application to a Court.

2. ENVIRONMENTAL CONSIDERATIONS

2.1 Native Vegetation – Modification and Clearing

The protection or conservation of certain vegetation may restrict the ability to establish the Asset Protection Zone as required to achieve compliance with the Acceptable Solutions. Approval to modify or remove vegetation may be required under separate legislation (identified below).

The modification of regulated vegetation may be restricted to the extent required to achieve BAL-29. Where removal of regulated vegetation is not authorised an alternate position on site may be required, or a high a construction standard commensurate to the distance available may be required.

In addition to the regulation of native vegetation, Local government may have additional policies, including within their Planning Scheme that would restrict the removal of native vegetation.

This BMP does not affect the independent considerations made under other legislation, or parts of the local Planning Scheme, regulating the modification and removal of native vegetation.

Regulated Vegetation

Environment Protection Act 1986 and Environmental Protection (clearing native vegetation) Regulation 2004

It is an offense to clear native vegetation without the authority of a permit or an exemption. The act of clearing native vegetation, requires a permit from either the Department of Water and Environmental Regulation (DWER) or the Department of Mines, Industry Regulation and Safety (DMIRS), unless an exemption applies.

Exemptions include:

Environment Protection Act 1986

- Clearing required by local government Section 33 *Bush Fires Act 1954*.
- Clearing in accordance with the terms of a subdivision approval.
- Clearing in accordance with a permit under the *Bushfires Act 1954* (prescribed burning) and clearing by a bushfire control officer.

Environmental Protection (clearing native vegetation) Regulation 2004 (exemptions do not apply in Environmentally Sensitive Areas, and clearing > than 5ha)

<https://www.der.wa.gov.au/your-environment/environmentally-sensitive-areas>

- Clearing to the extent necessary to construct an approved building.
- Clearing that is for fire hazard reduction burning.
- Clearing to maintain an area cleared in the last ten years.

(WA) Biodiversity Conservation Act 2016 and Bio-diversity Conservation Regulations 2018

The *Biodiversity Conservation Act, 2016*, replaces the *Wildlife Conservation Act, 1950*, and the *Sandalwood Act, 1929*, it became operational with the *Bio-diversity Conservation Regulations 2018*, on 1 January 2019.

The Act provides for listing species, threatened ecological communities (TECs), key threatening processes, and critical habitats. It introduces criteria for listing species 'endangered', 'critically endangered' or 'vulnerable,' to align with the Environment Conservation and Biodiversity Conservation Act 1999 (Cth).

The *Biodiversity Conservation Act 2016* recognises that activities approved under the *Environment Protection Act 1986* do not require further approval include clearing of native vegetation that is either exempt or done under the authority of a clearing permit or done in accordance with an implementation decision under Part IV of the *Environment Protection Act 1986*.

The proposal will not affect any vegetation regulated by the above Acts.

Commonwealth Environment Protection Biodiversity Conservation Act 1999 (EPBC)

The Commonwealth Environment Protection Biodiversity Conservation Act 1999 provides for the protection of matters of national environmental significance. National environment law does not generally regulate fire prevention measures taken by state and territory governments, but no specific exemptions are provided.

Department of Lands and Heritage (DPLH) BMP template complex

The Department of Lands and Heritage BMP template complex list the publicly available datasets available from the Landgate SLIP platform. It is provided as a guide. The publicly available datasets are not comprehensive and for some data sets are available only at a general scale. The BMP is not intended as a 'one stop shop' and it does not obviate the need for the owner to apply for authorisation under other legislation.

Table 1: Ecological database assessment.

Is the land affected by:	Yes/No/NA	If yes - describe
Conservation Wetland or buffer (DBCA-019 DBCA-017)	No	
RAMSAR Wetland (DBCA-010)	No	
Threatened and Priority Flora (DBCA-036)	No	
Threatened and Priority Fauna (DBCA-037)	Nearby	Potential Carnaby Cockatoo Habitat
Threatened Ecological Communities (DBCA-038)	No	
Bush Forever (COP-071)	No	
Environmentally Sensitive Area (DWER-046)	No	
Regionally Significant Natural Areas (DWER-070)	No	
Conservation Covenant (DPIRD-023)	N/A	
Does the proposal require the removal of restricted vegetation?		NO

No clearing of regulated vegetation is required, the proposal will not displace habitat for the Carnaby Black Cockatoo.

The proposal imposes no impact upon classified vegetation, either in the establishment of an Asset Protection Zone or by an increased expectation of fuel management on neighbouring land.

2.2 Re-vegetation/Landscape Plans

The Asset Protection Zone will be established 8 m from the childcare building, to provide a separation from adjoining grassland until the grassland is displaced by roads and residential development (Low threat AS3959:2018, s.2.2.3.2 (e)).

It is anticipated the Public Open Space and Public Purpose areas, within 100 m of the site may be revegetated as forest. The BAL has been assessed on the revegetation assumption and it demonstrates the future BAL at the childcare will be BAL - 19.

POSTPONED

3. BUSHFIRE ASSESSMENT

3.1 Bushfire Attack Level Assessment (Inputs)

The following assessment has applied the methodologies described in AS 3959:2018, the Guidelines, and has used the Fire Protection Association Australia accredited practitioner methodology for the preparation of Bushfire Attack Level (BAL) assessments.

All vegetation within 150 m (context) of the subject building has been classified following Clause 2.2.3 (AS 3959 -2018) to determine the predominant vegetation affecting the behaviour at the locality. The Bushfire Attack Level is determined by the **predominant** vegetation within 100 m of the external face from a habitable building.

The classifications of vegetation used in AS 3959:2018 are based on foliage cover, measured as a percentage of a hectare and by the fuel (vegetation) height.

Foliage cover: *The portion of the ground that would be shaded by foliage when the sun is shining directly overhead, expressed as a percentage for each stratum or identifiable layer of vegetation.*

AS 3959:2018

Layer/ Stratum	Description	Hazard
Bark	Tight/fine – course/ribbon	Spotting and ember attack potential associated with forest
Canopy	Trees taller than 6 m (forest)	Influences the flame height
Elevated fuel	Trees and Shrubs up to 6 m	Influences the flame height
Near surface	Grasses and shrubs taller than 100 mm and up to 2 m	Influences the rate of spread and canopy ignition
Surface	On ground material, leaves, twigs, bark	Influences the rate of spread

From CFA (Vic) Overall fuel assessment guide 2010

AS 3959:2018 describes six categories of Bushfire Attack Level (BAL): BAL-LOW, BAL-12.5, BAL-19, BAL-29, BAL-40, and BAL-FZ. In addition, BAL-FZ describes only performance solutions where the separation from classified vegetation (on completion) is less than 10 m. The BAL level is used for determining the siting of development (to be less than BAL-40) and in turn the construction standard that is equivalent to the BAL at the proposed building location.

This assessment has followed the guidance of AS 3959:2018. This includes:

- A recognition of excluded vegetation types described at cl.2.2.3.2 (e) and (f), but the underlying vegetation should still be classed e.g., an orchard may be excluded but not the grassland within it.
- A separate plot is applied if there is a variation in the slope greater than 5.0°
- For various vegetation classes a representation that is less than 10%, does not constitute the predominant class. Foliage cover referred to in AS 3959:2018 for various classes is based on the foliage cover for that class as a percentage of a ha. (shadow cast is not representative of foliage cover).
- The measurement point and the most influential vegetation class (presenting the highest BAL at the building) is used for the determination of the BAL at the building (Figure 2.2 AS 3959:2018).
- Consideration of the predominant vegetation is to consider the likelihood of regeneration.
- Orchards, and single tree rows (planted in a row less than 10 m wide) is determined by the underlying near surface fuel.

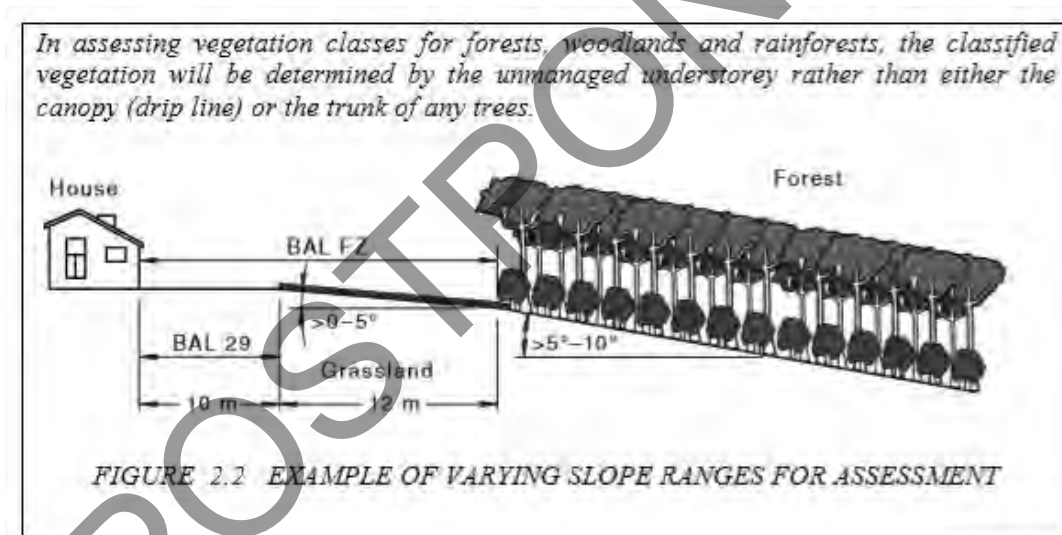


Plate 5: Effective Slope and measurement taken from AS 3959:2018

Effective slope under each vegetation plot was assessed in accordance with the methodology detailed in AS 3959:2018 Construction of buildings in bushfire prone areas (AS 3959) (Standards Australia, 2018 Bushfire Fuels). Slope data was measured on site and cross referenced with Landgate elevation data.

Photo evidence Site Assessment & Site Plans

The assessment of this site / development was undertaken on 17 November 2022 by a BPAD Accredited Practitioner for the purpose of determining the Bushfire Attack Level in accordance with AS 3959 :2018 Simplified Procedure (Method 1).

Figure 1: Location (future roads shown)



Figure 2: Topography (future road shown)

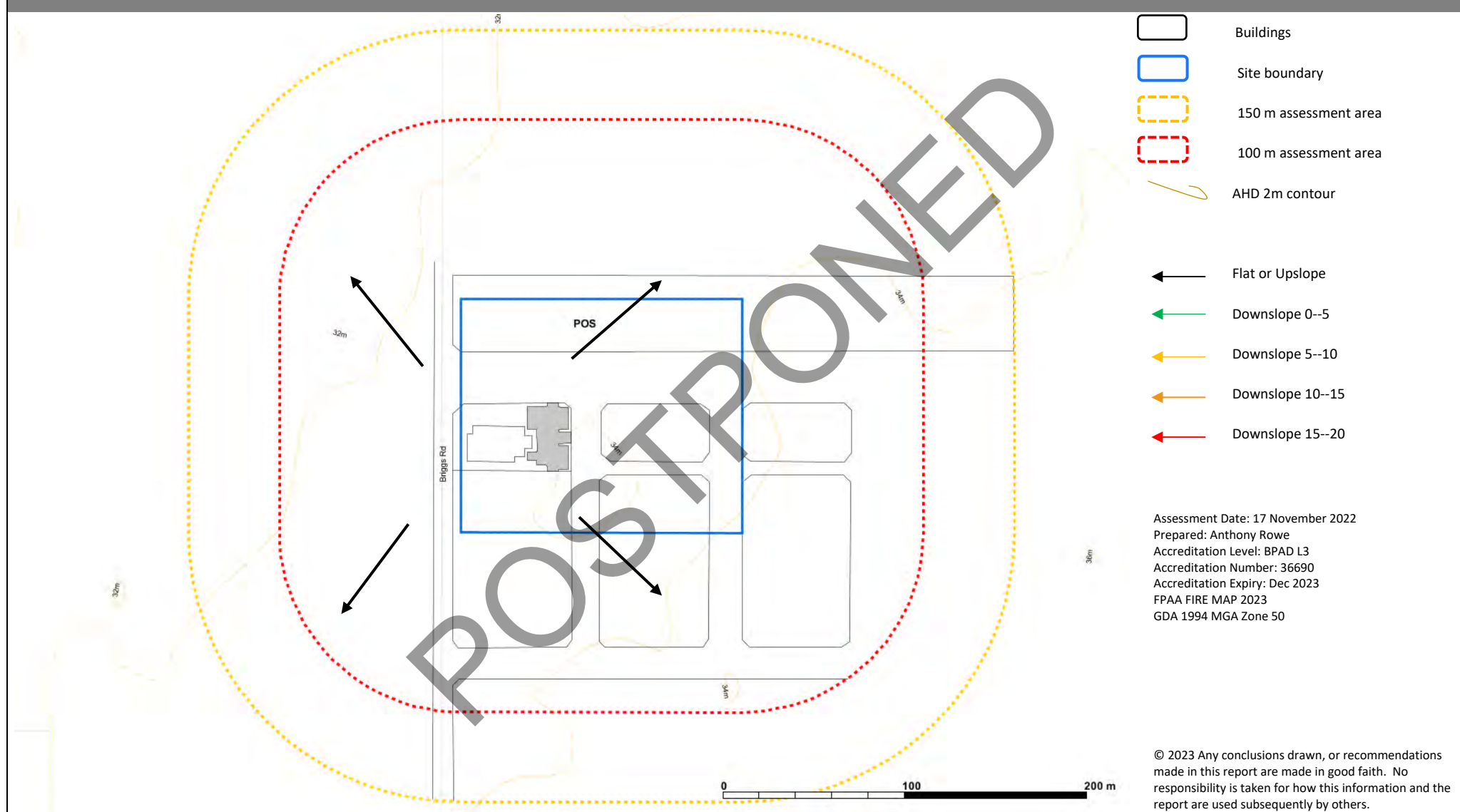


Figure 3: Vegetation Classification

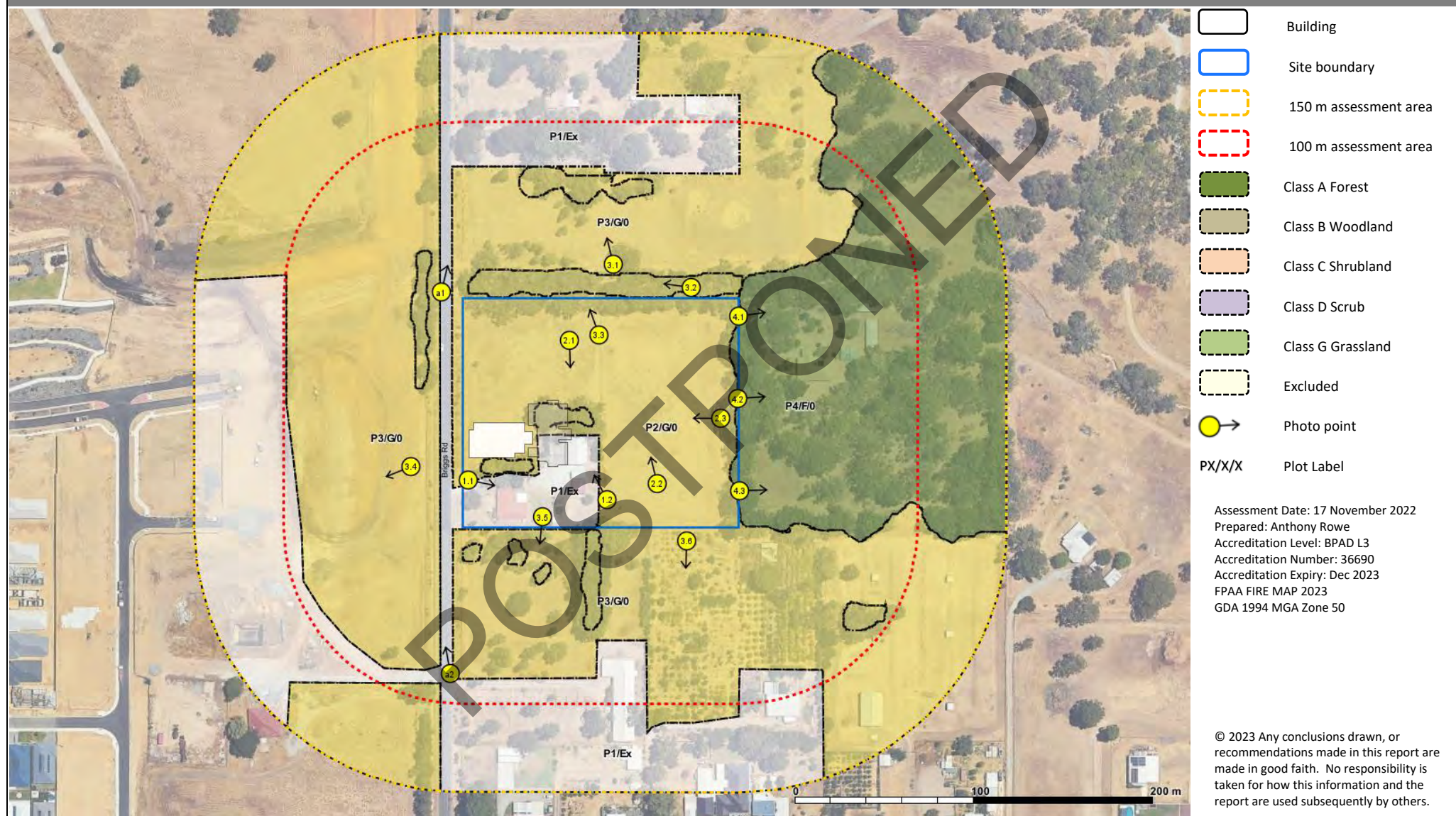
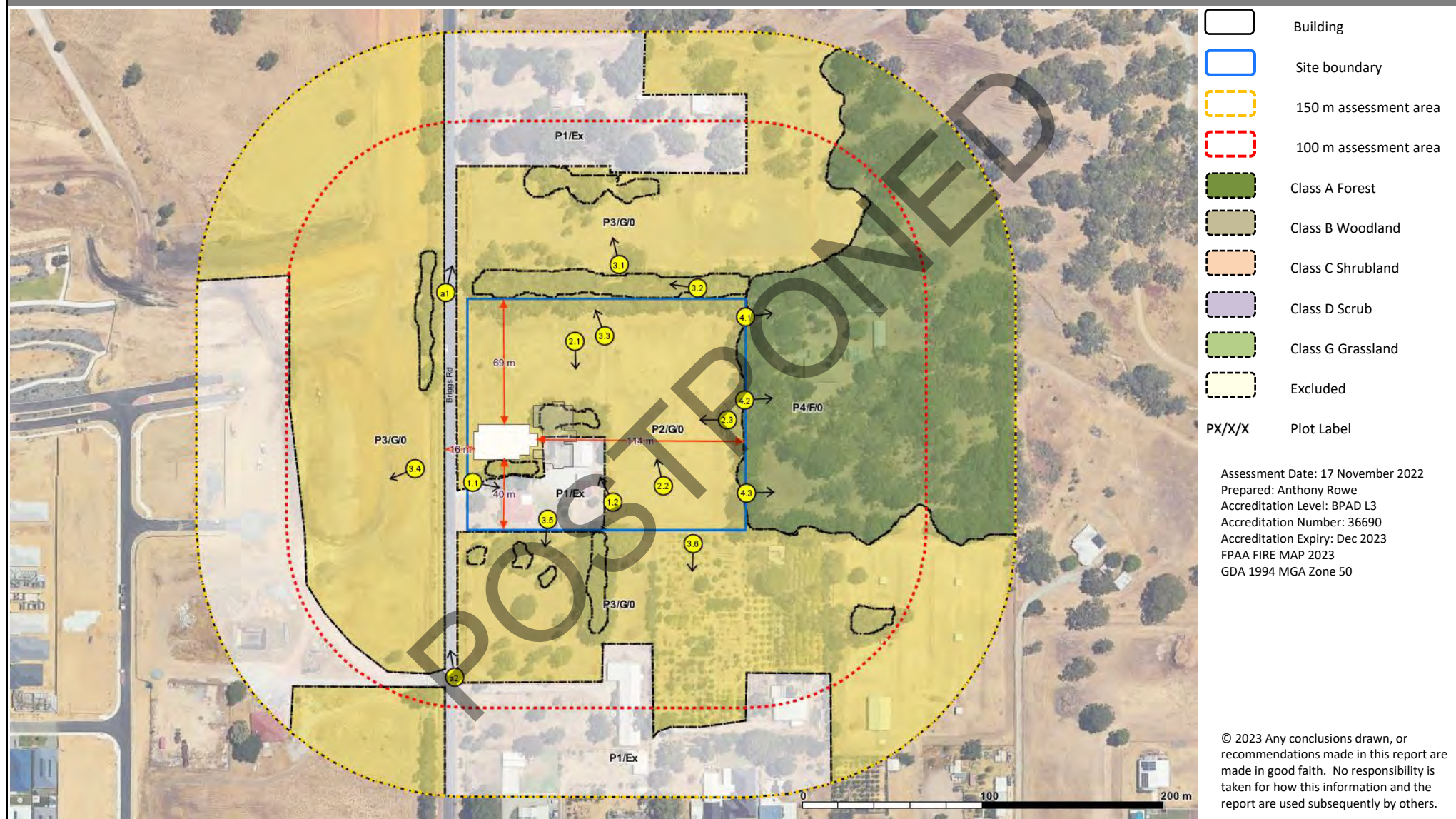













Figure 4: Vegetation Classification – distance to classified vegetation






PLOT:1				
Vegetation Classification		Slope		
Excludable - 2.2.3.2(f) Low Threat Vegetation		Flat		
Observation/Justification for classification				
Fuel Hazard	Surface	Near surface	Elevated	Bark
Low	✓	✓	✓	✓
Moderate				
High				
Very High				
Extreme				
Vegetation Description (AS 3959)				
Non-vegetated areas, that is, areas permanently cleared of vegetation, including waterways, exposed beaches, roads, footpaths, buildings and rocky outcrops.				
Post development				
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Envision Bushfire Protection Briggs 17 Nov 2022, 13:38:49</p> </div> <div style="text-align: center;">  <p>Envision Bushfire Protection Briggs 17 Nov 2022, 13:29:54</p> </div> </div>				
Photo 1.1 – existing dwelling		Photo 1.2 – existing buildings		

PLOT: 2				
Vegetation Classification		Slope		
Class G Grassland – Tussock grassland G-22		Flat		
Observation/Justification for classification				
Fuel Hazard	Surface	Near surface	Elevated	Bark
Low		✓	✓	✓
Moderate				
High	✓			
Very High				
Extreme				
Vegetation Description (AS 3959)				
All forms (except tussock moorlands) including situations with shrubs and trees if the overstorey foliage cover is less than 10%. Includes pasture and cropland. NOTE: Grassland managed in a minimal fuel condition and non-curing cropland is regarded as low threat vegetation for the purposes of Clause 2.2.3.2.				
Post development				
Grassland at the development site to be displaced by the childcare centre and residential lots				
				
Photo 2.1 Grassland in foreground - childcare location view from north		Photo 2.2 Grassland in foreground – future residential east of childcare - view from south		
				
Photo 2.3 Grassland in foreground - childcare location view from east				

PLOT:3				
Vegetation Classification		Slope		
Class G Grassland – Tussock grassland G-22		Flat		
Observation/Justification for classification				
Fuel Hazard	Surface	Near surface	Elevated	Bark
Low		✓	✓	✓
Moderate				
High	✓			
Very High				
Extreme				
Vegetation Description (AS 3959)				
All forms (except tussock moorlands) including situations with shrubs and trees if the overstorey foliage cover is less than 10%. Includes pasture and cropland. NOTE: Grassland managed in a minimal fuel condition and non-curing cropland is regarded as low threat vegetation for the purposes of Clause 2.2.3.2.				
Post development				
Grassland outside of the development site; land zoned for urban development				
				
Photo 3.1 Grassland future residential north of PoS		Photo 3.2 future PoS area (public purpose) including the drain, to be in forest POS.		
				
Photo 3.3 view north to PoS, including the drain (photo 3.2) to be in forest POS. .		Photo 3.4 grassland west of Childcare across Briggs Road, future residential		

PLOT:3				
Vegetation Classification		Slope		
Class G Grassland – Closed tussock grassland G-21		Flat		
Observation/Justification for classification				
Fuel Hazard	Surface	Near surface	Elevated	Bark
Low		✓	✓	✓
Moderate				
High	✓			
Very High				
Extreme				
Vegetation Description (AS 3959)				
<p>All forms (except tussock moorlands) including situations with shrubs and trees if the overstorey foliage cover is less than 10%. Includes pasture and cropland.</p> <p>NOTE: Grassland managed in a minimal fuel condition and non-curing cropland is regarded as low threat vegetation for the purposes of Clause 2.2.3.2.</p>				
Post development				
Grassland on lot zoned for rural living outside of the development site.				
				
<p>Photo 3.5 grassland south of the site (windrow (excluded) shown within grassland)</p>		<p>Photo 3.6 grassland under orchard south of the site. Orchard trees are excluded</p>		

PLOT:4				
Vegetation Classification			Slope	
Class A Forest - Open forest A-03			Flat	
Observation/Justification for classification				
Fuel Hazard	Surface	Near surface	Elevated	Bark
Low				
Moderate	✓			✓
High		✓		
Very High			✓	
Extreme				
Vegetation Description (AS 3959)				
Trees up to 30 m high; 30%-70% foliage cover (may include understorey of sclerophyllous low trees or shrubs). Typically dominated by eucalypts, melaleuca or callistemon (may include riverine and wetland environments) and callitris. Includes eucalypt plantations.				
Post development				
Forest on land zoned urban development east of the development site				
				
Photo 4.1 retained within PoS		Photo 4.2 future residential		
				
Photo 4.3 future residential				

POTENTIAL BUSHFIRE IMPACT - Outputs

In accordance with SPP 3.7, a BAL Contour Map 5a has been prepared to illustrate the potential radiant heat impacts and associated BAL ratings for the facility.

Table: 2.1

Plot no.	Vegetation Classification	Effective slope	Separation	Present BAL	Separation at completion	BAL at completion
1	Excluded	Flat/Upslope	0 m	BAL - Low	0	BAL Low
2	Grassland	Flat/Upslope*	0 m	BAL - FZ	12 m	BAL 29
3	Grassland	Flat/Upslope	16 m	BAL - 19	16 m	BAL 19
4	Forest	Flat/Upslope	114 m	BAL – Low	114 m	BAL Low

An APZ of 12 m is proposed around the childcare building, consistent with the future subdivision boundary.

The APZ can be established within the existing lot, requiring grass maintained at less than 100 mm around the childcare building (illustrated in figure 5a).

The future BAL when the adjoining land is developed in accordance with the approved structure plan is BAL – 19 (illustrated in figure 5b).

Figure 5a: BAL Contour



Figure 5b: BAL Contour - future development



4. IDENTIFICATION OF BUSHFIRE HAZARD ISSUES

Bushfire Behaviour

Sustainable fire combustion depends upon the availability of fuel, oxygen, and heat. Removal of any one of the three aspects will extinguish or not sustain a fire. Fuel management, the management of vegetation, is the most practical means of control.

Bushfire behaviour, as it increases in intensity and speed of travel, can exceed human control measures and when this occurs the risk increases to humans and property. Bushfire behaviour is a result of climate, topography, and the availability of bushfire fuel (vegetation).

- Climate (drought and season) & weather (temperature, humidity, wind, atmospheric instability).

Wind

Bushfires are influenced by the wind direction and the speed. The wind direction generally determines the direction of the fire and wind speed, along with ground slope, generally determines the speed a fire will travel over ground. As wind strength increases it increases the availability of oxygen allowing the fire intensity to increase.

Atmospheric conditions determine the potential for the uplift of embers and particles that can be distributed by the prevailing wind direction well ahead of the fire, up to 9 km, to create spot fires that can advance the location of the fire front.

Fire Danger Index FDI

FDI is an indicator of potential fire intensity and behaviour based upon weather conditions; temperature, humidity, and wind speed, together with climate measures, drought factor representing the dryness of the ground fuels.

The FDI is an indicator of the potential for house loss and fatalities.

The FDI is used as a basis for determining the required design performance of a building.

- Topography (slope of the ground, aspect) – fire travels faster uphill, and in some conditions may determine the direction of the fire. The landform can also channel and increase the windspeed at a locality and create turbulence. It is measured as 0.0° or in downslope increments of 5.0°.
- Vegetation (horizontal and vertical structure, flammability, mass, and availability). Measured as a vegetation classification, or an exclusion, in AS 3959 (Method 1). The arrangement of fuel has a greater effect upon the intensity of a fire than just its mass; its exposure to oxygen is referred to as its availability in a bushfire.

It is assumed that a bushfire will achieve a steady-state and be fully developed to maximum intensity over a 100 m (minimum) fire run. Grass fires travel faster (GFDI) than a forest canopy fire, but a forest canopy fire can eject a higher level of embers and also eject them over a greater distance, up to 5 km.

Crown fires occur when the ground fire is intense, and conversely, when ground fuels are managed, the resultant fire intensity may not be sufficient to involve the crown or sustain a fire.

Fuel reduction initiatives such as slashing and controlled burns are intended to reduce the fuel availability to a level where the intensity of the fire remains controllable.

Climate

The nearest weather station to the site is at Jandakot Aerodrome (23 km north west of the site). The site is within an area described as having a Mediterranean climate of dry summers and mild, wet winters. The majority of rainfall is between May and September. The prohibited burning period is from mid-December to mid-March.

The Bushfire Danger Season has traditionally been between November and April each year, but recent climatic conditions have caused fire danger conditions to be present either side of this period.

Severe bushfire conditions FDI 50+, occur mostly between January and March. Extreme (FDI 50) and Catastrophic (FDI 75+) conditions occur mostly in the afternoon and typically with south-south easterly winds (BoM Cape Naturaliste). A bushfire can however come from any direction.

Bushfires generally travel in the direction of the prevailing wind. The direction of the prevailing wind conditions can affect the options for evacuation and anticipated fire intensity depending upon the slope and fuel.

The wind roses below (Plates 6) for February (averaged) recorded at 9 am and 3 pm, illustrate the winds are strongest and most frequent from the south-east and east in the morning. Morning wind directions are predominantly from the southeast with a higher easterly component. Afternoon winds are generally stronger and of higher frequency from the south, with a higher westerly component.

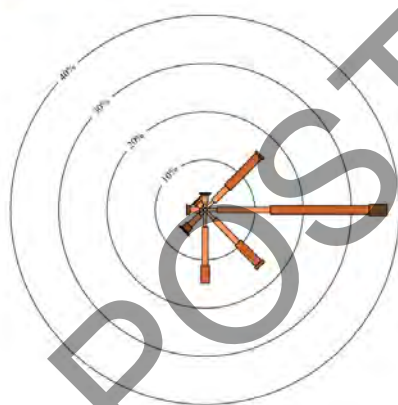
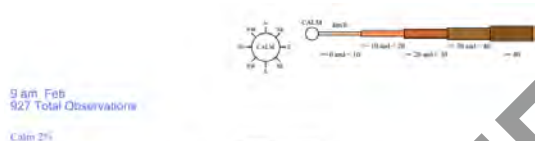


Plate 6a: BoM weather data, prevailing wind directions as at 9 am

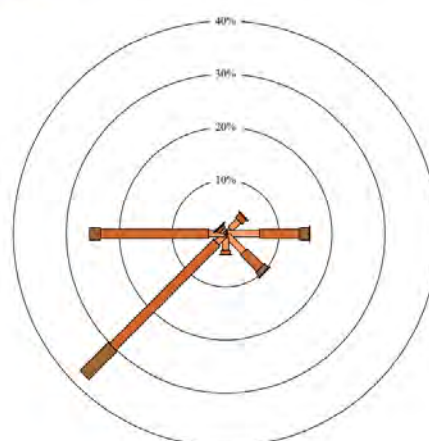


Plate 6b: BoM weather data, prevailing wind directions as at 3 pm

Site Context



Plate 7: Illustrates the surrounding area within 2.5 km is predominantly urban

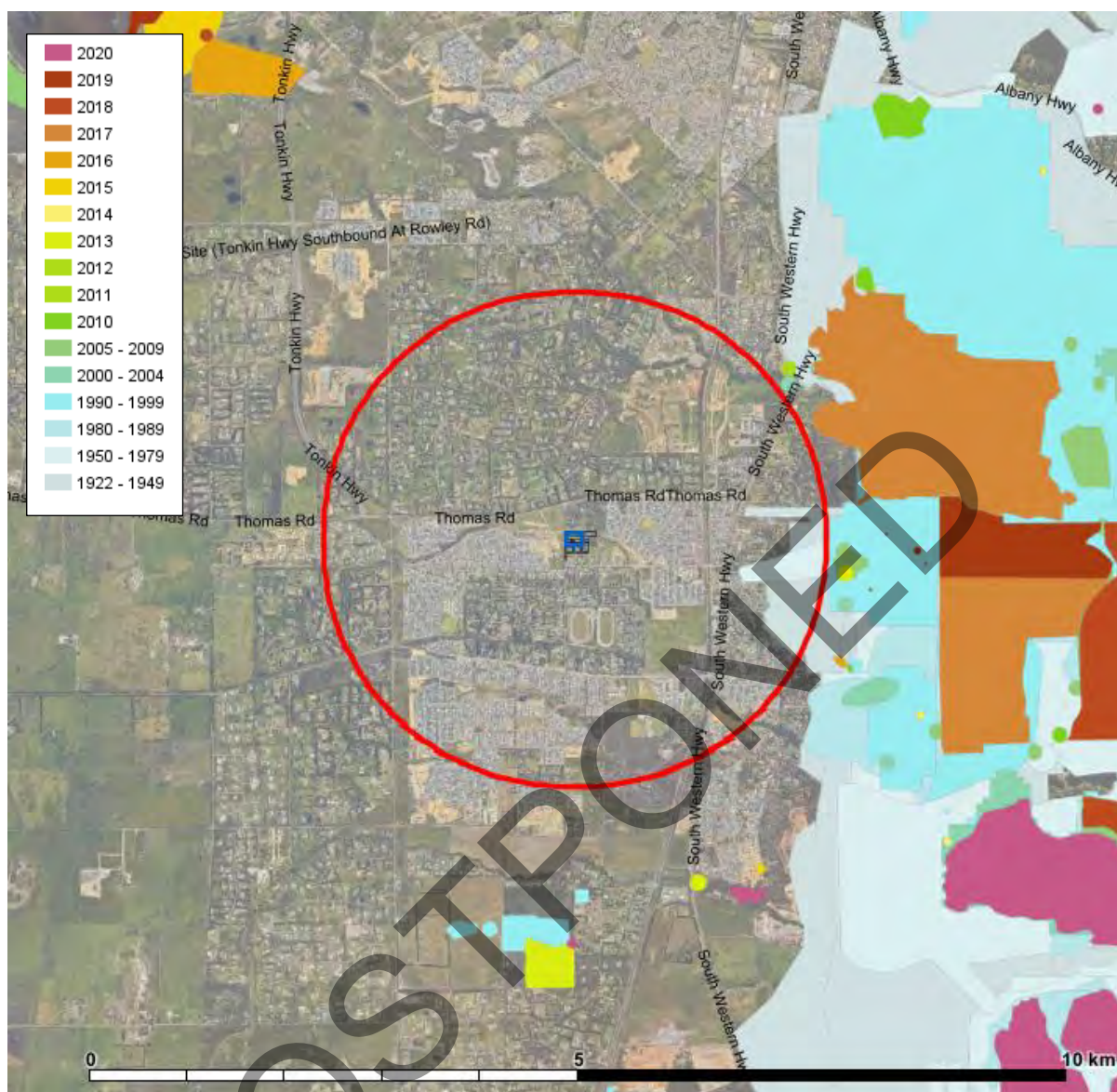


Plate 8: DBCA (indicative) landscape fire history

Plate 7; when combined with Plates 6, suggests a fire that is most likely to affect the childcare from grassland, east and southeast (morning) and (from the southwest) in the afternoon. The site is primarily within a grassland area that is intended for medium density residential development.

The fire history suggests the site is unlikely to be directly affected by a bushfire but there has been activity, both managed fuel reduction and bushfire east of the site in the Darling Scarp and Darling Ranges.

Until the development occurs the site is within a contiguous extent of grassland requiring an Asset Protection Zone to be established around the building to avoid direct flame contact. The Childcare is within a single holding until the adjoining residential development, site works and roads are made. Until then an Asset Protection Zone 12 m from the childcare can be established (BAL-19).

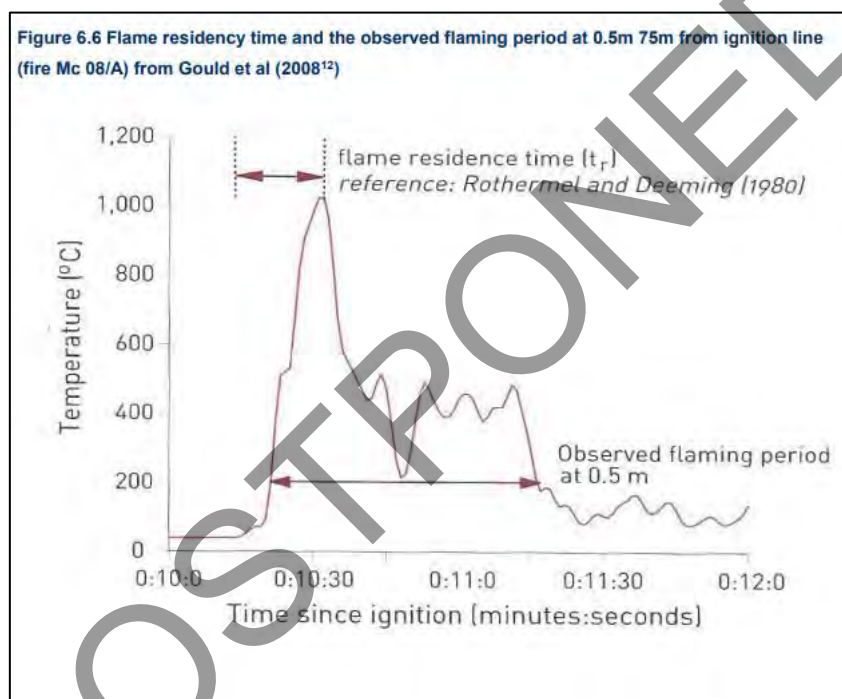
The site is within 5 km to the Darling Scarp and contiguous forest. Forest fire can generate embers that can be dispersed up to 5 km from the fire front, and fires in the Darling Ranges typically travel under winds from the east. The development site is unlikely to be affected by a concentrated ember attack, due to its separation from the Darling Scarp but ember attack could ignite the adjacent grassland.

Ember attack is responsible for the destruction of most buildings, either igniting adjacent flammable materials or penetrating gaps > 2mm to reach flammable materials within a building. Site management and building and maintenance can reduce this risk. Seasonal preparations are described in the Bushfire Emergency Evacuation Plan as a risk treatment.

A childcare building under NCC 2019 has no bushfire construction requirement and it is at the applicant's discretion to apply a bushfire construction standard. Notwithstanding the childcare will be located within BAL-19 it is recommended the Childcare Building adopt the construction standards for BAL-29, to provide resistant to a bushfire occurring in the reserve north of the site.

During a bushfire the peak radiant heat, upon which the BAL is determined lasts only a short time, typically 2 minutes, with the heat rapidly decaying after the firefront (peak) has passed.

Notwithstanding BAL - 29 is the acceptable constructions standard it is a fatal exposure level for humans, 10 kWm² is the maximum short-term exposure to evacuate by a vehicle.



From Bushfire Verification Method Handbook: NCC/ACBC 2014

In the event of a bushfire the Childcare should be evacuated, but evacuation will not be able to continue during the peak. Shelter in the building will be required at this time and this is a reason to construct the building to a standard commensurate to the level of bushfire attack.

The site has access to a reticulated water supply. The local brigade is also located within 2.6 Km of the site to provide a quick response, although in a bushfire there may be a number of competing priorities. Brigade attendance should therefore not be relied upon for the defence of a building.

The Bushfire construction standard and site maintenance are passive measures that minimise the dependence upon the local brigade for a building's survival.

5. BUSHFIRE PROTECTION MEASURES

5.1 State Planning Policy 3.7 - Planning In Bushfire Prone Areas (SPP 3.7)

SPP 3.7 applies to all development applications in designated bushfire prone areas.

SPP 3.7 Objectives

Policy Measure 5 contains the objectives of SPP 3.7. The following demonstrates how the proposed development meets each of the objectives.

Objective 1: Avoid any increase in the threat of bushfire to people, property, and infrastructure. The preservation of life and management of bushfire impact is paramount.

Development Response

The nature of the proposed activity does not increase the occurrence or intensity of bushfire within its locality.

Objective 2: Reduce vulnerability to bushfire through the identification and consideration of bushfire risks in decision-making at all stages of the planning and development process.

Development Response

The site provides opportunity to satisfy the acceptable solutions in the Bushfire Protection Criteria addressed in Section 5.2 below, which are acceptable treatments to the risk identified by the BAL level.

Objective 3: Ensure that higher order strategic planning documents, strategic planning proposals, subdivision and development applications take into account bushfire protection requirements and include specified bushfire protection measures.

Development Response

Objective 3 is satisfied through the compliance of the proposed development with the Bushfire Protection Criteria addressed in Section 5.2 below.

Objective 4: Achieve an appropriate balance between bushfire risk management measures and, biodiversity conservation values, environmental protection and biodiversity management and landscape amenity, with consideration of the potential impacts of climate change.

Development Response

The proposal does not require any modification to regulated vegetation.

5.2 Guidelines for Planning in Bushfire Prone Areas Version 1.4 (the Guidelines)

The Guidelines apply to development applications located within designated bushfire prone areas. The Guidelines provide supporting information for implementation of SPP 3.7. Specifically, they provide the Bushfire Protection Criteria to be addressed for all applications.

5.2.1 Bushfire Protection Criteria

The bushfire risk mitigation strategies detailed in (Table 2 below) are designed to comply with the Bushfire Protection Criteria detailed in Guidelines for Planning in Bushfire Prone Areas Version 1.4 (the Guidelines) Appendix 4 (WAPC, 2021).

Where discrepancy occurs between State and Local bushfire planning provisions, the higher standard of mitigation has been selected.

POSTPONED

Table 2: Bushfire Protection Criteria assessment.

For each of the elements listed within Appendix 4 of the Guidelines for Planning in bushfire-prone areas (V.1.4), the 'intent' must be achieved either by the proposal meeting the acceptable solutions; or where these acceptable solutions cannot be fully met, then by a performance-based solution that can achieve the 'intent.'

The following table also follows Guidelines for Planning in bushfire-prone areas (V.1.4) which now list certain items to be considered in a development application, as distinct to a Strategic document or subdivision proposal.

✓	Acceptable solution provided	C	An Acceptable Solution to be conditioned
N/A	Not Applicable	P	Performance Principal solution see 5.2

Bushfire Protection Criteria	Method of Compliance	AS	PP	Proposed Bushfire Management Strategies
Element 1: location To ensure that strategic planning proposals, subdivision, and development applications are located in areas with the least possible risk of bushfire to facilitate the protection of people, property, and infrastructure	A1.1 Development location The strategic planning proposal, subdivision, and development application is located in an area that is or will, on completion, be subject to either a moderate or low bushfire hazard level, or BAL-29 or below.	✓		The development site is within an area that is predominantly grassland. It is a moderate Bushfire Hazard Leve area. The childcare building will be located on land not exceeding BAL-29.

Bushfire Protection Criteria	Method of Compliance	AS	PP	Proposed Bushfire Management Strategies
Element 2: Siting and Design To ensure that the siting and design of development minimises the level of bushfire impact	A2.1 Asset Protection Zone Every habitable building is surrounded by, and every proposed lot can achieve, an APZ depicted on submitted plans, which meets the following requirements: <ul style="list-style-type: none"> Width: Measured from any external wall or supporting post or column of the proposed building, and of sufficient size to ensure the potential radiant heat impact of a bushfire does not exceed 29kW/m² (BAL-29) in all circumstances. Location: the APZ should be contained solely within the boundaries of the lot on which the building is situated, except in instances where the neighbouring lot or lots will be managed in a low-fuel state on an ongoing basis, in perpetuity (see explanatory notes). Management: the APZ is managed in accordance with the requirements of 'Standards for Asset Protection Zones.' (see Schedule 1). 	✓		<p>The Acceptable solution A2.1 requires that the development site can achieve on completion a BAL not exceeding BAL-29, by an APZ within the boundaries of the lot.</p> <p>The development site is adjoined by grassland. An APZ separation to achieve BAL-29 from grassland is 8m.</p> <p>It is proposed to provide an APZ of 12 m, which is a distance that would achieve BAL-19 at the childcare building, which is consistent with the BAL at the childcare building when the immediate area is developed for residential purposes.</p> <p>Figure 5a illustrates an APZ of 12m established within the site.</p> <p>Figure 5b illustrates the BAL when the immediate area is developed for residential purposes.</p> <p>A class 9b building is not a mandatory requirement to be constructed to BAL-29.</p> <p>In this instance the building need not be constructed to a shelter standard because evacuation is possible.</p> <p>The construction standard is at the applicant discretion and in this instance is recommended for construction comparable to BAL-29 construction level prescribed in AS3959:2018.</p>

Bushfire Protection Criteria	Method of Compliance	AS	PP	Proposed Bushfire Management Strategies
Element 3: Vehicular Access To ensure that the vehicular access serving a subdivision/development is available and safe during a bushfire event	A3.1 Public roads The minimum requirements under this acceptable solution are applicable to all proposed and existing public roads. Public roads are to meet the minimum technical requirements in Table 6, Column 1. The trafficable (carriageway/pavement) width is to be in accordance with the relevant class of road in the Local Government Guidelines for Subdivisional Development (IPWEA Subdivision Guidelines), Liveable Neighbourhoods, Aust Road standards and/or any applicable standards for the local government area.	✓		The site adjoins Briggs Road which is a sealed public road compliant with Table 6 column 1 The development of the adjoining land will include public roads compliant with the IPWEA standard for a public road.
	A3.2a Multiple access routes Public road access is to be provided in two different directions to at least two different suitable destinations with an all-weather surface (two-way access). If the public road access to the subject site is via a no-through road which cannot be avoided due to demonstrated site constraints, the road access is to be a maximum of 200 metres from the subject lot(s) boundary to an intersection where two-way access is provided. The no-through road may exceed 200 metres if it is demonstrated that an alternative access, including an emergency access way, cannot be provided due to site constraints and the following requirements are met: the no-through road travels towards a suitable destination; and the balance of the no-through road, that is greater than 200 metres from the subject site, is wholly within BAL-LOW, or is within a residential built-out area – Figure 23	✓		The site has access in two different directions to at least two different suitable destinations. Briggs Road is a north south through road. The car park will be accessed from a new road at the east boundary when the adjoining land is developed. The new road (unnamed) is a through road.

Bushfire Protection Criteria	Method of Compliance	AS	PP	Proposed Bushfire Management Strategies
	A3.2b Emergency access way Where it is demonstrated that A3.2a cannot be achieved due to site constraints, or where an alternative design option does not exist, an emergency access way can be considered as an acceptable solution. An emergency access way is to meet all the following requirements: requirements in Table 6, Column 2; provides a through connection to a public road; be no more than 500 metres in length; and must be signposted	N/A		The site has direct access to a through road.
	A3.6 Private driveways There are no private driveway technical requirements where the private driveway is: within a lot serviced by reticulated water; no greater than 70 metres in length between the most distant external part of the development site and the public road measured as a hose lay; and accessed by a public road where the road speed limit is not greater than 70 km/h. In circumstances where all of the above conditions are not met, or the private driveway is in a non-reticulated water area, the private driveway is to meet all the following requirements: requirements in Table 6, Column 4; passing bays every 200 metres with a minimum length of 20 metres and a minimum additional trafficable width of two metres (i.e. the combined trafficable width of the passing bay and constructed private driveway to be a minimum six metres); and turn-around area as shown in Figure 28 and within 30 metres of the habitable building.	✓		The childcare building and carpark is within 70 m of a public road. The technical requirements for private driveways in Table 6 column 4 does not apply.

Bushfire Protection Criteria	Method of Compliance	AS	PP	Proposed Bushfire Management Strategies
Element 4: Water To ensure that water is available to enable people, property and infrastructure to be defended from bushfire	A4.2 Provision of water for firefighting purposes Where a reticulated water supply is existing or proposed, hydrant connection(s) should be provided in accordance with the specifications of the relevant water supply authority	NA		For the assessment of strategic proposals.
	A4.2 Provision of water for firefighting purposes Where a reticulated water supply is existing or proposed, hydrant connection(s) should be provided in accordance with the specifications of the relevant water supply authority. Where these specifications cannot be met, then the following applies: The provision of a water tank(s), in accordance with the requirements of Schedule 2; and Where the provision of a strategic water tank(s) is applicable, then the following requirements apply: – land to be ceded free of cost to the local government for the placement of the tank(s); – the lot or road reserve where the tank is to be located is identified on the plan of subdivision; – tank capacity, construction, and fittings, provided in accordance with the requirements of Schedule 2; and – a strategic water tank is to be located no more than 10 minutes from the subject site (at legal road speeds). Where a subdivision includes an existing habitable building(s) that is to be retained, a water supply should be provided to this existing habitable building(s), in accordance with the requirements listed above.	✓		The site has access to a reticulated water supply. and firefighting hydrants (public)

5.3 Bushfire Management Strategies

Additional management strategies not directly addressed by the bushfire protection criteria above include the additional measures required to address the risk to a vulnerable class of development. This includes the provision of an Emergency Evacuation Plan (BEEP), prepared in accordance with clause 6.6 of SPP 3.7.

The following describes the compliance requirement for preparation of the BEEP that has been followed. In addition to these requirements the presentation has been undertaken to compliment an overall emergency in facilities plan (AS 3745:2010) for consideration on an ongoing basis.

Vulnerable Development Emergency Evacuation (CI 6.6)

Attachment 1 includes the BEEP. This plan has followed the WA Department of Planning Lands and Heritage *A Guide to Developing a Bushfire Emergency Evacuation Plan 2019*.

The attached Emergency Evacuation Plan has also incorporated the requirements listed under section 5.5.2 V1.4 *Guidelines for Planning in Bushfire Prone areas*.

Assumptions

- The childcare centre will be staffed, and children supervised.
- The occupants are able bodied, but require guidance, appropriate support and availability of transport if evacuation is required.
- The supervisors can see and smell smoke and can see a fire.

Key features to achieve occupant life safety include:

- Establishing monitoring of emergency public notifications;
- Establishing alert triggers;
- Establishing evacuation procedure;
- Evacuation transport and alternative destination; and
- Communication with parents and carers.

Compliance with CI. 5.5.2 Guidelines for Planning in Bushfire Prone Areas

The emergency evacuation plan should be concise and consider:	Addressed in Emergency Evacuation Plan <i>The plan has followed AS3745-2010</i>
the number of people at the facility	104 Children aged 0-5 years 18 Staff
whether the occupants are permanent or transient	Visiting
whether there is a caretaker onsite	Hosted
whether there are people with a disability, medically dependent, young children or the elderly	Special transport needs are required for children.
identification of a safe alternative location if there was a need for evacuation/relocation	Serpentine Jarrahdale Community Recreation Centre
a proposed method of movement of occupants to safe location(s)	Children will arrive by private vehicle. A priority emergency transport agreement should be

	entered into with a transport company if in an emergency it could be necessary to supplement existing centre buses.
details of suitable access/egress routes for the expected type/volume of traffic, including alternatives when suitable roads are inaccessible, insufficient or inappropriate	
transport options for those without access to private vehicles	Transport arrangements will be in place.
options to shelter in place as a last resort	Evacuation only. Evacuation is available in opposite directions (east and west), and it is therefore expected to be available in the opposite direction to an approaching fire.
roles and responsibilities of facility personnel and emergency services.	The landowner and/or childcare centre manager will have responsibility for seasonal preparations and daily preparations.
The emergency evacuation plan should consider if actions will change based on a series of triggers, such as:	Addressed in Emergency Evacuation Plan
effective warning methods appropriate for the occupants (including consideration of at-risk persons and the demographics of the occupants)	Centre managers and personnel are expected to recognise smoke, smell of fire and the site of fire. Warning is through monitoring of public resources DFES Emergency WA website ABC Local radio 720 and by observation.
closure of facility and early relocation of occupants appropriate to the fire danger rating (FDR) and bushfire warnings	It would be prudent to consider advising parents and guardians of children with respiratory conditions to avoid attendance on Extreme FDR days. If in attendance such children should be placed as a priority for evacuation.
any local government bushfire requirements (for example, harvest and vehicle movement bans).	Nil
a suitably qualified emergency management professional should prepare the emergency evacuation plan in collaboration with relevant stakeholders including the landowner/developer and the local government (refer to section 6.14 of the Guidelines).	Anthony Rowe Accreditation Level 3 Accreditation Number: 36690

5.4 Spatial representation of the bushfire management strategies

Further to the assessment against the bushfire protection criteria, the key features demonstrating compliance should be represented spatially in the *Spatial representation of the bushfire management strategies*. It represents the required bushfire risk management measures that must be implemented and maintained.

The Spatial representation of the bushfire management strategies is provided in Figure EX1.

6. RESPONSIBILITIES FOR IMPLEMENTATION AND MANAGEMENT OF THE BUSHFIRE MEASURES

The responsibilities for implementation and management of the bushfire measures, includes additional measure to achieve compliance with the bushfire protection measures following SPP 3.7. and become part of the development proposal. The details contained within the planning application authorised by the responsible decision maker are enforceable under section 214 of the *Planning and Development Act 2005*.

The Advisory Notes **do not** form part of the Development Proposal and are not enforceable.

Owner

1. The adoption of the Bushfire Emergency Evacuation Plan dated 28 February 2023.	Prior to occupation
2. The inside face of all external doors shall display the Evacuation Diagram.	Prior to occupation and ongoing
3. The childcare building Asset Protection Zone (12 m) is to be maintained in accordance with the Asset Protection Zone standard described in the <i>Guidelines for Planning in Bushfire Prone Areas v1.4</i> .	Prior to occupation and ongoing
4. The childcare building is to be constructed in accordance with the BAL 29 building construction requirements prescribed in sections 3 and 7 in AS3959:2018	Prior to occupation and ongoing
5. In furtherance of any <i>Building Act 2011</i> requirement, the Childcare is to be connected to the towns reticulated water, and fire hoses are to be provided at capable of applying water to all external surfaces of the building and up to 10 m around the building.	Prior to occupation and ongoing
6. A notification, pursuant to Section 70A Transfer of Land Act 1893 is to be placed on the certificate(s) of title of the proposed lot(s) with a Bushfire Attack Level (BAL) rating of 12.5 or above, advising of the existence of a hazard or other factor. The notification is to state as follows: <i>"This land is within a bushfire prone area as designated by an Order made by the Fire and Emergency Services Commissioner and is subject to a Bushfire Management Plan and a Bushfire Emergency Evacuation Plan."</i>	Prior to occupation and ongoing

Advisory notes

1. The landowner acknowledges any materials located against or near adjacent to the buildings, should they ignite, will expose the buildings to flame contact and will increase the risk of building ignition.

Note: The Bushfire Emergency Evacuation Plan includes seasonal preparations to remove the 'open' storage of flammable materials around the building and the elimination of gaps in roof greater than 2 mm (to prevent the entry of embers on to combustible materials in the roof cavity).

2. The landowner is responsible for availing themselves of any promotions and information to assist owners in preparing for and responding to a bushfire event as may be made by the Shire or the Department Fire and Emergency Services

The Shire of Serpentine Jarrahdale

- Developing and maintaining district bushfire fighting services and facilities. Ongoing
- Administer the *Bush Fires Act 1954* and monitor landowner compliance to maintain land in a state not conducive to the ignition or spread of bushfire. Ongoing
- Promoting education and awareness of bushfire prevention and preparation measures through the community. Ongoing
- Administering the requirements of the *Planning and Development Act 2005* and the *Building Act 2011*. Ongoing

State Government

- Notification of Emergency Alerts - Website and Telecommunication Media Ongoing

Acknowledgment - Proponent

The proponent acknowledges the responsibilities as listed above and the requirement to ensure that should the land transfer to a new owner, that the new owner is aware of the BMP and their ongoing responsibility.

ATTACHMENT 1 - Emergency Evacuation Plan

SCOPE OF PROJECT

The following Emergency Evacuation Plan Assessment and Emergency Evacuation Plan have been prepared pursuant to clause 6.6 in the State Planning Policy 3.7, Planning in Bushfire Prone Areas.

In accordance with the Department of Planning Lands and Heritage *A Guide to developing a BUSHFIRE EMERGENCY EVACUATION PLAN*, and the Emergency Evacuation Plan Template, compliance with clause 6.6, has been provided in the following documents comprising the

- Emergency Evacuation Plan Assessment; and
- Emergency Evacuation Plan

These documents follow the Bushfire Management Plan prepared **9 May 2023** by Anthony Rowe L3 BPAD 36690 in accordance with the FPA Guidelines.

PLANNING FOR EMERGENCIES IN FACILITIES

The Department of Planning Lands and Heritage *A Guide to developing a BUSHFIRE EMERGENCY EVACUATION PLAN*, and the Australian Standards (AS): AS 3745:2010 – *Planning for emergencies in facilities* are generally consistent and require a documentation of emergency arrangements consisting of preparedness, prevention, response and recovery arrangements.

Typically, the AS 3745:2010 is a response to a range of hazards **within** a building, where as a *Bushfire Emergency Evacuation Plan* is a response to a hazard initially **outside** of the building and includes the ability to move safely within the locality, or alternatively, to use the building for protection - Shelter.

The triggers for evacuation or shelter may be preventative, based upon direction from emergency services or by observation of an external danger.

Whilst *Planning for emergencies in facilities*, will incorporate many similarities, the triggers and subsequent response may be different, including the management arrangements.

A notable difference between the *Guide* and AS 3745:2010, is the description of the management structure. AS 3745:2010, and its Emergency Plan, separates the management duties into the Emergency Planning Committee, responsible for preparation of the facility, and the Emergency Control Organisation, responsible for supervising and undertaking the actions during a bushfire. Whilst the functions are separated in AS 3745:2010, they are instead to be undertaken by the Emergency Management Team, as a single management entity, in a Bushfire Emergency Evacuation Plan.

Also, at the time of seeking Development Approval, the final building design and its internal arrangements will not be determined. At development approval the Bushfire Emergency Evacuation Plan serves to demonstrate the conditions for evacuation or shelter, and it precedes the preparation of the *Planning for emergencies in facilities*.

This Bushfire Emergency Evacuation Plan should therefore be incorporated within or as an addendum to the overall Emergency Plan (AS 3745:2010) *Planning for emergencies in facilities* when it is prepared.

Both the emergency evacuation diagram for the facility, and the emergency evacuation plan (bushfire), are required to be displayed, and the distinction between an internal threat and response and an external threat and response should be clearly illustrated.

LIMITATIONS STATEMENT.

Envision Bushfire Protection

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Version Control

Proposed childcare – Lot 57 Briggs Road Byford			
Version	Date	Author	
V1	28 February 2023	Anthony Rowe	Submission
V2	9 May 2023	Anthony Rowe	Submission

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Disclaimer

In undertaking this work, the authors have made every effort to accurately apply the available information **at the time of writing** following the instructions of the regulatory authorities and applying best practice as described by the Fire Protection Association Australia. Any conclusions drawn or recommendations made in the report are made in good faith, and the consultants take no responsibility for how this information and the report are subsequently used.

Envision Bushfire Protection accepts no liability for a third party's use of, or reliance upon, this specific report.

Envision Bushfire Protection accepts no liability for the inaction of the owner to provide or maintain the bushfire protection measures identified in this report. Vegetation is dynamic, building materials may distort, and the accumulation and the location of flammable materials near the building may affect the potential for damage or loss of a building to occur.

Failure to maintain the property and/or building to these standards may compromise an insurance policy if currently covering any of your assets or those of any third party that may be consequentially affected due such failure. If not insured, and if you are seeking insurance, this report may not influence the decision of any insurer not to offer cover.

Importantly the measures contained in this report cannot guarantee human safety or an absence of harm or that the building will not be damaged or would survive a bushfire event on every occasion. This is due to the unpredictable nature of fire behaviour (knowledge in this field continues to develop) and the unpredictable nature of extreme weather conditions.

Client relationship

I was engaged to provide expert bushfire safety and planning advice. My relationship with the client is a standard commercial contract and no private, personal, or other matter has influenced the content of the:

- Emergency Evacuation Plan Assessment; and
- Emergency Evacuation Plan

STATEMENT OF CONFORMITY – PLANNING AND DEVELOPMENT ACT 2005



Anthony Rowe Level 3 - BPAD36690
Principal

BUSHFIRE EMERGENCY EVACUATION ASSESSMENT

This assessment has been prepared having regard to:

The Department of Planning Lands and Heritage: A Guide to developing a BUSHFIRE EMERGENCY EVACUATION PLAN

AS 3745-2010: Planning for emergencies in facilities

This assessment has been prepared in accordance with the Guidelines for preparing a bushfire emergency evacuation plan an accredited bushfire practitioner was engaged (Anthony Rowe BPAD L3 36690).

This assessment does not form part of the BUSHFIRE EMERGENCY EVACUATION PLAN.

STEP 1. THE EMERGENCY MANAGEMENT TEAM

For the purpose of a Childcare Centre the Emergency Management Team shall comprise of the owner/s of the facility.

In accordance with the Guidelines for preparing a bushfire emergency evacuation plan an accredited bushfire practitioner was engaged (Anthony Rowe BPAD L3 36690).

The bushfire planning practitioner has been responsible for assisting the emergency management team with

- Formulation of emergency procedures
- Consultation with local government and local emergency services as part of the Development Approval

Following the development of the emergency plan, the owner / operator is responsible to

- Maintain the emergency plan and ensure resources are provided for its implementation. The childcare centre should be provided with:
 - Alarm control for signalling of assembly
 - Emergency kit
 - Communication equipment
 - Hi vis vests for staff
 - First aid equipment
 - Water for hydration
 - Pre-arranged transport
 - Parent communication procedures and set messages
- Ensure the childcare centre is compliant with the building's bushfire safety measures, in liaison with the property owner.
- Nominate staff to key positions who will be on site whenever the centre is operating
 - Identify and assign duties and responsibilities
 - Chief Warden
 - Deputy Chief Warden
 - Evacuation Wardens
 - Ensure the training of staff and a demonstrated understanding of respective roles prior to the commencement of the bushfire season
- Ensure priority is given to the safety of children in care during a bushfire event.
- Ensure parents are informed of preparations, possibility for precautionary closure, response actions (evacuation) and recovery during the bushfire season.
- Maintain awareness of local government and emergency services initiatives in planning for emergencies, bushfire alerts, and evacuation places and safe routes which may change with the circumstance of the bushfire event.

The emergency management team (owner) should regularly review the emergency evacuation plan to ensure it remains practical and current.

STEP 2. FACILITY DETAILS, SITE ANALYSIS AND LOCAL CHARACTERISTICS

The emergency plan applies to the childcare centre at Lot 57 Briggs Road Byford (the site). The facility is located in a developing residential area but is within an area identified as bushfire prone.

The childcare centre provides care for up to 104 children from 0-5 years.

The proposed Childcare Centre site has frontage to Byford Road, a through road. Access to the site will be from the north boundary off the proposed extension of Indigo Parkway.

The site is within a reticulated area and a hydrant is located within 100 m on Briggs Road.

The area has full mobile phone coverage in addition to land lines, a resilient communication infrastructure.

The BMP dated **9 May 2023** describes the sites vulnerability to bushfire.

Key positions and responsibility

Chief Warden

- At regular intervals during the bushfire season the Chief Warden will monitor the DFES Alerts and Warnings web page <https://www.emergency.wa.gov.au>
- Responsible for determining the need to evacuate through communication with DFES or Police and overseeing the evacuation.
- initiate the evacuation – predetermined transport arrangement.
- Ensure parents are informed of the emergency response, and the arrangements for safe collection of children.
- Responsible to prepare post emergency reports documenting the actions taken and any difficulties with following the emergency plan before, during and after the evacuation.
- It is recommended the Chief Warden delegates the parent communication function to a nominated Warden.

Deputy Chief Warden

- Fulfills the responsibilities of the Chief Warden in the absence of the Chief Warden.

Evacuation Wardens

- Follows directions from the Chief Warden (or deputy) to ensure all children, staff and other visitors are accounted for.

An arrangement is to be entered into for priority attendance by a transport company to provide transport suitable for the evacuation of children 0-5 years in an emergency.

Transport WA requirements for transport of children are as follows –

Drivers are legally responsible for ensuring that children are suitably restrained in a vehicle:

- Aged 0 to 6 months are restrained in a rear-facing child restraint (e.g. infant capsule).*
- Aged 6 months to under 4 years are restrained in either a rear or forward-facing child restraint with in-built harness.*
- Aged 4 years to under 7 years seated in either a forward-facing child seat or booster seat restrained by a fastened seat belt or child safety harness.*
- Aged 7 years to 16 years are either in a suitable child seat or a seatbelt.*
- Aged under 7 years must not be in the front row of seats, if the vehicle has two or more rows of seats.*
- Aged between 4 years and 7 years can travel in the front seat if all other rear seats are filled with passengers aged under 7.*

When riding in a bus or taxi, if there is no suitable approved child seat available, children under the age of seven years must not be in the front row of seats where the bus or taxi has two or more rows of seats.

Children seven years and over can be restrained in an adult seat belt or booster seats.

Whilst child restraints are not mandatory on buses or in taxis, staff should be trained in the use of childcare restraints for those children in the baby rooms (maximum 24), and sufficient restraints must either be on hand at the centre or have been negotiated to be provided by the pre-arranged transport company.

STEP 3. PRIMARY AND SECONDARY EMERGENCY ACTIONS

The **primary action** in response to bushfire threat is **early** evacuation to an off-site location at a distance away from the effects of a bushfire.

Evacuate when:

- 'Advice', 'Watch and Act' or 'Emergency Warning' alert is issued from the Department of Fire and Emergency Services.
- There is awareness of fire in the locality with a likelihood of reaching the site
- Smoke or fire has been identified nearby.

Evacuation destination

In a bushfire event, announcements will be made via electronic media and online, regarding bushfire incidents and potential threats to the site.

In a bushfire event follow DFES/Emergency Services advice (public announcements) to determine the safe evacuation route and destination.

Smoke and particles, including embers can fall a distance greater than the heat experienced from the fire and can cause harm; evacuation from the area, by vehicle is therefore recommended.

The facility should be closed on catastrophic fire danger rating days, until the surrounding area is developed for residential purposes.

STEP 4. REQUIREMENTS FOR EVACUATION AND SHELTER-IN-PLACE

This assessment of requirements for evacuation and shelter has been guided by the questions provided in The Department of Planning Lands and Heritage: *A Guide to developing a BUSHFIRE EMERGENCY EVACUATION PLAN*. These have been addressed in Appendix 1

The Shire of Serpentine Jarrahdale has a number of nominated evacuation centres which may be activated in a bushfire emergency.

The Serpentine Jarrahdale Community Recreation Centre 38 Mead St, Byford WA is the closest.

The route is via Briggs Road (travel south) to Abernethy Road, then Warrington Road to Mead Street and east along Mead Street to the Serpentine Jarrahdale Community Recreation Centre. An alternative longer route is available via Southwest Highway, Abernethy Road and Gordin Way to Mead Street and the Serpentine Jarrahdale Community Recreation Centre.

Upon being alerted to a fire approaching the Chief Warden (Manager) will

1. Alert staff (calmly) and initiate their undertaking of assigned responsibilities
2. Confirm evacuation destination and route with DFES
3. Contact the transport company
4. Assemble children within the common area close to the exit
5. Close windows and doors
6. Account for all children (verify against daily registration log)
7. Keep children hydrated and calm
8. Locate fire extinguishers
9. Observe external conditions
10. Monitor condition of the building
11. Upon arrival of arranged transport, evacuate the building taking the emergency kit and daily attendance log (inclusive of parent/guardian contact information).
12. Advise parents/guardians the childcare centre has been evacuated. Instruct them not to attend the child care centre and confirm the evacuation destination and arrangements for collection of children

Notes:

The location may be subject to smoke and ember attack. It is best to remain in the building until transport arrives in order to reduce the likelihood of minor injury and distress to children.

STEP 5. DEVELOP PRIMARY AND SECONDARY EMERGENCY PROCEDURES

PREPAREDNESS

Prior to the commencement of the bushfire season the Emergency Evacuation Plan must be reviewed ensuring all information, procedures, contact details and any attached publications are current.

The A3 size evacuation diagram must include current information and be displayed at all exit doors within the childcare centre.

The facility should be closed on catastrophic fire danger rating days.

Fire extinguishers must be checked to ensure they are charged and in working order.

Fire hoses should be checked to ensure all are in good condition and capable of reaching all surfaces of the building.

Flammable materials should be removed from within 3 m of the building.

Externally located rubbish bins, storage areas, should have closing lids.

No flammable materials should be attached to the building, i.e. shade sails should not be of a flammable material.

Ensure employees and other occupants are informed and familiar with the procedures laid out in the Emergency Evacuation Plan.

Contact off-site location(s) for potential use during a bushfire emergency.

Contact transport suppliers for potential use during a bushfire emergency.

Ensure property access is kept clear and easily trafficable.

Ensure an emergency evacuation kit including first aid kits and adequate levels of drinking water has been prepared and is easily accessible by staff.

AWARENESS

Maintain situational awareness through a range of information sources including local ABC radio 720, the Emergency WA website (emergency.wa.gov.au), DFES Facebook or Twitter, information line 13 DFES (13 33 37) and local emergency services.

Maintain observation of external condition for signs, and smell of smoke.

Alert parents and guardians to expected Catastrophic conditions and notify them of the precautionary closure of the centre.

If an Advice warning is issued, precautionary evacuation must occur; contact parents and carers to arrange urgent collection of children.

Parents and carers contact details are to be confirmed on attendance at sign in.

EMERGENCY RESPONSE

Evacuate when:

- 'Advice', 'Watch and Act' or 'Emergency Warning' alert is issued from the Department of Fire and Emergency Services.
- There is awareness of fire in the locality with a likelihood of reaching the site
- Smoke or fire has been identified nearby.

If sufficient time permits, following advice from DFES or emergency services, contact parents/carers and arrange for immediate collection of children. If there is not sufficient time available to arrange full evacuation by parents/carers, contact the transport company and evacuate to the Shire's nominated evacuation centre.

Check and communicate:

- Confirm building is clear and all children, staff visitors are accounted for.
- Inform DFES and parents and carers of evacuation and destination.

Shelter in place is not recommended and there should be no necessity for shelter in place to occur however if DFES or emergency services have advised it is too late to leave, or it is unsafe to exit the building due to the conditions outside, then staff should ensure all doors and windows are sealed as best as possible.

Staff should move children to the room furthest from the fire front and with ready access to an exit. The centres Emergency in Facilities Plan must identify the location for shelter in the building¹. The fire front should continue to be observed by a nominated staff member; if the building has ignited the building must be evacuated. As soon as it is safe outside (the fire has passed) a member of the emergency management team should check the building and grounds for any small fires; any small fires should be extinguished.

When safe to do so arrange for the children to be collected.

Recovery

- Maintain communication (appointed responsibility) with parents and carers and arrange collection of children.
- On all clear, the Chief Warden is to check building is suitable for occupation.
- Advise parents/carers when the centre will re-open
- Review incident for improvement and incorporate into the Emergency Plan and training.

¹ Emergency in Facilities Plan AS3745-2010 which addresses a range of emergencies

STEP 6. TRAINING AND EDUCATION ON EMERGENCY PROCEDURES

Staff and volunteers will be provided with information outlining emergency management procedures and bushfire protection measures. The childcare centre manager will practice procedures and ensure that delivery of education and training for staff and any volunteers occurs. The manager will be trained in where to find official emergency information. For example, Emergency WA website, 13 DFES information line, and local ABC Radio 720 for the purpose of monitoring conditions.

As part of the registration process notice must be provided to the responsible parent or carer that the childcare centre is located within a bushfire prone area and precautionary or emergency evacuation may be required during the fire season.

Staff and volunteers must acknowledge that they have sighted and understood the emergency evacuation procedures and understand their role and responsibilities.

- Individual roles and responsibilities.
- Access and egress routes.
- Assembly point location.
- Firefighting equipment locations
- The written procedures applicable to the site.
- Use of child (vehicle) restraints

The following exercise drills should be practiced

- assembly and evacuation procedures
- site preparation procedures and post fire inspections
- firefighting techniques to create a familiarity with the firefighting equipment (which might be used by staff to address small fires)
- the debrief process (which would follow any bushfire event) to identify and discuss any issues that could occur with the emergency plan

Appendix 1

Step 4 Evacuation or Shelter Analysis

The following questions will assist developing or reviewing the Emergency Evacuation Plan to identify an off-site location - EVACUATION.

If there are occupants with support needs that require a similar facility to support them, is the off-site location suitable?

Yes ☒
No ☐

- Occupants with support needs are people with physical, intellectual, visual, or auditory disability or impairment, either temporary or permanent. It also includes aged persons and juveniles who are dependent on others for their care and wellbeing.

Comment:

The facility provides the care of children who will require supervision and support

Is the off-site location in an area away from the effects of a bushfire?

Yes ☒
No ☐

- Have you considered locations such as community centres, clubs etc. as possible places to go?

Comment:

Shire nominated emergency shelter - Serpentine Jarrahdale Community Recreation Centre 38 Mead St, Byford WA

Are there amenities (toilets, food, water etc.) available at the off-site location? (if applicable)

Yes ☒
No ☐

Can the off-site location accommodate the number of occupants?

Yes ☒
No ☐

- Remember that other persons may wish to utilise the same facility as their shelter for evacuation.
- Accommodation for more than one day may be required.

Comment:

Shire provided emergency shelter Serpentine Jarrahdale Community Recreation Centre 38 Mead St, Byford WA

Does an available route to the off-site location avoid transporting through bushfire affected areas or areas that may be affected by an approaching bushfire?

Yes ☒
No ☒

Depending on the extent of the bushfire hazard around the site, the location of a bushfire and the safest route from the site, there may be a need for alternative routes and locations.

Comment:

The most direct access (2.9 km) to the Serpentine Jarrahdale Community Recreation Centre is South along Briggs Road. An alternative route (4.3 km) is available east of the site via Larsen Road to Southwest Highway

Has the owner of the off-site location advised that they are happy to accommodate occupants if evacuation from a bushfire emergency occurs?

Yes ☒
No ☐

Comment: The Shire promotes the availability of community recreation centres operating at times that the childcare centre is in operation.	
<i>Consider the following questions to assist planning transport arrangements.</i>	
Do you have your own transport for all occupants? If no, what transport provider will you use?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Comment: Sufficient transport suitable for all children and staff is required to be arranged at the commencement of each season. Verification of transport availability must be confirmed on days of Extreme conditions when the centre is operating. Whilst child restraints are not mandatory on buses or in taxis, staff should be trained in the use of childcare restraints for those children in the baby rooms (maximum 24), and sufficient restraints must either be on hand at the centre or have been negotiated to be provided by the pre-arranged transport company.	
Are you going to use private vehicles?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Comment: Private transport will be arranged.	
If using private vehicles, will they be available when you need them and will there be drivers available? If no, consider another mode of transport	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Comment: The availability of pre-arranged transport will be verified on days of Extreme conditions when the centre is operating. In addition, taxis and other forms of hire transport may be used.	
Will there be sufficient vehicles to transport all the occupants?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Comment: An arrangement with a transport provider will be confirmed prior to each bushfire season.	
Have occupants with support needs been considered when determining transport types and necessary timing to evacuate?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Comment: Staff will accompany the children to the evacuation destination.	
Is disabled transport required, and is this sufficient to move the number of occupants from the facility?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Comment: An individual plan should be determined for children with reduced physical ability, which may include ambulance support.	
Do you require ambulances? If yes, St John Ambulance Australia needs to be consulted.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Comment: This will be subject to the individual needs of the child, but a bushfire is only one circumstance where emergency support by ambulance may be required and will be part of an individual plan.	

Is a community bus available?	Yes <input type="checkbox"/>
	No <input checked="" type="checkbox"/>
Comment: Augmented transport arrangements will be negotiated with local private transport suppliers.	
Will community buses be available when you need them and will drivers be available?	Yes <input type="checkbox"/>
	No <input checked="" type="checkbox"/>
Comment: Not required	
Are other means of transport available?	Yes <input checked="" type="checkbox"/>
	No <input type="checkbox"/>
Comment: Pedestrian access to BAL Low south will be available as the area develops (residential development).	
Do you need any other type of special transport?	Yes <input checked="" type="checkbox"/>
	No <input type="checkbox"/>
Comment: Evacuation will be provided across sealed public roads, only 2wd road going vehicles are required.	

The following questions will assist developing the Emergency Evacuation Plan to identify an on-site building. SHELTER

Is the property well maintained and kept free from a build-up of fuel and leaf litter in gutters and around buildings?

Yes ☒
No ☐

Comment:

The building should be inspected prior to the bushfire season, particularly those aspects that are not readily observable or accessible such as elevated ledges and the roof.

During the bushfire season rubbish bins should be self-closing, and material accumulating against the building should be removed.

Is there a building on-site that is away from bushland and is unlikely to be impacted by bushfire?

Yes ☐
No ☒

- Consider the potential for any adjoining structures, vegetation or combustibles to ignite and impact on the building.
- For facilities where occupants are located in numerous buildings or rooms, it may be appropriate to remain in those rooms under supervision.

Comment:

On site refuge is not sought but the building is a single building within BAL 29. Evacuation should be taken if safe to leave.

Is the building constructed in a manner that minimises bushfire attack with appropriate Asset Protection Zones?

Yes ☒
No ☐

To determine standards of construction, consult Australian Standard AS3959 Construction for buildings in bushfire prone areas.

Comment: The proposed building will be constructed to the commensurate determined BAL level.

Can the building accommodate the number of occupants and visitors?

Yes ☒
No ☐

Comment:

The building capacity required is 1.2 m³ per person, as a minimum shelter standard ABCB Handbook 2014

Is there ease of accessibility to the building and is it easily identifiable?

Yes ☒
No ☐

Comment:

The main access to the building is from the carpark immediate to Shepparton Boulevard.

Is there access to amenities (toilets, food, water etc) away from the effects of a bushfire?

Yes ☐
No ☐

Comment: Shire nominated evacuation centres have amenities

BUSHFIRE EMERGENCY PLAN

NAME OF FACILITY Child Care Centre

ADDRESS Lot 57 Briggs Road Byford

PREPARED BY Anthony Rowe, L3 BPAD 36690

OWNER/OPERATOR Blokk Property

DATE 9 May 2023

VERSION NUMBER 2

Document Control

Version	Date	Details	Undertaken by
1	28/02/2023	Submission	Anthony Rowe
2	09/05/2023	Submission	Anthony Rowe

Emergency Management Team

Name	Role	Contact Details
	Owner	
	Centre Manager	

FACILITY DETAILS

This Plan is for a Childcare Centre at Lot 57 Briggs Road Byford and has been designed to assist management in protecting life and property in the event of a bushfire.

The plan outlines procedures for both **evacuation** and **shelter-in-place** to enhance the protection of occupants from the threat of a bushfire.

The primary action to follow in a bushfire emergency is to:

Evacuate



Shelter in place



NAME OF CONTACT PERSON			
POSITION / ROLE OF CONTACT PERSON		Centre Manager	
PHONE NUMBER			
FACILITY TYPE	Childcare	NUMBER OF BUILDINGS	1
NUMBER OF STAFF	18	NUMBER OF OCCUPANTS	104 Children (and 18 staff)
NUMBER OF OCCUPANTS WITH SUPPORT NEEDS		104	
DESCRIPTION OF SUPPORT NEEDS		Children will require support and assistance from staff appropriate to their age and development	

RESPONSIBILITIES

The following outlines who has responsibility for implementing emergency procedures in the event of a bushfire.

Position	Role	Responsibility
Owner	Emergency Planning Committee	<ul style="list-style-type: none"> Ensure the facility is prepared for the bushfire season
Facility Manager	Chief Warden (Emergency Management Team)	<ul style="list-style-type: none"> Daily - check www.emergency.wa.gov.au for any warnings or alerts Ensure adequate transport is available for evacuation should it be required Monitor conditions on Severe plus FDR days <ul style="list-style-type: none"> Local ABC Radio 720 am Emergency.wa.gov.au Advise parents/carers of precautionary closure where catastrophic conditions are forecast Determine with DFES/emergency services that safe evacuation is available Consider any special needs of the children that may affect the decision and capability to evacuate Remain contactable (mobile phone) at all times oversee evacuation advise parents or carers of evacuation and arrangements for collection of children
Emergency Management Team (roles allocated to staff)	Deputy Warden	<ul style="list-style-type: none"> Activities delegated by the Chief Warden Supervise any fire suppression activity
	Communications officer	<ul style="list-style-type: none"> Responsible for keeping parents informed
	Transport Warden	<ul style="list-style-type: none"> Responsible for ensuring the evacuation

EMERGENCY CONTACTS

Name of Organisation	Office / Contact	Contact details
Fire / Police / Ambulance	Fire or Emergency	000 (112 from a mobile)
Department of Fire & Emergency Services	Emergency Information	13 33 37 (13 DFES)
Emergency WA	Warnings and incidents	www.emergency.wa.gov.au
Bureau of Meteorology	Weather information	1300 659 213

Secondary Contacts

Name of Organisation	Office / Contact	Contact details
Transport company	TBA	Confirmed annually

PREPAREDNESS

CHECKLIST – ongoing, prior to and during the bushfire season		
BUSHFIRE SEASON: COMMENCES 1 OCTOBER AND CONCLUDES 31 MAY OF EVERY YEAR (UNLESS OTHERWISE ADVISED)		
Action	Frequency	Responsibility
To be completed just prior to the bushfire season (by November 30 each year)		
1. Review Emergency Evacuation Plan to ensure details, procedures and contact phone numbers are correct. I. Contact off-site location(s) and confirm potential use during a bushfire emergency. II. Contact transport suppliers and confirm arrangements for potential use during a bushfire emergency.	Annual	Owner and Centre Manager
2. Ensure all staff are familiar with the procedures in the Emergency Plan		
3. Affirm parents and carers have been informed of the facilities emergency response procedures for the coming bushfire season and the possibility of precautionary closure on extreme, or catastrophic FDR days and on issue of an Advice level warning.		
4. Ensure the site layout diagram and emergency evacuation diagrams are current and in visible location(s).		
5. Ensure the routes to offsite locations are a safe option.		
6. Ensure any firefighting equipment (fire extinguishers hoses etc.) are serviceable and available.		
7. Ensure property access is clear and easily trafficable		
8. Ensure roof and gutters are free from leaf litter and debris		
9. Ensure staff are aware of their responsibilities as assigned by this plan and have received training on procedures and in the use of firefighting equipment		

To be completed during the bushfire season between 1 December and 12 May each year by the Emergency Management Team (centre manager).		
1. Ensure contact details of the emergency management team and employees are updated as required	Ongoing	Centre Manager
2. All objects attached to the buildings are non-combustible or easily removable, and the removing mechanism is in working order		
3. Smoke detectors are in working order		
4. Ensure first aid kits, fire extinguishers, emergency lighting and other emergency resources are current, serviceable and accessible		
5. The evacuation diagram and the site layout diagram are clearly displayed on the inside face of external doors		
6. Ensure defendable spaces around the building and assembly points are maintained (kept clear).		
7. The daily log book (registration of attendance) is kept on hand and includes parent / guardian contact details in case of evacuation		
8. Emergency communication equipment (mobile phone) is charged and on hand		

The Department of Fire and Emergency Services provides community and emergency advice about predicted and current conditions that advise about the level of bushfire threat.

The Fire Danger Rating (FDR) is based on the forecast weather conditions, the higher the rating, the higher the threat.

Extreme or Catastrophic ratings are the highest level and represent unsafe conditions. They are rare but represent exceptionally dangerous conditions for travel.

A new national Fire Danger Rating System was launched in September 2022

There are four levels of fire danger in the new system. Fire Danger Ratings are based on predicted conditions such as temperature, humidity, wind and the dryness of the landscape and give an indication of the possible consequences of a fire, if one was to start; the higher the fire danger rating, the more dangerous the conditions.

FIRE DANGER RATINGS

CATASTROPHIC

Catastrophic - For your survival, leave bush fire risk areas

EXTREME

Extreme – Take action now to protect your life and property

HIGH

High – Be ready to act

MODERATE

Moderate – Plan and prepare



BUSHFIRE WARNING SYSTEM



EMERGENCY WARNING

An out of control fire is approaching fast and you need to take immediate action to survive. If you haven't prepared your home it is too late.

You must seek shelter or leave now if it is safe to do so.



WATCH AND ACT

A fire is approaching and there is a possible threat to lives or homes. Put your plan into action. If your plan is to leave, make sure you leave early. If your plan is to stay, check all your equipment is ready.

Only stay and defend if you are mentally and physically prepared.



ADVICE

A fire has started but there is no immediate danger. Stay alert and watch for signs of a fire.

Be aware and keep up to date.

Where can I get information during an emergency?

emergency.wa.gov.au 13 DFES (13 33 37)

@dfeswa @dfes_wa Local ABC Radio



PREPARATION

The following outlines the preparation that must be taken to ensure occupants are aware of the bushfire threat and can respond with appropriate procedures.

Actions	Frequency	Responsible Person
Throughout the bushfire season		
Check the Emergency WA website daily for alerts and warnings www.emergency.wa.gov.au	Daily (in the morning) and again early in the afternoon	Centre Manager
Days forecast with a Catastrophic Fire Danger rating		
Inform parents and staff that due to the fire danger rating the centre will be closed for the duration of the warning.		

If an 'Advice,' 'Watch and Act' or 'Emergency Warning' alert or other communication has been issued by an emergency service authority -

ALERT

An 'Advice' is issued that a fire has started but there is no immediate danger.

Contact DFES for advice on availability of safe evacuation.

Contact parents / carers to arrange urgent collection of children

WATCH AND ACT or EMERGENCY WARNING

In the event of a Watch and Act or Emergency Warning, or if smoke of fire is observed in proximity, confirm with DFES the safe route to the intended destination. Public announcements will include confirmation of safe routes and activated welfare centres.

Method of Alarm

The building is a single building. To avoid distress to the children, the alert condition or condition to evacuate should be verbally communicated to all staff members and procedures followed.

Children should be immediately assembled within the building.

Any staff member who observes smoke or a fire nearby, is to advise the Chief Warden immediately or the acting senior member of staff who should in turn implement the Bushfire Emergency Evacuation Plan.

Parents and Carers are to be contacted and advised of implementation of the Bushfire Emergency Evacuation Plan.

Parent/Guardian Communication

- Advise parent / guardians of precautionary closure of the facility, the day before if there is the potential for the building to be affected by a bushfire (for example a bushfire is distant but may affect the building) or if the forecast FDR for the following day is Catastrophic.
- Advise parent / guardians of pre-emptive evacuation, requirement for urgent collection from the facility if an 'Advice' level warning has been issued.
- Advise parents / guardians of emergency evacuation and ensure they understand they should not attend the childcare centre. As soon as possible following evacuation advise parents / guardians of the location and arrangements for collection of children.

NOTE

The location may be subject to smoke and ember attack. It is best to remain in the building until transport arrives in order to reduce the likelihood of minor injury and minimise distress to children.

Parents and carers are to be informed early and requested to follow an orderly process for the safe collection of children, and importantly enable management to maintain accountability and certainty for the location of each child. The circumstance of a parent acting upon a public notice and collecting their child without appropriate record must be avoided.

Evacuation Destination Details - Preparation

The following destinations and routes may be available in a bushfire event however current public advice from Emergency WA should always be followed to ensure you use the safest evacuation route to the safest destination.			
Designated evacuation assembly point/s			
1. inside the childcare centre			
Primary off-site location			
Name of venue	The Serpentine Jarrahdale Community Recreation Centre		
Address of venue	38 Mead St, Byford WA		
Nearest cross street	Gordin Way (east of the Community Recreation Centre)	Map reference	Q2F2+Q6 Byford
Venue phone number	(08) 92078555		
Primary route to location	Head south on Briggs Road towards Larsen Road, at the roundabout, take the 1st exit onto Abernethy Road and at the next roundabout, take the 2nd exit onto Warrington Rd. From Warrington Road take the first exit at the roundabout onto Mead Street. The Serpentine Jarrahdale Community Recreation Centre is on the right (550 m)		
Secondary route to location	Head south on Briggs Road and turn left onto Larsen Road. Follow Larsen Road to Southwest Highway and turn right. After 1.1 km turn right to the Abernethy Road, then at the roundabout, take the 1st exit at the roundabout onto Gordin Way then the third exit at the roundabout onto Mead Street. The Serpentine Jarrahdale Community Recreation Centre is on the left (170 m)		
Primary transportation arrangements			
An arrangement is to be entered into with a transport company to provide a priority attendance to transport children in an emergency. Two buses each with a 55 person capacity will be required plus the use of private staff vehicles			
Estimated travelling time to destination		50 minutes: 10 minutes travel time plus 40 minutes maximum time required to mobilise transport	

Shelter-In-Place

The **primary action** to follow if there is an imminent bushfire threat is to **EVACUATE** following confirmation (DFES or emergency services) that a safe evacuation route is available. The area is under development and as that development continues areas of BAL-Low will become available south of the site. Until that area is developed evacuation from the facility by vehicle is recommended.

RESPONSE FOR EVACUATION AND SHELTER-IN-PLACE IN THE EVENT OF A BUSHFIRE.

Trigger	Action	Responsible Person
DFES have advised to evacuate and confirmed the route is safe or a bushfire is reported within 3-5 Km of the site or smoke or fire is observed Confirm with DFES it is safe to evacuate and confirm the destination and route	<ul style="list-style-type: none">Alert staff to implement the Emergency PlanContact transport company to arrange immediate attendance for evacuationLocate children to the common area of the building close to the exitClose windows and doorsAccount for all children (verify against daily registration log)Obtain the emergency evacuation kitLocate fire extinguishersMonitor external conditions and the condition of the buildingUpon arrival of arranged transport evacuate the building taking the emergency kit, the daily attendance log, and water for each child.Advise DFES the childcare centre has been evacuated.Check building has been cleared; all children and staff and visitors are accounted for.Evacuate to determined destinationContact parents or carers and advise the collection point for children <p>Notes: The location may be subject to smoke and ember attack. It is best to remain in the building until transport arrives in order to reduce the likelihood of minor injury and minimise distress to children.</p>	Centre Manager
SURVIVAL- SHELTER – only if advised by DFES it is not safe to leave and shelter in place is a safer option		
A fire is advised or is observed to be approaching and DFES public or direct advice is it is too late to leave (safe evacuation is not available)	<p>Contact emergency services and advise the number of children and staff sheltering in place.</p> <p>Keep fire extinguishers close by.</p> <p>Monitor the building condition for smoke and heat and stay low.</p> <p>Soak towels to block smoke ingress if required</p> <p>Keep children hydrated.</p>	Centre Manager

	<p>Monitor the fire's passing and leave the building when safe to do so.</p> <p>Note: Survivable conditions establish quickly after the firefront has passed, when the wind and noise has calmed. Don't stay in a burning building. Move to the carpark space.</p> <p>Inspect the building for any small fires and extinguish if safe to do so</p> <p>If the site and land nearby has been impacted by bushfire, evacuate the site when safe to do so until the area has been assessed and is given an 'All clear' is given.</p>	
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RECOVERY

Action	Responsible Person
<p>Inspect building.</p> <p>Advise parents or carers of the date when the centre will re-open</p>	Centre Manager
<p>Debrief</p> <ul style="list-style-type: none"> – assess the severity of the event; – would the actions taken be sufficient to ensure the safety of staff and visitors in an extreme event; – were there any unexpected problems not accounted for in the existing emergency plan; – update the emergency plan to include any learnings from the event. 	Emergency Planning Committee (owner) with the Emergency Management Team (delegate)

POSTPONED

Attachment 1 – Emergency Plan and Evacuation Map

BUSHFIRE EMERGENCY RESPONSE PLAN

Location -	Lot 57 Briggs Road Byford
Facility -	Childcare Centre
Visitors -	Maximum 104 children (plus 18 staff)

CONTACT PERSONS

Centre Manager		
Transport Contact		

Chief Wardens Role:

- Remain informed of DFES Emergency Warnings by monitoring public information sources (listed below)
- Contact Priority Transport provider to confirm availability of transport should it be required.
- Oversee Emergency Evacuation if it is required

AUSTRALIAN WARNING SYSTEM

		
ADVICE A fire has started but there is no immediate threat to lives or homes. Be aware and keep up to date.	WATCH AND ACT There is a possible threat to lives or homes. You need to leave or get ready to defend – do not wait and see.	EMERGENCY WARNING There is a threat to lives or homes. You are in danger and need to take immediate action to survive.

INFORMATION SOURCES

Local ABC radio	720 am
DFES information line	13 33 37
Emergency WA	www.emergency.wa.gov.au
Bureau of Meteorology	1300 659 213

ADVICE - prepare to evacuate

Trigger: Fire is greater than 10 km away

An ADVICE warning has been issued across telecommunications media of an incident nearby (within 10 km).

Response:

PRECAUTIONARY EVACUATION IS REQUIRED.

- Contact parents/carers and arrange for immediate collection of children.
- Turn off air conditioning, and close windows and doors
- Monitor emergency information to be informed of any change to the warning level
- Once all children have been collected, evacuate staff

WATCH AND ACT- Evacuate

Trigger

DFES or Police have advised EVACUATION IS REQUIRED (Public Notice)

Confirm with DFES or police the evacuation route which should be taken (public information).

Response:

- Assemble all children in the building to await evacuation.
- Contact (summon) transport company.
- Advise parents/carers that the centre is evacuating and they must not attend
- Turn off air-conditioning
- Close all doors, windows and blinds,
- Account for all children, staff and visitors.
- Board buses and evacuate to the Community Recreation Centre at 38 Mead Street.
- Contact parents/carers and confirm arrangements for collection of children from the safe location

EMERGENCY - Survival

Trigger:

DFES or Police have advised **EVACUATION IS NOT SAFE**

Response

Shelter at the site is not recommended. This Survival Plan should only be enacted in the event that DFES or police have advised a safe evacuation route is not available.

Children and staff should remain in the building for as long as it is safe to do so.

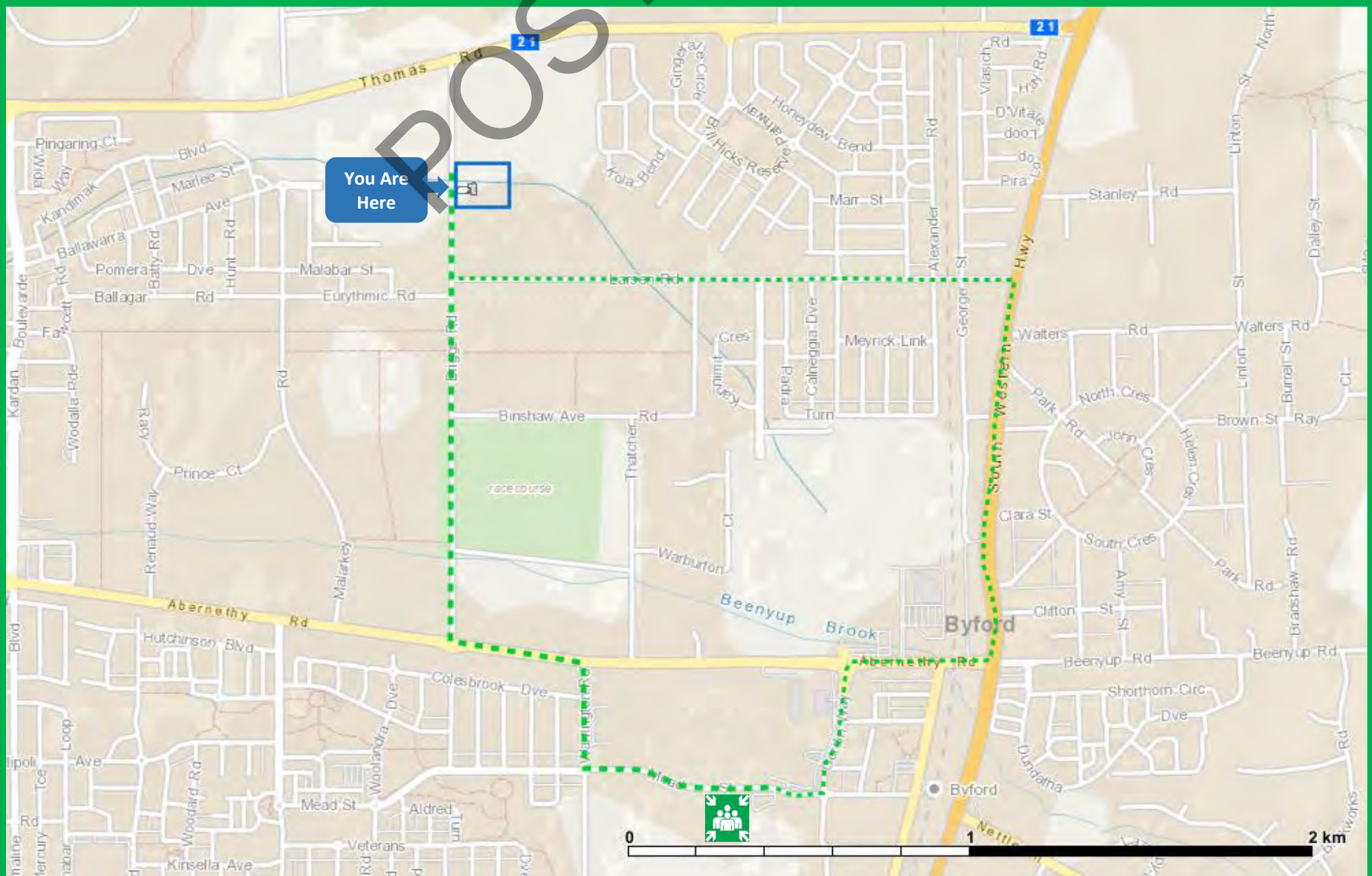
- Advise emergency services of the number of persons sheltering at the site
- Advise parents/carers that you are unable to evacuate and are sheltering in the childcare centre. **Instruct them not to attend the centre.**
- Close all doors and windows and ensure they are sealed as best as possible.
- Turn off air conditioning
- Soak towels and lay them along the inside of external doorways.
- Keep woollen blankets handy for protection against radiant heat.
- Take down curtains and push furniture away from windows.
- Stay low to limit exposure to smoke
- Drink plenty of water to avoid becoming dehydrated
- Shelter in the building for as long as possible.
- If the building catches fire evacuate to the carpark.

ALL CLEAR

When emergency services have deemed the area safe:

- The owner will attend the site and check buildings and grounds for any smouldering objects and determine if it is safe for children and staff to return
- Notify parents / carers of the date when the childcare centre will re-open.
- Commence the debrief process.

EMERGENCY EVACUATION DIAGRAM



ATTACHMENT 2 - References

GENERAL REFERENCES

SA Department of Environment and Natural Resources, Government of South Australia, 2012 *Overall Fuel Hazard Guide for South Australia*

Standards Australia, *AS 3959:2018 Construction of buildings in bushfire-prone areas*, Sydney

Western Australian Planning Commission (WAPC) *Position Statement: Planning in bushfire prone areas – Demonstrating Element 1: Location and Element 2: Siting and design* November 2019

WA Department of Planning Land and Heritage 2016, *Visual Guide for bushfire risk assessment in Western Australia*

Western Australian Planning Commission (WAPC) 2015, *State Planning Policy 3.7 Planning in Bushfire Prone Areas*, Western Australian Planning Commission, Perth, Perth

Western Australian Planning Commission and Department of Fire and Emergency Services (WAPC and DFES) 2017, *Guidelines for Planning in Bushfire Prone Areas Version 1.4*, Western Australia

Online references

Office of Bushfire Risk management (OBRM), Map of Bush Fire Prone Areas, viewed April 2022, <
<https://maps.slip.wa.gov.au/landgate/bushfireprone/>>

Site and Soil Evaluation Report

**Appraisal of site:
Lot 57 Briggs Road,
Byford.**



**Prepared by Dr Ross Mars
February 16, 2023.**

Field assistants and research: Corey Purdy and Mason Kilian.

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1. Introduction

Water Installations Pty Ltd has been engaged by Darren Blowes of Blokk Property to undertake a Site and Soil Evaluation (SSE) for the 2.01 ha site at Lot 57 Briggs Road, Byford with the view to build a childcare centre. Under the Government Sewerage Policy (GSP) it is a requirement that a Site and Soil Evaluation that addresses the risks of an onsite wastewater system on the environment and public health accompanies all new commercial and development applications. A field investigation and subsequent report have been undertaken to investigate this possibility. Recommendations for the monitoring and other management requirements will be made. A number of options are provided for both the treatment system and land application area (LAA). In considering the lot size it is noted that the lot will be of sufficient size to accommodate both the proposed development and have enough land application area as determined by Schedule 2 in the GSP.



Figure 1.1 Overall site plan or map, showing block details.

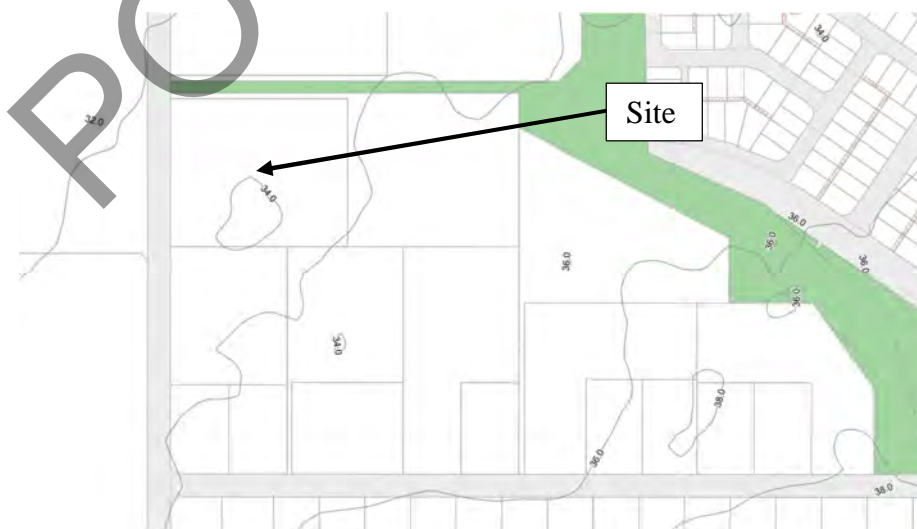


Figure 1.2 Contours and elevation.

Figure 1.2 shows the contours and elevation recorded on site. This indicates an approximate fall of 2 m toward the north west and a very gentle rise near the centre of the block.

2. Description of site and/or development

The site has an existing house and sheds as shown in Figure 1.1. There are multiple paddocks of annual grasses with tall eucalypts along the fence lines. A seasonal brook runs parallel to the northern boundary as visible in Figure 1.1. The proposal is to remove the existing buildings and construct a childcare facility.

Table 2.1 below provides a summary of the proposed development.

Table 2.1 Description of the site and/or development.

Development Characteristic	Description
Site Address	Lot 57 Briggs Road, Byford
Owner/Developer	Ian and Krystina Walton/Darren Blowes
Local Government	Shire of Serpentine-Jarrahdale
Zoning	Urban development (No R Code)
Lot size	20,186 m ²
Proposal	Development of childcare centre
Water Supply	Bore
Anticipated Wastewater Load	Allowance: Childcare centre (122 people). Total design load = 5,490 L/day .
Availability of Sewer	The area is unsewered and highly unlikely to be sewerred for several years, if at all.
Development located within (tick as appropriate)	<input type="checkbox"/> Public drinking water source area <input checked="" type="checkbox"/> Sewage sensitive area <input type="checkbox"/> Neither In the Serpentine River Catchment Area



Figure 2.1 Local zoning. Block is zoned Urban Development.



Figure 2.2 Proposed development – Construction of childcare centre (in red).



Figure 2.3 Mains water and sewerage availability.

Figure 2.3 shows the available water services in the area, there are no connections to the property.



Figure 2.4 Seasonal brook to the north of the property.

3. Site and soil assessment

Water Installations undertook the site investigations on Tuesday January 31, 2023.

Soil type was determined upon investigation. Both desktop and field studies were used to determine soil category, permeability and any constraints that may influence the type of wastewater system as well as the amount of irrigation and size of dispersal area.

3.1 Site

Table 3.1 summarises the key features of the site. Based on the most constraining site features (landform and drainage), the overall land capability of the site to sustainably manage all effluent onsite is satisfactory. The proposed effluent management area is located well above any local flood level.

Note:

- The site experiences low stormwater run-on as topsoil has good infiltration and drainage.
- There is no evidence of a shallow watertable or other significant constraints.
- The landform is a gentle gradient and risk of effluent transport offsite is very low.

Procedure

Two test pits were dug with an excavator to a depth of at least 2 m wherever possible. Permeability determination was undertaken with a hand auger. Soil samples were randomly selected from the excavated spoil, but typically from the middle to lower areas of soil profile. Topsoil was not included. Location of test pits is shown in Figure 3.1.

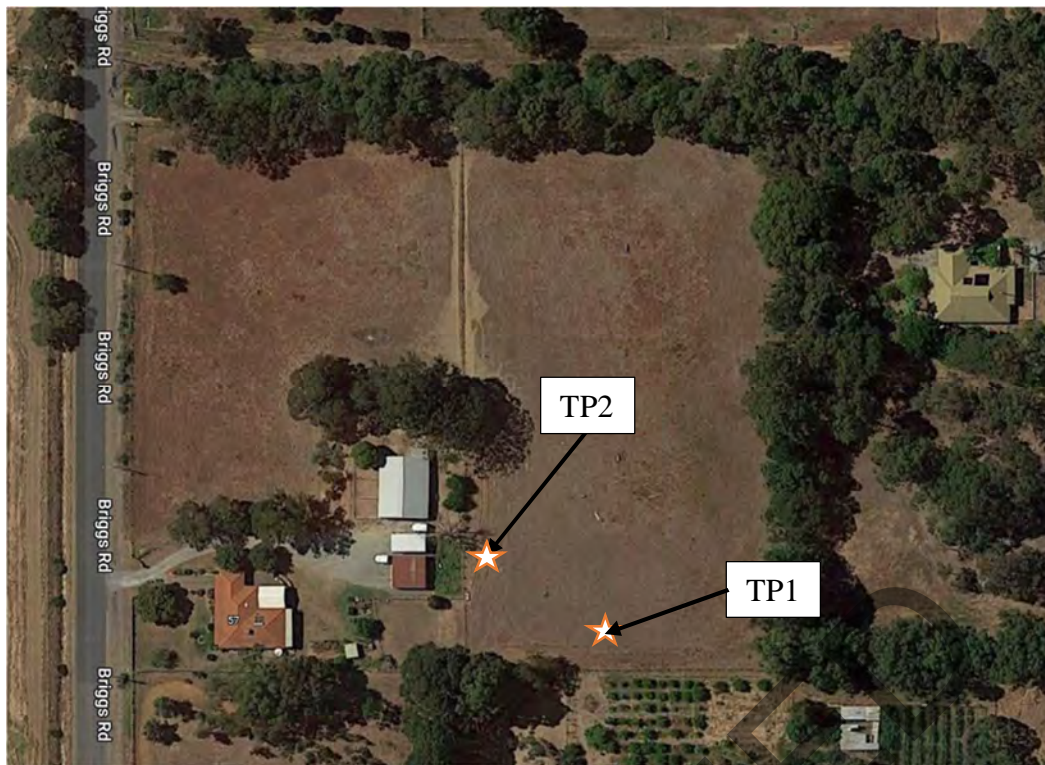


Figure 3.1 Map of test pit locations.

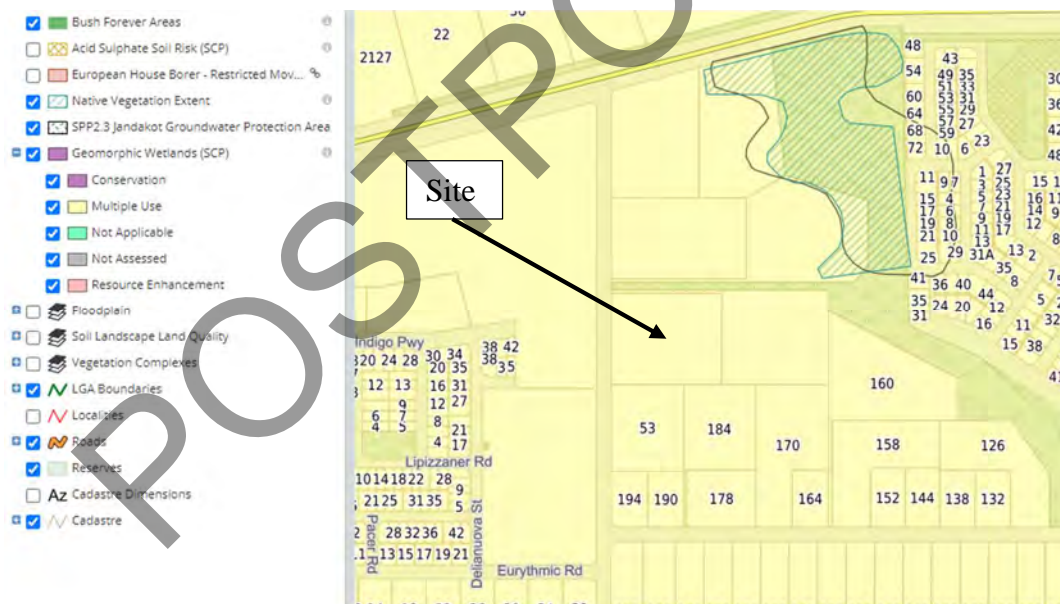


Figure 3.2 Local Natural Area – protection of vegetation.

Figure 3.2 shows reserves nearby, and the site indicated. There is no requirement for natural conservation onsite.

3.2 Soils

Methods

The site's soils have been assessed for their capability for onsite sewage management by a combination of soil survey, permeability studies, laboratory assessment and a desktop review of published soil survey information as outlined in the pages that follow.

Results

Published Soils Information

Suspected soils of the site have been investigated via number of web-based sites such as Shire of Serpentine-Jarrahdale Intramaps site and the DPIRD – Natural resource information, as well as documents published by the Dept of Agriculture and others.

From Figure 3.3 soils typically found in the region are Sandy clays – white-grey to brown, fine to coarse grained, subangular to rounded sand, clay of moderate plasticity, gravel and silt layers near scarp.

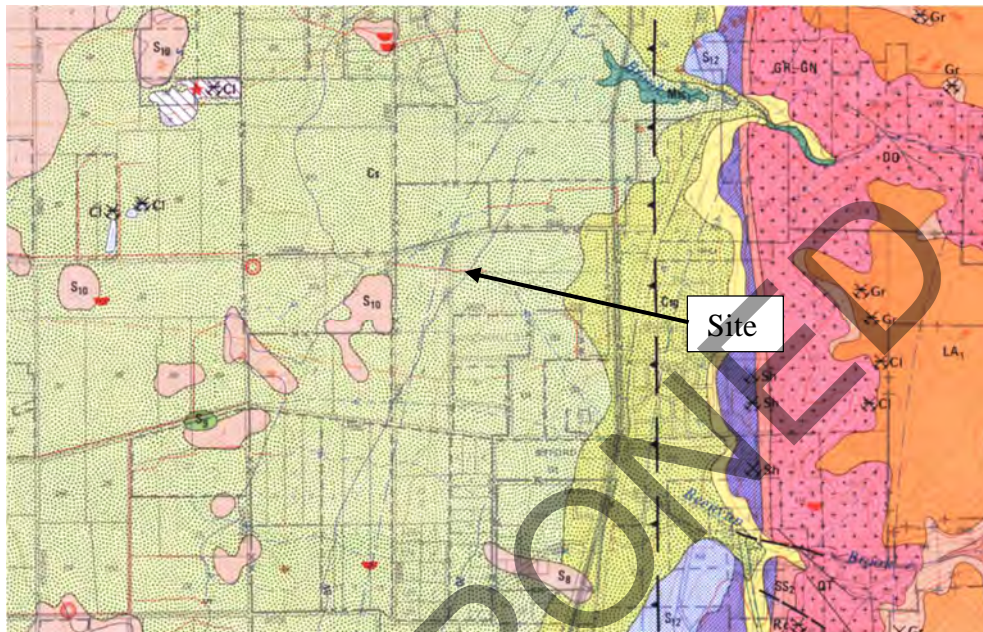


Figure 3.3 Soil types in Byford. Source: Geological Survey of Western Australia.

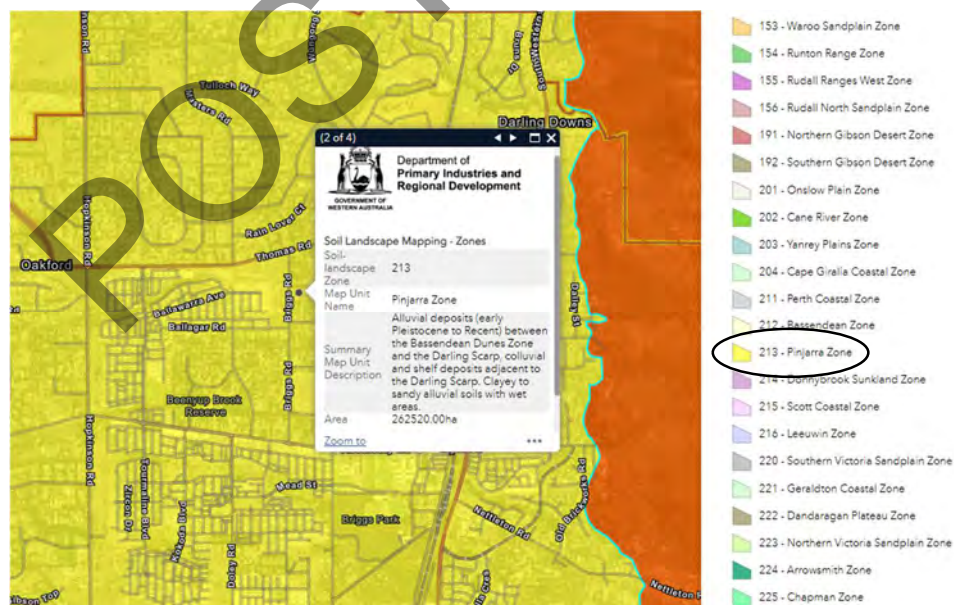


Figure 3.4 Soil zones. Source: DPIRD.

Figure 3.4 shows the soil zone recorded on site as 213 – Pinjarra Zone: Alluvial deposits between the Bassendean dunes and the Darling scarp, colluvial and shelf deposits adjacent to the Darling scarp. Clayey to sandy alluvial soils with wet areas.

Soil Survey and Analysis

A soil survey was carried out at the site to determine capability for the application of treated effluent. Soil investigations were conducted at two locations, as shown in Figure 3.1, using excavator-dug test pits (TP1 and TP2) to 1.4 m depth. Hard digging was encountered in both test pits at depth where excavation stopped. The soils were very similar in both test pits, so only minor variations would be expected throughout the area of interest. The same soil type was encountered in these investigations, with minor differences in the extent of layers. Profile descriptions are provided in the relevant sections that follow.

Generic samples of soil from each test pit were collected for subsequent laboratory analysis of pH, electrical conductivity, nutrient content, Phosphorus Retention Index and Dispersion Class. Various tables in each section describe the soil constraints in detail for each of the soils encountered.

Soils are characterised as loam, with a small amount of gravel, overlying some clay and compacted decomposing granite, typically below 2 m.

Given the physical and chemical characteristics of the subsoil in sampled areas of the site, and the large size of the site, effluent application via any approved method is possible.

Soil classification

Soils were also classified in accordance with the Dept of Agriculture and Food publication “Soil Groups of Western Australia” as shown in Figure 3.5 – see references.

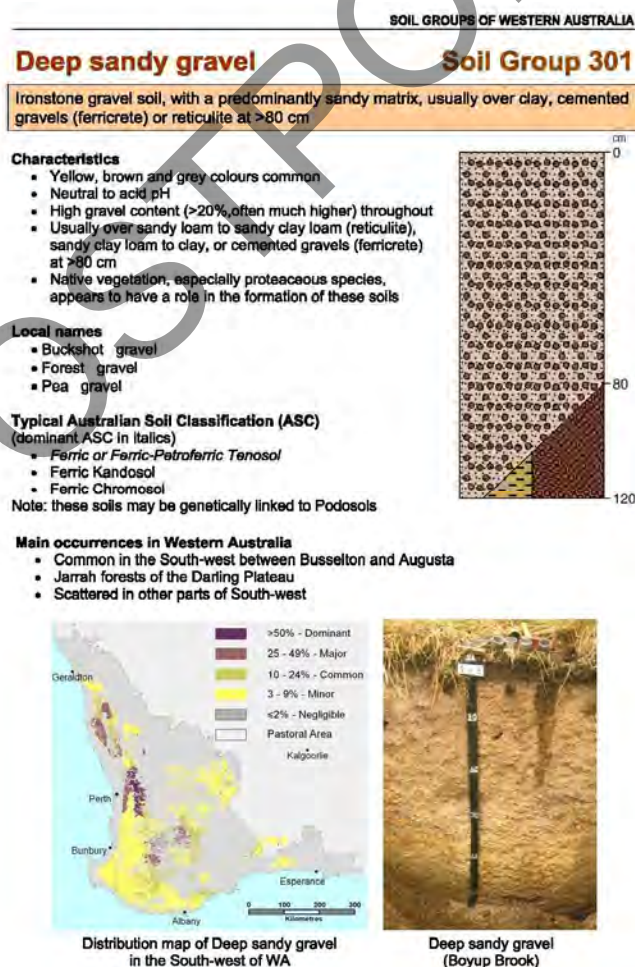


Figure 3.5 Characteristics of gravelly loamy soils.

Munsell soil colour

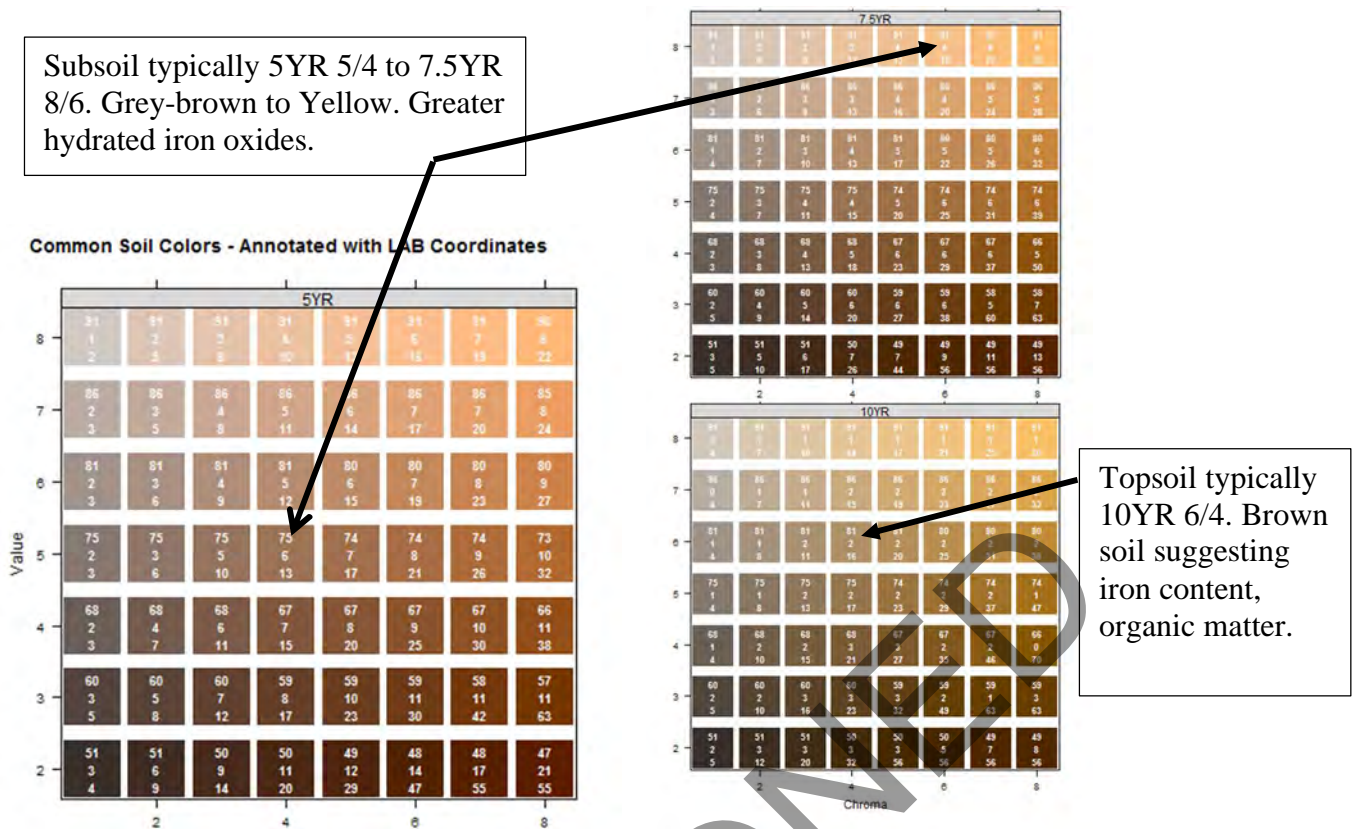


Figure 3.6 Typical colours of soils present on site.

3.3 Hydrology

A review of published literature was used to assess any possible constraints about the site, and then to make recommendations of appropriate wastewater treatment and land application areas.

In particular, the Government Sewerage Policy (GSP) requires that an onsite sewage system is not to be located within any area subject to inundation and/or flooding in a 10 percent Annual Exceedance Probability (AEP) rainfall event.

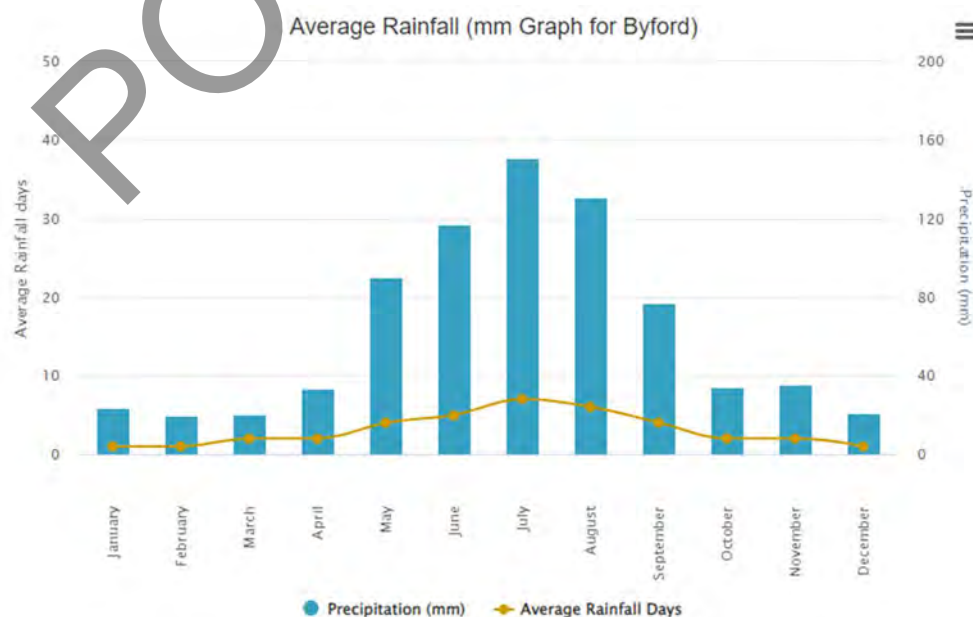


Figure 3.7 Annual rainfall for Byford.



Figure 3.8 Typical rainfall amount and rainy days for Byford.

Byford Long-Term Averages

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
Mean Max (°C)	31.4	31.6	29.6	25.8	22.0	19.2	18.0	18.7	20.2	22.9	26.4	29.4	24.6
Mean Min (°C)	16.9	17.2	15.7	12.6	9.3	7.6	7.1	7.3	8.3	9.8	12.7	14.9	11.6
Mean Rain (mm)	15.5	17.8	17.0	42.2	105.8	150.6	174.4	128.9	84.3	47.5	28.0	10.0	813.8
Mean Rain Days	2.5	2.3	3.9	7.3	12.3	15.5	17.9	15.7	13.6	9.1	6.1	3.3	109.2

Figure 3.9 Byford climate averages.

From Figures 3.7, 3.8 and 3.9 it is clear that most rainfall falls in winter but rainfall does fall in every month, and this pattern is consistent from year to year. Furthermore, even in winter, the number of rainy days does not exceed 18 or about two-thirds of each month. Annual rainfall 814 mm, number of rainy days = 109.

Peak flows for various Average Recurrence Interval (ARI) events - the Intensity Frequency Duration (IFD) data – for the site is shown in Figures 3.10 and 3.11. Taking the duration as 5 minutes and the probability of a severe rainfall event as 10% (AEP 10), then the graph and table suggest a Design Rainfall Depth of 9.91 mm. This is consistent with the anticipated maximum rainfall intensity for Byford and the surrounding region. Maximum rainfall about 174 mm for July = 5.5mm/day average, or 9.5 mm per rainy day.

Duration	Annual Exceedance Probability (AEP)						
	63.2%	50%#	20%*	10%	5%	2%	1%
1 min	1.81	2.01	2.63	3.08	3.53	4.16	4.66
2 min	3.20	3.50	4.49	5.21	5.94	6.95	7.76
3 min	4.28	4.69	6.06	7.04	8.04	9.43	10.5
4 min	5.16	5.67	7.37	8.58	9.83	11.5	12.9
5 min	5.90	6.51	8.49	9.91	11.4	13.4	15.0
10 min	8.52	9.44	12.4	14.6	16.7	19.7	22.1
15 min	10.3	11.4	15.0	17.6	20.2	23.8	26.7
20 min	11.6	12.9	16.9	19.8	22.7	26.8	30.0
25 min	12.7	14.1	18.5	21.6	24.8	29.2	32.7

Rainfall depth at AEP = 10% and storm duration 5 mins.

Figure 3.10 Rainfall depth for duration for Annual Exceedance Probabilities (AEP)

Given an AEP 10% and storm duration of 5 minutes then the anticipated rainfall intensity is 109mm/hr as calculated below. Using this value and the runoff coefficient for a grassed area (Figure 3.12) then a runoff flow value can be calculated as described below. The catchment area is deemed to be about the size of the LAA so that the impact of a severe rainfall event can be determined.

$$\text{Rainfall intensity} = \frac{\text{Design rainfall depth (mm)}}{\text{Duration (hrs)}}$$

$$\text{Duration} = 5 \text{ mins} = 0.0833 \text{ hr}$$

$$\text{Rainfall intensity} = \frac{9.91}{0.0833} = 118.96 \text{ mm/hr}$$

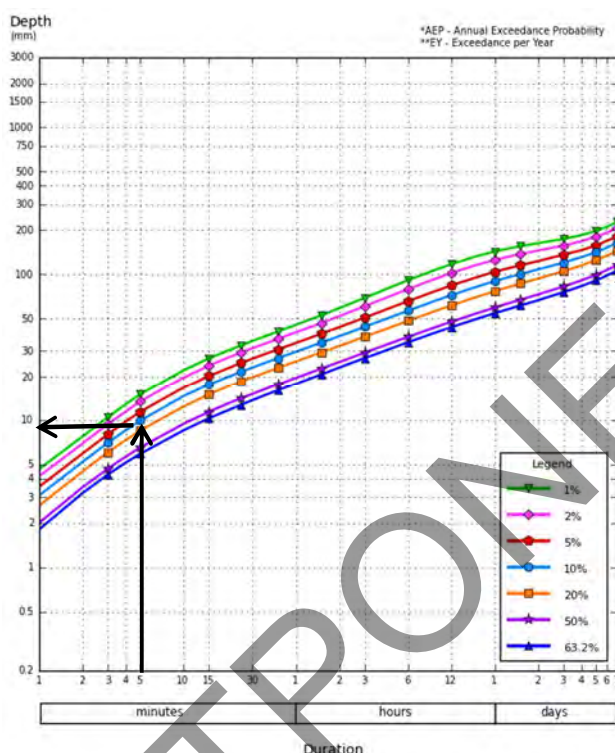


Figure 3.11 Graph of Design Rainfall Depth (mm) at various AEP levels.

COEFFICIENT OF RUNOFF = RUNOFF / RAINFALL	
SOIL TEXTURE	COEFFICIENT OF RUNOFF
Concrete, Roof, or Asphalt	1.00
Clay – Bare	0.70
Clay – Light Vegetation	0.60
Clay – Dense Vegetation	0.50
Gravel – Bare	0.65
Gravel – Light Vegetation	0.50
Gravel – Dense Vegetation	0.40
Loam – Bare	0.60
Loam – Light Vegetation	0.45
Loam – Dense Vegetation	0.35
Sand – Bare	0.50
Sand – Light Vegetation	0.40
Sand – Dense Vegetation	0.30
Grass Areas	0.35

$$\text{Runoff flow (L/s)} = \text{CIA}/3600$$

Where:-

C = Coefficient of runoff, I = Rainfall Intensity (mm/hr), A = Catchment Area (m²)

C = 0.35 (grass areas), I = 118 mm/hr and
A = 250 m² (one zone of proposed dripline LAA)

$$\text{Runoff Flow} = \frac{0.35 \times 118 \times 250}{3600} = 2.87 \text{ L/s}$$

With a slope of about 3-5% then the velocity of water movement across the sandy loam grassed-covered landscape would be less than 1 m/s (assuming width of irrigation area 10 m and 10 mm depth of water).

This poses no threat to the land application area, as water will be able to drain away through the natural ground.

Figure 3.12 Runoff coefficients for soils.

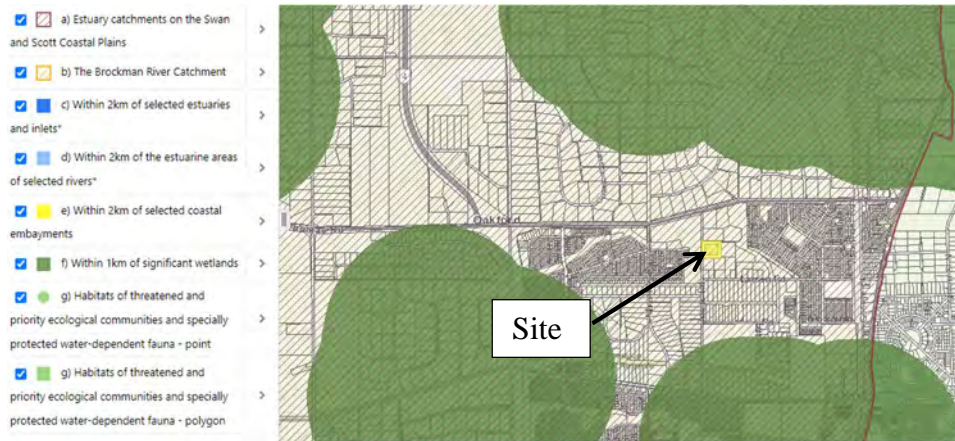


Figure 3.13 Sewerage sensitive areas. Source: DPL&H

As shown in Figure 3.14, the site is within the Swan coastal plain but not located near areas of sewerage sensitivity, such as wetlands and major watercourses.

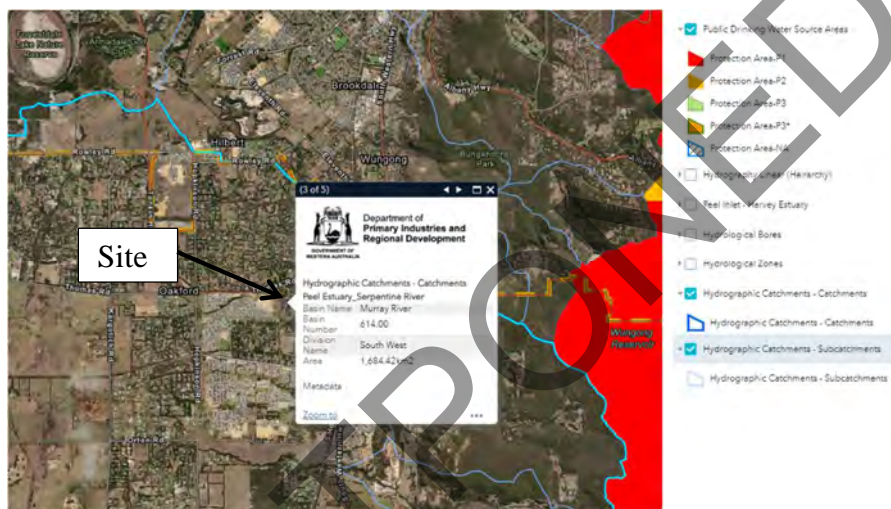


Figure 3.14 Public drinking water source areas. Source: DPIRD

Figure 3.15 shows the Peel Estuary and Serpentine River catchment. The site is not located in a public drinking water catchment.

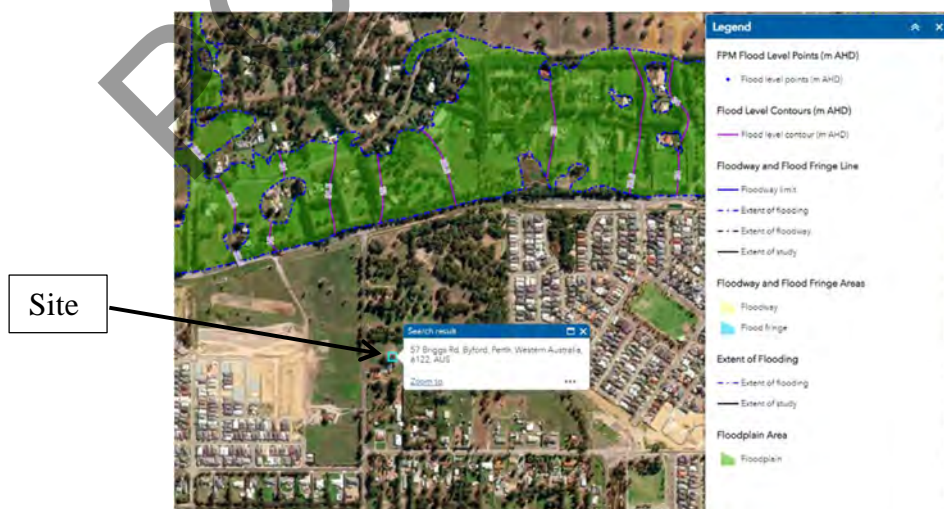


Figure 3.15 Flood hazard risk. Source: Department of Water and Environmental Regulation.

As indicated in Figure 3.16 the site is outside any major flooding risk.

There are no records for groundwater available for the site.

Table 3.1 Laboratory Test results. CSBP Bibra Lake.

Lab No		JFS23007	JFS23008
Name		TP 1	TP 2
Code		01/02/23	01/02/23
Customer		Briggs	Briggs
Depth		0-10	0-10
Colour		YWGR	YW
Gravel	%	35-40	55-60
Texture		2.0	2.5
Ammonium Nitrogen	mg/kg	1	< 1
Nitrate Nitrogen	mg/kg	1	< 1
Phosphorus Colwell	mg/kg	3	< 2
Potassium Colwell	mg/kg	32	< 15
Sulfur	mg/kg	14.1	20.2
Organic Carbon	%	0.20	< 0.05
Conductivity	dS/m	0.019	0.017
pH Level (CaCl ₂)		4.7	5.5
pH Level (H ₂ O)		5.8	6.5
DTPA Copper	mg/kg	0.70	0.21
DTPA Iron	mg/kg	28.50	7.00
DTPA Manganese	mg/kg	2.36	1.05
DTPA Zinc	mg/kg	0.11	2.15
Exc. Aluminium	meq/100g	0.278	0.053
Exc. Calcium	meq/100g	0.88	0.62
Exc. Magnesium	meq/100g	0.97	1.24
Exc. Potassium	meq/100g	0.07	0.03
Exc. Sodium	meq/100g	0.09	0.08
Boron Hot CaCl ₂	mg/kg	0.39	0.29
Phosphorus Retention Index		105.3	83.7
Dispersion Index		0.00	0.00

General Comments

Soil is moderately acidic, reasonably high in iron (as expected in local soils of this region). Generally, all other nutrients are low (unfertilized soil). Both samples have a good phosphorus retention index. Dispersion index suggests stable soil with low dispersion.

Results for cations calcium and magnesium were used to compare to sodium to enable Sodium Absorption Ratio (SAR) to be calculated. SAR is used to determine the sodicity of a soil and an assessment of any dispersion of clay aggregates. No dispersion is found in soils with a SAR value less than 3. The exchangeable sodium percentage (ESP) measures the proportion of cation exchange sites occupied by sodium. Soils are considered sodic when the ESP is greater than 6%, and highly sodic when the ESP is greater than 15%.

$$SAR = \frac{[Na]}{\sqrt{\frac{1}{2} [Ca + Mg]}}$$

$$ESP = \frac{[Na] \times 100}{[Ca + Mg + K + Na]}$$

Table 3.2 Calculations of SAR and ESP values.

Soil/site	Calcium meq/L	Magnesium meq/L	Potassium meq/L	Sodium meq/L	SAR	ESP
1. TP1	8.6	9.7	0.7	0.9	0.29	4.52%
2. TP2	6.2	12.4	0.3	0.8	0.22	4.06%

Table 3.3: Site Assessment

Feature	Description	Level of Constraint	Mitigation Measures
Climate	Average annual rainfall Byford historical records show an average of about 814 mm. Average no. of rain days per year 109 days. Average annual pan evaporation is about 1800 mm.	Low	NN*
Vegetation	Annual grasses. Established trees along the fencelines and near the existing structures.	Low	Some trees may need to be removed for development.
Slope, Erosion and Landslip	Slope is gentle, no evidence of sheet or rill erosion, and the erosion hazard is low. No evidence of landslip and landslip potential is low. Slope = 1°	Low	NN
Landform	Typically compacted topsoil, loamy well-draining subsoil. Crumbly decomposed granite below 2 m. Medium peds and fine gravel. Gentle planar slope.	Low	Any subsurface or substrata irrigation is suitable.
Rock Outcrops	No surface rock observed. Granite and laterite gravel encountered at depth in both test pits.	Low	NN
Exposure and Aspect	South facing slope with occasional trees, mostly grassed. Fair wind and sun exposure on most of the block	Low	NN
Drainage	No visible signs of surface dampness, spring activity or hydrophilic vegetation in the proposed effluent management area or surrounds. Loamy soil with minor gravel was observed in both test pits, some mottling in subsoil below about 1 m indicating seasonal variation in drainage.	Medium	Adopt DIR or DLR as per permeability studies
Groundwater	No signs of groundwater table. Perched water table unlikely, due to good drainage and soil structure.	Low	NN
Imported Fill	No imported fill material was observed anywhere on the site.	Nil	NN
Land Available for LAA**	Considering all the constraints and buffers, the site has ample suitable land for the land application area for treated effluent.	Nil	NN
Slope of LAA	The proposed effluent management areas are, or can be, reasonably level.	Low	NN
Run-on and Runoff	Negligible stormwater run-on and minor run-off hazard. Irrigation areas can be bunded if required.	Low	NN
Buffer Distances	All relevant buffer distances in the Code are achievable from the proposed effluent management area.	Low	NN

*NN: not needed **LAA: Land Application Area

*** Laterite and granite sheet, of varying depth and thickness, is occasionally found during excavation. This may result in an alternative location within the block to install tanks and the wastewater system or using machinery to break up the rock. Both options are common practice.

4. Test pits

4.1 Test pit 1 GPS 32°12'34.382" S, 115°59'35.466" E. Altitude 38 m. Slope = 1°.

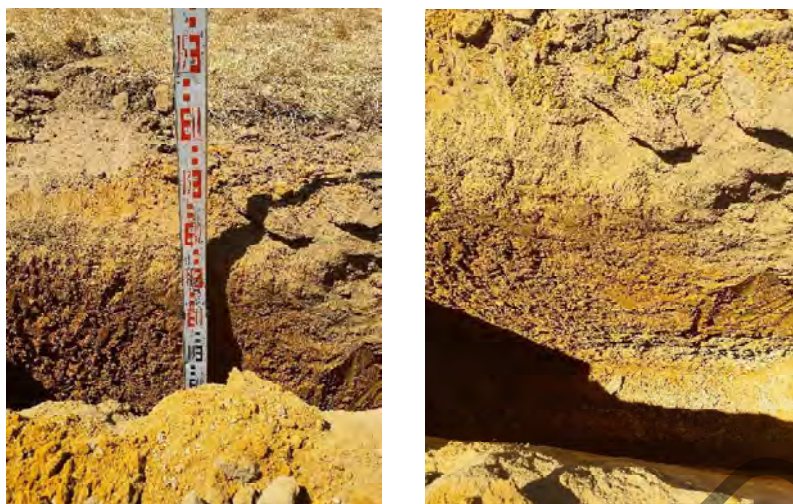


Figure 4.1 (L) Depth achieved 1300 mm. (R) Soil profile for TP1.



Figure 4.2 (L) Spoil. (R) Excavation of test pit.

Comments on TP1

Compacted grey brown silty sand topsoil was found in first 200 mm. Yellow-brown sandy loam, peds <50mm extended another 700 mm and transitioned to yellow and grey sandy loam for another 400mm. Some laterite gravel <10 mm throughout the subsoil.

Dispersion and gypsum responsiveness

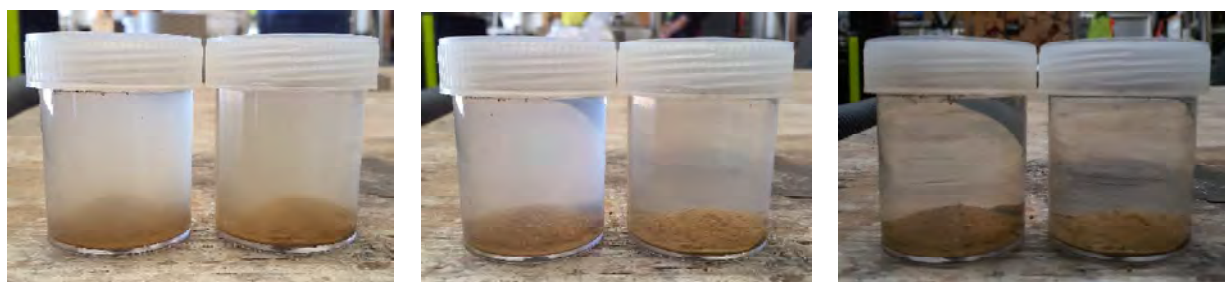


Figure 4.3 Dispersion and gypsum responsiveness TP1. In each photo the RHS jar is soil in gypsum solution. LHS jar is soil in water. (L) after 15 minutes, (M) after 2 hours, (R) after 20 hours.

Comments on dispersion of soils TP1

Very minor dispersion evident. CSBP result: 0 = no dispersion. The murkiness in the water jar is clearing, but there is a still some response to gypsum as shown in jar tests, suggesting that this could be used to enable better water infiltration in the irrigation area.

Permeability studies

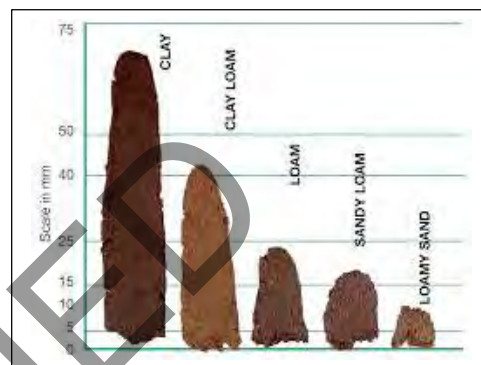
A sample of soil from the profile was taken and a simple ribbon test performed: the results of which are shown in Table 4.1. A constant head permeameter was employed to measure the infiltration rate into the soil, and the results are summarised in Table 4.2.

Soil category by Ribbon test

Estimated soil category by Ribbon test:

Table 4.1 Results of ribbon test. TP1

Ribbon length (mm)	20
Feel of sample	Slightly gritty
Soil category	3 – loam



Soil category by Permeability

Use of permeameter to measure water movement into the soil as per ASNZS 1547:2012.

Depth of auger hole = 50 cm

Depth of water in auger hole = 40 cm

Average radius of auger hole = 4 cm. Depth to any impermeable layer (if known) > 130 cm

Soil was ☐ wet ☐ moist or ☒ dry at time of investigation.

Table 4.2 Results of permeability studies TP1.

Time (sec)	Level in tube (mm)	Drop in level (mm)
Start 0	620	
60	740	120
120	830	90
180	930	100
240	1030	100
	Average	102.5/min
K _{sat} (from AS1547)	0.77 m/day	

Ksat VALUES					
Instrument Data					
Reservoir internal Diameter (mm)		==>	45		4.5
Breather pipe Outer Diameter (mm)		==>	0		0
Test Hole radius (mm)		==>	40		4
Water Depth in Test Hole (mm)		==>	400		40
Test Results			Test Results		
Water Fall Rate (mm)/min	Flow Rate cm ³ /min	Ksat cm/min	Ksat m/day	Water Fall Rate (mm)	
102.5	10.3	163.02	0.0532	152.5	
103.5	10.4	164.61	0.0538	153.5	
104.5	10.5	166.20	0.0543	154.5	
105.5	10.6	167.79	0.0548	155.5	
106.5	10.7	169.38	0.0553	156.5	
107.5	10.8	170.97	0.0558	157.5	
108.5	10.9	172.56	0.0564	158.5	
109.5	11	174.15	0.0569	159.5	
110.5	11.1	175.74	0.0574	160.5	
111.5	11.2	177.33	0.0579	161.5	

Figure 4.4 Ksat determination.

Soil category from permeability readings: 3 (weakly structured loam).



Figure 4.5 (L) Ribbon test. (R) Permeability TP1.



Figure 4.6 Soil fractions for sample TP1.

Comments

Soil is gravelly loam. Soil category = 3.
CSBP result; 35-40% gravel. Texture: loam. Colour: yellow grey.

WATER Installations Pty Ltd				Soil Profile Borehole Log		Date: 31/01/2023	Test Pit number: TP1
Client: Darren Blowes. Address: 57 Biggs road, Byford.							
Excavation type: Mini excavator.				Groundwater Depth: >1300mm			
Depth (metres)	Excavation Ease	Graphic Log	Material description and field notes	Moisture			
			Soil Group Name: Deep sandy gravel				
			Rock Description: Gravel <10mm				
	E		Yellow grey silty sandy loam			D	
0.5	E		Yellow sandy loam			D	
1	F		Yellow and grey sandy loam, gravel.			D	
	VH					D	

Key

- Gravelly
- Parent rock
- Laterite
- Clay
- Clayey loam
- Sandy loam
- Topsoil

Figure 4.7 Soil profile log TP1.

Table 4.3 Soil Assessment – TP1

Note: These comments are a review of the generic soil fraction. This is both a summary and comments of the laboratory testing as shown in Table 3.1.

Feature	Assessment	Level of Constraint	Mitigation Measures
Cation Exchange Capacity (CEC)	Main cations have low concentration (except iron), and the sodium level is low compared to magnesium.	Low	Soil amelioration unnecessary
Electrical Conductivity	EC and TDS low (12.16 mg/L). [0.019 dS/m]	Low	Monitoring of EC not necessary
Emerson Aggregate Test	Minimal dispersion shown in jar tests. EA Class 2. CSBP test result = 0 stable soil.	Low	Soil amelioration unnecessary
pH	4.7 (5.8 in water) which is slightly acidic. Would expect soil conditions to affect some plant growth, but some soil amendments can occasionally be added.	Low	Addition of alkaline wastewater may restore to optimum pH level
Rock Fragments	Gravel up to 10 mm, typically below 1 m. Figure 4.6 shows some gravel in the screen.	Low	Rock breaking unlikely to be necessary.
Sodicity (ESP)	Sodium concentration is very low – 20.7 ppm. Exchangeable Sodium Percentage (ESP) 4.52%, (<6%=non sodic >15%=highly sodic)	Low	Long-term soil sodicity monitoring unnecessary.
Sodium Absorption Ratio (SAR)	Sodium concentration is lower than Magnesium and Calcium concentrations in the tested samples; SAR is low (0.29). Dispersion tests confirm low sodicity. SAR is usually only a problem for dispersion and permeability if value >5.	Low	NN*. Sodicity and dispersion issues are not expected to pose a constraint.
Phosphorus Retention Index	105.3. Very good PRI, should remove phosphates. Soils above PRI 20 are accepted to remove phosphorus from wastewater.	Low	NN
Soil Depth	Topsoil: 200 mm	Low	Shallow subsurface irrigation in topsoil possible.
	Subsoil: >200 mm. Loamy soil becoming heavier below 900 mm. Excavation stopped at 1300 mm, some small gravel below 1000 mm.	Low	Shallow subsurface irrigation possible, on-site excavation may allow for other dispersal methods.
Soil Permeability and Design Loading Rates	Measured at 0.77 m/day saturated conductivity (K_{sat}) (AS/NZS1547:2012). Category 3 (weakly structured loam); 10-15 mm/day Design Loading Rate (DLR) for beds (30 mm/d for STS) and 4mm/d for irrigation system.	Low	NN
Soil Texture and Structure	Gravelly sandy loam (Category 3), although may be heavier at depth. Permeability soil category =3. CSBP: Gravel-35-40% Texture-2.0 (loam)	Low	NN
Watertable Depth	Groundwater not encountered; pit terminated at 1300 mm. Some evidence of mottling in subsoils suggests intermittent saturation.	Low	Any dispersal method recommended

*NN: not needed

4.2 Test pit 2 GPS 32°12'33.892" S, 115°59'34.625" E. Altitude 38 m. Slope = 1°.

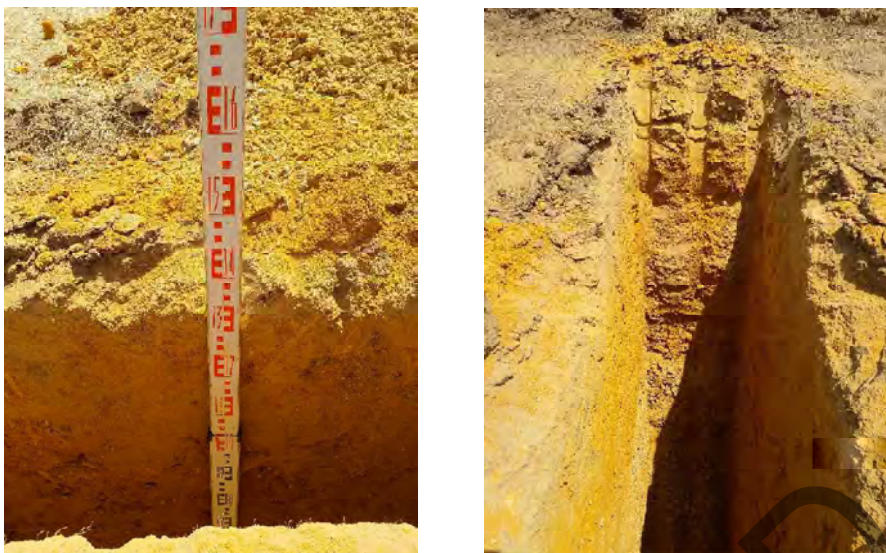


Figure 4.8 (L) Depth achieved 1450 mm. (R) Soil profile for TP2.



Figure 4.9 (L) Spoil. (R) Excavation of TP2.

Comments on TP2

Yellow grey fine sandy topsoil was found in first 250 mm. Yellow and white loam with extended another 1200 mm with gravel up to 30 mm. Excavation stopped at 1450 mm due to hard digging.

Dispersion and gypsum responsiveness



Figure 4.10 Dispersion and gypsum responsiveness TP2. In each photo the RHS jar is soil in gypsum solution. LHS jar is soil in water. (L set) after 15 minutes, (M) after 2 hours, (R set) after 20 hours.

Comments on dispersion of TP2 soil

Dispersion is minimal and water solution cleared rapidly. CSBP result: 0 = no dispersion. There was a very minor response to gypsum, and it is not likely to be required to assist in infiltration.

Permeability studies

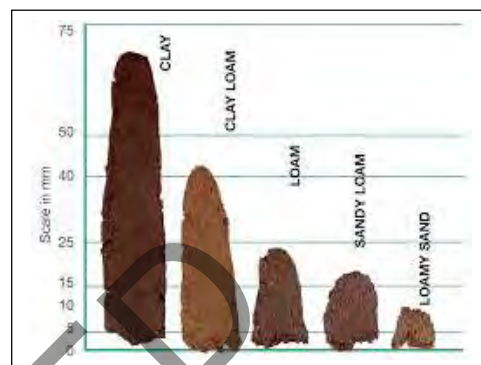
A sample of soil from the profile was taken and a simple ribbon test performed: the results of which are shown in Table 4.4. A constant head permeameter was employed to measure the infiltration rate into the soil, and the results are summarised in Table 4.5.

Soil category by Ribbon test

Estimated soil category by Ribbon test:

Table 4.4 Results of ribbon test. TP2

Ribbon length (mm)	25
Feel of sample	gritty
Soil category	3 – loam



Soil category by Permeability

Use of permeameter to measure water movement into the soil as per ASNZS 1547:2012.

Depth of auger hole = 50 cm

Depth of water in auger hole = 45 cm

Average radius of auger hole = 4 cm. Depth to any impermeable layer (if known) > 145 cm

Soil was ☐ wet ☐ moist or ☒ dry at time of investigation.

Table 4.5 Results of permeability studies TP2.

Time (sec)	Level in tube (mm reading)	Drop in level (mm)
Start 0	620	
60	660	40
120	690	30
180	720	30
240	750	30
	Average	130/min
K_{sat} (from AS1547)	0.82m/day	

Ksat VALUES					
Instrument Data					
Reservoir internal Diameter (mm)	====>	45		4.5	
Breather pipe Outer Diameter (mm)	====>	0		0	
Test Hole radius (mm)	====>	40		4	
Water Depth in Test Hole (mm)	====>	450		45	
Test Results					
Water Fall Rate (mm)/min	Flow Rate cm ³ /min	Ksat cm/min	Ksat m/day	Test Results Water Fall Rate (mm)	
130	13	206.76	0.0569	180	
131	13.1	208.35	0.0573	181	
132	13.2	209.94	0.0577	182	
133	13.3	211.53	0.0582	183	
134	13.4	213.12	0.0586	184	
135	13.5	214.71	0.0590	185	
136	13.6	216.30	0.0595	186	
137	13.7	217.89	0.0599	187	
138	13.8	219.48	0.0604	188	
139	13.9	221.07	0.0608	189	

Figure 4.11 Ksat determination.

Soil category from permeability readings: 3 (weakly structured loam).



Figure 4.12 (L) Ribbon test. (R) Permeability TP2.



Figure 4.13 Soil fractions of sample TP2.

Comment on soil fractions

Soil is loam with coarse sand particles and some gravel. Soil category = 3.
CSBP result; 55-60% gravel. Texture: clay loam. Colour: yellow.

Soil Profile Borehole Log				Date: 31/01/2023	Test Pit number: TP2
Client: Darren Blowes. Address: 57 Briggs road, Byford.					
Excavation type: Mini excavator.				Groundwater Depth: >1450mm	
Depth (metres)	Excavation Ease	Graphic Log	Material description and field notes	Moisture	
			Soil Group Name: Deep sandy gravel		
			Rock Description: Weathered gravel <30mm		
	E		Yellow grey silty sandy loam	D	
0.5	E			D	
1	F		Yellow and white sandy loam, gravel.	D	
	VH			D	
1.5					

Gravelly

Parent rock

Laterite

Clay

Clayey loam

Sandy loam

Topsoil

Key

Figure 4.14 Soil profile log TP2.

Table 4.6 Soil Assessment – TP2

Note: These comments are a review of the whole soil fraction. This is both a summary and comments of the laboratory testing, as shown in Table 3.1.

Feature	Assessment	Level of Constraint	Mitigation Measures
Cation Exchange Capacity (CEC)	Main cations have low concentration (except iron), and the sodium level is low compared to calcium and magnesium.	Low	Soil amelioration unnecessary
Electrical Conductivity	EC and TDS low (10.88 mg/L). [0.017 dS/m]	Low	Monitoring of EC not necessary
Emerson Aggregate Test	Minimal dispersion shown in jar tests. EA Class 2. CSBP test result = 0 non dispersive soil.	Low	Soil amelioration unnecessary
pH	5.5 (6.5 in water) which is slightly acidic. Would expect soil conditions to affect some plant growth, but some soil amendments can occasionally be added.	Low	Addition of alkaline wastewater may restore to optimum pH level
Rock Fragments	Some weathered gravel as seen in Figure 4.13. Up to 30 mm encountered throughout test pit.	Low	No consideration required.
Sodicity (ESP)	Sodium concentration is low – 18.4 ppm. Exchangeable Sodium Percentage (ESP) 4.06%, (non-sodic <6%).	Low	Long-term soil sodicity monitoring is unnecessary.
Sodium Absorption Ratio (SAR)	Sodium concentration is lower than Magnesium and Calcium concentrations in the tested samples; SAR is low (0.22). Dispersion tests confirm low sodicity. SAR is usually only a problem for dispersion and permeability if value >5.	Low	NN*. Sodicity and dispersion issues are not expected to pose a constraint.
Phosphorus Retention Index	83.7. Good PRI, sufficient to remove phosphates. Soils above PRI 20 are accepted to remove phosphorus from wastewater.	Low	NN
Soil Depth	Topsoil: 250 mm	Low	Shallow subsurface irrigation in topsoil possible.
	Subsoil: >250 mm. Loamy soil changing into clay loam below 1400 mm. Excavation stopped at 1450 mm, hard digging but impermeable rock not encountered.	Low	Shallow subsurface irrigation possible, on-site excavation may allow for other dispersal methods.
Soil Permeability and Design Loading Rates	Measured at 0.82 m/day saturated conductivity (K_{sat}) (AS/NZS1547:2012). Category 3 (weakly structured loam); 10-15 mm/day Design Loading Rate (DLR) for beds (30 mm/d for STS) and 4 mm/d for irrigation system.	Low	NN
Soil Texture and Structure	Gravelly loam (Category 3), although expect heavier at depth. Permeability soil category = 3. CSBP: Gravel 55-60% Texture-2.5 (clay loam)	Low	NN
Watertable Depth	Groundwater not encountered, pit terminated at about 1450 mm. Some mottling below 1200 mm suggesting intermittent saturation.	Low	Any dispersal method suitable.

NN* not needed

5. Discussion

It is reasonable to suggest that soils over whole site are similar – gravelly loams over clay loam and some weathered stone at depth. The only restriction for leach drains and tank siting may be the evidence of seasonal saturation below 1 m, however, this appeared to be minor. Permeability was good in both test pits, situated 100 m or more from the creek line, and Category 3 soils are found on site (loams) with good phosphorous retention. In all areas, dripline effluent and flatbed drains would be permissible or conventional leach drains may also be possible depending on local siting of system, which is determined upon excavation.

The Shire of Serpentine-Jarrahdale's position with regards to effluent disposal requires an application for the use of an onsite effluent disposal system for all new dwellings/sheds that are not connected to sewer and for renovations and/or additions to existing dwellings.

Government Sewerage Policy

Relevant sections (e.g. 5.2.1, 5.2.2 and 5.2.3) that discuss setbacks and separation from the water table and in relation to lot size and soil types are briefly:

- An onsite sewage system is not permitted in any area subject to inundation and/or flooding in a 10% Annual Exceedance Probability (AEP) rainfall event. This is discussed in detail in Section 3.3 of this report.
- In loams and heavy soils, a vertical separation distance from the highest known groundwater table is to be a minimum of 0.6 m (for lots outside of sewage sensitive and public drinking water source areas).
- Where slope exceeds one in five (1:5 or 20%) the land application area should be engineered to prevent run-off (including levelling, bunding of LAA and interceptor/cut-off drains to divert stormwater intrusion to LAA).
- Local government may approve the location of land application areas outside of building envelopes where the proposed location meets the requirements outlined above.

All of these conditions can be met in the proposed development.

Considering the whole site, calculations of loading rates based on soil assessments are as follows:

Hydraulic/Design Loading Rate

From AS/NZS 1547:2012, Tables L1 and M1, Soil Category 3. Worst case is weakly structured loam (TP1 Ksat approx 0.77 m/d).

DLR Trenches and beds (Table L1) 10-15 mm /day for leach/septic systems and 30 mm/d for Secondary Treatment Systems. **DIR** Drip or spray irrigation (Table M1) = 4 mm.

While the GSP provides information in Schedule 2, Table 3 for the required LAA, this is a commercial development so calculations for the LAA are provided here. Furthermore, as the site is within the coastal plain then only an STS can be installed (septic systems are ignored).

Land Application Area (LAA) Calculations

The following outlines options for the wastewater irrigation systems. These are provided as examples of appropriate system sizing. Childcare centre (122 people – staff and children @ 45L/p/d), total daily volume = 5490 L.

Based on the results of the site and soil assessment, Health Regulation 49 that describes the surface area of drains and the calculations listed above, the overall land capability of the proposed onsite sewage system is as follows:

STS

Dripline irrigation $5490 \div 4 = 1373 \text{ m}^2$.

Leach drains $5490 \div (1.5 \times 30) = 122$ m. Assume DLR = 30, SA drains 1.5 m^2 . Proposal 2 pairs of alternating drains of 30 m length.

Flatbeds $5490 \div (2.4 \times 30) = 76$ m. Proposal. 4 beds x 19 m long drain.

Conventional leach drains require greater depth of burial, and hard digging may be encountered in some areas of the site. Flatbeds may require a sand cover and so dripline irrigation is recommended, however the developer has choice. All of these systems can be accommodated on the available land application area.

Secondary Treatment System (STS) Recommendations

Any STS system can be used. There is no need for extra nutrient retention and PRI is high over the site. For dripline you will need to ensure disinfection as dispersal is typically substrata, and may be exposed at some times, but for flatbeds and leach drains this is not required as this is situated in subsoil.

Drains will require a diversion valve which can be changed at every service (3 months) by the service technician. Alternatively, a KRain or similar hydraulic valve, which automatically shifts water to a different bed each time the pump is employed, can be installed.

Final statement

There is enough land application area space available in the proposed development area to accommodate the proposal with new structures and effluent dispersal, dependant on final design and regulatory requirements. Permeability is good, so at most 1373 m^2 of irrigated area for a secondary treatment system is required for the calculated design load of 5490 L/day. Depending on Council regulations, there could be more or less footprint for leach drains/flatbeds and calculations using particular surface areas of drains and reduced volumes, based on occupancy and staffing, may allow a smaller area than this.

For a secondary treatment systems the, irrigation area should be as banded as possible or required on slope, although the tank system can be downhill and slope is only about $1.5\text{-}5^\circ$. Effluent is typically pumped.

An indicative (suggestion only) area for wastewater effluent dispersal is shown in Figure 5.1. However, setbacks from boundaries and buildings need to be followed as per Council requirements.

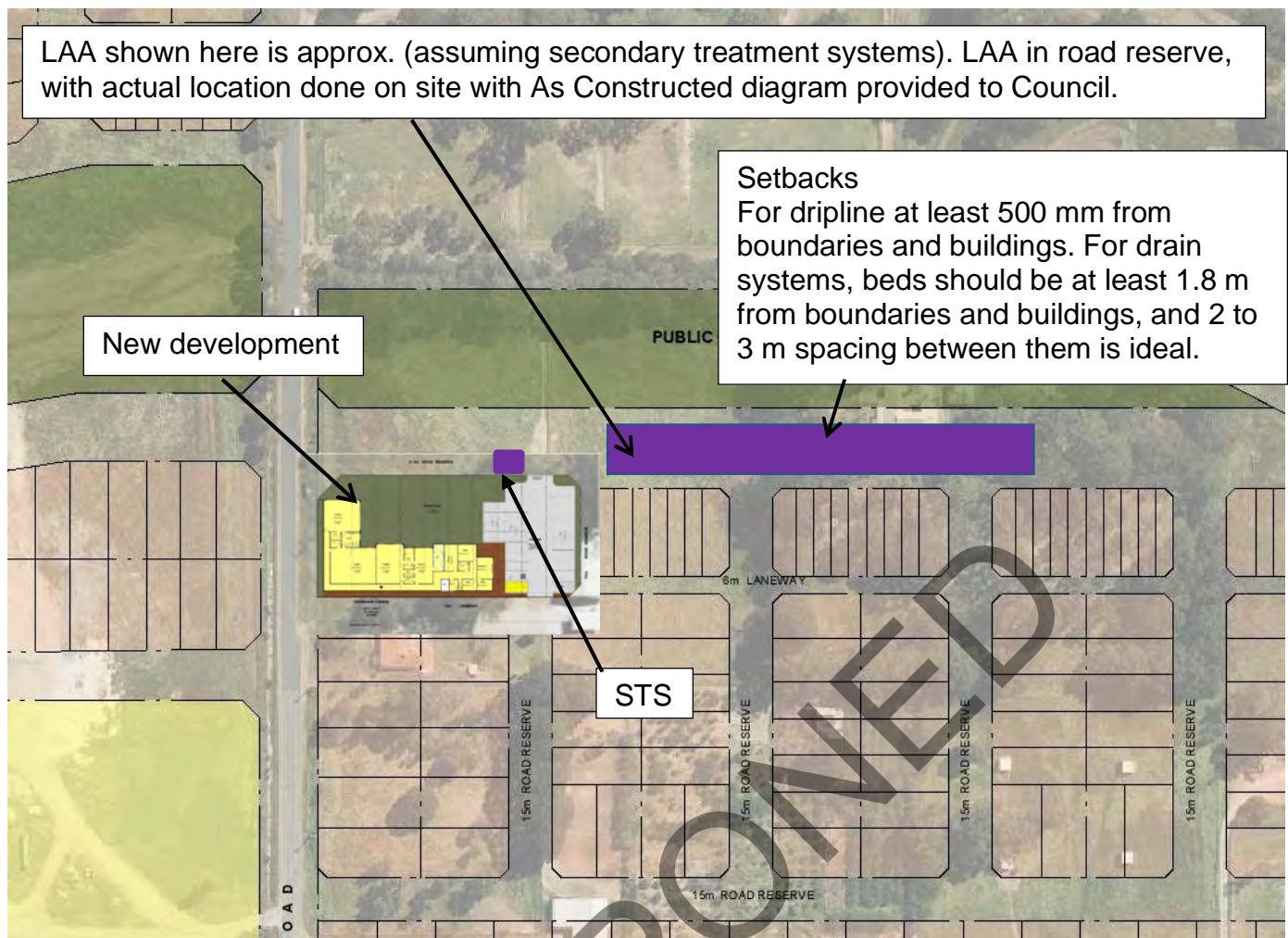


Figure 5.1 Indicative areas for wastewater treatment system.

6. References

- Earth Colors - a guide for soil and earthtone colors. (1996). Globe Program. Chicago, USA.
- King, P. and Wells, M. (1990). Darling Range Rural Land Capability Study. Land Resources Series No. 3. Dept Agriculture, Perth.
- McDonald, R, et al (1990) Australian Soil and Land Survey Field Handbook. Inkata Press, Melbourne.
- Schoknecht, N and Pathan, S (2013). Soil groups of Western Australia: a simple guide to the main soils of Western Australia (4th edition). Department of Agriculture and Food. Perth. Report 380.

7. Information on Secondary Treatment Systems (STS)

This is a generic description of considerations for a STS. Further information about the operation and maintenance of these systems can be found from manufacturers and suppliers.

1. Consequences of overloading system.

Every Secondary Treatment System (STS) or septic or wastewater treatment system gradually accumulates sludge and scum. This is because the scum that floats on the surface is mainly oils, grease and fats, and these substances are not readily broken down by the bacteria. Sludge builds up on the bottom as this is foodstuffs and materials that aren't broken down, as well as a build-up of dead bacteria. Literally millions of bacteria die every day and this accumulates as sludge. Should the system experience overloading from too many people using and contributing to the wastewater stream then there is simply not enough retention time for the microbes and processes that occur to satisfactorily break down the solids, so more sludge and scum accumulate, and

untreated sewage passes from one chamber to another, and may eventually be pumped out to irrigation.

In this scenario, eventually, your system will require a pump out – typically anywhere from two to five years.

2. Consequences of under-loading the system.

A Secondary Treatment System relies on a balance between food (household wastewater) and microbes. If not enough wastewater enters the treatment plant (due to homeowners away on holiday, few people staying in home) then microbes run out of food and die – more sludge accumulates. However, the most important effect is that, should a large volume of wastewater suddenly enter the system then there aren't enough microbes to break this down and so untreated sewage passes through the system.

3. Requirements for servicing and maintenance (by authorised Service Technician).

Service Personnel need clear access to your system so that they can carry the required testing and cleaning equipment from their vehicle to the tank/s, and so that they can easily remove hatches and undertake the range of tasks performed at each service. Please:

- Do not cover tanks and hatches with soil, cement, paving or any material.
- Do not prevent quick and easy access to any inspection openings.
- Do not allow roof or surface water to enter any part of the system.
- Allow free access to your property for the service person. Ensure that the gates are unlocked, your dogs are locked up and your children are supervised.
- Keep plants and grass monitored and maintained on land application areas (irrigation zone/s).

4. Homeowners responsibilities

Here are some suggestions that will help to ensure the optimum operation of your wastewater treatment system.

Washing Machines

Try to evenly spread your washing over a period of a week. Avoid where possible to wash everything in one day. It puts too much water and alkaline substances in the system in a short time and your treatment plant will struggle to cope. Liquid soaps breakdown easier than powder types, and they generally contain less salt and are at a lower pH – both of which will affect soils and plant growth. Try not to use too much soap of any type.

Things to Avoid

Chlorine, disinfectant, ammonia, acids, bleaches, caustics and heavy chemical products, nappy pre-soaker products, antibacterial products, fat, oil, grease, milk, toilet deodorizers and cleaners etc are some of the types of products that will cause the bacteria to die off in your STS. It will recover but may cause some odours in the short term.

Don't allow foreign objects, (eg. Nappy liners, disposable nappies, tampons, pads, condoms etc) to enter the system. They do not breakdown and can cause problems.

Avoid pouring large quantities (½ litre or more) of beer, flour, yeast, wine, milk, fruit juice or oils into the system. Products that are acidic may affect bacteria production. (Milk, beer and fruit juices, for example, often contain large amounts of sugar which is digested by some bacteria that rob the water of oxygen, and this, in turn, stops the growth and working of those bacteria that rely on oxygen to survive).

5. Types of products and materials that should not enter the STS plant.

You must try to use environmentally friendly cleaning products as any product used that kills bacteria is harmful to your system. If you wish to use some of the harsher cleaning products, such

as bleach, nappy cleaning products and any disinfectants, it is suggested that you use a bucket and discard the contents in a hole in a disused area of the garden.

Some other things that may cause problems are antibiotics or people who are on chemotherapy. Antibiotics are designed to kill bacteria in your body, and they also wipe out these good bacteria working hard in the STS. We do not suggest that you stop your medication, just expect that the treatment system may not function well for a short time.

It is fair to suggest that all products should be used in moderation.

Surface cleaners - when using surface cleaners try to wipe excess cleaner with a disposable cloth and discard contents into the bin.

Toilet cleaners - cream cleaner or washing soda (Sodium carbonate).

General cleaners – bicarb soda (Sodium hydrogen carbonate), vinegar (not too much).

Floor cleaners - use hot water and detergent.

Laundry powders and liquids - use suitable products that contain low phosphorus and low salt (used as bulking/fill agents).

Do Not Allow These to Enter Your STS (not down the drain)

- oil, paint and chemicals
- drain cleaning or clearing products
- methylated spirits, kerosene, acetone or any other solvents
- flea or tick wash
- oven cleaners
- plastics of any type
- disposable nappies, sanitary napkins



End of document.

10.1.5 - Proposed Child Minding Centre - Lot 57 Briggs Road, Byford (PA23/172)

Responsible Officer:	Manager Statutory Planning and Compliance
Senior Officer:	Director Development Services
Disclosure of Officers Interest:	No Officer involved in the preparation of this report has an interest to declare in accordance with the provisions of the <i>Local Government Act 1995</i> .

Authority / Discretion

Quasi-Judicial	When Council determines an application/matter that directly affect a person's right and interests. The judicial character arises from the obligation to abide by the principles of natural justice. Examples of quasi-judicial authority include local planning applications, building licences, applications for other permits/licences (e.g. under Health Act, Dog Act or Local Laws) and other decisions that may be appealable to the State Administrative Tribunal.
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Proponent: Apex Planning
Owner: DRB Development Pty Ltd
Date of Receipt: 10 March 2023
Lot Area: 2.0124ha (Planning Parcel 2,392m²)
Town Planning Scheme No Zoning: 'Urban Development'
Metropolitan Region Scheme Zoning: 'Urban'

Report Purpose

The purpose of this report is for Council to consider endorsing the Responsible Authority Report (RAR) prepared for the development application for a 'Child Minding Centre' on Lot 57 Briggs Road, Byford. The development proposes the construction of a new Child Minding Centre for 104 children, associated outdoor play areas, landscaping, signage and car parking.

The development has an estimated construction value of \$2.05 million and the applicant has opted in for the Metro Outer Joint Development Assessment Panel (MODAP), to determine the application. The MODAP will replace Council as the decision-making authority for the application in accordance with the *Planning and Development (Development Assessment Panels) Regulations 2011*. The report is presented to Council to consider the RAR that will be presented to the MODAP, consistent with established delegations.

The RAR, as contained in **attachment 1** recommends that the application be approved subject to conditions. The proposal is considered generally consistent with the objectives of the 'Urban Development' zone, Structure Plan and Policy framework. The report has addressed relevant matters including residential amenity, built form, traffic movements and noise management. For the reasons outlined in the report, it is recommended that Council endorse the RAR which recommends approval of the application by the MODAP, subject to conditions.

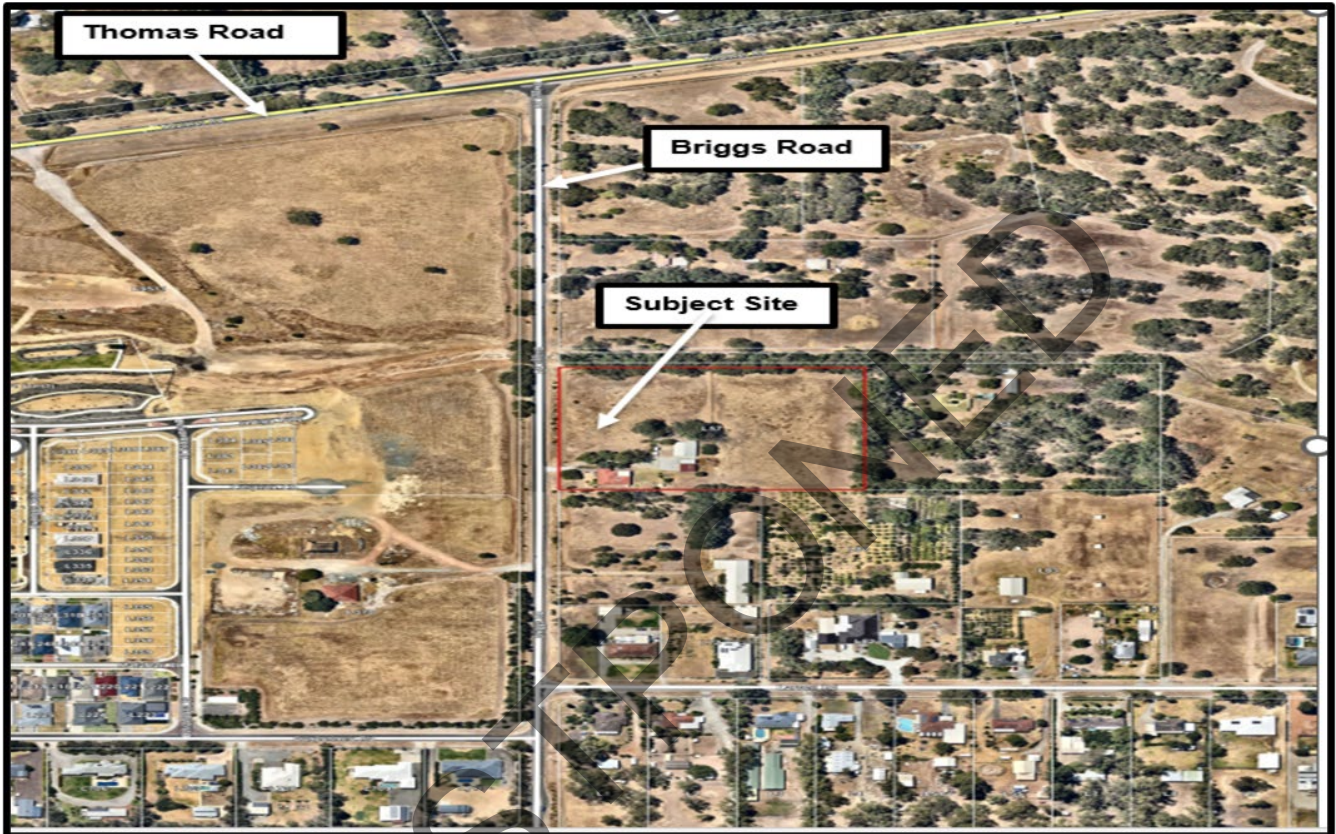
Relevant Previous Decisions of Council

There is no previous Council decision relating to this matter.

Background

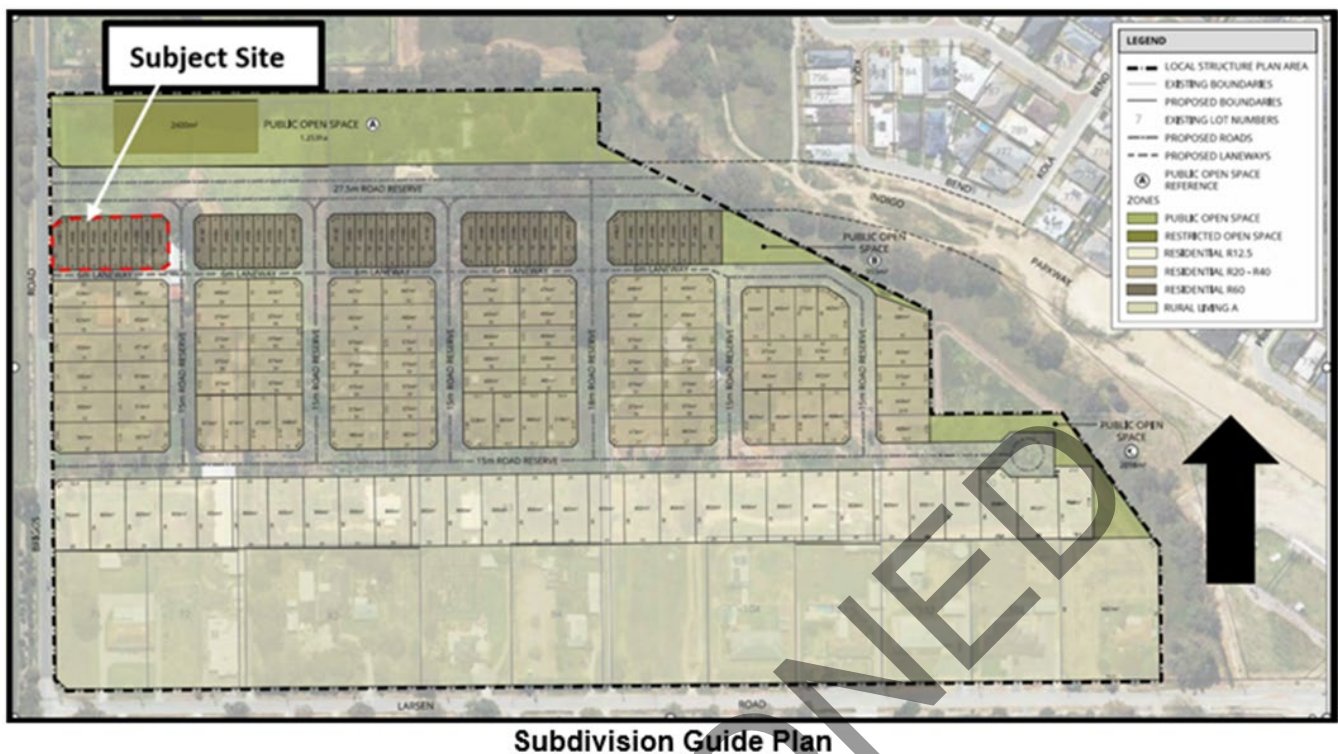
Existing Development

The subject site forms part of Lot 57 Briggs Road which has a total area of 2.0124ha. The site is currently designated as 'Residential' within the 'Area D Briggs Larsen Precinct Local Structure Plan' (LSP). It is bound by Briggs Road to the east and the road reserve for the future Indigo Parkway to the north. The Oaklands Main Drain runs parallel to the northern boundary.



The subject site is developed with a single-storey semi-rural dwelling with associated outbuildings, located to the south-western portion of the lot. The remainder of the land consists of large open grassed paddocks with mature vegetation along boundaries to the north and east. Land to the west is undergoing progressive urbanisation with ongoing subdivisions to facilitate low-medium density housing and road infrastructure being constructed.

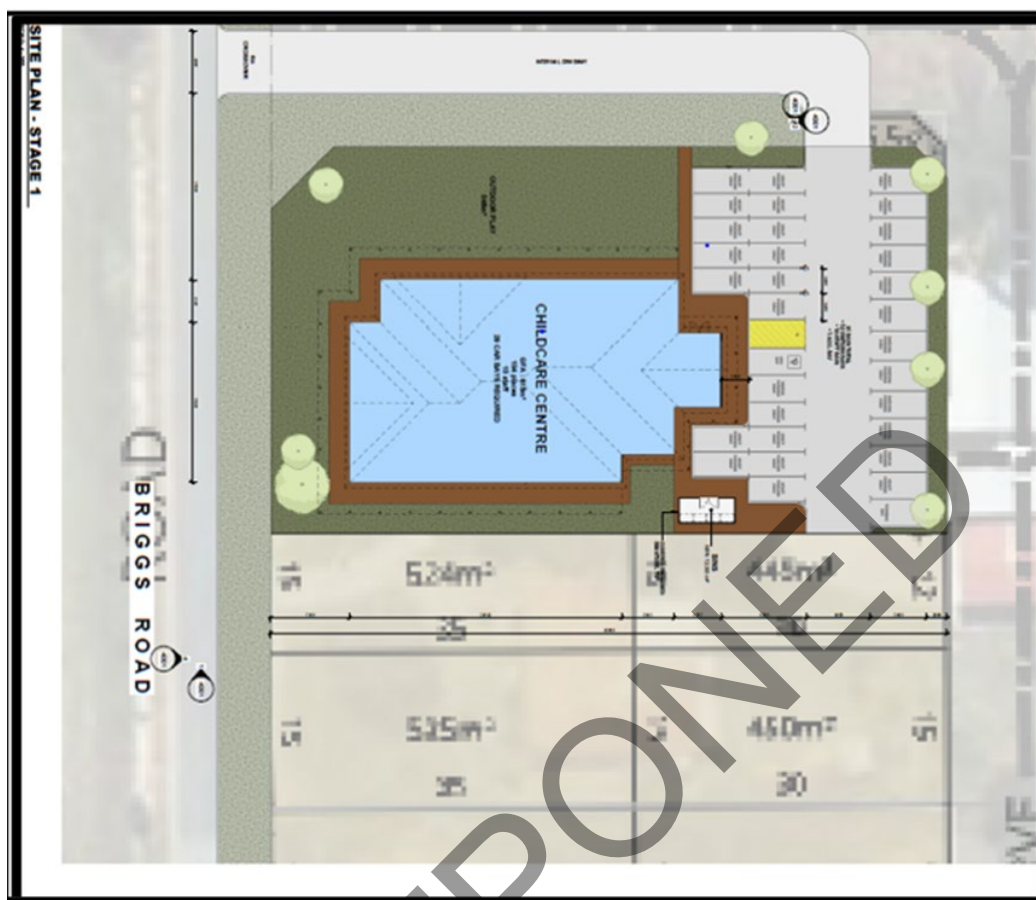
The site is also subject to an indicative subdivision plan which was prepared as part of the LSP which provides an indicative layout of how the site would ultimately be subdivided. This can be seen following:



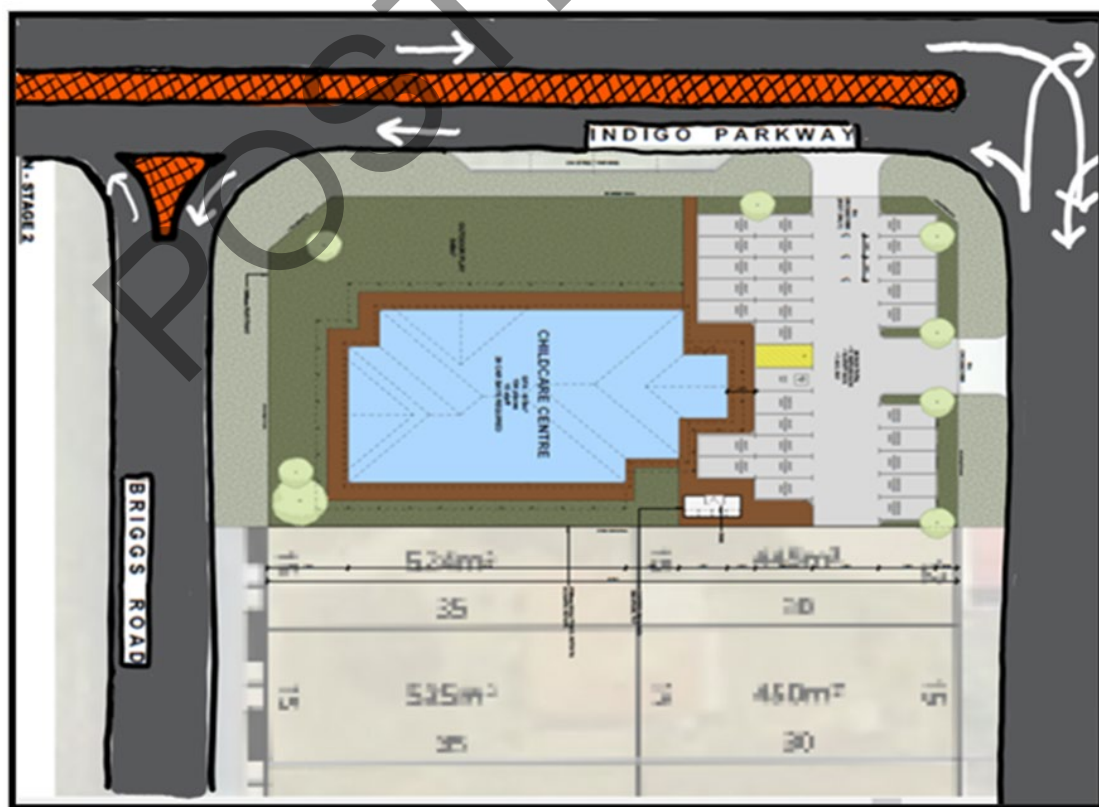
Proposed Development

The proposal seeks approval for the construction of a single storey purpose built 'Child Minding Centre'. The proposed development would occupy 2,392m² of the current overall land parcel of 2.024ha, which is identified as 'Residential' within the LSP for the site. The development is proposed to accommodate 104 children and 18 staff.

Vehicle access to the subject site is proposed to be in two stages. Stage 1 which is based on the current road network involves the construction of an interim driveway to Briggs Road. Stage 2 includes the ultimate development scenario as per the LSP, including the construction of Indigo Parkway (north of site) and an access road (to the east). This would result in a minor reconfiguration to access/egress arrangements of the site whereby Indigo Parkway will be an exit only (left out) and the access road to the east resulting in full movement. The two scenarios are shown following:



Stage 1



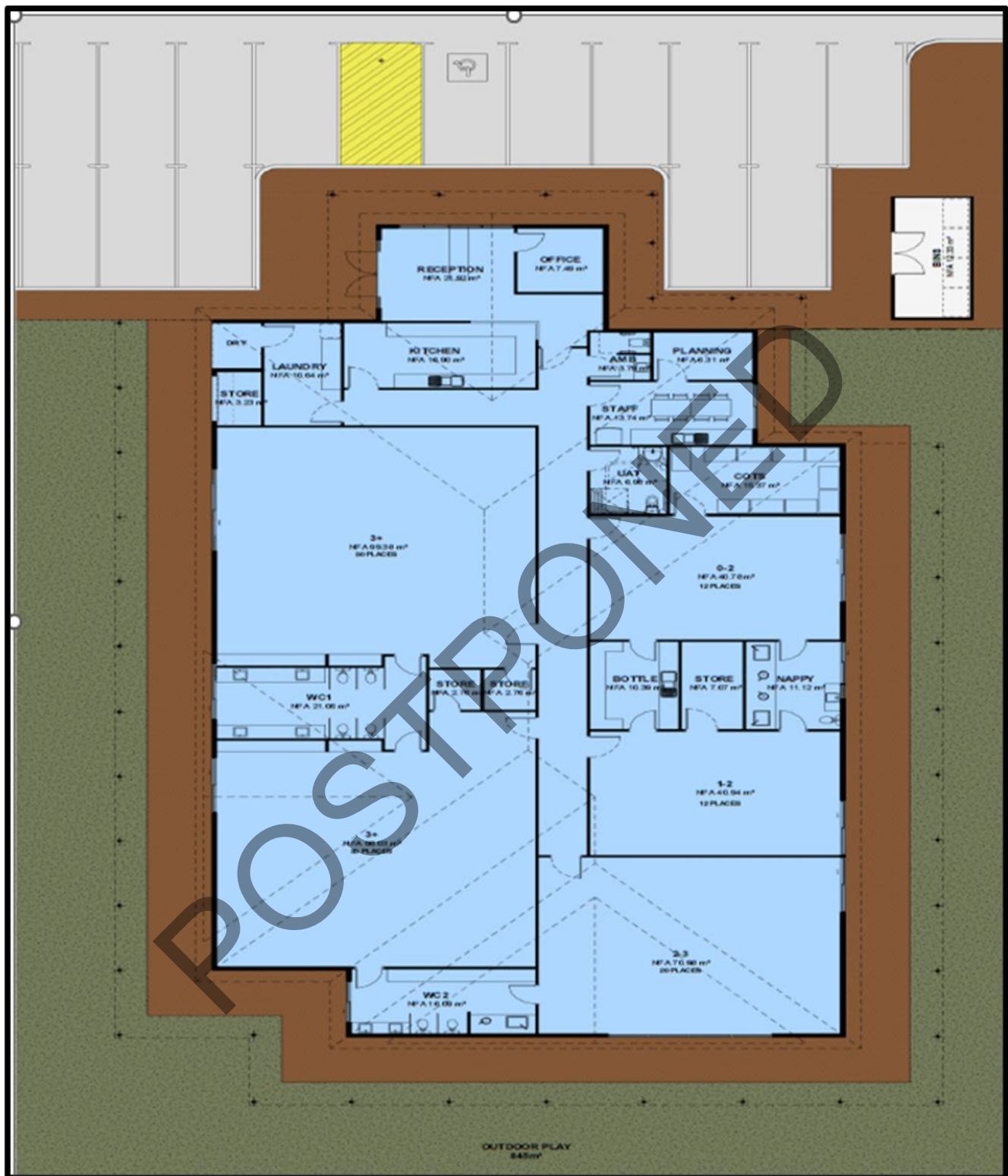
Stage 2

The Child Minding Centre is proposed to operate between the hours of 6:30am - 6:30pm Monday to Friday. The Child Minding Centre is expected to employ up to a maximum of 18 staff across the operations in varying shift times. The applicant provided information that the centre will accommodate children within the following age groups:

- 0-2 years: 24 places;
- 2-3 years: 20 places;
- 3+ years: 60 places.

Specifically, the proposal includes:

- Building comprising of a reception area, office, planning room, staff amenities, staffroom, kitchen, children's toilets with storage areas, dining area, cots room, nap change/toilets, enclosure bin store, toilets, laundry and storage areas;
- Construction of Stage 1 car park with 31 car parking bays comprising of 12 spaces (visitors) for pick-up and drop-off, 18 staff car parking spaces including one universal access bay;
- Construction of a new six metre crossover on Briggs to provide direct full movement access to the stage 1 car parking area via an internal driveway;
- Construction of outdoor play areas with a total area of 845m² provided to the eastern, western and southern aspects of the building;
- Construction of 1.8m garrison style fencing long Briggs Road frontage and future Indigo Parkway along the northern boundary;
- Construction of 2.1 m high acoustic solid fence/wall of minimum (8kg/m²) surface mass along the outdoor play area's southern boundary abutting future dwellings;
- Perimeter landscaping (2m) along the northern and western car park boundary;
- A fully enclosed bin store along the western boundary.



Full details of the proposal are contained within **attachment 2**.

The application was advertised for a period of 28 days from 20 March 2023 to 17 April 2023 to surrounding landowners within a 500m radius of the subject site, in accordance with LPP1.4 - Consultation for Planning Matters. The application was also advertised on the Shire's website for the same period.

At the conclusion of the consultation, 12 submissions consisting of six objections, three letters of concern and three letters of support were received. The objections and concerns relate to the following summarised issues, which are discussed in the relevant headings of the report and form part of the Officer assessment:

- Safety concerns due to potential localised traffic congestion from the proposal and from the future school and child care centre to the east;
- Traffic movements on the existing road network and potential unsafe traffic and pedestrian environment;
- An upgrade to the Briggs Road and Thomas Road intersection considered to be narrow and in poor condition to support additional traffic;
- Upgrade or widening of Briggs Road to be able to cater for additional traffic movements and potential congestion concerns;
- Inappropriate development is a semi-rural locality earmarked for R60 future residential dwellings thereby reducing the dwelling yield forecast in Byford;
- Lack of footpaths and street lighting along Briggs Road to support the development;
- Increased number of Child Minding Centres within the locality;
- Premature development is not in line with proper and orderly planning due to lack of the appropriate road infrastructure and reticulated sewerage to support the premises;
- Inconsistency of the proposed access way with the ultimate road network presented within the subdivision concept plan that does not provide direct lot access to Indigo Parkway;
- Potential for the intersection of Briggs Road and Indigo Parkway becoming an uncontrolled intersection for cars and pedestrians trying to cross Briggs Road;
- Proposal is not consistent with the Department of Planning, Lands, and Heritage (DPLH) Draft position statement: child care premises with regards to co-location;

These matters are discussed in the relevant section of the report below.

Consultation with other Agencies or Consultants

Department of Health (DoH)

The application was referred to the Department of Health who provided no in principle objections to the proposed Child Care Premises subject to ensuring the following are provided during the planning approval process.

Water Supply and Wastewater Disposal

In relation to the management of wastewater, the proposal is to install an onsite wastewater treatment system and disposal area. Unfortunately, the proposed location does not meet the Government Sewerage Policy 2019 objectives, that require a 100-metre setback from winter creeks or the seasonal brook. In addition, the site and soil evaluation (SSE) was not undertaken during the wettest time of the year, but rather the warmest time of the year, being mid-January. This could significantly influence the minimum design criteria of the effluent disposal area.

DoH appreciates the lot is currently of significant size and should be able to manage wastewater onsite. Therefore, the department supports the proposal subject to ensuring the following are provided during the planning approval process.

As deep sewerage is surrounding the proposal, the DoH recommends connection to deep sewerage as the preferred option and seek costings and schedules for this option vs onsite wastewater treatment options and schedules; If it is not financially viable to connect to deep sewerage.

- Another specific site and soil evaluation (SSE) report is required for the above proposal that should be undertaken by a qualified consultant that is conducted during the wettest seasonal time of the year only (Mid-July/August) as per AS/NZS 1547:2012 requirements.*
- As the proposed lot is within an environmentally sensitive area, the secondary treatment system (STS) should be engineer Certified detailing the requirements as specified on the DoH website certification for installation of wastewater treatment systems.*

To ensure the stormwater catchment and diversion/disposal does not influence or interfere with the efficacy of the effluent disposal area.

- A plan detailing the proposed building envelopes, all trafficable areas, parking bays and land application area/s with setbacks, exclusion zones and measurements shown for the proposal.*
- Each onsite wastewater treatment system and disposal area requires a formal application to be submitted to the respective local government for assessment and that will be forward onto the DoH for approval.*

Public Health Impacts

- The site was a former farmhouse and out-buildings and portion of cleared bushland used for grazing. The submission provides no information on the age and construction of the existing buildings, the presence or absence of hazardous materials (including asbestos, fuel tanks, agricultural chemicals etc) or the measures to prevent the release of hazardous materials during any proposed demolition prior to development, causing land contamination.*
- The site is not registered on the Department of Water and Environmental Regulation contaminated sites database. However, the proponent is advised to obtain a Basic Summary of Records to complete their enquiries*
- Consideration should be given to the setback of the facility from the main road. There are currently no guidelines for setbacks of child-care premises from busy roads but there is consistent evidence of adverse short and long-term health outcomes in children exposed to traffic-related air pollution (TRAP). The DoH recommends a setback of at least 50m for the main buildings and play areas. The DoH also recommends vegetation barriers between the road and the site.*

Food Act Requirements

- All food related areas (kitchen, preparation areas, etc.) to comply with the provisions of the Food Act 2008 and related code, regulations and guidelines.*

Department of Water and Environmental Regulation (DWER)

The application was referred to the Department of Water and Environmental Regulation who provided no in principle objections to the proposed Child Care Premises, subject to the following key matters being given due consideration.

Government Sewerage Policy

Lot 57 Briggs Road is within a sewage sensitive area, as it is located with the Peel-Harvey coastal plain catchment. The requirements of the Government Sewerage Policy (GSP) (DPLH, 2019) apply including site requirements for on-site sewerage disposal.

It is acknowledged that a Site and Soil Evaluation (SSE) was included within the application and comments pertaining to the SSE. The SSE lacks detail to demonstrate Lot 57 can manage on-site wastewater treatment and disposal prior to the availability of reticulated sewerage associated with urbanisation of the surrounding area. It is recommended that the SSE is provided to the Department of Health for assessment.

Stormwater Management

DWER recommended for the car park stormwater drainage system to be designed, constructed and managed in accordance with the Stormwater Management Manual for Western Australia (DWER, 2022). Stormwater management within the site should be in accordance with Lots 57, 58 and 70 Briggs Road and Lots 53, 81, 83, 100 and 105 Larsen Road, Byford Local Water Management Strategy (360 environmental, October 2020).

The Department recommends that the first 15mm of stormwater runoff passes through a water quality treatment process, such as rain gardens or tree pits, before infiltration. Flush kerbing between the carpark and surrounding garden beds will assist in capturing stormwater.

Water Supply

Lot 57 is not currently connected to a reticulated potable water supply. An alternative water supply may be required for development on this lot if the proposed water main extension on Briggs Road/future Indigo Parkway (Byford Meadows Estate) has not been completed.

The proposed development area is located within the Serpentine Groundwater Area (Byford 3 sub area) which is proclaimed under the Rights in Water and Irrigation Act 1914. Any groundwater abstraction would be subject to licencing by the Department.

Noise Assessment Report

To be discussed in the noise assessment section of the report

Water Corporation

The application was referred to Water Corporation who provided no in principle objections to the proposal and provided the following advice:

- The proposed development does not appear to affect Water Corporation assets. If our assets are affected, the developer may be required to fund new works, or the upgrading of existing works and protection of all works associated with the Water Corporation. Water Servicing is available to the site, Wastewater servicing is not however. The proponent has stated in their planning report that will utilise onsite effluent disposal which is suitable for a lot of this size under the State Sewerage Policy.*
- This proposal will require approval by our Building Services section prior to the commencement of works. Infrastructure Contributions and fees may be required to be paid prior to approval being issued.*

Department of Fire and Emergency Services (DFES)

DFES provided a submission requiring further clarification within the Bushfire Management Plan in relation to the following matters:

- Classification of vegetation within Plot 2 and Plot 3 and detail specifically how the Class G Grassland classification was derived.
- Correct reflection of the BAL ratings subject to correct vegetation classification
- Inconsistency of the APZ distance throughout the BMP

In response to concerns raised the applicant provided a revised BMP addressing concerns. Offices consider that the revised BMP complies with the policy measure outlined within the *State Planning Policy 3.7: Planning in Bushfire Prone Areas*.

Main Roads Western Australia (MRWA)

The application was referred to MRWA who had no objections to the proposal.

A summary of the submissions including applicant comments can be viewed in **attachment 3**.

Statutory Environment

Legislation

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

State Government Policies

- South Metropolitan Peel Sub-Regional Framework Towards Perth and Peel 3.5 Million
- Planning Bulletin 72/2009 - Child Care Centres
- Environmental Protection Authority Environmental Assessment Guideline for Separation Distances

Local Planning Framework

- Shire of Serpentine Jarrahdale Town Planning Scheme No. 2
- Draft Shire of Serpentine Jarrahdale Local Planning Scheme No. 3
- Shire of Serpentine Jarrahdale Local Planning Strategy
- Byford Area D Briggs Larsen Precinct Local Structure Plan

Local Planning Policies

- Local Planning Policy 1.4 - Public Consultation for Planning Matters (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 4.15 - Bicycle Facilities Policy (LPP 4.15)
- Local Planning Policy 4.16 - Landscape and Vegetation Policy (LPP4.16)
- Local Planning Policy 4.24 - Child Minding Centres (LPP4.24)

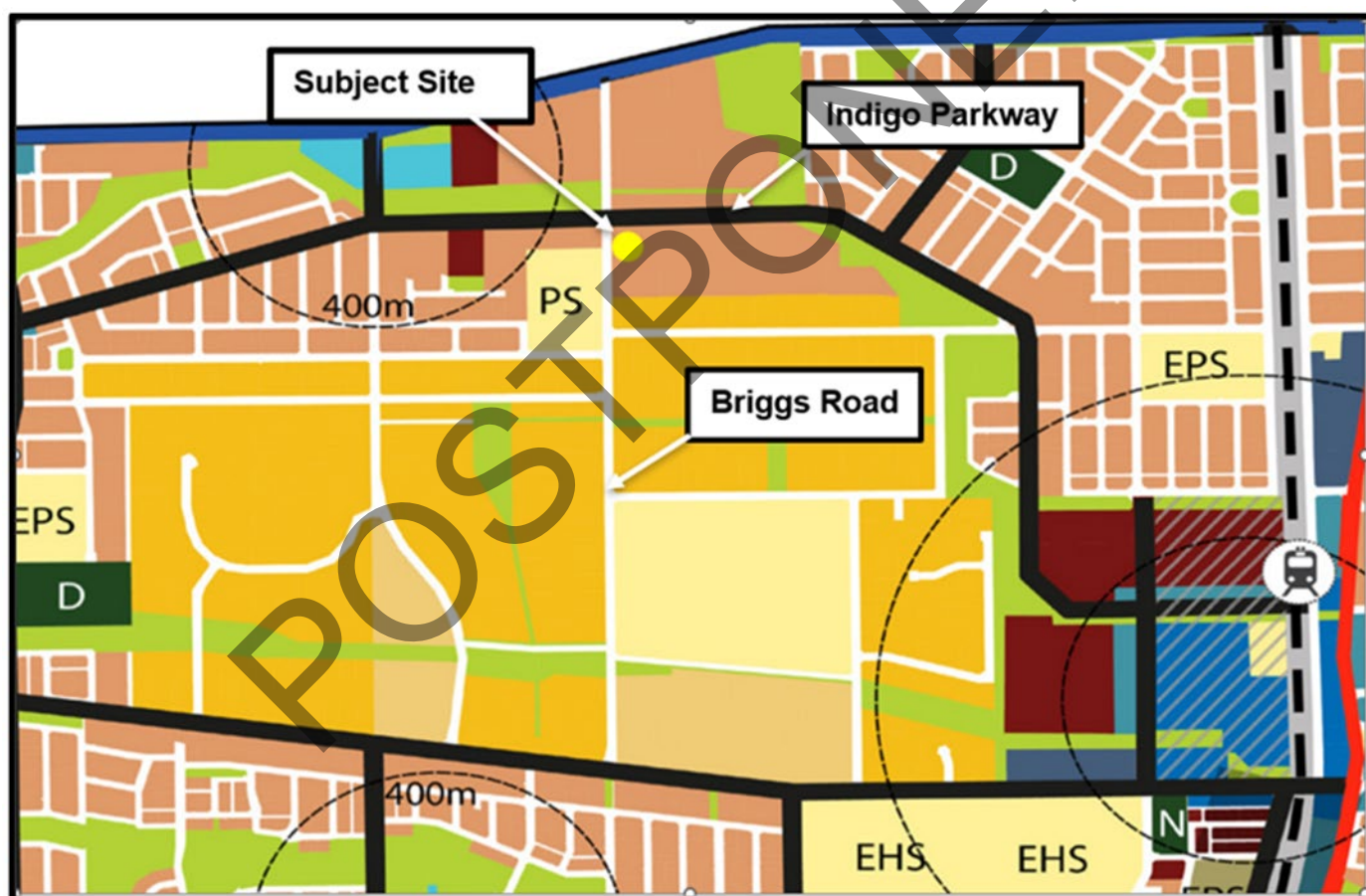
Planning Assessment

Clause 67 of the Deemed Provisions lists matters to be considered in the determination of development applications. A full assessment was carried out against the planning framework in accordance with Clause 67 of the Deemed Provisions which can be viewed within **attachment 4**.

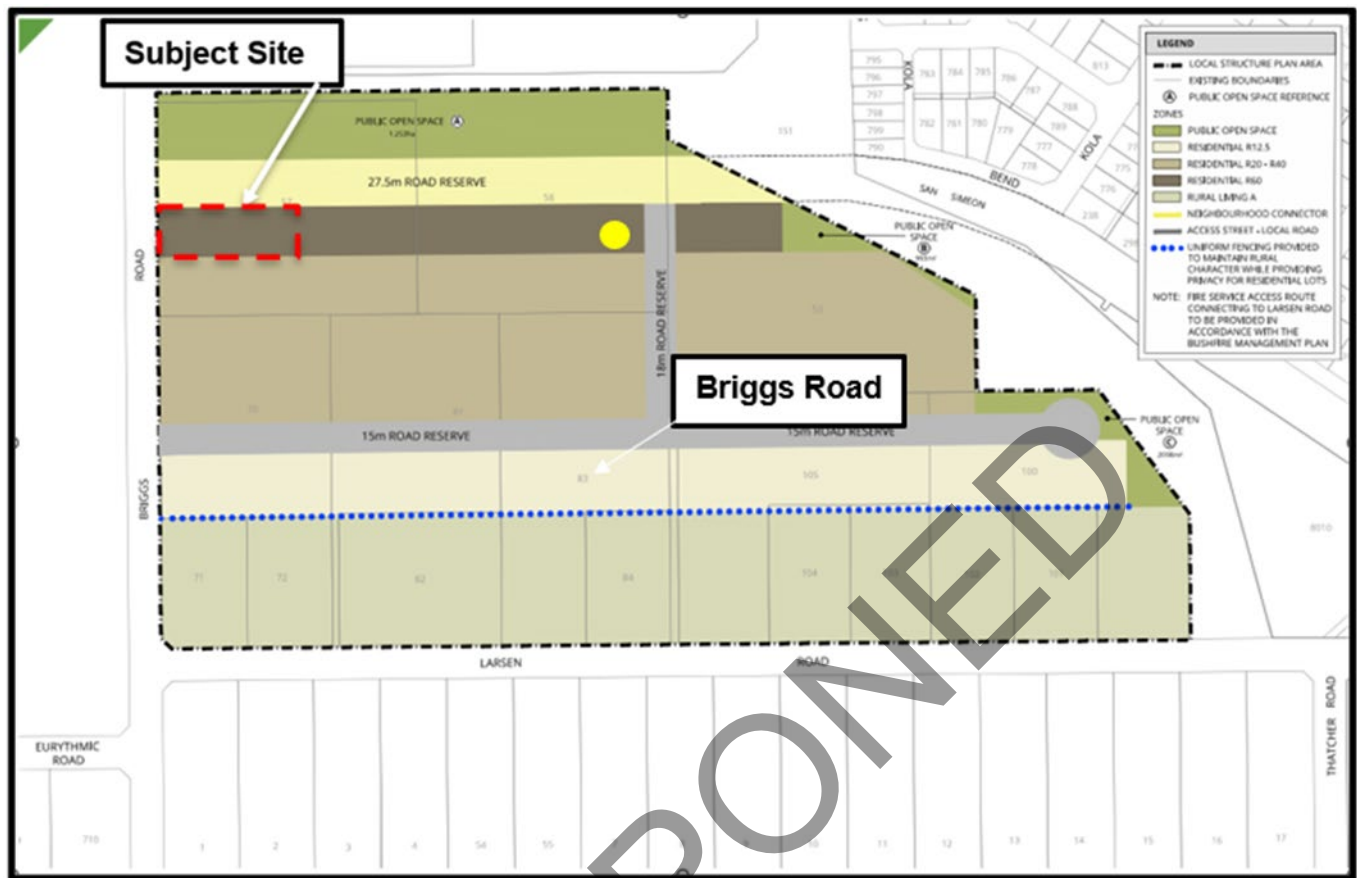
Town Planning Scheme No. 2 (TPS2)

The subject site is zoned 'Urban Development' under the Shire's TPS2. Clause 5.18 of TPS2 sets out the objective of the 'Urban Development' zone as *"to provide for the orderly planning of large areas of land in a locally integrated manner and within a regional context, whilst retaining flexibility to review planning with changing circumstances"*. This objective is facilitated through the preparation of Structure Plans, which guide land use permissibility and development.

The subject site is identified as 'Residential' within the Byford District Structure Plan 2020 (BDSP), and the LSP which provide the relevant land use permissibility and indicative land use designation applicable to the site. The proposed land use can be considered within the 'Residential' designation of the structure plans. The two structure plans, showing the land in question, are provided following:



Byford District Structure Plan



Byford Area D Briggs Larsen Precinct Local Structure Plan

Land Use

The proposal falls within the TPS2 definition of 'Child Minding Centre', which means:

"...land and buildings used for the daily or occasional care of children in accordance with the Child Welfare (Care Centres) Regulations, 1968 (as amended) but does not include a family care centre as defined by those regulations, or an institutional home".

The Child-Minding Centre is an 'SA' land use in the 'Residential' zone consistent with the residential designations of the structure plans. SA means, *"that Council may, at its discretion, permit the use after notice of the application has been given in accordance with Clause 64 of the Deemed Provisions."* An 'SA' land use requires the Shire to consider all submissions received and the broader planning framework in applying its discretionary powers to determine an application for approval.

Officers consider that the development, by way of scale, height, orientation intensity and form of development is consistent with the current and intended future amenity of the area. In addition to the future primary school and child minding centre to the west, the locality will be characterised by land uses that attract a higher level of activity compared to other locations within the structure plan area thereby forming an edge to the neighbourhood. Placement of these higher activity generating land uses on the edge of the neighbourhood allows effective management of current and future amenity for the area.

Officers further consider that the design of the development is sympathetic to the existing and the future residential development as it seeks to incorporate design elements such as verandahs, soft tones, pitched roofs and gable features to the building which, when viewed from the street, would appear residential in form. This will provide a high degree of compatibility with adjoining and

nearby medium residential density developments located within the broader locality of the Byford Meadows and Redgum Brook estates.

During the consultation period, concerns were raised regarding the land use permissibility of a child minding premises within the 'Urban Development' zone. In that regard, Officers consider that the proposed land use is consistent with the stated purpose and intent of the 'Urban Development' zone, as guided by the relevant structure plans.

Draft Local Planning Scheme No.3 (LPS3) and Local Planning Strategy (LPS)

The zoning of the subject site under draft Local Planning Scheme No.3 (LPS3) would remain zoned 'Urban Development'. The proposal will fall under the land use of 'Child Care Premises' which is defined as:

"means premises where -

(a) *an education and care service as defined in the Education and Care Services National Law (Western Australia) Section 5(1), other than a family day care service as defined in that section, is provided; or*

(b) *a child care service as defined in the Child Care Services Act 2007 section 4 is provided".*

The use is a discretionary use, subject to advertising within the 'Residential' zone of the structure plans as discussed above.

The land use is consistent with the stated purpose and intent of the 'Urban Development' zone, as guided by the relevant Structure Plans. The 'Residential' zone objective under LPS3 supports a range of non-residential uses, which are compatible with and complementary to residential development, encouraging high quality design, built form and streetscapes throughout residential areas which is appropriate to the climate. The design is considered to reflect such objectives.

Planning Bulletin 72/2009 - Child Care Centres

Location:

During the consultation process, concerns were raised in relation to the compatibility of the child minding centre in this locality. One of the objectives of Planning Bulletin 72/2009 - Child Care Centres is to *"locate child care centres appropriately in relation to their surrounding service area"*.

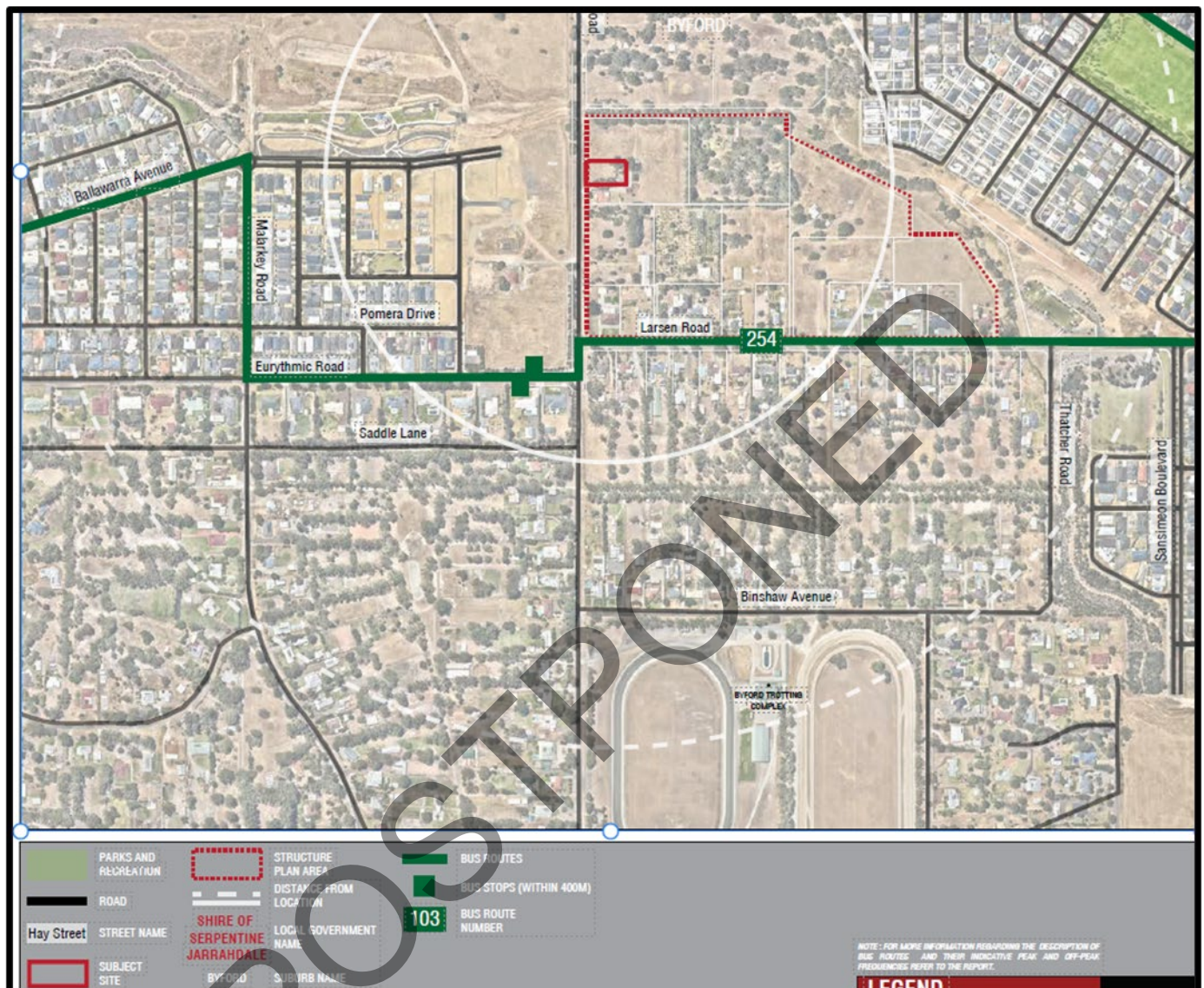
The bulletin provides guidance of planning considerations in relation to the location and development of child care centres. It states that broadly, child care centre activities are located in residential areas and that the ever-increasing demand for child care centres and the strong focus on their appropriate distribution and location is closely linked to demographic change. The objectives of the policy are to:

- a) locate child care centres appropriately in relation to their surrounding service area;*
- b) minimise the impact a child care centre has on its surrounds, in particular on the amenity of existing residential areas;*
- c) minimise the impact the surrounds may have on a child care centre; and*
- d) consider the health and safety of children attending the child care centre within the confines of the planning system.*

The bulletin states that centers should be located to provide the maximum benefit to the community and should be within an easy walking distance and serviced by public transport.

The proposal is in close proximity to land identified for a future school site to the west and is located approximately 400m from the Byford Meadows Neighbourhood Centre Precinct within a

medium density housing environment. It is serviced by Transperth bus routes on Eurythmic Boulevard west of Briggs Road which is within walking distance from the site as below.



In this regard, Officers are satisfied that the proposal is compatible with the adjoining land uses. However, as the site is located with the emerging area of Byford which is still undergoing urbanisation in accordance with the approved LSP, there are no pedestrian footpaths that enable residents from the nearby catchment areas to walk to the subject site. A footpath on Briggs Road would be extended from Eurythmic Road to Indigo Parkway consistent with this objective of the Bulletin. Officers consider that this needs to be addressed as part of a recommendation to the MODAP, in order to provide safe pedestrian access as noted to be a key consideration under the planning bulletin. A condition is therefore recommended to ensure a new footpath being extended on the eastern side verge of Briggs Road to link the development to the existing footpath on Larsen Road.

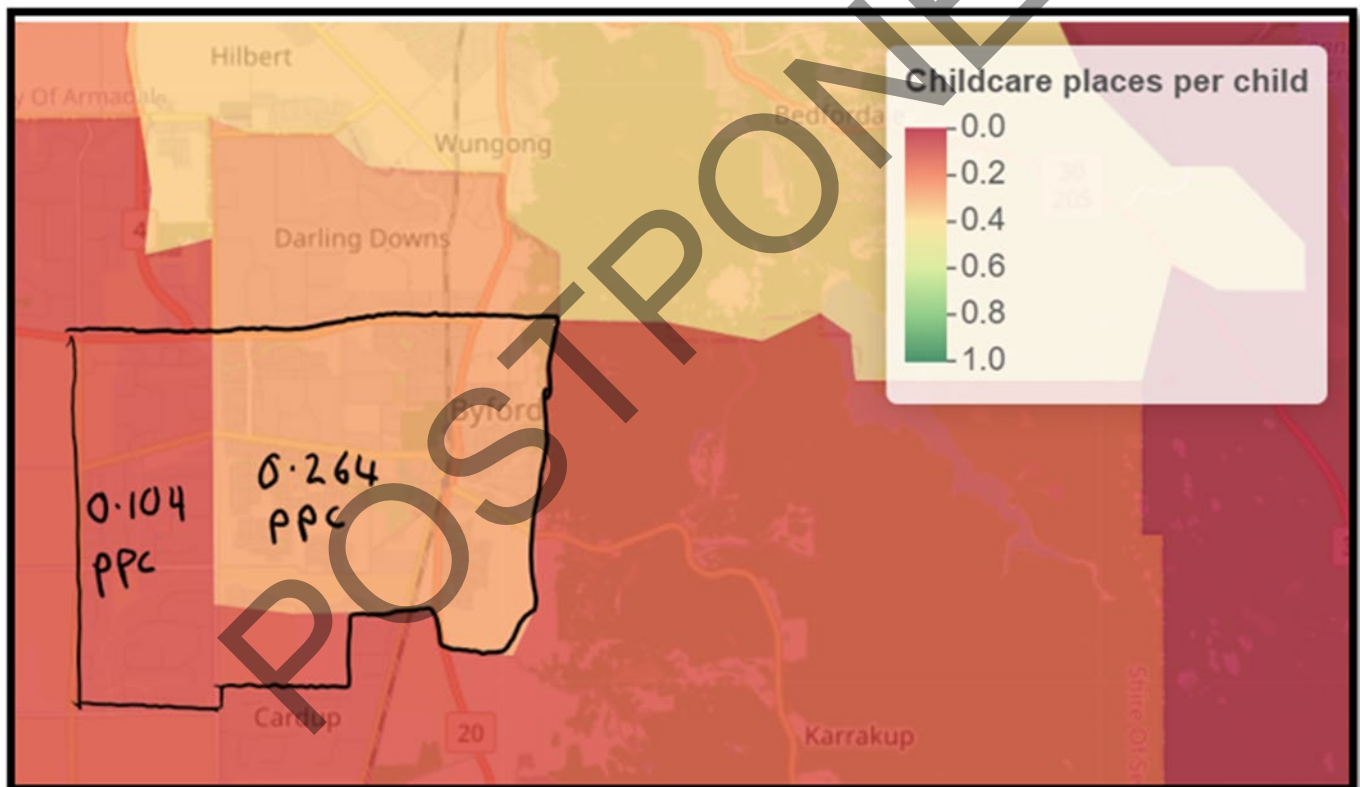
The bulletin also states that it is important in limiting the impact a 'Child Minding Centre' may have on surrounding activities and amenity of existing residential areas. In this regard, the development has been designed in such a way that the outdoor play area is located such that noise impacts to the adjoining future properties are reduced, by minimising the extent of playscape along the southern boundary and locating the youngest age groups in this area. The proposal demonstrates a configuration of development to moderate and manage as best possible noise impacts associated with the development. Noise is also later discussed in the report

During the consultation period, concerns were raised regarding the increasing number of child minding centres in the locality having an excess of four within 1km of the proposed. The planning framework does not specifically limit the number of business types to an area, recognising competitive neutrality as an important component of a market led economy.

Notwithstanding this, it is important for Council to consider the current situation pertaining to a lack of available childcare places, measured as a portion of theoretical places available per child. A recent study undertaken by Victoria University mapped the whole of Australia to determine supply gaps in the provision of childcare. It found that:

1. About 9 million Australians, 35% of the population, live in neighbourhoods classified as *childcare deserts* – populated areas where there are more than three children per childcare place.
2. The map below shows the accessibility of childcare across Australia. Areas in orange and red indicate suburbs more likely to have childcare deserts.

This reveals in respect of Byford:



Map showing childcare places per child

About two thirds of the suburb has only 0.26 childcare places available per child, with the remaining one third about 0.1 places per child. This is a significant issue, given the Shire is the fastest growing local government in Western Australia, and Byford the third fastest growing suburb in total numbers recently reported. Byford experienced the fourth largest number of new born children in WA in 2022 (394), as also recently reported in the regional growth statistics of the ABS. Lack of access to childcare correlates with primary carers having a lack of employment opportunities (particularly mothers). This has an adverse economic impact on both household and local income generation potential.

Overall, the proposal is considered consistent with Planning Bulletin 72/2009.

Car Parking

Clause 67(s) of the Deemed Provisions requires consideration be given to the adequacy of provision for parking of vehicles. As such, a car parking assessment has been undertaken against the requirements from TPS2 and draft LPS3.

Table V of TPS2 sets out the parking requirements for different land uses. The minimum number of car parking bays for a 'Child Minding Centre' is one space per five children accommodated. Accordingly, as the proposal seeks to accommodate up to 104 children, a minimum of 21 parking bays would need to be provided. The plans provided indicate that the proposal is compliant with the minimum TPS2 parking requirements, as it incorporates a total of 31 on-site parking bays including one disabled access bay for Stage 1 and a total of 29 on-site parking bays including one disabled access bay for Stage 2. Two bays will be removed for Stage 2 to allow for addition of a crossover for the future access road.

In terms of draft LPS3, the table below summarises the parking requirements:

Land Use	Parking Requirement	No of Children/Staff	Parking Required	Proposed Bays
Child Minding Centre	1:10 children, plus 1:1 employee	104 18	10.4 (11) bays 18 bays	13 18
Total			31	31

The proposal complies with the parking requirements under LPS3 for both the Stage 1 and Stage 2 scenarios. Officers have also considered that public transport is conveniently located nearby the subject land, leading to this mode of transport being available for use by families and staff alike. The bus stops would be accessible via a footpath along Briggs Road, which forms a recommended condition of approval.

Development Requirements

Clause 7.10 and table 2 of TPS2 sets out the development standards and site requirements for development. Consideration has been given to the requirements as they apply to the 'Residential' zone, which the land is designated as under the LSP.

Table 11 TPS2 set out site requirements for selected uses in the 'Residential' Zone

Child Minding Centre	Required	Provided	Complies
<u>Setbacks</u>			
Front (Briggs Road)	7.5m	7.5m to building 4.5 to verandah	Yes
Side (Future Indigo Parkway)	3.0m	9.8m to verandah 12.75m to building	Yes
Rear (Future access road)	7.5m	20m	Yes
Plot Ratio (ratio of the gross total of the areas of all internal floors of a building to the area of site)	0.5	0.26	Yes

Child Minding Centre	Required	Provided	Complies
Site Coverage (how much of site is covered by roofed area)	0.3	0.38	No

The development slightly exceeds the prescribed site coverage requirements of TPS2. Officers have considered that the slight exceedance on the site coverage would not adversely impact on the available open space or appear as if the site is overdeveloped. The development features three outdoor playscapes fronting Briggs Road, future Indigo Parkway and future access (east) street frontages that will ameliorate the bulkiness of the building. The minor variation is not considered to present the development as bulky or overbearing when viewed from the street frontage due to the design of the building particularly the open verandahs which reduces the building bulk. The proposed permeable fencing along Briggs Road and Indigo Parkway boundaries will maintain a sense of openness between the street and the development, removing the presence of bulk.

Form of Development

Part VII of TPS2 provides general development standards. Clause 7.1 of TPS2, relating to the general appearance of buildings and preservation of amenity, requires consideration of architectural style, colour, use of materials and the general appearance of buildings to ensure the exterior design is not out of harmony with existing buildings or likely to impact the amenity of the locality.

Below are the set of elevations, as viewed from the north (Indigo Parkway) east (Briggs Road) west future access road and from the south abutting future residential properties.



In terms of the visual impacts of the development, the proposed building which covers an area of 615m² incorporates design elements intended to reflect residential development within the immediate locality, noting the site is designated as under the LSP. The design elements include the use of timber looking decking boards, coloured feature walls, composite cladding, linear textured sheets, brickwork features and Colourbond roof sheets.

The contemporary style building is architecturally designed in response to its corner location. The verandahs, soft colour tones, and gable features will add visual interest to street frontages. The built form and playscapes are oriented toward key street frontages. The scale, height, orientation and appearance of the development is sensitive to the existing and future characteristics of the locality.

The site is designated as R60 under the LSP. During the consultation period concerns were raised with regard development to the compatibility of the proposal within a semi-rural locality which earmarked for R60 future residential dwellings and its potential to reduce the dwelling yield forecast in Byford. Although the development is not residential in nature and is not required to comply with the density designation, it has been designed to be sympathetic to the R60 density requirements, especially in terms of setbacks and open space to further ensure the development is sympathetic to the existing and future residential development within the locality. The proposal has been designed to address all street frontages to ensure surveillance of the street and to ensure an enhanced streetscape.

Local Planning Policy 4.24 - Child Minding Centres (LPP 4.24)

LPP4.24 seeks to provide guidance for child minding centres in relation to matters such as location, siting, design, traffic, and amenity. The objectives of the policy are as follows:

- *To provide guidance for the location of child minding centres to best take advantage of the surrounding natural environment and provide a compatible setting with the locality.*
- *To ensure that amenity impacts, including noise and traffic, are managed appropriately.*
- *To promote a design of child minding centres which reflect the rural and natural character of the Shire.*
- *To provide guidance for the consideration of convenient access and layout.*

LPP4.24 sets out particular criteria for child minding centres. Development that complies with the 'Acceptable' criteria will generally be supported. Proposals falling within 'Performance Based' are required to demonstrate acceptability in relation to the specific criteria. The application has been assessed against the policy criteria below and generally complies.

Acceptable Development	Performance Based	Officer Comment
Location		
<p>Child minding centres located within easy walking distance of activity centre or recreational nodes.</p> <p>Located within a walkable catchment for the local neighbourhood.</p> <p>Larger child minding centres being encouraged to locate near or within activity centres.</p>	<p>The chosen location is appropriate to the proposed scale of the child minding centre, and such location benefits from integration with the surrounding natural and built environment.</p>	<p>Acceptable - Proposal located within 400m of a Neighbourhood Centre.</p> <p>It is located within a walkable distance from existing and future residential development.</p>
<p>The location is close to or adjoins public open space.</p>	<p>Located within a walkable distance to a public open space/recreational area with good quality pathways.</p>	<p>Acceptable - Proposal abuts the Public Open Space to the north of Indigo Parkway as identified on the LSP.</p>
<p>Child minding centres are adequately separated from any incompatible nearby uses, with this supported by a suitably qualified risk assessment forming part of an application. Such risk assessment is to consider elements such as dangerous goods, hazardous materials and public health considerations.</p> <p>Potentially incompatible uses (taking into account design and layout) may include, for example, outlets selling petroleum, fast-food, and alcohol or tobacco products.</p>	<p>Where child mining centres are located within 200m of any incompatible use, such proposal demonstrates that the potential for adverse health impacts is removed. Such demonstration to be in the form of a suitably qualified consultant study.</p>	<p>Acceptable - No incompatible land uses within 200m of the subject site.</p>

Acceptable Development	Performance Based	Officer Comment
Parking		
<p>Parking meets the requirements of the Local Planning Scheme, and demonstrates how this meets the operational aspects of the development.</p> <p>Internal driveways having two-way movement.</p> <p>Landscaped parking areas in accordance with the Local Planning Scheme.</p> <p>Parking areas located so as to provide a separation between surrounding dwellings and outdoor play spaces.</p>	<p>Suitably demonstrates that there is sufficient parking onsite in the form of a traffic and parking assessment.</p> <p>Design and layout demonstrates safe movement of vehicles and pedestrians internally.</p> <p>Parking areas incorporate layers of landscaping and Water Sensitive Urban Design.</p>	<p>Acceptable - Proposal is compliant with TPS2 and draft LPS3 car parking requirements. Refer to parking section of the report.</p>
Traffic		
<p>Traffic generation poses an increase of no more than 10% of the current recorded daily volumes on the roads which the development adjoins. This is confirmed by a traffic impact statement.</p> <p>Development facilitates full movement access to and egress from the site.</p>	<p>Demonstrates that traffic impacts can be managed through the submission of a Traffic Management Plan. This demonstrates how traffic will be managed to not represent an adverse safety or amenity impact on the adjoining road environment.</p> <p>Demonstrate that access and egress to the site will not result in unsafe manoeuvring due to the lack of full movement access.</p>	<p>Acceptable - refer to the traffic section of the report.</p>
Infrastructure Requirements		
<p>Designated pedestrian footpaths from the street to the centre and the car park to the centre.</p>	<p>Demonstrate that pedestrians can safely navigate to and around the site, with dedicated pathways.</p>	<p>Acceptable - A condition will be imposed to ensure footpath will be constructed to link the with the existing network.</p>
<p>Car parking visible from the street to discourage verge parking.</p>	<p>Signage or other means to discourage verge or unsafe parking.</p>	<p>Acceptable - refer to the car parking section of the report.</p>
Amenity		
<p>Outdoor play areas located in a safe place within the site, providing adequate shade, and separated</p>	<p>Outdoor play areas are arranged so as to demonstrate such will not adversely impact</p>	<p>Acceptable - The outdoor play areas are located such that noise</p>

Acceptable Development	Performance Based	Officer Comment
<p>from noise sensitive premises.</p> <p>Waste service areas appropriately screened from public areas.</p> <p>Setbacks to side and rear boundaries and the orientation of openings to indoor play areas located to minimise noise impacts.</p> <p>Acoustic impact assessment submitted demonstrates how noise will be managed, particularly from:</p> <ul style="list-style-type: none"> - Indoor and outdoor play areas; - Car parking areas and the impulsive noise that comes from car access (especially staff arriving before opening and departing after closure), opening and closing of car doors, arrangement of car parking bays (staff versus visitor). 	<p>sensitive receptors. This is confirmed by an acoustic impact assessment and subsequent noise management plan.</p> <p>Noise levels are demonstrated to be consistent with the level of amenity currently afforded to an area.</p>	<p>impacts to the adjoining future properties is reduced by minimising the extent of playscape along the southern boundary and locating the youngest age groups in this area.</p>
<p>Hours of operation 7:00am to 7:00pm Monday to Friday.</p>	<p>Demonstrate that operation hours outside of these times would not impact amenity of the area through an acoustic impact assessment and subsequent noise management plan.</p>	<p>Performance - the proposed hours of 6:30am - 6:30am operation comply. While staff and children arriving prior to 7:00am, the use of the outdoor play areas will not occur until after 7:00am to comply with the acoustic report.</p>
<p>Child minding centres are not subject to unacceptable noise that could impact the health and wellbeing of children.</p>	<p>An acoustic impact assessment and subsequent noise management plan demonstrate that noise external to the site would not adversely impact on the wellbeing of children.</p>	<p>Acceptable - refer to the amenity section of the report.</p>
<p>Sites in residential areas greater than 1,000m² in areas.</p> <p>A maximum site coverage of 60%, in order to mimic typical residential form and to provide future ability to recede back to a residential development should that occur.</p>	<p>Demonstrate that sites in residential areas will be able to accommodate all activities (including parking and play areas) required on the site.</p>	<p>Acceptable - the site is greater than 1,000m²</p>
Landscaping		
<p>On site landscaping and landscape</p>	<p>A reduction in the on-site</p>	<p>Acceptable - Proposed</p>

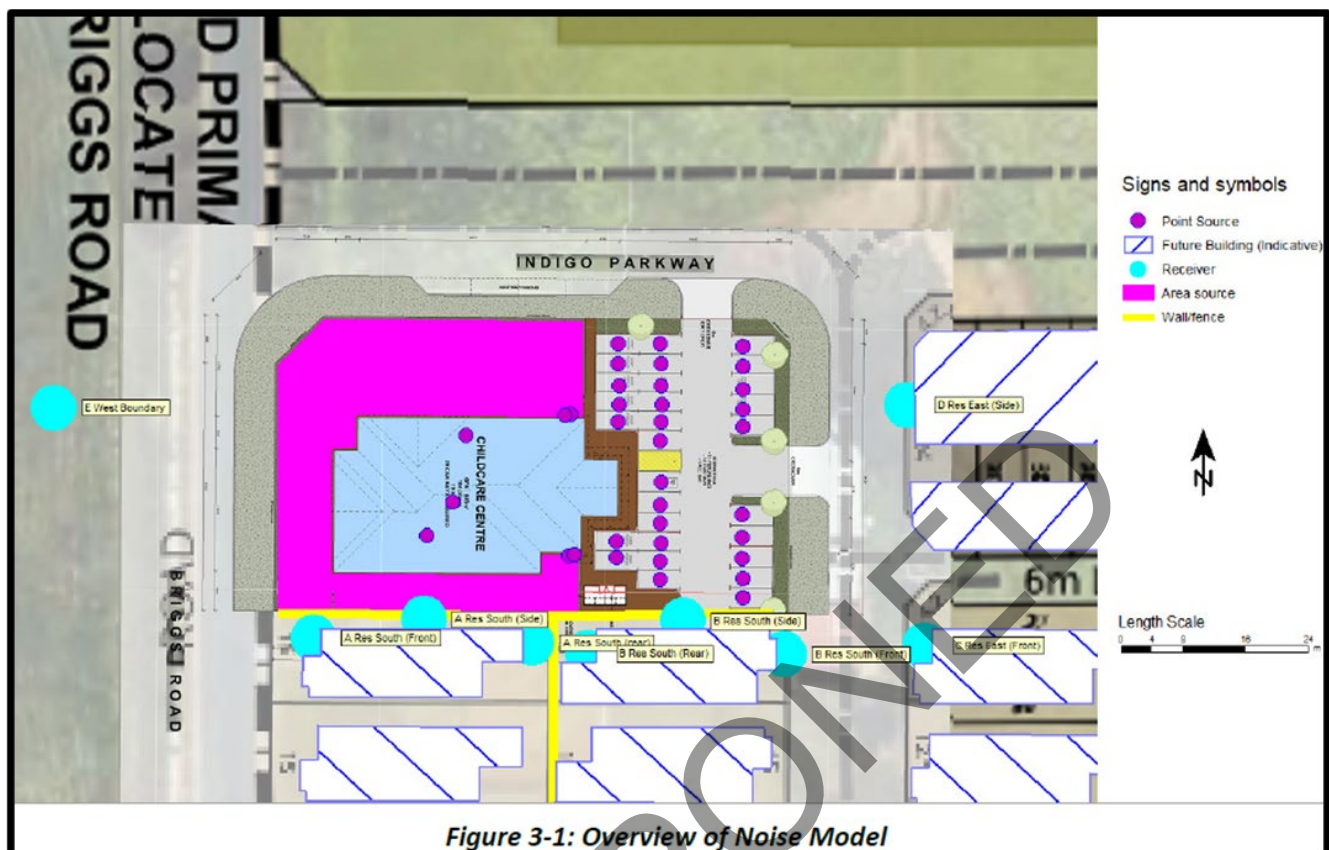
Acceptable Development	Performance Based	Officer Comment
of all adjoining verge areas, in accordance with the Scheme, to provide an attractive setting and contribute to the streetscape.	landscaping requirement is associated with additional verge landscaping.	landscaping is consistent with the policy. Refer to the built form section of the report.
Design		
Development has the appearance of natural materials i.e. recycled clay face brick, vertical and horizontal patterns of timber cladding, rammed earth construction, earth block features, natural stone elements for columns, sheltering gable roof. Measures should be taken to ensure that play areas are large enough and of such dimensions to be useful as play areas and positive outdoor space. Side setback and leftover building areas are not included for such purpose.	Demonstrate that the development includes natural features to elevate the rural and natural character of the Shire. Demonstrate that the proposal is in keeping with the surrounding built and natural environment. Development in residential areas mimics residential urban patterns (front yard, central placed building, driveway to one size and rear backyard).	Acceptable - refer to Built Form section of report.

Amenity

Clause 67 of the Deemed Provisions, namely clause (n), requires the Local Government to consider the amenity impacts of a development. Noise generated from the proposal has the potential to impact upon the amenity of the area, given the proximity of the proposal to future neighbouring residential dwellings surrounding the subject site (sensitive receptors).

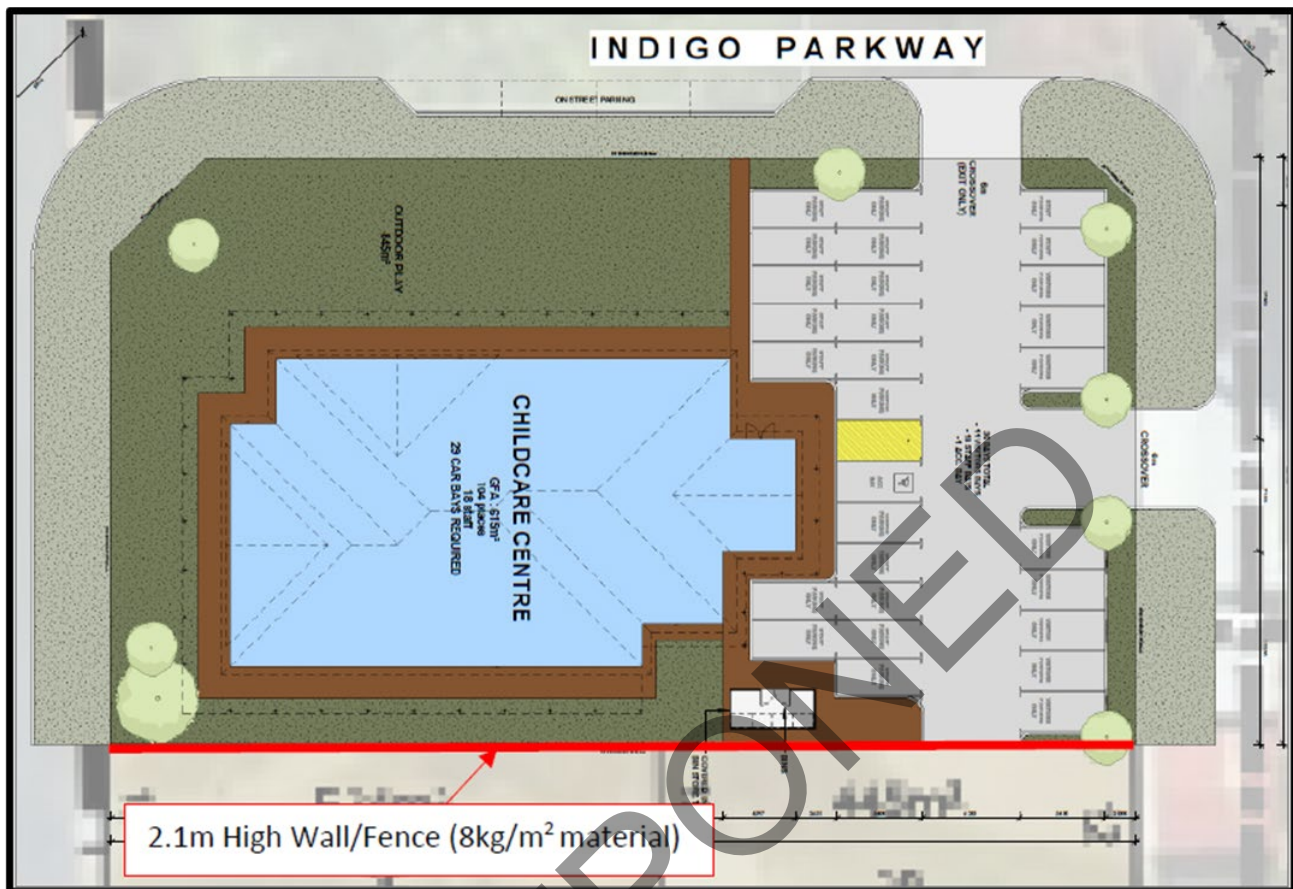
To address noise, the applicant submitted an Environmental Noise Assessment (ENA) in accordance with the *Environmental Protection (Noise) Regulations 1997* (the Regulations). This can be viewed as **attachment 5**. The report assesses noise emissions from indoor and outdoor child play areas, car doors closing in the car park, and mechanical plants (air conditioning units and exhaust extraction fans), against the prescribed standards the Regulations.

The Regulations set out the maximum allowable noise level that may be received at nearby sensitive receptors. In this case, computer modelling using the noise modelling program SoundPlan 8.2 was used to predict noise emissions from the development at all noise receivers (sensitive receptors identified as shown below and demonstrated within the ENA).



The predicted noise levels received at the future residential properties (sensitive receptors) within the ENA for the major noise sources, have been tabulated in Tables 4.1 to 4.3 of the ENA. The location of these sensitive receptors and noise receivers at this location have been captured in the above diagram.

In terms of the outdoor child play assessment, the ENA assessment demonstrates that all noise receivers will comply with the assigned levels under the regulations with zero exceedance. The acoustic modelling of outdoor play noise was based on the worst-case scenario of all children of any age group of children playing simultaneously within the outdoor play areas shown in the site plan. The noise modelling has been based on construction of a 2.1m solid wall along the southern boundary enclosing the southern outdoor play area and carpark as shown in the site plan following.



The applicant has provided information that whilst the proposed facility would open at 6.30am which is before 7:00am (i.e. during the night period as set in the Regulations) for drop offs, the outdoor play area would only be used after 7:00am thereby restricting outdoor play times. In addition, the applicant has provided information that play time would generally be staggered and therefore not all children would be playing outside at once for extended periods of time. As such, Officers are satisfied that outdoor play area noise received at the neighbouring future residences to the south from the outdoor play area would comply with the assigned and maximum noise levels. The proposal has been designed in such a way that the large footprint of the outdoor play area is located to the north which abuts the future Indigo Parkway and public open space. As such, Officers are satisfied that outdoor play area noise received at the neighbouring future residences to the south and east from the outdoor play area would comply with the assigned and maximum noise levels.

The assessment of noise emitted from the mechanical plant was based on the assumptions relating to the number, location, size and type of mechanical plant. In that regard, the ENA demonstrates that all existing noise receivers predominantly sensitive receptors, comply with the assigned levels under the Regulation. Officers note that adjusted predicted noise levels at future sensitive receptors located to the south meet the threshold limit of the assigned levels which arguably presents a risk of exceedance. To ensure full compliance, the applicant has provided information that mechanical plant noise (specific AC unit types) is to be reviewed by a qualified acoustic consultant during detailed design, to ensure that noise attenuation is applied to achieve compliance with the future sensitive receptors to the south. This will include measures such as acoustic shielding of the units on all sides by a suitable barrier. This has been conditioned accordingly and required to be met prior to the issue of a building permit.

In respect to car doors opening and closing, ENA demonstrates that all noise receivers will comply with the assigned levels under the regulations based on the construction of a 2.1m high solid wall to the south.

In terms of the indoor child play assessment, the ENA demonstrates that all noise receivers will comply with the assigned levels under the regulations based on the following:

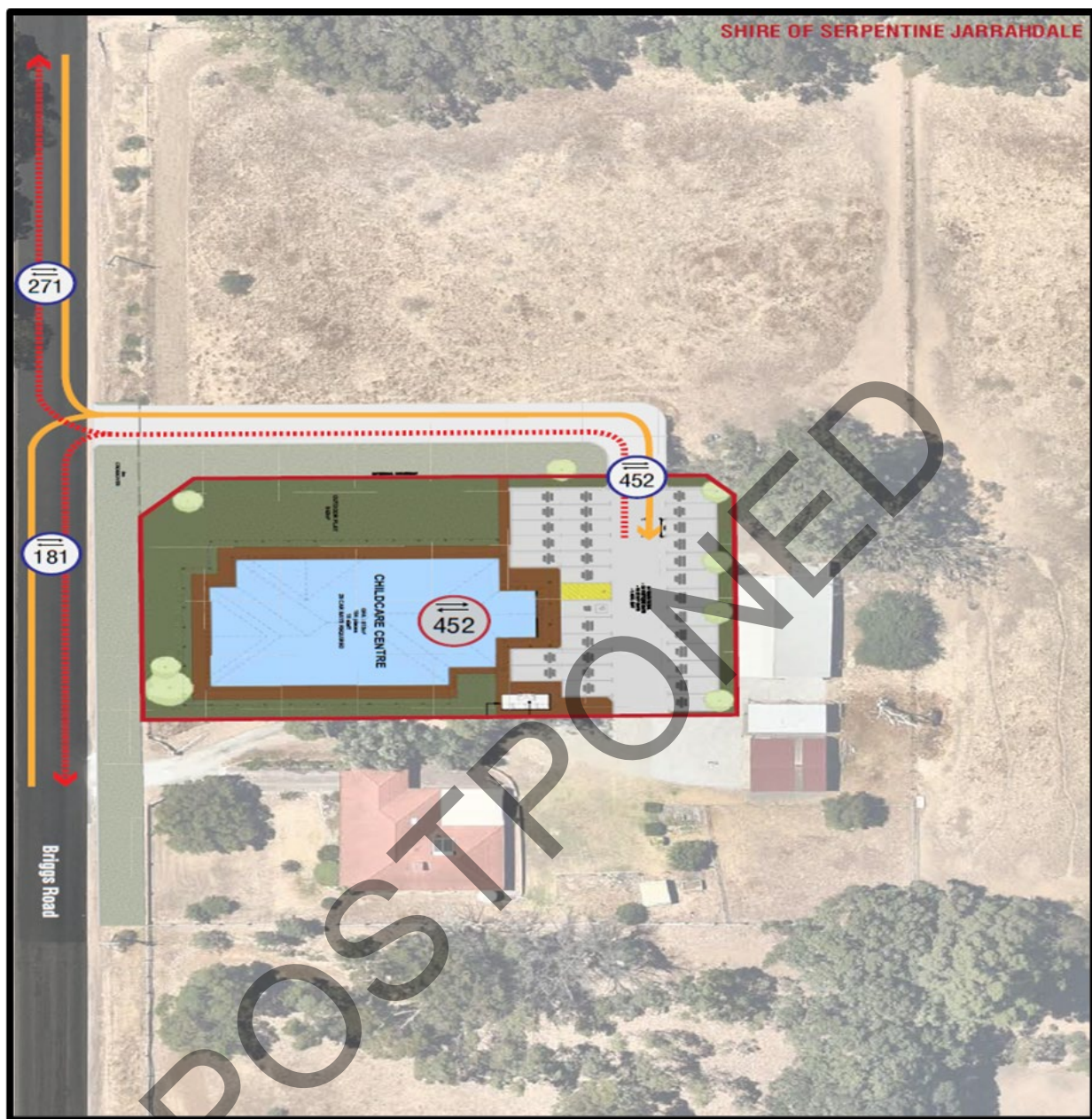
- Internal noise levels within activity rooms would not exceed those from outdoor play for each age group, regardless of windows being open or closed; and
- Any music played within the internal activity areas would be 'light' music with no significant bass content and played at a relatively low level.

Overall, the ENA demonstrates that all noise receivers will comply with the assigned levels under the Regulations. Officers will be recommending a Noise Management Plan be submitted to address all activities associated with outdoor play and indoor child play to further reduce noise emissions from the development and to include the recommendations within ENA. Officers are satisfied that the development can be undertaken without adversely impacting upon the amenity of the locality. Officers are satisfied that the implementation of recommendations within the ENA would result in the development not adversely detracting from the existing amenity of the area currently afforded to occupiers of the area.

Traffic and Access

The category of the vehicles associated with the proposed development will predominantly comprise of small passenger vehicles dropping off and picking up children, as well as staff and waste vehicles. During the consultation period concerns were raised over the impacts of increased traffic movements on Briggs Road and whether its current state would be capable to accommodate additional traffic generated by the proposal.

As discussed above, vehicle access to the subject site is proposed in two stages based on the current road network and the future road network which includes the delivery of roads through the gradual subdivision of land within the LSP area. Vehicle access for Stage 1 of this development is proposed via a single full movement crossover on Briggs Road via an internal driveway to the carpark area as shown below.



The proposed six metre wide crossover on Briggs Road will provide access to the main car park consisting of 31 bays (inclusive of one ACROD bay) as shown in the previous image.

To assess the increased traffic movements on the road network and potential safety issues, a Transport Impact Statement (TIS) was provided with the application, which can be viewed in **attachment 6** to this report. The TIS assessed traffic generated by the proposed development and its potential impact on the overall performance of the existing and future surrounding local road network. This includes the current state of Briggs Road and the future Indigo Parkway. Briggs Road is an Access Road and Indigo Parkway a Local Distributor Road. Based on the approved LSP covering the site, Indigo Parkway will thus be upgraded to a Local Distributor Road, with a cross section comprising a single lane of traffic in either direction and central median for boulevard tree planting and drainage management.

Consistent with the planning for Byford and protection of the Byford Trotting Complex, Briggs Road is not intended to function as a Local Access Road, for access into and out of the Byford Trotting Complex.

Existing Network

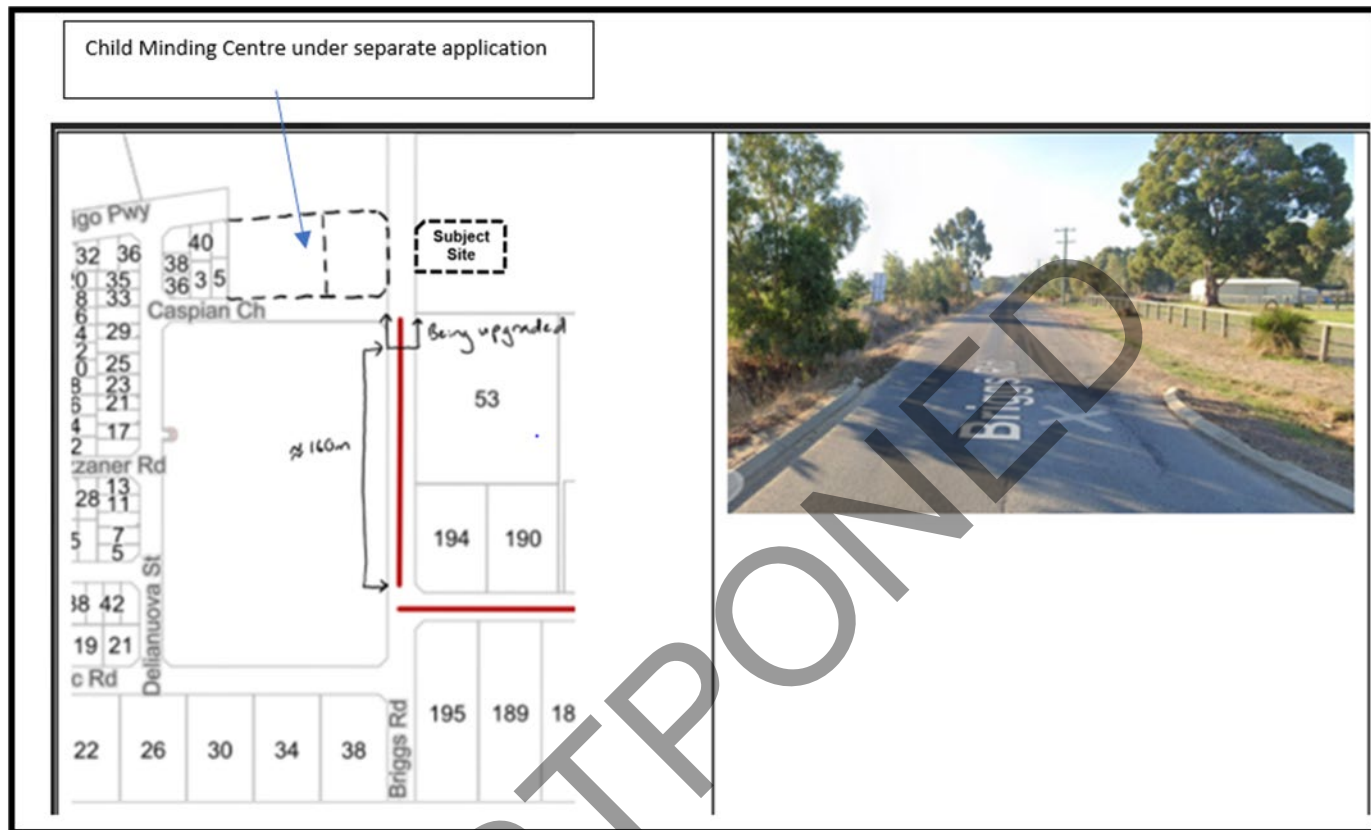
The findings on the volume of traffic likely to be generated by the proposal to the site, based on the existing network was estimated using available trip generation rates from the Institute of Transportation Engineers (ITE). The TIS identifies that the development will generate 452 vehicle trips per day within the local catchment. The AM peak period generating 83 vehicle trips to the site and a PM peak flow of 73 trips generated. The focused distribution of traffic flows associated with the development is expected to be as follows:

- 60% to/from the north via Briggs Road
- 40% to/from the south via Briggs Road



The predicted AM/PM trip generation peak periods fall under the 'moderate impact' category according to WAPC Transport Impact Assessment Guidelines. This moderate impact, however,

will in the opinion of Officers, exacerbate the section of Briggs Road which is not being upgraded through the ongoing subdivisions to accommodate the planned increase in traffic. There is a section of Briggs Road, that is designated as 'Very Poor' according to the 2023 asset data capture. The section of concern is shown following:



Without a suitable upgrade, the very poor section of Briggs Road will, in the opinion of Officers, be a risk exacerbated by the intensification of traffic proposed by the development. Officers are of the opinion that the road upgrade at least needs to comprise resurfacing, similar to the recent resurfacing of Briggs Road completed by the Shire south of Larsen Road. Accordingly, a condition is recommended to require a financial contribution to resurfacing of the road, based upon the following formula:

A. Cost to resurface 160m section:	\$120,000
B. Number of child care centres proposed:	Two
C. Portion of traffic emanating south:	40%
Formula to calculate financial contribution:	$(A/B) \times C$
Upgrade contribution:	\$24,000

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

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

In Officers assessing this aspect of the TIS, the actual deteriorated section of Briggs Road does not represent a current infrastructure standard that can safely manage the planned increase in traffic. To address this aspect, a road upgrade is needed to enable the proposed development to safely operate based on the expected traffic demands which show in the interim period 40% of traffic coming from the south. A financial contribution towards this, based on generated traffic, is recommended to be conditioned.

Upgrade of Footpath

As shown in the following image, the site will be isolated from a safe pedestrian path, and Officers consider that this needs to be addressed as part of approval of the development, by including a footpath on the eastern verge of Briggs Road that connects south to the existing network along Larsen Road.



As such, a condition has been included to secure the required footpath infrastructure that adjoins the frontages of this lot, which also extends to link to the footpath network (existing) on Larsen Road. This is important in order to facilitate safe pedestrian access to the proposed development. Consistent with the planning framework to ensure that all modes of transport are catered for.

Future network

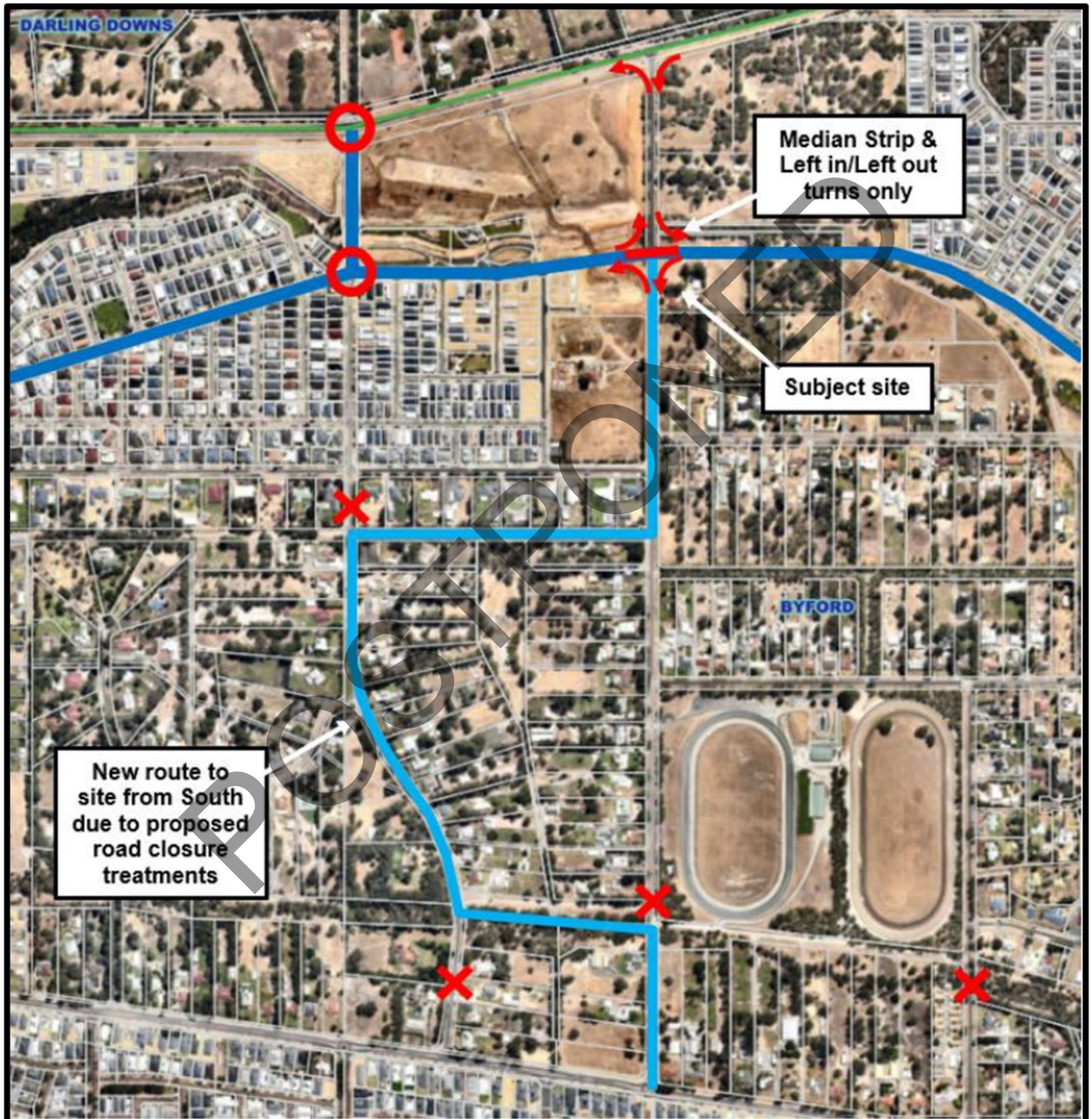
In the longer term, various proposed changes to the surrounding road network will redistribute the child minding centre traffic. This is based upon the approved Byford DSP, which depicts the ultimate network structure which aims to avoid traffic flows running through the Byford Trotting Complex along Briggs Road and Malarkey Road.

The changes to the network in the future are as follows:

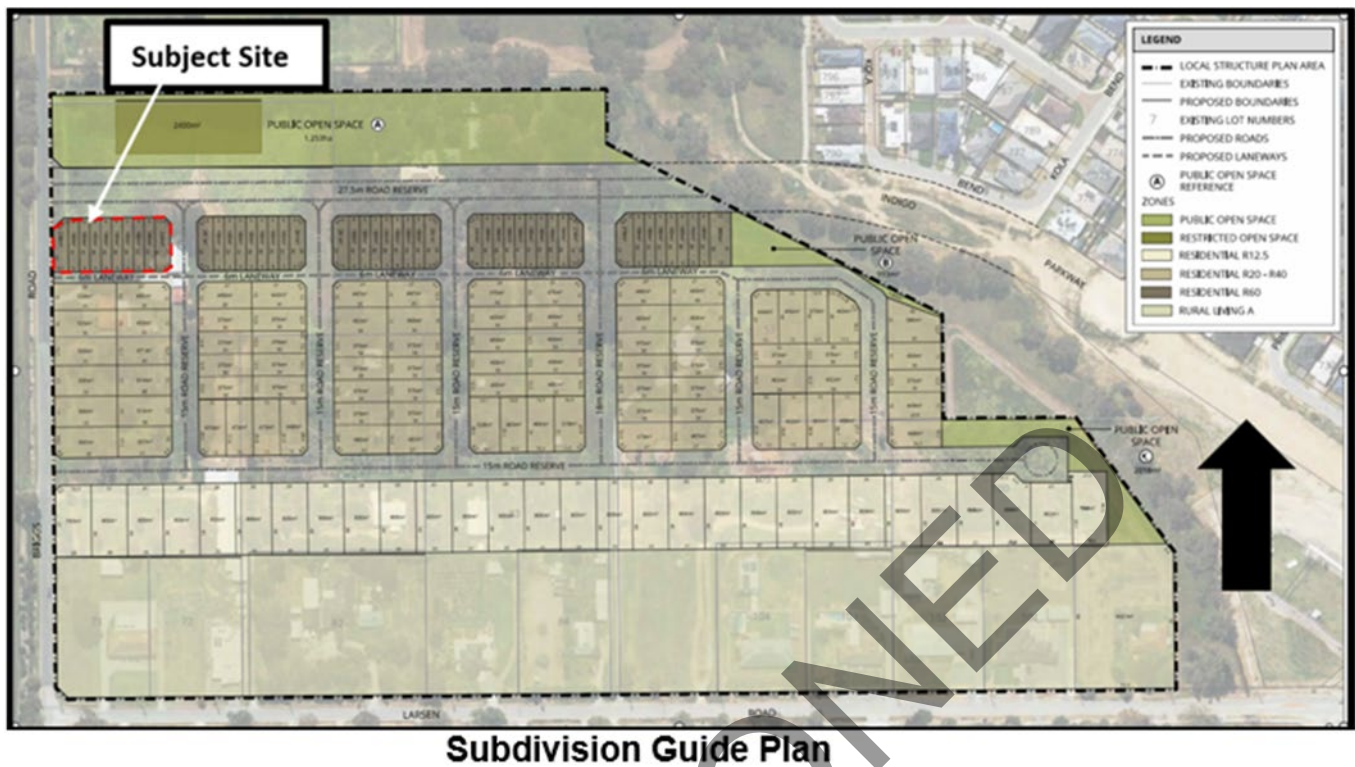
- Thomas Road / Briggs Road intersection will be modified to only allow left turns.
- Briggs Road north of Abernethy Road will be modified to limit through traffic in the Byford Trotting Complex.
- Malarkey Road will be extended north to Thomas Road, and new roundabouts will be constructed on Thomas Road at Malarkey Road/Master Road and Kardan Boulevard.

- The Thomas Road / Plaistowe Boulevard intersection will be signalised.
- The median strip along Indigo Parkway will be extended across Briggs Road to block right turns and through movements along Briggs Road.

The long-term changes to the road network is depicted in the diagram below:



Based on the long-term changes to the road network depicted in the previous diagram, a median is expected to be constructed on Indigo Parkway, allowing only LILLO movements from/to Briggs Road. It is considered that that in the longer term traffic would be evenly distributed through the creation of roads from the gradual subdivision process of the LSP area as depicted within the subdivision concept plan. Furthermore, as a result of the construction of Indigo Parkway in an eastbound direction towards the town centre.



Based on the future scenario it is unlikely that the development will increase traffic on any particular section of road by more than 100 vehicles per hour. Provided the previously mentioned condition of a contribution to upgrading the 160m section of Briggs Road occurs, the development is unlikely to have an adverse impact on the road network in the future.

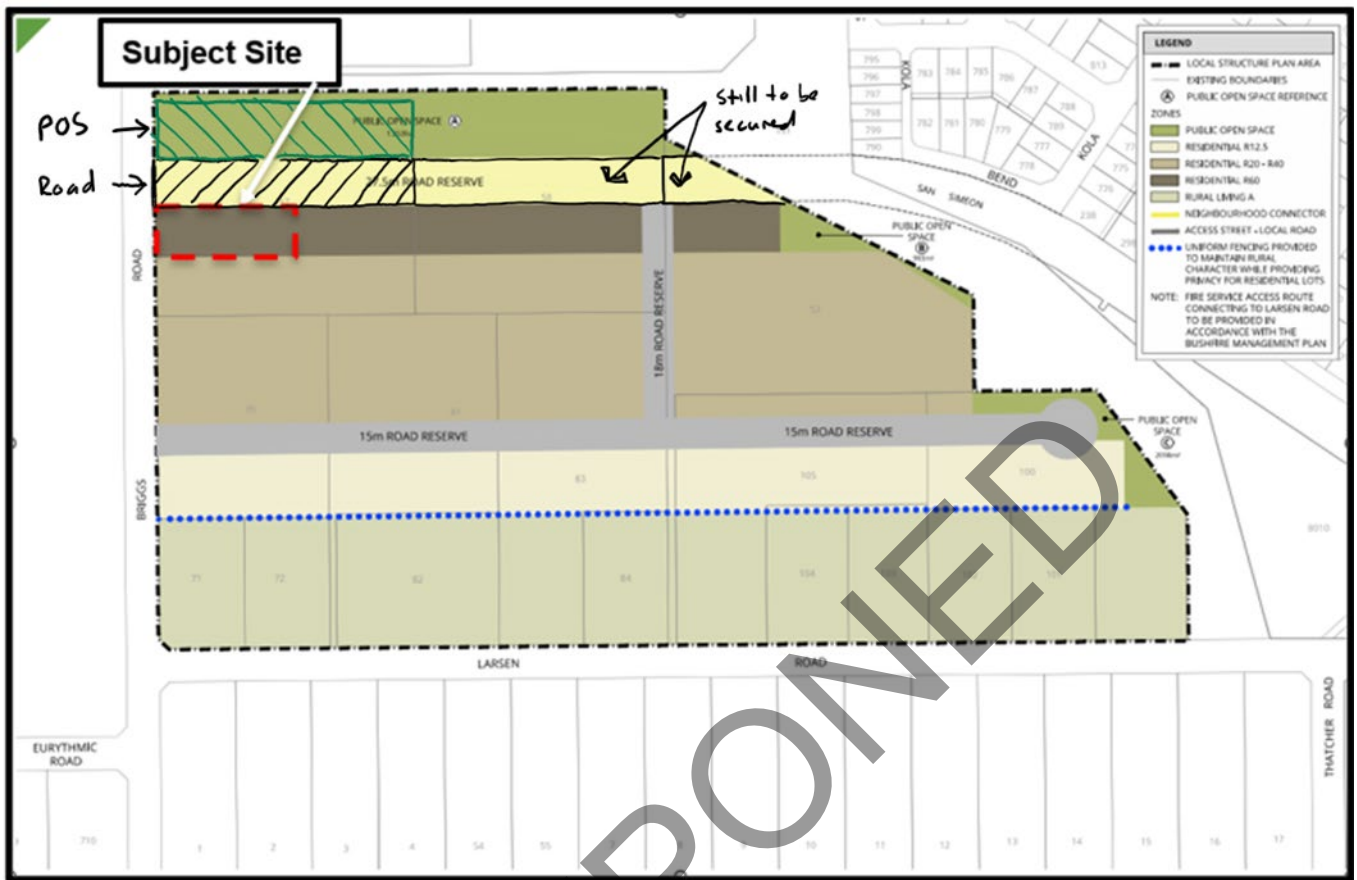
In terms of the Stage 2 access/egress arrangements, the development would be accessed via a full movement crossover to the future eastern access road and an exit only crossover to Indigo Parkway. A condition of approval ensuring the works associated with the modified access/egress arrangements are undertaken at the completion of both Indigo Parkway and the access road.

Ceding of land for Indigo Parkway and Public Open Space (POS)

The role of the structure plan is to attempt to coordinate landowners in subdividing their land, such that land parcels may be subdivided jointly in a coordinated process to layout in a logical manner where roads, POS and development will occur.

It is expected that the road reservation required for the extension of Indigo Parkway and POS Reservation as shown within the LSP is secured through the process of subdivision or a development application, which ever precedes the other. Officers consider that as development of the site has occurred first, ceding of the land for the purposes of a road reservation and the POS corridor is required to occur as part of this process. The POS portion of the land will include provision for drainage, and the portion of road reserve will likely be required for coordinated construction of the Indigo Parkway link around the 2025/2026 financial year. This is conditioned accordingly and shown in the following image.

It is conditioned to construct the POS, whereas it is not conditioned to construct Indigo Parkway given all land required for the link is yet to be secured. The remaining land portion to be secured are also shown following:



Local Structure Plan

Local Planning Policy 1.6 - (LPP 1.6) - Public Art for Major Developments

The objective of LPP1.6 is to facilitate per cent for art to enhance public enjoyment, engagement and understanding of places through the integration of public art. The policy sets out the requirements for physical and financial contributions for public art for any development valued at \$1 million or greater.

Officers note that the applicant has not provided any details for a public art feature within the design of the development. Should the application be approved, a percentage for art condition of development approval would be recommended by way of a condition, consistent with the policy.

Local Planning Policy 4.11 (LPP4.11) - Advertising

Local Planning Policy LPP 4.11 - Advertising sets out development standards and requirements for advertisements. The plans, as submitted, have identified nominal wall signage for the proposal integrated into the façade of the development. No detailed drawings of the signage were provided with the application.

If the application is approved, a signage plan will be required to be prepared and approved prior to operation of the development, to ensure any signage is compliant with the policy.

Local Planning Policy 4.15 (LPP4.15) - Bicycle Facilities

LPP4.15 provides guidance to developers on the design and requirements of bicycle parking and end of trip facilities for each specific land use. In accordance with the policy, bicycle facilities are to be provided in accordance with Schedule 1 of the policy. Officers note that the applicant has not

provided any details or provisions for a bicycle rack. If the application were to be approved, the applicant would be required to comply with the requirements of the policy.

Local Planning Policy 2.4 - Water Sensitive Design

LPP2.4 aims to maximise water efficiency by encouraging best practice urban water management methods. The policy aims to ensure water sensitive design best management practices are implemented for new developments with the Shire.

A Stormwater and Drainage Management Plan (SMP) will be required, demonstrating how stormwater is managed and shall be provided prior to issue of a Building Permit.

Local Planning Policy 24 (LPP24) - Designing Out Crime

LPP24 encourages commercial development to incorporate principles of Crime Prevention through Environmental Design (CPTED). LPP24 sets out five key crime prevention principles that are to be applied to different levels of the planning framework according to the policy. A development application needs to be assessed against the principles of the policy. The principles relate to surveillance, access control, territorial reinforcement, target hardening, management, and maintenance.

It is considered that the corner location of the site affords the site with a high level of passive surveillance. In addition, proposed activity spaces and outdoor play areas face public streets and facilitate passive surveillance over the public realm.

State Planning Policy 3.7 - Planning in Bushfire Prone Areas

SPP3.7 provides the requirements and guidelines for development within areas identified as bushfire prone. The subject site is located within a designated bushfire prone area in accordance with the Department of Fire and Emergency Services (DFES) Map of Bushfire Prone Areas. SPP3.7 seeks to ensure the risk of bushfire to developments is considered and mitigated through the development assessment process.

Pursuant to the provisions of SPP3.7, the application included a Bushfire Management Plan (BMP) for the subject site. The BMP which can be viewed as **attachment 7** states that on completion the proposed childcare center is expected to achieve a compliant BAL-29 or lower outcome, under the vegetated scenario.

As a Child-Minding Centre is a vulnerable land use, the application has been referred to DFES for assessment. DFES has recommended modifications to be undertaken to the submitted Bushfire Management Plan. These modifications primarily relate to the justification on the classification of vegetation plots and will be conditioned accordingly.

Government Sewerage Policy (2019)

This policy set out the guidelines relating to the provision of sewerage services through the planning and development of land. The policy generally requires connection of new subdivision and development to reticulated sewerage to protect public health and amenity.

The site is not proposed to be connected to deep sewerage surrounding the subject site which can be readily connected. The applicant has proposed an interim alternative effluent disposal system until such a time when the site is fully developed due to costs associated with the deep connection. During the consultation period concerns were raised regarding the lack of reticulated sewerage to support the development and the potential health impacts of the proposed alternative effluent disposal system.

The application and the accompanying Site Soil Evaluation (SSE) report was referred to the DoH. The DoH have recommended connection to deep sewer as their preference, however, are satisfied that the site can manage wastewaters onsite. The DoH have requested an updated SSE

to be submitted which is undertaken during the wettest seasonal time of the year (mid-July-August) as per Australian/New Zealand Standard 1547:2012 requirements as part of a condition of approval. Furthermore, more specific details of the development to wastewater management areas (irrigation areas) of the site and confirmation that stormwater and wastewater management will not interact.

To address DoH comments, a condition has been recommended requiring an updated SSE to be submitted to reflect DoH comments. The SSE to be submitted to the Shire for approval on advice by the DoH. It should be noted that subject to a separate approvals process, the wastewater system will have to be approved by the DoH in conjunction with the Shire. This provides a second assessment process to ensure the system is compatible with the land and broader area.

In terms of future sewer connection, once land within the LSP area begins to be subdivided and sewer moves closer to the LSP area, the wastewater treatment system will be decommissioned, and the development will be connected to sewer. Currently the closest connection is 330m away from the development. A condition requiring the irrigation area of the development to be remediated to the satisfaction of the Shire once the development has been connected to sewer.

Development Contributions (DCA1)

This development falls within the development contribution area DCA1 (Area A) and as such is required to contribute towards the cost of common infrastructure under the Byford Traditional Development Contribution Plan. The development contribution area was introduced by way of Amendment 108 to TPS2, and recently updated under Amendment 208.

Under a development application (as opposed to a subdivision), contributions are calculated on the current lot area on which the development is situated, giving a lot “yield” for the site. The liability to pay the contribution is triggered at the building permit stage, and thus the DCP payment will be applied as a development condition needing to be met prior to the issue of a Building Permit. The condition of approval for the applicant to contribute towards the costs of providing common infrastructure is expected to address concerns that were raised during the consultation period.

Options and Implications

Option1

That Council RESOLVES the following Responsible Authority Recommendation:

1. That the Metro Outer Joint Assessment Panel APPROVES the development application for the construction of a ‘Child Minding Centre’ at Lot 57 Briggs Road, Byford subject to the following conditions:
- a. The development is to be carried out in compliance with the plans and documentation listed below, except where amended by other conditions of this consent.

Plans and Specifications	Development Plans dated November 2022 Updated Transport Impact Statement dated April 2023 Environmental Acoustic Assessment dated 20 February 2023 Updated Bushfire Management Plan dated 9 May 2023 Soil Site Evaluation Report dated 16 February 2023
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- b. The maximum number of children on the premises shall not exceed 104.
- c. The operating hours shall be between 6:30am and 6.30pm, Monday to Friday.

- d. Prior to the issue of a Building Permit for the development, the land required for the future construction of Indigo Parkway and the public open space (multiuse corridor) where it exists on the subject land, is to be precipitated as a road reserve and reserve for recreation and drainage respectively by subdivision of the subject land, as depicted within the 'Area D Briggs Larsen Precinct Local Structure Plan', to the satisfaction of the Shire of Serpentine Jarrahdale.
- e. Prior to the issue of a Building Permit or approval of earthworks / civil plans (whichever comes first), updated development plans shall be submitted to and approved by the Shire of Serpentine Jarrahdale which depict the following being undertaken as part of the development:
- (i) A new footpath being extended on the eastern side verge of Briggs Road to link the development to the existing footpath on Larsen Road;
 - (ii) The verge abutting the development site on the subject land being upgraded to an urban standard, to match the verge standard approved as part of the adjoining resident subdivision on the western side of the Briggs Road;
 - (iii) The landscaping and drainage design of the multiuse corridor, in order to reflect the continuation of the design elements located west of the subject land, namely central living stream, offline vegetated swales, lighting and pathways;

Once approved, the applicant must undertake and complete all infrastructure upgrade works prior to the commencement of the development's operations.

- f. Prior to the occupation of the development, vehicle parking areas, access ways and crossovers shall be designed, constructed, sealed, kerbed, drained and line marked in accordance with the approved plans and thereafter maintained to the satisfaction of the Shire of Serpentine Jarrahdale.
- g. A minimum of one car parking bay is to be provided and marked for the exclusive use of vehicles displaying government issued disabled parking permits. Such bay shall be located conveniently to the principal building entrance and designed in accordance with the relevant Australian Standard.
- h. Prior to issue of a Building Permit, the applicant shall submit a Noise Management Plan to the specifications and satisfaction of the Shire of Serpentine Jarrahdale. The Noise Management Plan shall be prepared to ensure appropriate measures are designed and implemented for the development to achieve compliance with the *Environmental Protection (Noise) Regulations 1997*, with particular regard to the following points:
- (i) The design of the wall on the south side of the building;
 - (ii) The management of outdoor play areas;
 - (iii) The management of indoor activities;
 - (iv) The design and shielding of mechanical plant;
 - (v) Parking arrangement for drop off before 7:00am.

Once approved, the Noise Management Plan shall be implemented in its entirety to the satisfaction of the Shire. The plan shall demonstrate the development incorporating all design and operational recommendations as specified within the Environmental Acoustic Assessment, to the satisfaction of the Shire of Serpentine Jarrahdale where associated with construction requirements integrated into plans submitted for a building permit.

- i. Prior to issue of a Building Permit, a Waste Management Plan shall be submitted to and approved by the Shire of Serpentine Jarrahdale. Once approved, the Waste Management Plan shall be implemented in its entirety to the satisfaction of the Shire.

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- j. Prior to issue of a Building Permit, an updated Soil Site Evaluation report is to be submitted to and approved by the Shire of Serpentine Jarrahdale on advice by the Department of Health. The updated report is required to be:
- (i) Modelled during the wettest season times of the year (mid-July-August);
 - (ii) Demonstrate that stormwater management does not interfere with the efficacy of the effluent disposal area;
 - (iii) A plan detailing the proposed building area, trafficable areas, parking bays setback to land application areas and exclusion areas.
- k. Prior to the issue of a Building Permit, a Landscape and Revegetation Plan shall be submitted to and approved by the Shire of Serpentine Jarrahdale. This is required to include the full extent of verge adjoining the development site, and the multiuse corridor. Once approved, the Landscape and Revegetation Plan shall be implemented in its entirety and maintained thereafter by the operator, to the Shire's satisfaction.
- l. Prior to the issue of a Building Permit, a Stormwater Management Plan shall be submitted to and approved by the Shire of Serpentine Jarrahdale. All stormwater shall be directed so stormwater is disposed of within the property. Direct disposal of stormwater onto the road, neighbouring properties, watercourses and drainage lines is not permitted. Stormwater may be managed through either soak wells, raingardens or a combination of the two.
- m. Prior to issue of a Building Permit, a Signage Strategy must be submitted to and approved by the Shire of Serpentine Jarrahdale. The Strategy shall demonstrate compliance with Local Planning Policy No 4.11 - Advertising Signs. Once approved, signage shall be displayed and maintained in accordance with the Strategy.
- n. Prior to occupation of the development, the provision of percent for art being provided in accordance with Local Planning Policy 1.6 - Public Art for Major Developments to the satisfaction of the Shire.
- o. Prior to issue of a Building Permit, the landowner/applicant contributing towards development infrastructure, pursuant to the Shire of Serpentine Jarrahdale Town Planning Scheme No. 2.
- p. Prior to issue of a Building Permit, a Construction Management Plan is to be submitted to and approved by the Shire of Serpentine Jarrahdale. The Plan should address the following matters:
- (i) Management of car parking, delivery vehicles and traffic associated with the construction of the development;
 - (ii) Management of dust and noise.
- q. Within three months of the completion of the construction of Indigo Parkway and the eastern access road as depicted within the Subdivision Guide Plan of the 'Area D Briggs Larsen Precinct Local Structure Plan', the access arrangement onto Indigo Parkway will be required to be modified to exit only (left out) and a new full movement access/egress arrangement constructed to the access road to the east to the satisfaction of the Shire of Serpentine Jarrahdale.
- r. Once the development is connected to sewer, the wastewater system is to be decommissioned to the satisfaction of the Shire of Serpentine Jarrahdale. The wastewater irrigation area is to be remediated prior to being used for any other purpose to the satisfaction of the Shire.
- s. Prior to the issue of a Building Permit, a financial contribution of \$24,000 being made to the Shire, reflective of the costs to resurface the 160m section of Briggs Road relied upon for

access by the development, with the contribution based upon the pro-rata generation of traffic emanating from the development.

Option 2

That Council RESOLVES the following alternative Responsible Authority Recommendation:

1. That the Metro Outer Development Assessment Panel REFUSES the application for a 'Child Minding Centre' development at Lot 9511 Briggs Road, Byford due to the following reasons:
 - a. The size of the development poses an adverse amenity impact on the surrounding current and future sensitive land uses in the area;
 - b. The current road condition of Briggs Road, 160m south of the subject land, is in Very Poor Condition and cannot safely accommodate additional traffic generated by this development;
 - c. The current footpath network will not be linked to the development and represents an unsafe access situation for pedestrian to access the development;
 - d. The proposal is not connected to reticulated sewer contrary to the Government Sewerage Policy.

Option 1 is recommended.

Conclusion

This report is presented to Council to endorse a Responsible Authority Reports for the Metro Outer Development Assessment Panel for a 'Child Minding Centre' development in the western portion of Byford. Officers consider that the development is consistent with the planning framework, provided conditions are imposed to address the relevant incidental matters that relate to the proposed development. The proposed development will increase the child care services and provide employment opportunities for the local community that will assist to support the population growth within the Shire. Officers are satisfied that the conditions recommended will address concerns raised during public submissions and it is considered to not adversely impact upon the existing amenity of the area.

As such, for the reasons outlined in the report, it is recommended that Council approve the application subject to conditions.

Attachments (available under separate cover)

- **10.1.5 - attachment 1** - Responsible Authority (E23/6358)
- **10.1.5 - attachment 2** - Development Plans (E23/6359)
- **10.1.5 - attachment 3** - Summary of Submissions (E23/6210)
- **10.1.5 - attachment 4** - Deemed Provisions Regulations Clause 67 (E23/6347)
- **10.1.5 - attachment 5** - Updated Traffic Impact Assessment (E23/6207)
- **10.1.5 - attachment 6** - Environmental Acoustic Assessment (E23/6360)
- **10.1.5 - attachment 7** - Updated Bushfire Management Plan (E23/6211)

Alignment with our Strategic Community Plan

Outcome 3.1	A commercially diverse and prosperous economy
Strategy 3.1.1	Actively support new and existing local businesses within the district.
Outcome 4.2	A strategically focused Council
Strategy 4.2.1	Build and promote strategic relationships in the Shire's interest.

Financial Implications

Nil.

POSTPONED

Risk Implications

Risk has been assessed on the Officer Options and Implications:

Officer Option	Risk Description	Controls	Principal Consequence Category	Risk Assessment			Risk Mitigation Strategies (to further lower the risk rating if required)
				Likelihood	Consequence	Risk Rating	

1	That Council RESOLVES the Responsible Authority Recommendation for the MOJDAP to approve the application, and MODAP propose approval without the full extent of conditions necessary.	A clearly explained report that addresses the validity of each condition.	Social Community Outcomes /	Possible	Moderate	MODERATE	If MODAP were seeking to approve, the provision of the RAR contains justification to the conditions.
2	That Council RESOLVES the Responsible Authority Recommendation for the MOJDAP to refuse the application, and MODAP propose approval without the full extent of conditions necessary.	Panning Framework	Organisational Performance	Possible	Moderate	MODERATE	If MODAP were seeking to approve, the provision of the RAR would include reference to Option 1 so would be a basis to ensure conditions were made aware to MODAP.

Voting Requirements: Simple Majority

OCM134/06/23

COUNCIL RESOLUTION / Officer Recommendation

Moved Cr Duggin, seconded Cr Coales

That Council RESOLVES the following Responsible Authority Recommendation:

- 1. That the Metro Outer Joint Assessment Panel APPROVES the development application for the construction of a 'Child Minding Centre' at Lot 57 Briggs Road, Byford subject to the following conditions:**
 - a. The development is to be carried out in compliance with the plans and documentation listed below, except where amended by other conditions of this consent.**

Plans and Specifications	Development Plans dated November 2022 Updated Transport Impact Statement dated April 2023 Environmental Acoustic Assessment dated 20 February 2023 Updated Bushfire Management Plan dated 9 May 2023 Soil Site Evaluation Report dated 16 February 2023
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- b. The maximum number of children on the premises shall not exceed 104.**
- c. The operating hours shall be between 6:30am and 6.30pm, Monday to Friday.**

- d. Prior to the issue of a Building Permit for the development, the land required for the future construction of Indigo Parkway and the public open space (multiuse corridor) where it exists on the subject land, is to be precipitated as a road reserve and reserve for recreation and drainage respectively by subdivision of the subject land, as depicted within the 'Area D Briggs Larsen Precinct Local Structure Plan', to the satisfaction of the Shire of Serpentine Jarrahdale.
- e. Prior to the issue of a Building Permit or approval of earthworks / civil plans (whichever comes first), updated development plans shall be submitted to and approved by the Shire of Serpentine Jarrahdale which depict the following being undertaken as part of the development:
- (i) A new footpath being extended on the eastern side verge of Briggs Road to link the development to the existing footpath on Larsen Road;
 - (ii) The verge abutting the development site on the subject land being upgraded to an urban standard, to match the verge standard approved as part of the adjoining resident subdivision on the western side of the Briggs Road;
 - (iii) The landscaping and drainage design of the multiuse corridor, in order to reflect the continuation of the design elements located west of the subject land, namely central living stream, offline vegetated swales, lighting and pathways;

Once approved, the applicant must undertake and complete all infrastructure upgrade works prior to the commencement of the development's operations.

- f. Prior to the occupation of the development, vehicle parking areas, access ways and crossovers shall be designed, constructed, sealed, kerbed, drained and line marked in accordance with the approved plans and thereafter maintained to the satisfaction of the Shire of Serpentine Jarrahdale.
- g. A minimum of one car parking bay is to be provided and marked for the exclusive use of vehicles displaying government issued disabled parking permits. Such bay shall be located conveniently to the principal building entrance and designed in accordance with the relevant Australian Standard.
- h. Prior to issue of a Building Permit, the applicant shall submit a Noise Management Plan to the specifications and satisfaction of the Shire of Serpentine Jarrahdale. The Noise Management Plan shall be prepared to ensure appropriate measures are designed and implemented for the development to achieve compliance with the *Environmental Protection (Noise) Regulations 1997*, with particular regard to the following points:
- (i) The design of the wall on the south side of the building;
 - (ii) The management of outdoor play areas;
 - (iii) The management of indoor activities;
 - (iv) The design and shielding of mechanical plant;
 - (v) Parking arrangement for drop off before 7:00am.

Once approved, the Noise Management Plan shall be implemented in its entirety to the satisfaction of the Shire. The plan shall demonstrate the development incorporating all design and operational recommendations as specified within the Environmental Acoustic Assessment, to the satisfaction of the Shire of Serpentine Jarrahdale where associated with construction requirements integrated into plans submitted for a building permit.

- i. Prior to issue of a Building Permit, a Waste Management Plan shall be submitted to and approved by the Shire of Serpentine Jarrahdale. Once approved, the Waste Management Plan shall be implemented in its entirety to the satisfaction of the Shire.**
- j. Prior to issue of a Building Permit, an updated Soil Site Evaluation report is to be submitted to and approved by the Shire of Serpentine Jarrahdale on advice by the Department of Health. The updated report is required to be:**
 - (i) Modelled during the wettest season times of the year (mid-July-August);**
 - (ii) Demonstrate that stormwater management does not interfere with the efficacy of the effluent disposal area;**
 - (iii) A plan detailing the proposed building area, trafficable areas, parking bays setback to land application areas and exclusion areas.**
- k. Prior to the issue of a Building Permit, a Landscape and Revegetation Plan shall be submitted to and approved by the Shire of Serpentine Jarrahdale. This is required to include the full extent of verge adjoining the development site, and the multiuse corridor. Once approved, the Landscape and Revegetation Plan shall be implemented in its entirety and maintained thereafter by the operator, to the Shire's satisfaction.**
- l. Prior to the issue of a Building Permit, a Stormwater Management Plan shall be submitted to and approved by the Shire of Serpentine Jarrahdale. All stormwater shall be directed so stormwater is disposed of within the property. Direct disposal of stormwater onto the road, neighbouring properties, watercourses and drainage lines is not permitted. Stormwater may be managed through either soak wells, raingardens or a combination of the two.**
- m. Prior to issue of a Building Permit, a Signage Strategy must be submitted to and approved by the Shire of Serpentine Jarrahdale. The Strategy shall demonstrate compliance with Local Planning Policy No 4.11 - Advertising Signs. Once approved, signage shall be displayed and maintained in accordance with the Strategy.**
- n. Prior to occupation of the development, the provision of percent for art being provided in accordance with Local Planning Policy 1.6 - Public Art for Major Developments to the satisfaction of the Shire.**
- o. Prior to issue of a Building Permit, the landowner/applicant contributing towards development infrastructure, pursuant to the Shire of Serpentine Jarrahdale Town Planning Scheme No. 2.**
- p. Prior to issue of a Building Permit, a Construction Management Plan is to be submitted to and approved by the Shire of Serpentine Jarrahdale. The Plan should address the following matters:**
 - (i) Management of car parking, delivery vehicles and traffic associated with the construction of the development;**
 - (ii) Management of dust and noise.**
- q. Within three months of the completion of the construction of Indigo Parkway and the eastern access road as depicted within the Subdivision Guide Plan of the 'Area D Briggs Larsen Precinct Local Structure Plan', the access arrangement onto Indigo Parkway will be required to be modified to exit only (left out) and a new full movement access/egress arrangement constructed to the access road to the east to the satisfaction of the Shire of Serpentine Jarrahdale.**

- r. Once the development is connected to sewer, the wastewater system is to be decommissioned to the satisfaction of the Shire of Serpentine Jarrahdale. The wastewater irrigation area is to be remediated prior to being used for any other purpose to the satisfaction of the Shire.**
- s. Prior to the issue of a Building Permit, a financial contribution of \$24,000 being made to the Shire, reflective of the costs to resurface the 160m section of Briggs Road relied upon for access by the development, with the contribution based upon the pro-rata generation of traffic emanating from the development.**

CARRIED UNANIMOUSLY 7/0

POSTPONED

**LOT 622 (No.2) AUREA BOULEVARD, GOLDEN BAY –
PROPOSED MIXED COMMERCIAL DEVELOPMENT (GOLDEN
BAY NEIGHBOURHOOD CENTRE)**

Form 1 – Responsible Authority Report
(Regulation 12)

DAP Name:	Metro Outer Joint Development Assessment Panel	
Local Government Area:	City of Rockingham	
Applicant:	Apex Planning	
Owner:	Golden Bay Village Pty Ltd, under contract to Jarra Dev Pty Ltd	
Value of Development:	\$11 million <input checked="" type="checkbox"/> Mandatory (Regulation 5) <input type="checkbox"/> Opt In (Regulation 6)	
Responsible Authority:	City of Rockingham	
Authorising Officer:	Mr Peter Ricci, Director Planning and Development Services	
LG Reference:	DD020.2023.00000035	
DAP File No:	DAP/23/02447	
Application Received Date:	27 February 2023	
Report Due Date:	28 June 2023	
Application Statutory Process Timeframe:	90 Days + 43 days	
Attachment(s):	1. Development Application Report 2. Development Plans 3. Landscape Concept 4. 10 Principles Assessment 5. Emissions Impact Assessment 6. Transport Impact Assessment 7. Environmental Noise Report 8. Approved Local Development Plan 9. Schedule of Submissions 10. Peer Review by SLR Consulting 11. Council Report 12. Recommended Conditions if the MOJDAP decides to grant Development Approval	
Is the Responsible Authority Recommendation the same as the Officer Recommendation?	X Yes <input type="checkbox"/> N/A	Complete Responsible Authority Recommendation section
	<input type="checkbox"/> No	Complete Responsible Authority and Officer Recommendation sections

Responsible Authority Recommendation

That the Metro Outer Joint Development Assessment Panel resolves to:

Refuse DAP Application reference DAP/23/02447 and accompanying plans received on 27 February 2023 and Amended Plans and Technical documents received on 3 May 2023:

- DA001 - DA003 – Perspective
- DA100 – Location and Survey Plan
- DA101 – Site Plan
- DA102 – Demolition Plan
- DA200 – Proposed Ground Floor Plan
- DA400 – Proposed Elevations – Streetside
- DA401 – Proposed Elevations – Internal
- DA900 Proposed Signage Schedule
- DA901 – DA902 – Material Schedule
- DA905 – Pedestrian Movement Diagram
- Landscape Concept Plan
- Landscape Piazza Concept Plan
- Development Application Report
- Traffic Impact Assessment (May 2023)
- Environmental Noise Assessment (Acoustic Report) (28 April 2023)
- Emissions Impact Assessment (EIA) (March 2023)

in accordance with Clause 68 of Schedule 2 (Deemed Provisions) of the *Planning and Development (Local Planning Schemes) Regulations 2015* for the following reasons:

1. The proposed development is not compatible with sensitive land uses in the locality, in particular, to the two Child Care Centres located in immediate proximity to the proposed Service Station, where the proposal presents an unacceptable health risk to children from benzene exposure.
2. The proposed Aurea Boulevard crossover is inconsistent with the approved Local Development Plan (LDP) for the Golden Bay Neighbourhood Centre, and will likely result in an unacceptable risk of traffic accidents given the proximity of the crossover to the Warnbro Sound Avenue/Aurea Boulevard signalised intersection; and the proposed crossover being immediately adjacent to the start of the left turn slip lane.
3. The amended Transport Impact Assessment (TIA) does not adequately address on-site design issues including swept path, blind aisle and Service Station stacking distances.

Details: outline of development application

Region Scheme	Metropolitan Region Scheme
Region Scheme - Zone/Reserve	Urban
Local Planning Scheme	City of Rockingham Town Planning Scheme No.2
Local Planning Scheme - Zone/Reserve	Commercial
Structure Plan/Precinct Plan	Golden Bay Structure Plan
Structure Plan/Precinct Plan - Land Use Designation	Commercial
Use Class and permissibility:	Shop (P)(permitted) Fast Food Outlet (D)(discretionary) Liquor Store (Small) (D) Service Station (D)
Lot Size:	1.24ha
Existing Land Use:	Vacant
State Heritage Register	No
Local Heritage	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Heritage List <input type="checkbox"/> Heritage Area
Design Review	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Local Design Review Panel <input type="checkbox"/> State Design Review Panel <input type="checkbox"/> Other
Bushfire Prone Area	No
Swan River Trust Area	No

Proposal:Development Proposal

The application proposes the following:

- 1,165m² Supermarket fronting Thundelarra Drive.
- 3 x 'specialty retail' Shops with total 263m² floorspace fronting a 'mall', which links Thundelarra Drive and the carpark behind the Supermarket.
- 2 x freestanding Fast Food Outlets (260m² and 265m²), with drive-through facilities adjacent to Warnbro Sound Avenue.
- 230m² freestanding Liquor Store, with back-of-house and drive-through fronting Warnbro Sound Avenue.
- 305m² Service Station with Convenience Store on the corner of Thundelarra Drive and Aurea Boulevard.
- Access via crossovers to Thundelarra Drive, Aurea Boulevard and Wyloo Lane. No access/egress is proposed to Warnbro Sound Avenue.
- Signage as follows:
 - 2 x 6m high pylon signs on Warnbro Sound Avenue.
 - 2 x 6m high pylon sign on Aurea Boulevard, with one of the signs advertising the Service Station.

- Other signage integrated into the Supermarket building on Thundelarra Drive, and directional signage on site.
- Additional price-board sign and Service Station related signage.

Specific signage for the Fast Food Outlets and Liquor Store is not yet proposed.

A total of 148 car parking bays with the following breakdown:

- 96 bays in the main carpark (including 7 disabled parking bays).
- 16 Service Station bays (8 bays at bowisers, 8 customer bays).
- 32 queuing bays within the Fast Food and Liquor Store drive-throughs (included as parking bays for the proposed development).
- 4 on-street bays (located on Thundelarra Drive).
- 15 bicycle parking spaces.

Operating hours for the proposed development will be as follows:

- Supermarket – standard supermarket operating hours.
- Specialty Shops - over the course of the day and evening (depending on tenant requirements).
- Liquor Store - between 10am-10pm.
- Service Station and Fast Food uses - 24 hours.

Landscaping is proposed throughout the subject site and within the Thundelarra Drive verge, with existing landscaping within the Warnbro Sound Avenue and Aurea Boulevard verges being retained.

Pedestrian access is existing around the site via footpaths within the road reserves. Access is also proposed in north-south and east-west directions through the carpark, to connect the various land uses.

Information Lodged

The application is accompanied by the following technical reports and plans:

- Development Application report.
- Development Plans.
- Landscape Concept.
- 10 Principles Assessment (prepared in accordance with State Planning Policy No.7.0 – Design of the Built Environment).
- Traffic Impact Assessment (TIA).
- Environmental Noise Assessment (Acoustic Report).
- Emissions Impact Assessment (EIA).

This information forms Attachments 1-7 of this Report.

Context:

The subject site is located within the Golden Bay Neighbourhood Centre, approximately 1km south of the Secret Harbour District Centre and 1.2km west of Ennis Avenue (refer Figure 1: Location Plan and Figure 2: Aerial Plan).

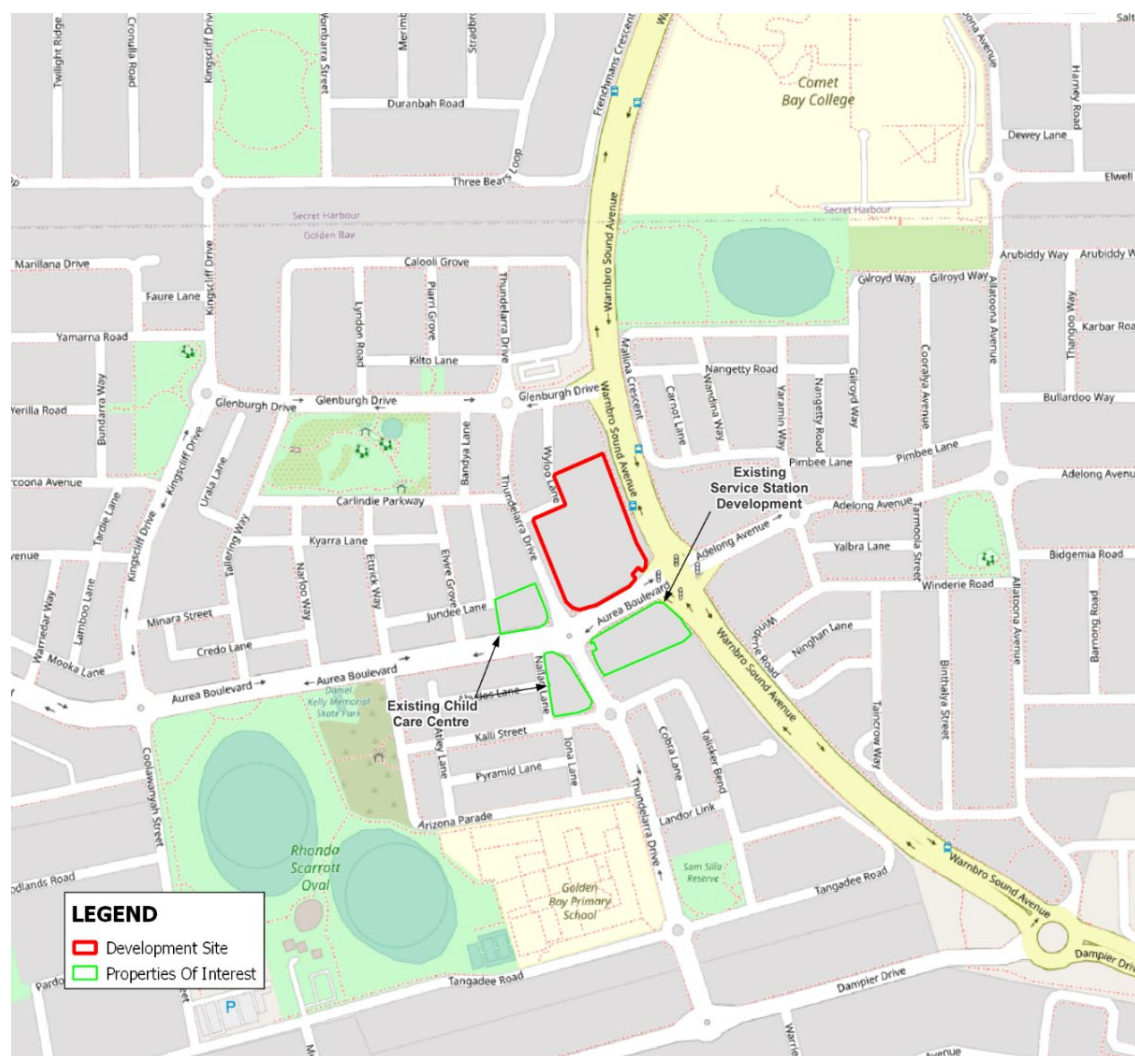
The site is located centrally to the Golden Bay Structure Plan area, and to the Neighbourhood Centre itself, and is bounded by Warnbro Sound Avenue to the east, Thundelarra Drive to the west (as the 'Main Street' for the Centre), and Aurea Boulevard to the south.

The northern boundary of the site abuts an (undeveloped) R60 residential lot, and to the north-west a number of laneway style residential dwellings have been constructed along Wyloo Lane.

Two operating Child Care Centres are located to the immediate west and south-west of the subject site. A Primary School is located 200m to the south-west of the subject site. Other vacant land zoned Commercial (and previously approved for a mixed residential/commercial development) is located to the immediate west. A Service Station, with other commercial uses, is operating to the south.

Figure 3 provides photos illustrating the site context.

Other land surrounding the Neighbourhood Centre has largely been developed for residential purposes.



1. Location Plan



2. Aerial Plan



View south along Thundelarra Drive showing Child Care Centre opposite subject site



View north along Aurea Boulevard at the intersection of Thundelarra Drive



View west along Aurea Boulevard showing Child Care Centres, and Service Station site to right side of photo



View east showing existing Commercial development with Service Station located south of subject site



View of Wylloo Lane from Thundelarra Drive

3. Site Context Photos

Background:

Pre and Post Lodgement Engagement with Applicant

The application was subject to pre-lodgement discussions with the Applicant, during which time a number of design and operational considerations were raised by the City, to be addressed in the Development Application.

Key issues of relevance to this Report are listed as follows:

- Consider providing a wider mall (originally proposed at 7.6m), and cross section, to facilitate greater level of use and activity, light penetration and landscaping.
- Provide an internal layout for the Supermarket and notation on plans to ensure windows remain unscreened by advertising, shutters or the like, to maintain an interactive frontage.
- Provide an updated Acoustic Report addressing a range of matters and inconsistencies raised by the City's Environmental Health Officers and WA Department of Health.
- Respond to a range of traffic engineering concerns.
- Note the City's concern about the proximity of the proposed Service Station to the two adjacent Child Care Centres, and the potential impact of emissions on public health.

The Applicant submitted Amended Plans and other documentation on 3 May 2023, which addressed the majority of the matters raised by the City, including increasing the width of the mall from 7.6m - 10m to improve functionality. Matters which were not addressed are discussed later in this Report.

The following points summarise the history of the site and its immediate surrounds, providing context for the current proposal:

- [illegible]

- In June 2016, the City of Rockingham (City), under delegated authority, approved a proposal for a Shopping Centre on the subject site (refer Figure 5). The application comprised a supermarket, five (5) Restaurants, a Liquor Store, five (5) Shops, three (3) Commercial tenancies, a Medical Centre, 'public piazza' and parking.

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5. Previous Development Approval (June 2016)

Whilst the building commenced construction, with a slab and steel frame still remaining on site, it is understood that the then Proponent decided not to proceed after losing its anchor tenant, and the site has remained vacant since. The approval period for the Development Application has now lapsed, and the site is now under contract to purchase by another party.

- Current development within the broader Neighbourhood Centre includes two (2) operating Child Care Centres at the intersection of Aurea Boulevard and Thundelarra Drive (Lots 716 and 263) (refer Figures 1 and 2). A Multiple Dwelling development to the immediate west of the subject site on Lot 636 Thundelarra Drive was approved by MOJDAP in November 2019, however, has not proceeded.
- A Mixed Commercial Development (including a Service Station) on Lot 1523 Aurea Boulevard, to the immediate south of the subject site, was approved by JDAP in September 2021. This Mixed Commercial Development proceeded and is operational.

The following information regarding the Lot 1523 Commercial Development is of relevance to the current proposal.

The Council did not support the Mixed Commercial Development (particularly the Service Station component) on Lot 1523 due to concerns over human health, traffic and safety, signage and vegetation removal. In particular, the Council was concerned about the proximity of the proposed Service Station to the approved Child Care Centres located on Lots 716 and 263 Thundelarra Drive. At the time, one of the Child Care Centres was under construction (Lot 716) and the other was approved, with construction yet to commence.

Consistent with the Council's position, the MOJDAP originally resolved in May 2021, to refuse the application on the following (relevant) grounds:

- "1. Sensitive Land Uses, including two approved Child Care Centres are located within the 200m generic separation distance recommended by Environmental Protection Authority Guidance Statement No.3 (Separation Distance between Industrial and Sensitive Land Uses 2005). The Applicant has not submitted a scientific study based on site and industry-specific information which demonstrates that a lesser distance will not result in unacceptable health impacts.*
- 2. The potential traffic volume and movements resultant from the proposed development, based on the Left-in/Left-out access via Aurea Boulevard and Left-in/Left-out access via Thundelarra Drive, is likely to have an adverse impact on traffic flow associated with vehicles queuing during peak hours of operation within the development site and is likely to overflow into the adjacent road network including the traffic intersection of Warnbro Sound Avenue and Aurea Boulevard and Thundelarra Drive and Aurea Boulevard intersection."*

In May 2021, the Applicant lodged an application for review (Appeal) with the State Administrative Tribunal (SAT) over the refusal of the application by MOJDAP. Following the receipt of additional information, Orders were issued requiring the Respondent (MOJDAP) to reconsider its decision. Following further consideration by Council in August 2021, where it reaffirmed its position to not support the proposal, the MOJDAP resolved to approve the application.

Included in the additional information submitted by the Applicant, was an Emissions Impact Assessment (EIA) addressing modelling for fuel vapour emissions from the proposed Service Station, which was independently peer reviewed.

The EIA concluded that predicted concentrations of benzene at sensitive land use receptors in proximity to the Service Station (being future housing and Child Care Centres) would not present unacceptable risk. Benzene levels were identified as being significantly below the prescribed acceptable national air quality level, providing VR1 and VR2 fuel vapour recovery systems were installed. VR1 captures displaced vapours from storage tanks and associated infrastructure when a tanker delivers petrol to a service station, and VR2 captures displaced vapours at the bowser while a motorist refuels.

The Council's position at the time was based on Department of Health (DoH) and Department of Water Environment and Regulation (DWER) advice which recommended applying a 200m separation distance between the Service Station and adjacent sensitive development (ie. Child Care Centres) in accordance with *Environmental Protection Authority Guidance Statement No.3 – Separation Distances between Industrial and Sensitive Uses (GS3)*.

The potential for land use conflict is discussed further in the Policy section of this Report.

- In December 2022, the City approved the latest version of a Detailed Area Plan (DAP), now referred to as a Local Development Plan (LDP), for the Golden Bay Neighbourhood Centre. The LDP was based around a 'Main Street' centre along Thundelarra Drive. The LDP sets out the key design parameters for development within the centre (refer Attachment 8), which are addressed later in this Report.

Legislation and Policy:

Legislation

- Planning and Development Act 2005
- Metropolitan Region Scheme
- Planning and Development (Local Planning Schemes) Regulations 2015 ('the Regulations')
- Town Planning Scheme No.2 (TPS2)
- Environmental Protection (Noise) Regulation 1997

State Government Policies

- State Planning Policy 4.1 – Industrial Interface (SPP4.1)
- State Planning Policy 4.2 – Activity Centres in Perth and Peel (SPP4.2)
- Draft State Planning Policy 4.2 – Activity Centres in Perth and Peel (DRAFT4.2)
- State Planning Policy 7.0 – Design of the Built Environment (SPP7.0)
- Draft Position Statement – Child Care Premises
- WAPC Operational Policy No.2.4: Planning for School Sites (OP2.4)
- Environmental Protection Authority (EPA) Guidance Statement No.3 (GS3)

Structure Plans/Activity Centre Plans

- Golden Bay Structure Plan

Local Policies

- Planning Policy 4.1.2 – Local Commercial and Activity Centres Strategy (LCACS)(PP3.1.2)
- Planning Policy 3.3.1 – Control of Advertisements (PP3.3.1)
- Planning Policy 3.3.9 – Fast Food Outlets
- Planning Policy 3.3.14 Bicycle Parking and End of Trip Facilities (PP3.3.14)
- Planning Policy No.3.3.19 – Licenced Premises (PP3.3.19)
- Planning Policy 3.3.25 – Percent for Public Art – Developer Contributions (PP3.3.25)

Local Development Plans

- Golden Bay Neighbourhood Centre Local Development Plan (LDP)

Consultation:

Public Consultation

The application was advertised for public comment, for a period of 21 days between 9 March 2023 and 3 April 2023, in the following manner:

- Correspondence was sent to owners and occupiers within 200m of the subject site.
- The application was made available for public inspection at the City's Administration Offices and published on the City's website.
- 3 signs were displayed on the property on each street frontage, advertising the proposal.

A total of 76 submissions were received from at the conclusion of the advertising period comprising the following:

- 71 submissions objecting to the proposal.
- 3 submissions supporting the proposal.
- 2 neutral comments.

Figure 6 shows the distribution of responses in proximity to the subject site - 11 of the 71 objections were received from those within 200m of the subject site, along with 1 neutral submission. The majority of other submissions were received from other residents of Golden Bay.



6. Submissions Map

Summary of Submissions

The submissions received raised a number of key concerns which are set out in the following table, along with responses from the Applicant and the City. Attachment 9 contains submissions received from the community and Agencies:

Proliferation of Uses/Need
<p><u>Submission:</u></p> <p>Concerns were raised that the proposal would result in a proliferation of Fast Food, Service Station and Liquor Store land uses in the locality; and that that these uses are not required on this site as they are provided elsewhere in the locality to service the community.</p>
<p><u>Applicant's Response:</u></p> <p><i>"The perceived oversupply of a land use is not a relevant planning consideration. The development site is zoned Commercial under the City of Rockingham Local Planning Scheme No.2 and all of the uses proposed are contemplated within the Commercial zone (noting they are commercial in nature)."</i></p>
<p><u>City's Response:</u></p> <p>The uses proposed are all those which are able to be considered under the City of Rockingham Town Planning Scheme No.2 (TPS2) within the 'Commercial' Zone, and are uses that are commonly provided within Neighbourhood Centres. The number of outlets (Fast Food, Service Station, Liquor Store) already existing in the local area and the need or commercial demand for more, is not a matter in this case which is appropriate to consider for this proposal.</p>
Health Impact
<p><u>Submission:</u></p> <p>Concerns were raised about a range of potential adverse health impacts arising from the proposed Fast Food, Service Station and Liquor Store uses, in particular:</p> <ul style="list-style-type: none">• Concerns about odour and benzene emissions from Service Station, particularly in close proximity to two (2) Child Care Centres and the potential health impacts on children.• Concerns about odour from the Fast Food Outlets.• Concerns about the potential health impacts resulting from two Fast Food Outlets in close proximity to a School and Child Care Centres.• Concerns about the number of liquor outlets in the area.
<p><u>Applicant's Response:</u></p> <p><i>"As noted in the first response, the proposal seeks approval for commercial land uses on land which is allocated Commercial zoning under the City's LPS2. The development site fronts Warnbro Sound Avenue, an 'Other Regional Roads' reserve which currently carried just under 10,000vpd.</i></p> <p><i>The application is supported by an emissions assessment for the Service Station, which demonstrates potential airborne pollutants are all within compliant/acceptable levels with the inclusion of vapour recovery systems.</i></p> <p><i>Odours from the Fast Food Outlets can be addressed at detailed design stage as part of an odour management plan and the installation of the appropriate equipment, as per standard practice.</i></p>

Perceived issues associated with 'health impacts' resulting from the establishment of Fast Food Outlets is not addressed by the statutory planning framework and should not be given weight in the decision-making process. Fast Food Outlets are a commercial land use and are appropriate for the Commercial zone.

The perceived oversupply of liquor outlets is not a relevant planning consideration. The use is capable of approval in the Commercial zone. It is noted that a liquor outlet was proposed and approved on the site as part of a previous approval in 2016."

City's Response:

The Policy section of this Report addresses potential health impacts from the Service Station, given the proximity of the proposed Service Station to the two (2) existing Child Care Centres and concerns regarding benzene exposure.

There are no buffer or setback distances contained in either the State or local planning framework which specify a minimum distance between Child Care Centres and Fast Food Outlets, and therefore this is not a matter which can be taken into account when considering a planning application. A condition requiring an Odour Management Plan will be requested in the event the application is approved.

The Liquor Store use is a discretionary use which can be considered under TPS2 in the 'Commercial' Zone. As noted in 'Proliferation of Uses/Need' above, the number of outlets in an area is not a matter which can be taken into account by the City when considering a development proposal. It is, however, a factor which can be considered by the Department of Local Government, Sport and Cultural Industries (DGSCI) when determining the liquor licence application.

Scale and Impact

Submission:

Concerns were raised about the scale of development proposed on the site, and that it would result in traffic, parking and amenity impacts on the surrounding locality.

Applicant's Response:

"The level of development proposed on the site is appropriate and viable. The issues of traffic and parking are comprehensively addressed as part of the traffic impact assessment materials produced by Transcore, suitably qualified and experienced traffic engineers. Amenity impacts are comprehensively addressed as part of the supporting application materials, demonstrating the development is of a high quality and will contribute positively to the local area."

City's Response:

The subject site is identified in the approved Structure Plan and LDP as a Neighbourhood Centre. The retail floorspace proposed is less than that previously approved on the site (2499m² NLA as opposed to 3240m² NLA previously). The uses proposed, and the general form of development, is consistent with the intended development outcome for the site.

Parking and traffic considerations are discussed in the Policy section of this Report.

Access and Local Road Network

Submission:

Concerns were raised about the Warnbro Sound Avenue/Aurea Boulevard intersection and impacts on the local road network.

Further concern was raised that Wyloo Lane, located to the immediate north of the subject site, is too narrow, dangerous and inappropriate to provide access to the development, and particularly for service vehicles.

Applicant's Response:

"The supporting TIA comprehensively addresses the operation of the Warnbro Sound Avenue/Aurea Boulevard intersection, demonstrating it will operate at an acceptable level of service with moderate queues and delays, both in the post-development and 10 year scenario. It is also relevant to note the Department of Planning, Lands and Heritage (the authority with planning control over Warnbro Sound Avenue under the MRS) has reviewed the proposal and has no objection. Wyloo Lane was planned to service this site, both for patrons and service vehicles, under the Local Development Plan. The Development Proposal is consistent with the LDP in this regard. It is also noted that the use of Wyloo Lane for the same purpose was supported and approved by the City in 2016."

City's Response:

The TIA submitted with the application addresses the operation of the intersection(s) and impact on the local road network. The Policy section of this Report addresses traffic considerations following review by the City, Department of Planning Lands and Heritage (DPLH) and Main Roads WA (MRWA).

The access to the site via Wyloo Lane is consistent with the approved LDP, and formed part of the previous approval for the site. A condition of approval should be requested to limit the times of delivery vehicles via Wyloo Lane, should the application be approved.

The Acoustic Report assessed the impact of noise from the development on nearby residential dwellings and recommends the installation of an acoustic wall and roof, over the delivery area for the Supermarket. These recommendations, along with others identified in the Acoustic Report, are considered to appropriately manage noise impact on adjoining residential properties, and should be imposed as conditions, should the application be approved.

Supermarket Servicing

Submission:

Concerns were raised about how the Supermarket would be serviced and where bin stores would be located.

Applicant's Response:

"The Supermarket will be serviced from the loading area shown on the plans. The bin stores are depicted on the drawings."

City's Response:

The Supermarket will be serviced via Wyloo Lane. The Applicant's TIA addresses servicing vehicle access. A condition limiting bin servicing via Wyloo Lane to between 7am and 6pm Mondays to Fridays and 9am to 5pm on Saturdays, with no servicing on Sundays, is recommended, should the application be approved.

The plans show the location of bin stores for all tenancies other than the Service Station. For this use, the bin store is typically located within the loading area.

It is recommended that this be subject to the preparation of a Waste Management Plan, should the application be approved.
Design and Inconsistency with LDP
<p><u>Submission:</u></p> <p>Concern was raised on the proposal's inconsistency with the approved LDP; and associated design concerns including Main Street treatment, landscaping shortfall, setback of the Liquor Store to the northern boundary, corner treatments, and street interfaces.</p>
<p><u>Applicant's Response:</u></p> <p><i>"These matters are all comprehensively discussed and addressed in the supporting application materials. The layout, configuration, design response, and landscaping arrangements of this development are appropriate/responsive to the contextual characteristics of the site/were formulated by highly experienced architectural experts, and will create positive outcomes for the locality."</i></p>
<p><u>City's Response:</u></p> <p>The Policy section of this Report addresses compliance with the LDP and other design and development criteria. The Amended Plans are considered to satisfy the intended design outcomes of the LDP.</p>
Insufficient Parking
<p><u>Submission:</u></p> <p>Concern was raised that there is insufficient parking provided on site to service the development, which will lead to overflow parking occurring in surrounding residential streets.</p>
<p><u>Applicant's Response:</u></p> <p><i>"The application materials contain a thorough parking assessment, including a parking demand assessment during peak periods, which demonstrates the on-site provision of bays will sufficiently cater for the needs of each land use."</i></p>
<p><u>City's Response:</u></p> <p>The Policy section of this Report provides an assessment of parking provision. The proposal involves a parking shortfall of 28 bays which is considered acceptable given an assessment of parking against a range of criteria.</p>
Rubbish Generation and Disposal
<p><u>Submission:</u></p> <p>Concerns were raised about increased levels of rubbish generated by the Fast Food and Service Station uses.</p>
<p><u>Applicant's Response:</u></p> <p><i>"This is a natural effect of any land use proposed in a commercial zone. Bin Stores of a suitable size and layout are shown on the plans. A waste management plan will be produced at detailed design stage."</i></p>
<p><u>City's Response:</u></p> <p>A Waste Management Plan, including a requirement for adequate bins and rubbish collection patrols, can be requested as a condition should the application be approved.</p>

Anti-social Behaviour
<p><u>Submission:</u></p> <p>Concerns were raised that the Fast Food and Liquor Store uses on site would result in anti-social behaviour in the surrounding area.</p>
<p><u>Applicant's Response:</u></p> <p><i>"The submitter(s) has not provided any testable evidence that Fast Food and/or liquor Shops result in increased anti-social behaviour. This is not a matter addressed by the statutory planning framework and should not be given weight in the decision making process."</i></p>
<p><u>City's Response:</u></p> <p>There is no tangible link between anti-social behaviour and the proposed development. Whilst the management of anti-social behaviour is a policing, rather than planning matter, the proposal has been designed to allow for movement by vehicles and pedestrians through the site at all times. In most cases windows, tenancy entries and accessways will enable passive surveillance.</p> <p>The '10 Principles Assessment' provided with the application indicates CCTV will be installed, and 24 hour uses will provide passive surveillance, which will assist in managing behaviour on-site.</p>
Light-spill
<p><u>Submission:</u></p> <p>Concern was raised about light spill, and operational and customer noise impacting on the amenity of nearby residents as a result of the proposal.</p>
<p><u>Applicant's Response:</u></p> <p><i>"External lighting will be required to comply with AS 4282 Control of the obtrusive effects of outdoor lighting. An environmental noise assessment was prepared, demonstrating compliance with the Environmental Protection (Noise) Regulations 1997."</i></p>
<p><u>City's Response:</u></p> <p>A condition requiring lighting design to reduce light-spill can be recommended in the event the application is approved.</p> <p>The Acoustic Report addresses noise impact on nearby residents and recommends a number of mechanisms to reduce noise on site to acceptable levels which can be applied as conditions should the application be approved.</p>
Community Benefit
<p><u>Submission:</u></p> <p>Concern was raised that the proposal does not result in an overall community benefit.</p>
<p><u>Applicant's Response:</u></p> <p><i>"The development site is zoned Commercial under the City of Rockingham Local Planning Scheme No.2 and all of the uses proposed are contemplated within the Commercial zone (noting they are commercial in nature). The layout, configuration, design response, and landscaping arrangements of this development are appropriate/responsive to the contextual characteristics of the site/were formulated by highly experienced architectural experts, and will create positive outcomes for the locality."</i></p>

City's Response:

Although questionable as to whether it is a relevant planning consideration, the application is considered to provide an overall community benefit by the provision of food and specialty retail uses not currently provided in the immediate locality; the provision of a mall which will provide a meeting place to the local community; and the opportunity for alfresco dining. The design offers a quality outcome to the Thundelarra Drive frontage consistent with the intent of the LDP.

Alternative Landuses**Submission:**

Preferred alternative landuses/tenancies for the site were suggested, which included medical, juice bar, icecream shop, fresh food market, hairdresser, café, library, community/recreation uses and the like.

Applicant's Response:

"Noted. It is not a relevant planning consideration to consider what would be a "better proposal". However, it is also relevant to note that the Supermarket could contain a fresh food component, and the Specialty tenancies could contain local operators provided food/café/hairdresser/etc etc."

City's Response:

The Application must be considered on its planning merit based on what has been submitted, rather than those land uses submissioners consider should have been included.

The following Agencies were consulted on the application:

- Department of Planning Lands and Heritage (DPLH);
- Main Roads WA (MRWA);
- Department of Education (EDWA);
- Department of Health (DoH);
- Water Corporation (Water Corp);
- Department of Water and Environmental Regulation (DWER); and
- Department of Mines Industry Regulation and Safety (DMIRS).

Comments received from these other agencies are summarised as follows:

Department of Planning Lands and Heritage (DPLH)**Submission:**

- The land is not affected by the Other Regional Roads (ORR) reservation.
- No access is proposed to Warnbro Sound Avenue, which is consistent with Western Australian Planning Commission (WAPC) Development Control Policy No.5.1 (DC5.1).
- The Transport Impact Assessment (TIA) shows satisfactory performance for the majority of turning movements to 2033.
- It is unclear if the presence of on-street parked vehicles on Aurea Boulevard near the proposed left-in, left-out (LILO) driveway will allow adequate sight lines for exiting vehicles. It is also unclear if a turning treatment is required in this location.

<ul style="list-style-type: none"> It is recommended that the City verify the acceptability of submitted swept path movement drawings at Appendix C: 'Turn Path Analysis'. Trip Generation modelling indicates that just over 500PM peak hour trips would be generated by the proposal (before cross trade discount applied), which is higher than the methodology provided in the TIA.
<p><u>Applicant's Response:</u></p> <p><i>"A revised TIA has been submitted which addresses City and DPLH comments."</i></p>
<p><u>City's Response:</u></p> <p>Refer to the Policy section below, which addresses the City's comments on the TIA.</p> <p>The two (2) parking bays on Aurea Boulevard have been removed in the Amended Plans due to issues with sight lines.</p>
<p>Main Roads WA (MRWA)</p>
<p><u>Submission:</u></p> <p><i>"Main Roads has no objections to the development application.</i> <i>It is noted for the City's consideration that the proposed Left In-Left Out crossover to Aurea Boulevard is located within the functional area of the adjacent Warnbro Sound Avenue/Aurea Boulevard signalised intersection, and immediately adjacent to the start of a left-turn slip lane. The movement of vehicles turning in/out of a crossover in this location may introduce the risk of rear-end, side-swipe and right-angle type crashes."</i></p>
<p><u>Applicant's Response:</u></p> <p>Nil</p>
<p><u>City's Response:</u></p> <p>Given the concerns raised regarding the proposed Aurea Boulevard crossover by MRWA, along with concerns raised by the City about the crossover, traffic design issues on-site, and remaining disparity regarding traffic modelling assumptions and outcomes, it is the City's view that the revised TIA does not adequately address the concerns raised.</p>
<p>Department of Education (EDWA)</p>
<p><u>Submission:</u></p> <ul style="list-style-type: none"> There are several incompatible land uses proposed on the subject site which are in close proximity to the Primary School including Service Station, 2 x Fast Food Outlets and a Liquor Store. There are 2 Fast Food Outlets 270m and 380m from the School site. EDWA does not support Fast Food Outlets operating near Primary School sites as these food outlets may cause unhealthy diets and obesity. The proposed Service Station is located 210m from the Primary School. GS3 recommends 24/7 Service Station land use operations should be minimum distance of 200m. EDWA notes location is beyond the 200m setback distance noted by EPA Guidelines (GS3). The Liquor Store is unlikely to adversely impact the occupants of the School site. EDWA does not support incompatible land uses in close proximity to School sites, particularly Fast Food Outlets in this instance, as detrimental impacts to the health and wellbeing of students may result.

Notwithstanding, the Department recognises the subject site is designated as Commercial under the Structure Plan.
<p><u>Applicant's Response:</u></p> <p>Nil</p>
<p><u>City's Response:</u></p> <p>The subject site is a Neighbourhood Centre zoned 'Commercial' where the proposed uses are permissible under TPS2, and commonly provided within Centres of this nature.</p> <p>The EDWA comments on health concerns generated by the proximity of Fast Food Outlets to Schools were also reflected in a submission on the proposal by the Heart Foundation and other submitters during the advertising period.</p> <p>There is, however, no guidance or provisions within the State or Local Planning Framework which identify or specify separation distances between Schools and Fast Food Outlets.</p> <p>As noted by DoE, the School site is outside the 200m generic buffer identified in GS3.</p>
Department of Health (DoH)
<p><u>Submission:</u></p> <ul style="list-style-type: none"> The development is required to be connected to Scheme water and reticulated sewerage. Concerned about short distance between the proposed Service Station and two existing child-care centres (<50m for both). DoH does not have the technical expertise to assess the rigour of the Emissions report. Previous advice from DWER to DoH (and City of Rockingham) on emissions modelling is that: <p><i>"In general, air quality dispersion modelling has a number of areas of uncertainty. The Department is generally not able to verify the assumptions made in these modelling studies. Given these uncertainties, the use of dispersion modelling to make precise judgements on separation distances is impossible. For this reason, the recommended approach is the application of separation distances within Guidance Statement 3 Separation Distances between Industrial and Sensitive Land Uses (GS 3) (EPA, 2005)."</i></p> DoH is concerned there is an existing Service Station, although considered in emission modelling, and questions why the proposed Service Station must be placed directly across the road from the child-care premises rather than elsewhere on the site. All food related areas to comply with the Food Act (2008). The area is subject to mosquito impact and a Mosquito Management Plan should be prepared, and the proposal not create additional on-site mosquito breeding habitat.
<p><u>Applicant's Response:</u></p> <p><i>"DoH confirmed they do not have the expertise to assess the rigour of the emissions report, and provided the standard advice in respect of water / sewer and food related areas."</i></p>

City's Response:

The site is connected to reticulated water and sewer. A Mosquito Management Plan is not considered necessary given there are no water features or retention of water proposed on the site. The Stormwater Management Plan, which will be required should the proposal be approved, will require drainage to be infiltrated within 96 hours to minimise any mosquito breeding.

The Policy section of this Report addresses the proximity of the proposed Service Station to the two (2) existing Child Care Centres and the associated health considerations, in relation to benzene.

In its discussions with the Applicant on the proposal, City Officers suggested that the uses on-site be rearranged to relocate the Service Station away from the Child Care Centres.

The Applicant verbally advised that vehicle manoeuvrability (tanker and customer vehicles) would be less optimal, and concentrate more traffic on Thundelarra Drive, and declined to make any change to the arrangement of uses on the site.

Water Corporation (Water Corp)**Submission:**

The subject land is provided with water and wastewater services to accommodate the proposed development.

Applicants Response:

Noted.

City's Response:

Noted.

Department of Mines Industry Regulation and Safety (DMIRS)**Submission:**

The Service Station will require licensing by DMIRS.

Applicant's Response:

No comment.

City's Response:

An Advice Note relating to licensing by DMIRS will be recommended in the event that the application is approved.

Department of Water and Environmental Regulation (DWER)**Submission:**

No objection.

Advice was provided regarding modifications to the Acoustic Report, and recommending preparation of a Stormwater Management Plan which includes specific requirements in relation to the Service Station.

In respect to the Acoustic Report, the 3m high wall to the loading bay associated with the future Supermarket is required to be of solid construction, and minimum acoustic requirements applied.

DWER also raised concern about the parking bays to the west of the Liquor Store and noise impact on residences on Wyloo Lane from car doors closing; and recommended the Acoustic Report address noise impacts resulting from delivery trucks reversing into the loading bays.

Applicant's Response:

"DWER did not comment on the emissions assessment but noted no objections with recommendations to address noise, drainage and water quality.

The comments related to drainage and water quality can be addressed as part of a stormwater management plan which would be provided at detailed design stage, in accordance with standard practice.

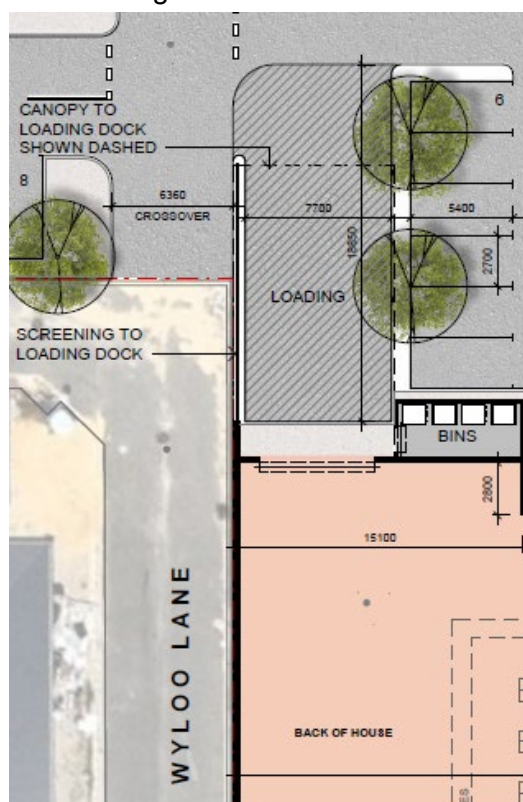
The acoustic assessment was revised in accordance with the noise comments of DWER, which included a reduction of the influencing factor (creating a more conservative assessment) as well as revised recommendations which have been incorporated into the proposal.

These include:

- A covered roof over the Supermarket loading area.*
- A low 1.6m screen along a portion of the Liquor Store loading area.*
- Service vehicles to utilise a broadband beeper when reversing, as per DWER best practice requirements."*

City's Response:

The Applicant has submitted an amended Acoustic Report to address comments raised by DWER which is acceptable to the City. This includes the requirement for a 3m high acoustic wall along the Supermarket loading area (refer Figure 7), which will be roofed, insulated and contain no gaps to minimise noise impact on adjacent residents. In addition, limitations on delivery times and bin servicing are recommended.



7. Location of Acoustic wall along Wyloo Lane, adjacent to Supermarket Loading Area (extract from site plan)

The City notes that DWER did not object, or provide any guidance, in respect to the proximity of the Service Station to sensitive uses.

A condition requiring a Stormwater Management Plan is recommended in the event the application is approved.

Design Review Panel Advice

No design review process was undertaken for this application.

Planning Assessment:

State Government Policies

State Planning Policy 4.1 - Industrial Interface (SPP4.1)

SPP4.1 seeks to prevent conflict and encroachment between industrial development and sensitive land uses. The Policy guides development and interface outcomes for particular buffer and separation requirements for development, and how potential risks can be mitigated.

The Service Station is considered an industrial land use, and is subject to *EPA Guidance Statement No.3: 'Separation Distances between Industrial and Sensitive Land Uses'* (GS3), addressed below.

An EIA has been submitted by the Applicant for the proposed Service Station. Discussion is provided below in relation to the adequacy of the EIA, the proposal's compliance with SPP4.1, and GS3, along with relevant comments received during the referral process.

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

SPP4.2 addresses the planning and development of new activity centres, and the redevelopment and expansion of existing centres. It is primarily concerned with the distribution, function, broad land use and urban design criteria of activity centres, together with coordinating land use and infrastructure planning.

Clause 5.1 - Activity Centre Hierarchy

Golden Bay is a Neighbourhood Centre within the hierarchy of activity centres, as outlined in the City's Local Commercial and Activity Centres Strategy (LCACS).

The proposal is consistent with the planned hierarchy, given the function of a Neighbourhood Activity Centre is to provide for daily and weekly household shopping and community needs.

Clause 5.2 - Activity

A range of land uses are proposed that cater for household convenience, shopping needs, local employment, and land uses that generate activity outside of normal business hours.

Clause 5.3 - Movement

Activity centres should be designed to be accessible by a variety of transport modes. The proposed development is designed to be accessed by car, servicing vehicles, bus, bicycle and pedestrians.

SPP4.2 requires that parking facilities are located, scaled, designed and landscaped to avoid visual domination of street and public space frontages, and to avoid discontinuity of the urban form and pedestrian amenity. The design response to the approved LDP is discussed below.

Clause 5.4 - Urban Form

The buildings are designed to address the 'Main Street' of Thundelarra Drive, with an active frontage; with the mall intended to provide a meeting place for the community in a location that will connect the core retail area of the centre. Car based uses, being the Fast Food and Liquor Store, are located to the rear of the site adjacent to Warnbro Sound Avenue, although are oriented internally to the site. Other design considerations are addressed in the LDP section below.

The application is considered to be generally consistent with SPP4.2 in relation to hierarchy and function, and how the proposal addresses the Main Street. The proposal's design response to the planning framework is addressed below.

Draft State Planning Policy No.4.2 - Activity Centres in Perth and Peel (SPP4.2)

The WAPC is currently reviewing SPP4.2, and has released a Draft revised Policy which has been advertised and is therefore a 'seriously entertained document' which must be given due regard.

The application is generally consistent with draft SPP4.2. An 'Impact Test' is not required given retail floorspace is under 5,000m² NLA.

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

SPP7.0 provides an extensive framework for the design of the built environment and includes assessment of LDP's and Development Applications for Activity Centres. The '10 Principles Assessment' provided with the application has been considered in the context of SPP7.0 and the approved LDP and considered to be acceptable.

Draft Position Statement: Child Care Premises

In November 2022, WAPC released a 'Draft Position Statement on Child Care Premises' to provide location and design guidance to decision makers, proponents and the community for a consistent policy approach to planning Child Care Centres within Western Australia.

In relation to Service Stations, the Position Statement provides as follows:

"The decision-maker should consult and obtain advice from the DoH regarding any external emission sources likely to have an adverse and unacceptable impact on the child care premises. For example, gaseous emissions from Service Stations and high volumes of passing traffic may be unacceptable in terms of noise and emissions."

As previously noted, the proposed development is located opposite two (2) Child Care Centres (and to the immediate north of an existing Service Station). DoH comments are detailed above; and discussion on emissions and potential health risk is addressed below.

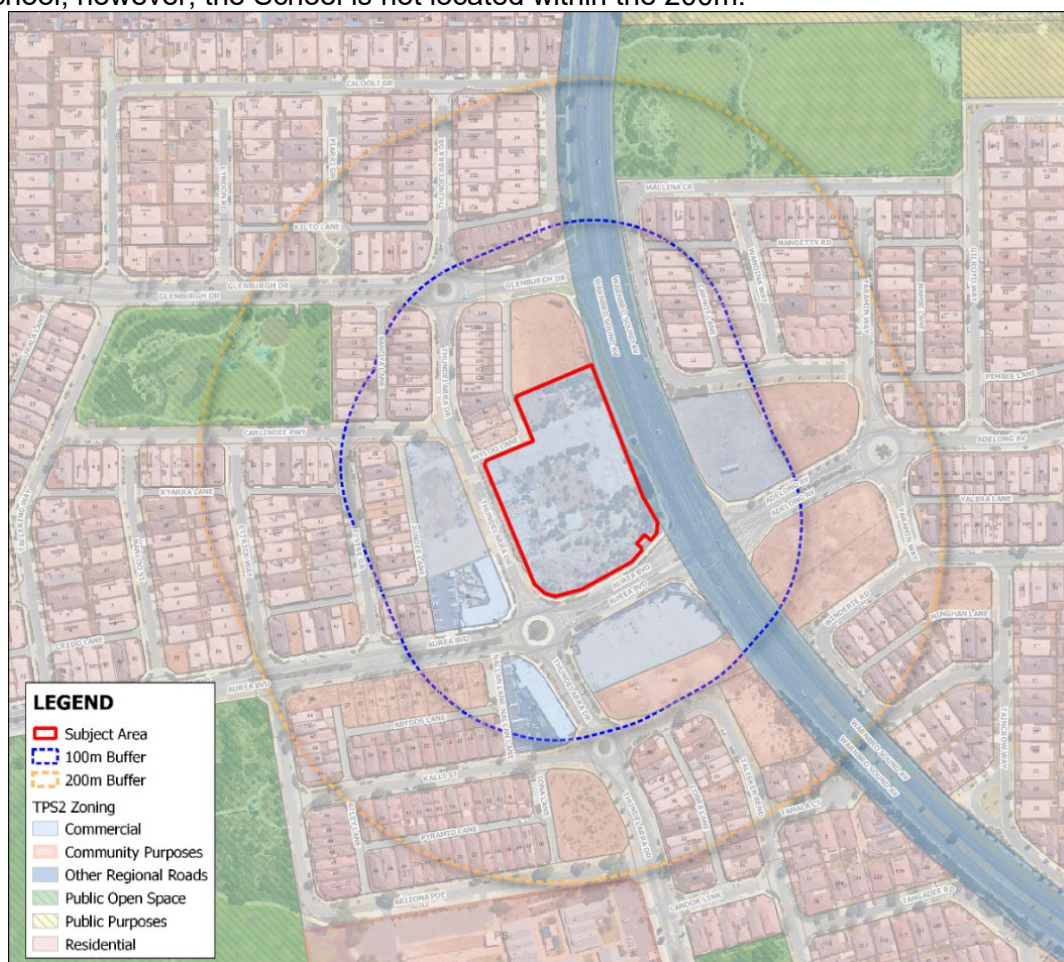
Environmental Protection Authority (EPA) Guidance Statement No.3 (GS3)

GS3 provides advice on the use of generic separation distances between industrial and sensitive land uses to avoid conflicts (gaseous, noise and odour) between incompatible land uses. GS3 applies to the subject application as industrial uses include Service Stations and sensitive uses include Child Care Centres and residential dwellings.

The separation distance required between the Service Station (24 hour operation) and Child Care Centres under GS3 is 200m. Where proposals vary from this separation distance, site specific technical analysis is required.

A map showing the 200m separation distance for the subject site is shown in Figure 8. It includes all land within the Neighbourhood Centre including the Child Care Centres to the west, located approximately 21m and 47m from the proposed Service Station, and residential lots located to the east and west of Warnbro Sound Avenue.

The separation distance intersects with the northern boundary of the Golden Bay Primary School, however, the School is not located within the 200m.



8. EPA Guidance Statement No.3 - Separation Distance

Concerns have been raised by the WA Department of Health, the City's Health Services and a number of submitters about the proximity of the proposed Service Station to the Child Care Centres. The concern is primarily in relation to the health impacts on young children from benzene gas emissions. Benzene is a known human carcinogen which is emitted during bulk fuel deliveries by fuel tankers filling underground tanks, vehicles filling tanks at bowzers, fuel spills and opening fuel caps on vehicles.

An EIA has been lodged with the application to determine compliance of modelled emissions against standards, utilising industry standard modelling methods. It considers emissions from the Service Station, including the cumulative impacts of the existing Service Station located to the immediate south of the subject site.

The EIA concluded as follows:

- The primary pollutants were predicted to have ground level concentrations lower than acceptable exposure limits when using both Vapour Recovery Phase 1 (required) and Vapour Recovery Phase 2 (recommended) (referred to as VR1 and VR2).

- Utilising VR1 and VR2, the proposed Service Station emissions will not have an unreasonable impact on the health of existing sensitive receptors or sensitive landuses, and the cumulative emissions are predicted to be below the exposure criteria at key sensitive receptor locations.

The City engaged SLR Consulting to undertake a Peer Review of the EIA (refer Attachment 10). This review considered the appropriateness of the assessment methodology in the context of WA legislation and guidelines, and whether the impact assessment indicated that National Environment Protection Measure (NEPM) criteria is likely to be met at the Child Care Centres and other nearby adjacent residential properties.

The City's Peer Review concluded as follows:

- The assessment was found to be appropriate for the intended purpose.
- A separate model could be run assuming regular hourly filling of underground storage tanks to predict the maximum benzene levels.
- The report could provide additional context around legislation, additional graphs to illustrate outcomes, and provide additional detail on surface roughness.

The information submitted with the application indicates two (2) – three (3) bulk fuel deliveries per week will occur, and therefore additional modelling was not requested. The comments contained in Point 3 were not considered to materially change the outcomes of the modelling.

From the Peer Review comments it can be concluded that the EIA modelling outcomes can be relied upon for its intended purpose.

The City's concern is that no air monitoring has been undertaken to validate or verify the previous modelling assumptions for the currently operating Service Station (that the City did not support), rather the report has just used the previously reported modelling data. Clause 4.4.1 of GS3 recommends that where the separation distance is less than the generic distance, a scientific study based on site and industry specific information must be presented to demonstrate that a lesser distance will not result in unacceptable impacts. There is a lack of guidance at State level to determine the nature of scientific study required to demonstrate impact, or to specify a monitoring programme over modelling results.

Notwithstanding, WA Department of Health advised it was concerned about the proximity of the Service Station to the Child Care Centres (and in the context of the existing Service Station to the south), but that it did not have the technical expertise to assess the EIA. It referred the City to previous DWER advice on other, proposal(s) that in general, air quality dispersion modelling contains uncertainty. It therefore recommended GS3 be applied.

The City's Health Services has advised that the DWER Air Quality Unit and the DoH do not support air modelling emissions reports as a means of justifying a lesser buffer distance to sensitive land uses, given there can be significant uncertainty in the accuracy of these studies, and recommend applying the standard separation distances outlined in GS3.

The City does not recommend support for the proposed Service Station for the following reasons:

- The City does not support air modelling emissions reports as a means of justifying a lesser buffer distance to sensitive land uses, as it considers the results cannot be relied upon.
- The Council has taken a consistent approach to applying GS3 separation distances between service stations and sensitive uses, including the existing service station to the south of the subject site that the Council did not support (but was ultimately approved by MOJDAP following SAT review).
- Given the City's concerns about the unreliability of modelling results, the precautionary principle, which urges caution in decision making where scientific evidence about a health hazard is uncertain and the stakes are high, is recommended.
- The City maintains its position that GS3 separation distances be applied, requiring 200m separation between Service Stations and Child Care Centres.

Local Government Policies

Planning Policy No.3.1.2 - Local Commercial and Activity Centres Strategy (LCACS) (PP3.1.2)

PP3.1.2 provides for a Neighbourhood Centre at Golden Bay, and reflects the previously approved retail NLA of 3,240m². The NLA of the proposed development is lower at 2,488m².

The proposed development is consistent with the role and function of a Neighbourhood Centre in providing for daily to weekly household Shopping needs and a small range of other convenience services. Consistent with the Policy, the Centre will provide a Supermarket, and is expected to provide a (limited) range of Specialty Shops and personal services.

Planning Policy No.3.3.1 - Control of Advertisements (PP3.3.1)

PP3.3.1 sets out requirements for various types of signage in the City. Four (4) pylon signs are proposed in this application, with 2 (two) along Warnbro Sound Avenue, and two (2) on Aurea Boulevard (one (1) advertising the Neighbourhood Centre, and one (1) for the Service Station). No signage is currently proposed for the Fast Food Outlets and Liquor Store.

Whilst the Policy specifies a maximum of one (1) pylon sign per street frontage, two (2) signs along Warnbro Sound Avenue is considered appropriate given the length of this frontage is approximately 128m, and as Warnbro Sound Avenue provides primary commercial exposure to the development.

Two pylon signs are proposed for the Aurea Boulevard frontage which is considered excessive given the relatively short length of this road. It is recommended that only one (1) pylon sign be located along this road, consistent with PP3.3.1.

Signage panels integrated into the facades of the Supermarket and other tenancies, and directional signage, are considered to be consistent with the buildings on which they are located and the locations where they are proposed.

Signage for the Fast Food Outlets will need to be considered as part of a signage strategy approved by the City if the development is approved.

Planning Policy No.3.3.9 - Fast Food Outlets (PP3.3.9)

PP3.3.9 provides guidance for the development of Fast Food Outlets within the City. The application proposes two (2) Fast Food Outlets (with operators yet to be confirmed) adjacent to Warnbro Sound Avenue. The outlets are not positioned on the Main Street, and are located away from residential dwellings to minimise adverse amenity impact, consistent with PP3.3.9. Whilst the drive-through facilities are located on the Warnbro Sound Avenue frontage, these will be screened and the frontage landscaped, providing an acceptable design outcome.

In excess of ten (10) cars can be accommodated within the drive-through facilities. Whilst the Policy provides for 50% of these bays to be included in parking calculations, it is considered reasonable for 100% to be applied, given these cars are not accommodating other bays within the parking area.

Planning Policy No.3.3.14 - Bicycle Parking and End-of-Trip Facilities (PP3.3.14)

PP3.3.14 provides for secure, well defined and effective on-site bicycle parking and end-of-trip (EOT) facilities, to encourage the use of bicycles as a means of transport and access within the City.

Bicycle Parking Requirement

Land Use	Required				Required
	Minimum Short Term		Minimum Long Term		
	Rate	Number	Rate	Number	
Shop – Neighbourhood Centre (2,488m²)	0.30 spaces per 100m² NLA	7.5	0.12 spaces per 100m² NLA	3	10.5
Provided					15

An oversupply of 4.5 bicycle spaces is provided.

A condition will be provided for the bike parking to be provided in accordance with the relevant Australian Standard (AS).

End of Trip Facilities (EoT)

As less than five (5) long term bicycle parking spaces are required, no end-of-trip facilities are required.

Planning Policy No.3.3.19 - Licenced Premises (PP3.3.19)

PP3.3.19 provides guidance for the assessment and determination of applications for licenced premises. The application proposes a Liquor Store which is subject to this Policy. The Policy requires consideration be given to impact on amenity, character, and social impact, as set out in the *Planning and Development (Local Planning Schemes) Regulations 2015*.

The location of the Liquor Store fronting Warnbro Sound Avenue and with an average 2m setback to the undeveloped residential lot to the north is considered to be acceptable as the northern wall and 1.8m boundary fence will provide a suitable interface between the uses. No additional noise attenuation is required by the Acoustic Report.

At this stage, the Applicant has not provided sufficient detail to support a liquor licensing application.

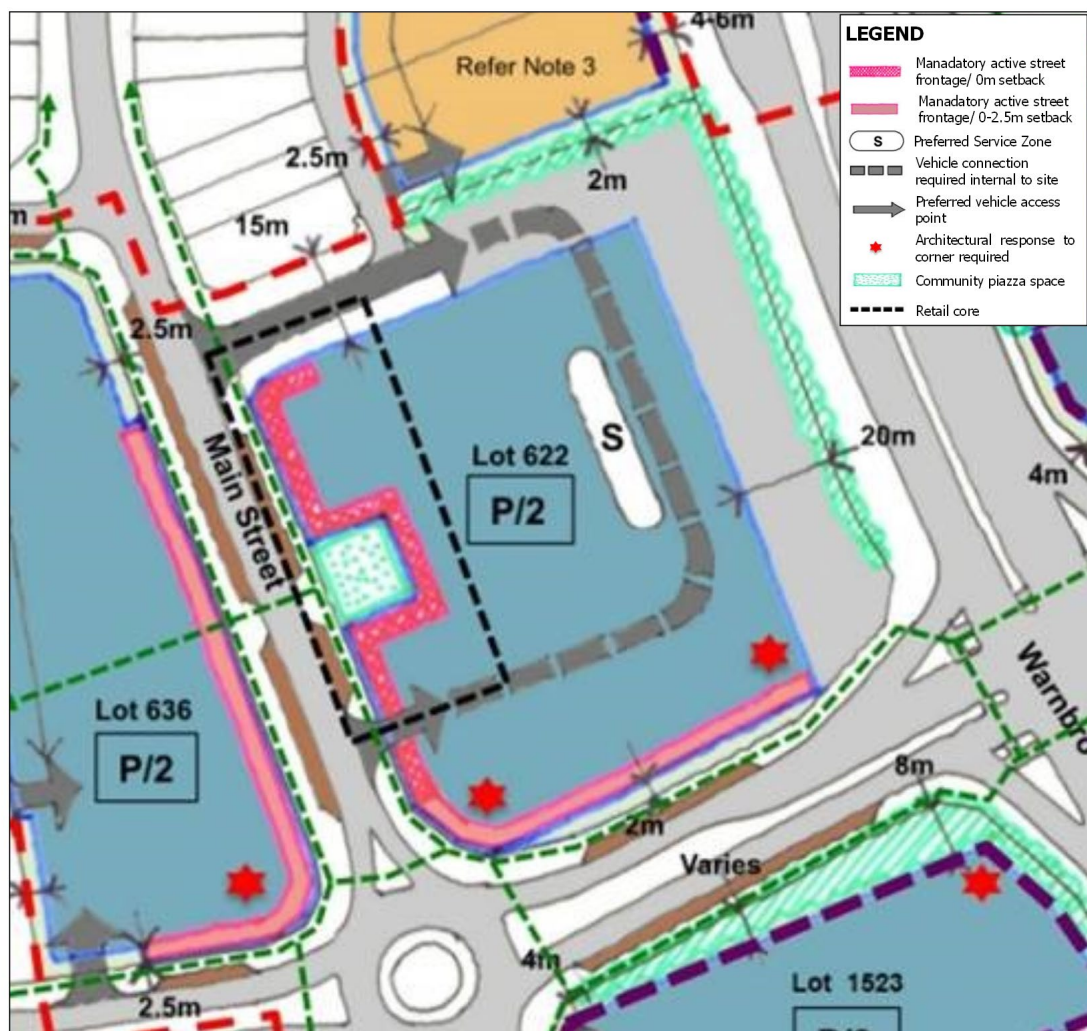
Planning Policy No.P3.3.25 - Percent for Public Art – Developer Contributions (PP3.3.25)

In accordance with PP3.3.25, where a proposed development has an estimated construction cost exceeding \$5M, there is a requirement to provide Public Art to a value of not less than 1% of the building works, being \$110,000 for this application, given the value of the proposed development at \$11 million.

The public art is proposed to be delivered on-site or as a cash-in-lieu contribution, and will be recommended as a condition should the application be approved.

Local Development Plan (2022)

As a requirement of the Structure Plan, a LDP was prepared by the (then) Proponent, with the latest version approved on 6 December 2022. An extract of the approved LDP is provided in Figure 9 and a full copy of the LDP is included at Attachment 8.

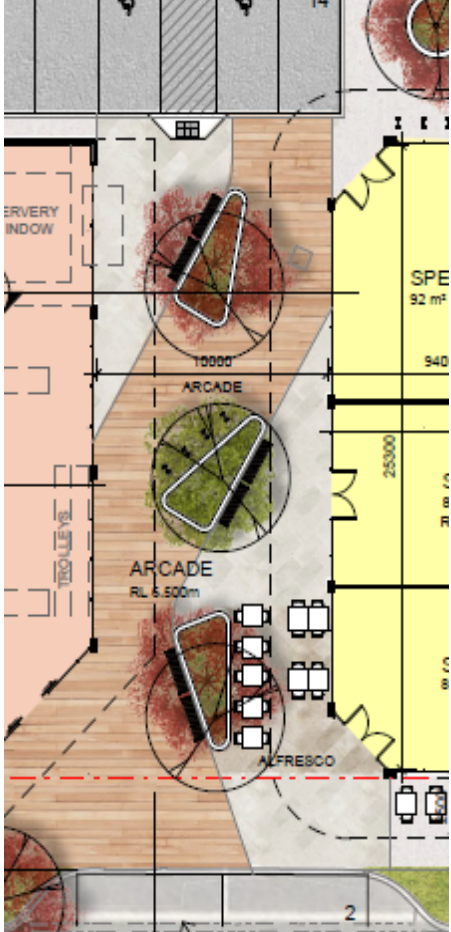


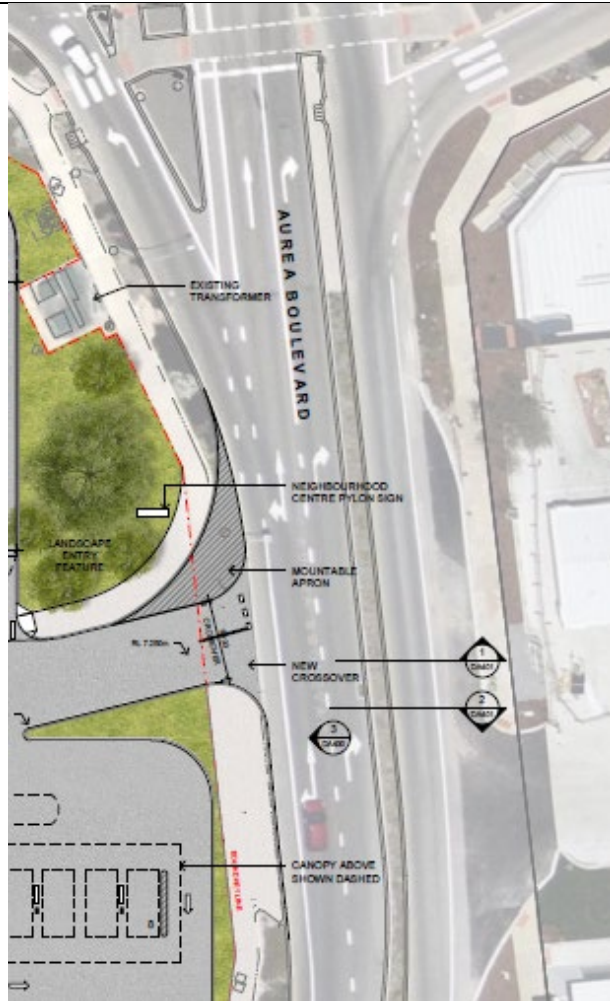
9. Golden Bay Neighbourhood Centre LDP (Extract)

The following Table sets out only those aspects of the proposal which are inconsistent with the elements of the LDP:

Element	City Comment
<p>(a) Tenancies must present their main entrance to the main street or the community piazza space if frontage to either is provided. Parking is provided to the rear of the site fronting Warnbro Sound Avenue.</p>	<p>The Supermarket fronts the Main Street (where business and activity is focussed) of Thundelarra Drive with the entry to the tenancy being at the corner of the building and mall, adjacent to the Specialty Shops.</p> <p>Best practise urban design would generally locate Specialty Shops on the Main Street and sleeve the Supermarket behind, however, this proposal involves reduced floorspace from the original approval which makes that configuration challenging. The design relocates the Specialty Shops from the Main Street to a mall, which will be used for alfresco dining, a meeting place and a movement corridor for those accessing the Supermarket entry from the rear parking area. Customers will pass the Specialty Shops on the way to and from the Supermarket. The orientation of the mall means that it will be sheltered from both the prevailing breeze and the afternoon sun creating a comfortable place for alfresco dining.</p> <p>Windows to the Supermarket, located along the Main Street, will provide for interaction between the business and the street. In addition, the floorplan shows aisles and low shelving along the windows, allowing a clear view from the street to the inside of the tenancy.</p> <p>Trolley parking is provided within the car parking area to the rear of the Supermarket, and within the tenancy near the checkouts so as to not be viewed from the Main Street. Suitable conditions will be required to achieve these outcomes, in the event the application is approved.</p> <p>Locating the Fast Food Outlets and Liquor Store to the rear of the site fronting Warnbro Sound Avenue is a reasonable approach which locates these uses away from residences and other sensitive uses.</p> <p>The design outcome as shown on the amended plans is considered to be an acceptable solution and is supported, subject to appropriate conditions regarding the interface of the buildings with public areas.</p>
<p>(b) Mandatory active street frontage along Aurea Boulevard.</p>	<p>An active frontage is not shown along Aurea Boulevard given the proposed crossover and the Fast Food/ Service Station uses. The proposed interface mirrors the development which has occurred the southern side of Aurea Boulevard.</p> <p>The design provides, however, a suitable response to the corner of Thundelarra Drive and Aurea Boulevard which is a key objective of the LDP.</p>

	<p>Whilst active uses along Aurea Boulevard consistent with the LDP would be a preferred outcome, it is more important that the Thundelarra Drive frontage be given design priority, which it is considered to do in this case.</p> <p>Given the development to the south and the traffic volumes and carriageway width along Aurea Boulevard, the design response is considered acceptable.</p>
(c) A canopy with continuous frontage extending across the entire street frontage of the building.	<p>The Supermarket canopy along Thundelarra Drive finishes approximately 5 metres short of Wyloo Lane. The corner truncation to Wyloo Lane creates some difficulty in extending the awning all the way along this frontage.</p> <p>The shorter awning, in favour of the architectural response proposed (ie. facade design, signage positioning and landscaping) is supported. The awning in front of the Specialty Shops on Thundelarra Drive will need to be extended approximately 3.5m south to provide cover to the bicycle parking.</p>
(d) Community piazza space fronting Thundelarra Drive and designed to provide for greenery, shade and casual seating.	<p>Whilst not in the position or configuration shown in the LDP, being located centrally on Thundelarra Drive as shown in Figure 10, the 'community piazza' space is provided by the 10m wide mall located between the Supermarket and Specialty Shops (refer extract from site plan below). The location and function of this reoriented space is supported in that it will provide protection from the prevailing wind and afternoon sun, encourage the area to be used as a community meeting place, and support food and beverage outlets and alfresco dining.</p>

	 <p>10. Mall Design (extract from site plan)</p>
<p>(e) Two preferred vehicle access points from Thundelarra Drive – one adjacent to the roundabout, and the other via Wyloo Lane north of the site with internal vehicle connections central to the site.</p>	<p>The proposal includes access to Aurea Boulevard, in addition to access from Thundelarra Drive and Wyloo Lane (refer Figure 11). The LDP does not include an access point to Aurea Drive as proposed. The proposed access facilitates servicing (fuel tanker) and customer vehicle movement around the site rather than concentrating access/egress for the Service Station along Thundelarra Drive.</p> <p>The two (2) carparking bays on Aurea Boulevard have been removed due to concerns about sight lines.</p>



11. Proposed Aurea Boulevard Access (extract from site plan)

The TIA has been assessed by the City on two occasions in response to the initial report, and the revised TIA submitted with the Amended Application. Following detailed assessment, the following concerns with the TIA remain:

- The proposed left-in, left-out crossover off Aurea Boulevard and its proximity to the Warnbro Sound Avenue intersection which may result in queuing along Aurea Boulevard ahead of the signalised intersection, impacting the Aurea Boulevard crossover and access/egress from the site;
- Inadequate vehicle queuing within the site, and line marking for the Service Station which may result in vehicles overflowing to Aurea Boulevard and impacting the surrounding road network;
- Swept path analysis has identified concerns in a number of locations throughout the development;
- Design of blind aisles and inadequate turnaround in the vicinity of the Liquor Store has been identified;

	<ul style="list-style-type: none"> The need for a pedestrian refuge within the Thundelarra Drive crossover given its 9m width; and General concerns about the accuracy of the modelling and associated assumptions, resulting in the TIA outcomes being considered unreliable. <p>Given the above concerns, the TIA not supported.</p>
(f) Landscape material to continue across driveways and entrances to maintain visual continuity of the pedestrian network.	The plans currently do not show footpaths extending across crossovers. A condition will be recommended, in the event the application is approved, ensuring footpath treatment is extended over crossovers in accordance with the LDP to assist legibility; and that a pedestrian refuge is provided within the Thundelarra Drive crossover to assist pedestrian safety.
(g) Special vegetation screens to consist of trees and understorey of low level shrubs to maintain sightlines for pedestrians and be of a minimum width of 3m.	The proposal includes a landscape strip ranging from 1.5-2.5m along Warnbro Sound Avenue which is a variation to the 3m landscaping strip indicated in the LDP. Given the extent of landscaping shown on the Landscaping Plan and the additional tree planting proposed within the parking area, along with the retention of landscaping within the Warnbro Sound Avenue and Aurea Boulevard verges, this variation is considered acceptable.

City of Rockingham Town Planning Scheme No.2 (TPS2)

The subject land is zoned 'Commercial' in TPS2.

The objective of the 'Commercial' Zone is:

'... to provide for the development of District, Neighbourhood and Local Shopping facilities to cater for the present and future residents of the Local Government consistent with the Local Government's Local Commercial Strategy and supported by any other Plan or Policy that the Local Government from time to time may adopt as a guide for the future development within the zone.'

The proposal is consistent with this Objective.

The application proposes the following land uses:

Land Use	Commercial Zone Permissibility
Shop	Permitted ('P')
Fast Food Outlet	Discretionary ('D')
Liquor Store (Small)($<300\text{m}^2$)	Discretionary ('D')
Service Station	Discretionary ('D')

In accordance with clause 3.2.2 of TPS 2:

"'P' use *"means that the use is permitted by the Scheme providing the use complies with the relevant development standards and the requirements of the Scheme.*

'D' use *"means that the use is not permitted unless the local government has exercised its discretion by granting development approval."*

All uses proposed are able to be considered within the 'Commercial' Zone under TPS2. The uses are commonly provided within a Neighbourhood Centre and are considered acceptable.

Clause 4.6.4 Setbacks

Notwithstanding that TPS2 requires R-Code setbacks where development is proposed on a lot having a common boundary with a Residential zoned lot, the LDP provides for a 2m setback in this location. The proposed setback ranges from 1.88-2.1m from the northern boundary, averaging 2m. The design of the northern wall of the Liquor Store, landscaping and boundary fence will soften the appearance of the wall and the setback proposed is considered to be acceptable.

Clause 4.6.5 Landscaping

A minimum provision of 10% landscaping is required for development within the 'Commercial' Zone, excluding those areas identified for pedestrian movement.

Landscaping within verge areas may be included in the site landscaping requirement. Where this provision is not possible, an equivalent contribution towards streetscape works in public streets adjoining the property may be required.

In this case, 8.5% landscaping is provided, with additional tree planting on-site within the carparking area, landscaping within the verge along Thundelarra Drive and retention of the existing verge landscaping around the site. A reduction in landscaping to 8.5% is therefore considered acceptable.

Clause 4.6.3 - Parking

On-site car parking is required to be provided in accordance with Table No.4 of TPS2.

The provision of car parking is summarised as follows:

Land Use	Proposed NLA	Required Parking TPS2	Bays Required
Shop (Supermarket, specialties, liquor)	1658m ²	6/100m ² NLA	99.48 bays
Fast Food	525m ²	1/11m ² NLA	47.7 bays
Service Station	305m ² + 8 service bays and 2 employees	6/100m ² NLA 1/service bay 1/employee	28.3 bays
Total Proposed NLA	2,488m ²		
Total Required			175.48 bays
Provided			148 bays
Parking balance			-27.48 bays (shortfall)

Clause 4.20 of TPS2 provides the Council with discretion to vary carparking requirements.

The application proposes 148 bays on site, where 176 bays are required, resulting in an overall parking shortfall of 28 bays. The number of bays provided includes all bays within the drive-through facilities and four (4) embayment parking bays on Thundelarra Drive.

The previous approval for the site included a parking shortfall of 18 bays.

To assist in considering the parking shortfall, it is relevant to note other parking standards which may be applied.

Clause 5.3.2(4) - Traffic and Parking of (SPP4.2 provides a recommendation for parking to be provided at a rate of 4-5 bays/100m² NLA which equates to 99.52 - 124.4 bays for the subject application, reflecting a significant oversupply in parking provided in this proposal.

Further, DPLH is currently advertising its '*Draft Interim Guidance for Non-Residential Car Parking Requirements*' ('Draft Guidance') which aims to provide consistent car parking requirements for non-residential land uses across Metropolitan and Peel local governments. Parking requirements for the subject Application would vary from a minimum of 50 bays to a maximum of 124.4 bays if the proposal were to be assessed under the Draft Guidance, also reflecting a significant oversupply.

Clause 4.20 of TPS2 provides the Council discretion to vary any standard or requirement of the Scheme where Council is satisfied, amongst other matters, that the proposal is consistent with orderly and proper planning and will not have any adverse effects on occupiers or users of the development.

The parking provided on site is considered to be adequate for the uses proposed, and the parking shortfall of 28 bays is therefore supported on the following basis:

- A number of the uses on site are car based (Fast Food Outlet, Liquor Store, Service Station), where customers will likely remain in their vehicles to visit one or more of the businesses during a single trip.
- The likely extended trading hours of the Supermarket, and the other 24 hour uses proposed, will extend trade and minimise peaks.
- The TIA indicates a maximum demand of 134 parking bays, and the proposed 148 bays will therefore exceed maximum demand.
- When considering SPP4.2, an oversupply of parking bays is calculated and therefore the 148 bays proposed is considered to be sufficient.

Environmental Protection (Noise) Regulations 1997

The *Environmental Protection (Noise) Regulations 1997* ('the Regulations') provide protection to people and sensitive uses from unnecessary noise disturbance.

The Applicant has submitted an Environmental Noise Assessment (Acoustic Report) which demonstrates that noise generated by the proposal can be appropriately managed to comply with the Regulations, with the implementation of the following measures:

- A 3.0m screen wall to the loading bay to extend the length of the loading bay, to be of solid construction and of a material with a minimum surface mass of 15kg/m². The roofed structure overhead should extend at least 4m across, be lined with an absorptive material, with no gaps between the overhead section and vertical screen wall.
- Delivery vehicles are to have broadband type reversing alarms fitted rather than standard tonal alarms.
- A section of solid screening is to be constructed near the Liquor Store bin store area, of minimum height and of minimum surface mass 4kg/m² and free of gaps.

The following measures are also recommended by the Acoustic Report to minimise noise impact:

- Any external music or the like shall be low level and inaudible at residences.
- Bin servicing shall occur between 7am and 7pm Mondays to Saturdays. Where possible, bins shall be located in areas away from and/or screened from residences.
- Various recommendations relating to the design and operation of mechanical plant.

The City accepts the recommendations of the Acoustic Report and also recommends that deliveries via Wyloo Lane, to the immediate north of the subject site, be limited to 6am – 6pm Mondays to Fridays and 9am to 5pm Saturdays to minimise noise disturbance to the adjoining residential property.

Bin servicing via Wyloo Lane should also be limited to 7am to 6pm Monday to Saturday to minimise noise impact to residents.

The above measures are considered reasonable to ensure compliance with the Regulations, and will be recommended as conditions should the application be approved.

Conclusion:

The proposed application for the Golden Bay Neighbourhood Centre has been the subject of thorough assessment in accordance with TPS2, the approved LDP and the State and Local Policy Framework, having regard to the comments received from the community and external State Government agencies along with the City's internal Teams during the consultation process.

Variations to the LDP and other standards such as land use, general distribution of uses around the site (other than the Service Station), design of the Thundelarra Drive Main Street and mall, and the parking shortfall proposed, are considered to be acceptable.

There are, however, two significant areas of concern:

Health Concerns (Benzene)

The proximity of the proposed Service Station to the two existing, operating, Child Care Centres is of concern from a public health perspective.

Whilst the City notes the Applicant's EIA proposing VR1 and VR2 emissions reduction, the City considers that the potential health impacts from fuel vapour, especially benzene, creates unacceptable risk to the local community, especially children, and out-weighs the planning merit of approving the Service Station in this location. Any risk, even a low risk, is considered to be unacceptable in this regard.

Air quality modelling has a number of areas of uncertainty, and consistent with its position on other Service Stations in proximity to Child Care Centres, and in the absence of modelling outcomes, the City considers a precautionary approach should be applied to avoid the risk of benzene exposure to children.

The proposed development is therefore considered to be incompatible with the nearby sensitive development in this locality and is not supported.

Traffic and Safety

The proposed access from Aurea Boulevard, and its potential implications for unacceptable queuing from the Warnbro Sound Avenue controlled intersection; along with a number of associated issues relating to traffic design and modelling concerns impacting the operation of the site (including swept path, blind aisles and Service Station stacking distances) will likely result in unacceptable impacts to vehicle movement, and to traffic and road networks in the locality.

The proposed development is also not supported on this basis.

Conclusion

It is therefore recommended that the MOJDAP refuse the application.

Golden Bay Neighbourhood Centre

Application for Planning Approval



Lot 622 (2) Aurea Boulevard, Golden Bay

February 2023

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planning

Development Application

Lot 622 (2) Aurea Boulevard, Golden Bay

Prepared for Jarra Dev Pty Ltd

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1 INTRODUCTION

Apex Planning has produced this application for planning approval on behalf of Jarra Dev Pty Ltd, with regard to the proposed Golden Bay neighbourhood centre located at Lot 622 (2) Aurea Boulevard, Golden Bay (hereafter referred to as the **development site**).

The proposal seeks to establish a vibrant neighbourhood activity centre on the site, which appropriately responds to the contextual characteristics of the locality and delivers a range of complementary commercial uses which will cater for the daily and weekly needs of the surrounding community.

The neighbourhood centre is comprised of a local supermarket with specialty outlets, fuel station, liquor store, and fast food facilities which are designed to a high architectural standard to deliver the outcomes envisaged by the Golden Bay structure plan and associated local development plan.

The development will activate land which is currently vacant/derelict (and contains the remnant structures of an uncompleted previous development), significantly improving local amenity and access to key urban support services for the local area.

The proposed development has significant planning merit and warrants the support of the local authority, and the approval of the Metro Outer JDAP.

1.1 PRE-LODGEEMENT ENGAGEMENT

Considerable pre-lodgement engagement has occurred with the officers of the City of Rockingham with regard to the proposed development.

On 8th July 2022, representatives of the proponent and Apex Planning attended an early project consultation meeting with the City of Rockingham, where a conceptual sketch notionally depicting the proposed land uses was presented for discussion and feedback. A copy of the initial concept plan is provided as **Appendix 1** for reference.

The development proposal was discussed in the context of the key requirements of the applicable structure plan / local development plan, including:

- The size of the supermarket component, and the relationship of the core retail areas with Thundelarra Drive (the 'main street').
- The need for the service station retail building to achieve suitable activation and aesthetic requirements due to the key corner location at Aurea Boulevard / Thundelarra Drive.
- The size and position of the piazza component.
- The importance of landscaping throughout the development site.
- The nature of the proposed land uses, in particular the service station and drive-through fast food outlets.
- Key expert input required for the development, including vapour assessment for the service station.

The need for pre-lodgement consideration by the City's Design Review Panel (**DRP**) was also discussed at the meeting, though it was subsequently decided by the City after the meeting that no consideration by the City's **DRP** would be necessary.

On 3rd October 2022, a design review package containing revised plans and an assessment against the principles of *State Planning Policy 7.0 Design of the built environment* (**SPP7**) was submitted to the City for comment.

Feedback was subsequently received on the package on 31st October 2022, which was given close consideration and resulted in further changes to the development.

Overall, the following changes were made to the development proposal as a result of the pre-lodgement process with the local authority, since the initial project meeting in July 2022:

- Expansion of the size of the supermarket component to 1,165sqm.
- Reorientation and redesign of the supermarket building to provide more meaningful frontage and activation to Thundelarra Drive, and screening of the car park from the street.
- Reorientation and redesign of the speciality tenancies to better connect with the supermarket and enable a larger and more meaningful arcade/piazza.
- Repositioning and expansion of the piazza/arcade to establish a better pedestrian connection via Thundelarra Drive and create a link between the supermarket and specialty tenancies.
- Enhancement of the service station through feature aesthetic form and more activation to Thundelarra Drive.
- Further development of landscape architecture to optimise areas for tree and screen planting around the site.
- Reduction of service station refuelling component to four bowzers rather than eight bowzers.
- Enhancement of the fast food facilities, in particular the extent of articulation and structural aesthetic screening for the drive-through components.
- Establishment of stronger pedestrian links throughout the site, via a series of internal pathways and zebra crossings.

In summary, the pre-lodgement process with the local authority has enabled the form, aesthetics, activation and function of the development proposal to be optimised.

2 LAND DESCRIPTION

2.1 LOT DETAILS

The land subject of this application for planning approval is described in **Table 1** below.

Table 1: Lot details					
Lot	Deposited Plan	Volume	Folio	Lot area	Ownership
622	408508	2898	430	1.2398ha	Golden Bay Village Pty Ltd

The Certificate of Title (CT) and Deposited Plan are provided at **Appendix 2**. There is only one encumbrance on the CT, which relates to an easement to Water Corp and is depicted on the Deposited Plan. No development is proposed within this easement.

2.2 PREVIOUS APPROVAL

On 29th June 2016, the City granted development approval to the 'Golden Bay Village Centre' on the site.

Based on the approval letter and stamped plans, the key elements of the previous approval are noted as follows:

- A supermarket of 1,050sqm, small retail tenancies totalling 1,115sqm, a standalone liquor store of 280sqm, and a medical facility with 6 consulting rooms. The applicable parking requirement is 176.7 bays based on the requirements contained within *Table No. 2 – Carparking Table* of Local Planning Scheme No.2.
- Parking provision of 153 parking spaces within the site and six onstreet parking spaces.
- An approved parking shortfall of approximately 17.7 bays.
- Vehicular access via Wyloo Lane and Thundelarra Drive.

Based on aerial imagery, construction of the village centre commenced in mid 2017, which involved site works, concrete slabs for some buildings, steel structures for some buildings, access and drainage infrastructure.

However, construction never progressed past this stage and the improvements have remained on the site since commencement.

3 CONTEXTUAL CONSIDERATIONS

The following sub-sections describe the contextual characteristics of the site. Refer to **Figure 1: Aerial Photo**, which illustrates the development site and surrounds.

3.1 REGIONAL CONTEXT

The development site is in the City of Rockingham and is approximately:

- 52km south of the Perth CBD
- 14.5km south of the Rockingham Strategic Centre
- 13km north of the Mandurah Strategic Centre

The development site has frontage to the following roads:

- Warnbro Sound Avenue, an Other Regional Roads reserve under the MRS and a District Distributor A under the structure plan.
- Aurea Boulevard, a Local Distributor under the Main Roads hierarchy and an Integrator B under the structure plan where it adjoins the development site.
- Thundelarra Drive, an Access Road under the Main Roads hierarchy and a Neighbourhood Connector B under the structure plan where it adjoins the development site.

Warnbro Sound Avenue is a key transport route for the coastal area generally west of Ennis Avenue / Mandurah Road, providing the communities of Warnbro, Port Kennedy, Secret Harbour and Golden Bay with a connection between Safety Bay Road (north) and Mandurah Road (south).

3.2 LOCAL CONTEXT

The development site forms part of the Golden Bay neighbourhood centre precinct, which is comprised of six separate lots zoned 'Commercial' under the City's LPS2 and indicated as such under the Golden Bay structure plan (extract provided below):



Image extract: the Neighbourhood Centre Precinct as shown on the Golden Bay Structure Plan.



Figure 1: Aerial Photo / Context Map



NORTH

Drawn: Alessandro Stagno

Rev: 0

Source: MNG Access

Date: 31 January 2023

Lot 622 (2) Aurea Boulevard, Golden Bay

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The development site is the largest and centrally located lot of the neighbourhood centre precinct and is bounded on three sides by roads (Warnbro Sound Avenue, Aurea Boulevard, Thundelarra Drive).

The site benefits from frontage to the highest order roads in the structure plan area (affording a high level of exposure), as well as frontage to Thundelarra Drive which is intended to form the 'main street' of the locality.

The Golden Bay locality is bisected by Warnbro Sound Avenue, and has been in the process of urbanisation in accordance with the Golden Bay Structure Plan since the early 2010s. Residential development of densities generally ranging from R20-R80 has emerged throughout the area.

The Golden Bay neighbourhood centre precinct is approximately 1.2km south of the Secret Harbour district centre, which is located at the intersection of Warnbro Sound Avenue / Secret Harbour Boulevard. The district centre contains three major supermarkets, as well as supplementary liquor, fuel, and other associated specialty shops and serves a significant catchment.

In terms of immediate surroundings:

- The development site is bounded by Wyloo Lane to the north-west, with housing located beyond.
- The development site adjoins vacant residential land to the north, currently identified as Lot 9505.
- The development site is bounded by Warnbro Sound Avenue to the east, which is comprised of six lanes of traffic and a wide verge immediately opposite the site. Traffic data from 2022 indicates Warnbro Sound Avenue carried approximately 9,700 daily vehicles in the vicinity of the site.
- The development site adjoins the major signalised intersection of Warnbro Sound Avenue / Aurea Boulevard / Adelong Avenue to the south-east, which affords controlled full-movement access into the Golden Bay estate.
- The development site is bounded by Aurea Boulevard to the south, which is comprised of four lanes of traffic (including slip lanes). Traffic data from 2022 indicates Aurea Boulevard carried approximately 3,182 daily vehicles in the vicinity of the site.
- A recently completed mixed commercial development exists on Lot 1523 adjacent to the site to the south, which contains a 24 hour service station, gym, and commercial building.
- The development site adjoins the roundabout intersection of Aurea Boulevard and Thundelarra Drive to the south-west. Childcare facilities are present on both sides of the roundabout, fronting Thundelarra Drive.
- A large, vacant commercial site (Lot 636) is adjacent the development site on the western side of Thundelarra Drive.

In terms of public transport, the 558 route operates along Warnbro Sound Avenue with a stop located within the verge immediately adjacent the development site. The 558 route provides a connection between Mandurah and Rockingham, operating on a half hourly basis throughout the day with additional services providing during the peak hour. The route provides a connection to Rockingham train station and Warnbro train station, affording a reasonably good level of transit connectivity.

3.3 SITE CONDITIONS AND TOPOGRAPHY

The development site is currently in a derelict condition, resulting from the partial completion of a formerly approved 'village centre' development.

The site currently contains various concrete pads, steel frame structures, a crossover to Thundelarra Drive and drainage infrastructure which formed the early phases of construction, and appear to have remained on the site since 2017.

In terms of topography, this varies as some areas of the site appear to have been subject to site works as part of the aforementioned approval. These areas are generally flat with gentle grades. There are also some existing mounds throughout the site which are around 1.5m-2m higher than natural ground level.

According to mapping, the development site appears to have access to the necessary urban utilities services.

4 DESCRIPTION OF PROPOSAL

Refer to **Appendix 3** for the full set of development plans (including 3D images), **Appendix 4** for the landscape concept plan, and **Appendix 5** for an assessment against the ten principles of SPP7.0.

The proposal seeks to establish a vibrant neighbourhood centre on the site, which delivers a range of complementary commercial uses to cater for the daily and weekly needs of the surrounding community in accordance with the Golden Bay structure plan.

The development will significantly improve the site's relationship with the surrounding area and will enhance local visual amenity, by replacing what exists on the site with an attractively designed neighbourhood centre which is accessible both by foot and by car.

The proposed neighbourhood centre development includes the following land uses:

- A supermarket of 1,165sqm, operating during typical supermarket hours.
- Three speciality tenancies totalling 255sqm, likely operating morning / daytime / evening.
- A service station with 320sqm retail building and 4x fuel bowsers, operating 24 hours.
- Two drive-through fast food outlets of 265sqm and 260sqm, operating 24 hours.
- A small liquor store of 230sqm with a drive-through component, operating 9am-10pm.

The layout and configuration of the development aligns with the structure plan and local development plan prepared for the area, with access / driveways / landscaping / built form generally positioned in the areas indicated (albeit with some minor variance).

The proposed neighbourhood centre is arranged to appropriately respond to its surroundings, addressing the 'main street' design intention for Thundelarra Drive, the regional road function of Warnbro Sound Avenue, and the Integrator B function of Aurea Boulevard.

The site's vehicular access points are via Wyloo Lane, Thundelarra Drive, and Aurea Boulevard, all linking to a main internal driveway which provides connection to each facility. Total parking availability will be 151 bays (including 6 onstreet bays), which will be used reciprocally. Strong pedestrian linkages are established throughout the car parking areas with raised pathways, pram ramps and zebra crossings.

Buildings are deliberately positioned along road frontages with the car park in the centre of the site, as a means of creating built form presence to the frontage roads and screening the car park from the public realm. Landscape integration plays a key role in the architectural approach for the neighbourhood centre, using landscape features, screen planting, and raised planters as a means of establishing a sensitive interface with each boundary frontage.

4.1 MAIN STREET RESPONSE (THUNDELARRA DRIVE)

An engaging 'main street' is established along Thundelarra Drive, with an attractively designed pedestrian precinct comprised of the supermarket, speciality tenancies and central arcade/piazza. Buildings comprise street-edge setbacks to Thundelarra Drive and the piazza/arcade.

The buildings facing Thundelarra Drive and the arcade are articulated/treated with high quality materials reflective of the coastal context and pedestrian-level windows / openings which afford mutual views to the street and arcade for a high level of engagement.

The arcade provides a quality pedestrian thoroughfare between Thundelarra Drive and the car park, funnelling pedestrians through a pleasant urban space from the street and encouraging foot traffic to pass the specialty tenancies. The arcade aligns with the main internal pedestrian path through the site, connecting through to the bus stop on Warnbro Sound Avenue for optimised accessibility.

Alfresco seating within the arcade is protected with raised planters to create a comfortable environment for patrons seeking to linger and socialise over a coffee or meal.

The proposed service station is positioned at the corner of Thundelarra Drive and Aurea Boulevard and is intended to create a corner presence through accentuated height, variation in materials, and feature roof form with structural expression.

The service station building addresses both of its frontages, with full height windows and pedestrian entry points at the forecourt and facing Thundelarra Drive. Whilst a key function is to offer the retail sale of fuel, the retail building also serves an important convenience function and is expected to provide local residents with uninterrupted access to essential goods on a 24 hour basis, providing significant passive surveillance and night-time activity as part of CPTED principles.

Built form treatments, materiality and colour tones are coastal in nature, taking keynotes from existing local examples, seaside undertones, and key principles adopted from the Golden Bay design guidelines enforced by the estate developer for the surrounding area.

4.2 WARNBRO SOUND AVENUE RESPONSE

The three drive-through facilities (liquor and two fast food outlets) are appropriately positioned along the Warnbro Sound Avenue frontage, which affords visibility/exposure to the high number of daily vehicles using this key regional road whilst allowing the pedestrian focused uses to be located along Thundelarra Drive.

Each facility is separated by raised kerbing with intuitive circulation systems and Australian Standards compliant car parking areas to ensure efficient and coordinated movement at all times.

Visual amenity is given priority along Warnbro Sound Avenue, though landscape screening adjacent to the liquor store and the use of structural feature screening along the drive-through areas of the fast food outlets with integrated landscape planting.

The fast food outlet located at the corner of Warnbro Sound Avenue / Aurea Boulevard includes a transitioned feature screen comprised of battens which increase in height as they wrap around the curve of the drive-through, creating visual interest.

All three facilities provide varied roof forms, alternating colours/materials, and shopfront windows, ensuring design quality across the site is at the optimal standard.

4.3 AUREA BOULEVARD RESPONSE

The response to Aurea Boulevard has been informed by key contextual considerations, to ensure a practical and realistic approach is adopted.

The existence of three lanes with a solid central median for most of the road frontage (as well as the proximity to a major signalised intersection for a regional road) makes this area less conducive to built form or meaningful activation, and more suitable for access and car-based activity.

A central access point restricted to left-in/left-out (**LILLO**) movements is a logical response, as traffic adjoining the site flows toward the nearby signalised intersection (affording low-conflict in and out movements) and enables better dispersion of traffic through the site. The access point also reduces the number of service vehicle movements along Thundelarra Drive, strengthening its function as a 'main street'.

The positioning of the service station with frontage to this road maintains consistency with the layout of the recently completed development on the southern side of Aurea Boulevard, whilst optimising accessibility to the refuelling area due to its connection to driveways and crossovers.

A large landscape entry feature is provided at the eastern side of the proposed crossover, which screens views into the car park and enhances the 'sense of arrival' as traffic moves into the area from Warnbro Sound Avenue.

4.4 LANDSCAPING ARRANGEMENTS

A conceptual landscape plan depicting landscape arrangements throughout the neighbourhood centre is provided at **Appendix 4**. The landscape plan was formulated by PlanE and includes:

- A generous landscape feature area next to the site's Aurea Boulevard crossover which will include a feature Norfolk Island pine tree with uplighting as a keynote to the site's coastal location.
- Landscape planting along the Warnbro Sound Avenue frontage to enhance the site's relationship to this regional road, comprised of suitable trees and low planting species.

- Significant tree planting throughout the car park to reduce the urban heat island effect and optimise the provision of greenery within this space.
- Enhancements to the verge, including the planting of additional verge trees along Thundelarra Drive to enhance the 'main street' feel of this area.
- The use of a coastal-inspired hardscape treatment and raised planters within the piazza/arcade, which allow the planting of attractive native tree species and enhance the amenity of the space of users of the alfresco areas.
- The Thundelarra Drive accessway containing trees and low-level planting to contribute toward a sense of place and screen side/rear elevations of the speciality tenancies and service station retail building.
- Landscape buffer planting within the northern setback area of the liquor store. The buffer planting is provided on a raised planter, which not only improves articulation and optimises soil volume, but also allows trees to more effectively screen buildings due to increased height.

The landscape arrangements for the proposed neighbourhood centre are appropriate and allow the facility to integrate with its surroundings.

4.5 TRAFFIC ASSESSMENT

The proposed development is supported by a comprehensive Traffic Impact Assessment (**TIA**) produced by Transcore, in accordance with the requirements of the WAPC traffic impact assessment guidelines. The TIA is provided at **Appendix 6**.

The key outcomes of the TIA are as follows:

- With regard to traffic generation, the TIA concludes that the net addition of AM and PM peak trip generation is 123 and 213 respectively, which is entirely capable of being accommodated by the surrounding road network.
- A SIDRA analysis of the nearby signalised intersection of Warnbro Sound Avenue / Aurea Boulevard and roundabout intersection of Aurea Boulevard / Thundelarra Drive confirms satisfactory operation in the post-development and 10-year scenarios, with no major change in current level of service. Importantly, both intersections retain ample spare capacity for future traffic growth.
- A SIDRA analysis of the proposed development crossovers demonstrates satisfactory operation in 2023 and 2033 during the peak hours, with good level of service and minimal delays and queuing.
- A stacking analysis for the service station demonstrates adequate queuing space for vehicles during peak periods of operation.
- The capacity of drive-through areas for both fast food outlets meets the requirements of the RTA guidelines.

The traffic assessment also considers parking supply and demand for the neighbourhood centre, analysing the need for bays based on the peak periods of operation for each land use. The analysis demonstrates that reciprocal use of bays will adequately cater for the needs of the overall development.

In relation to servicing, the TIA contains swept path plans demonstrating the satisfactory movements of service vehicles for each land use, including:

- 19m fuel tankers for the service station, capable of comfortably entering via Thundelarra Drive and exiting via Aurea Boulevard.
- 8.8m service vehicle for the two fast food outlets, capable of entering and existing both fast food sites in forward gear.
- 8.8m service vehicle for the liquor store, capable of comfortably entering and exiting in forward gear. The drive-through canopy is purpose-designed to allow through movement of service vehicles.
- 12.5m service vehicle for the supermarket, capable of comfortably entering via Wyloo Lane and reversing into the loading area, and subsequently exiting in forward gear via Aurea Boulevard.

As evident from the swept path diagrams, a distinct advantage of the proposed LILO crossover to Aurea Boulevard is that the number of service vehicle movements on Thundelarra Drive is reduced, enhancing its function as a 'main street' precinct.

In summary, the TIA is comprehensive and demonstrates acceptable traffic/access outcomes associated with the development.

4.6 ACOUSTIC COMPLIANCE

An environmental noise assessment was produced by Lloyd George Acoustics in accordance with statutory requirements, noting the development site is within proximity of residential land and includes land uses which would operate outside of normal business hours. The acoustic report is provided at **Appendix 7**.

The assessment undertakes a conservative 'worst case' analysis of noise generated by each land use based on their intended hours of operation, and demonstrates compliance is readily achieved based on the details/information depicted on the development plans.

4.7 EMISSIONS IMPACT ASSESSMENT (SERVICE STATION)

Having regard for the proximity of the proposed 24 hour service station to sensitive properties, an emissions impact assessment was prepared to consider airborne pollutants against established standards. The assessment is provided at **Appendix 8**.

The assessment conservatively considers potential emissions from the service station, including potential cumulative impacts due to the existence of a service station on the opposite side of Aurea Boulevard.

The assessment demonstrates that the assessed airborne pollutants fall below guideline exposure standards, subject to the proposed service station employing both Stage 1 and Stage 2 vapour recovery systems. This is a matter which can be addressed as a condition of planning approval.

5 STATUTORY PLANNING ASSESSMENT

5.1 METROPOLITAN REGION SCHEME (MRS)

The development site is zoned Urban under the Metropolitan Region Scheme (**MRS**). The proposal involves the establishment of a commercial development on the site, which is consistent with the Urban zone of the MRS and warrants approval.

The site adjoins the Category 1 Warnbro Sound Avenue Other Regional Roads reservation. No direct access to Warnbro Sound Avenue is proposed.

5.2 STATE PLANNING POLICY 4.2: ACTIVITY CENTRES

SPP4.2 intends to ensure planning and development adequately considers the distribution, function and broad land use considerations for activity centres.

The Golden Bay neighbourhood centre was established through retail analysis and structure planning, in accordance with the principles and policy measures of SPP4.2.

The retail floorspace prescribed by the structure plan and its retail analysis for this neighbourhood centre was approximately 3,500sqm, across the entire neighbourhood centre precinct which is comprised of six separate lots zoned for commercial purposes under LPS2.

An assessment is appropriately provided against the City's Local Commercial Strategy and Golden Bay structure plan later in this report.

5.3 STATE PLANNING POLICY 7.0: DESIGN OF THE BUILT ENVIRONMENT

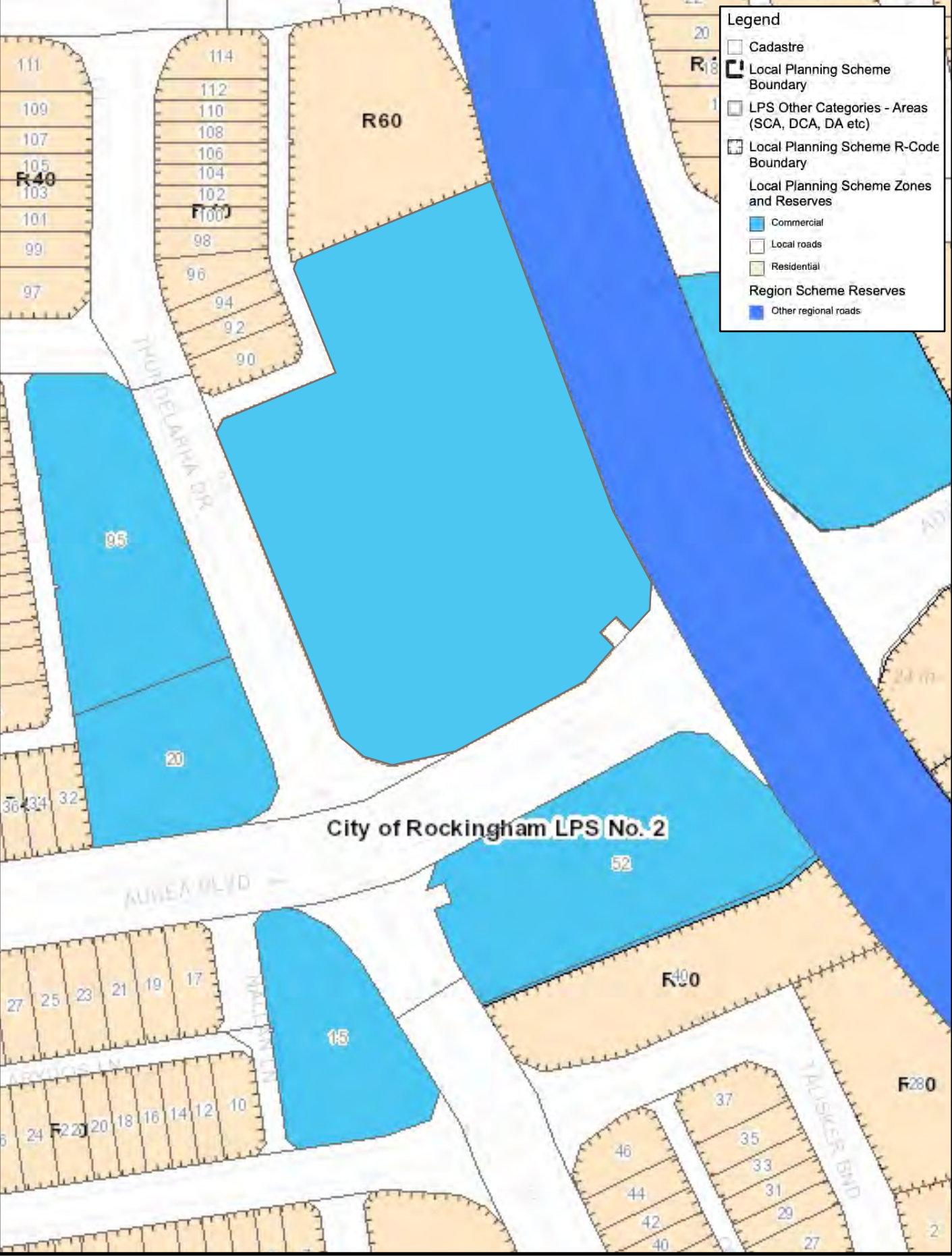
SPP7.0 addresses design quality and built form outcomes, seeking to deliver the range of benefits that derive from good design. A comprehensive visual and textual assessment against the ten principles of SPP7.0 is provided at **Appendix 5**.

5.4 CITY OF ROCKINGHAM LOCAL PLANNING SCHEME NO. 2 (LPS2)

5.4.1 ZONING

The development site is zoned Commercial under the City's LPS2. Refer to **Figure 2 – Zoning Map**. Under Clause 4.6.1 of LPS2, the objective of the Commercial zone is:

to provide for the development of District, Neighbourhood and Local shopping facilities to cater for the present and future residents of the City consistent with the local government's Local Commercial Strategy and supported by any other Plan or Policy that the local government from time to time may adopt as a guide for the future development within the Zone.



This proposal involves the establishment of a neighbourhood level shopping facility on the site which is comprised of a supermarket, specialty shops, liquor store, and fast food outlets. The total gross leasable retail area of the development is 2,495sqm.

The land use mix is consistent with what would be expected at a neighbourhood level centre catering for the daily and weekly needs of the local community, and extent of floorspace fits comfortably with the neighbourhood centre function of the site as set out in the state and local planning framework.

The site is also located within Development Area 14 (**DA14**) of LPS2, which sets the statutory basis for the Golden Bay structure plan and associated local development plan (both are addressed in the subsequent sections of this report).

5.4.2 LAND USE PERMISSIBILITY

The development site is zoned Commercial under the City's LPS2. The permissibility of the proposed uses in the Commercial zone is set out below:

Fast Food Outlet: 'D' discretionary

Liquor Store – Small: 'D' discretionary

Service Station: 'D' discretionary

Shop: 'P' permitted

The uses are all inherently commercial in nature and are consistent with the intent of the commercial zone. The proposed mix of uses is appropriate for a neighbourhood centre which would provide for the daily to weekly household shopping needs of the surrounding community, given its highly accessible location.

The layout and design of the proposed neighbourhood centre is responsive to the characteristics of the site and its surroundings, and features a high quality of architectural expression. The development is supported by a range of expert assessments demonstrating the suitability of the proposed uses on the site. The content of this report comprehensively demonstrates the development is consistent with the applicable planning framework.

With the above in mind, the proposed uses warrant approval.

5.4.3 PARKING ASSESSMENT

Table No. 2 – Carparking Table of LPS2 sets out the applicable parking requirement for the respective land uses proposed as part of this development. The requirements are as follows:

Fast Food Outlet: 1 bay per 11sqm NLA (including outdoor eating areas)

Liquor Store – Small: refer to shop

Service Station: 1 bay for every service bay, plus 1 bay per employee and 6 bays per 100sqm NLA of retail floorspace

Shop: 6 bays per 100sqm NLA

An assessment against the parking standards set out under LPS2 is provided in Section 7 of the TIA and extracted below:

Use	Required	Provided	Surplus / Shortfall (+/-)
Supermarket	70	50	-20
Specialty shops	16	5	-11
Fast Food outlets	49	46	-3
Service station	22	16	-6
Liquor store	18	27	+9
On-street bays		6	+6
Total theoretical shortfall considering the on-street bays			-25

The development creates a total theoretical shortfall of 25 bays, noting it is intended bays would be used reciprocally. The parking arrangements for this neighbourhood centre are acceptable and warrant the exercise of discretion for the following reasons:

- The TIA provides a detailed parking demand analysis between the various land uses and demonstrates that the proposed parking provision will adequately cater for the needs of the overall development, with a surplus of bays still available during the most intensive periods of usage.
- A shortfall of 17.7 bays was previously considered acceptable on the site as part of the development approval for the former village centre. A shortfall of 25 bays is not significantly greater than the shortfall previously considered.
- A considerable amount of patronage for the liquor store, fast food outlets, and service station is expected to use drive-through and/or refuelling facilities, which technically does not contribute toward the demand for marked parking spaces.
- The development encourages the use of alternate modes of transportation, noting a clear and direct connection to the adjacent bus stop is provided and 15 bicycle racks are provided throughout the site.
- Many patrons residing within the walkable catchment are expected to walk to the site to access the services offered.
- Multi-use trips are expected to occur, whereby patrons attending the site for one purpose would also use other services.

The proposed provision of bays meets the parking demand of the neighbourhood centre and warrants support.

5.4.4 SCHEME REQUIREMENTS (COMMERCIAL ZONE)

Table 2 below provides an assessment against the scheme requirements for the Commercial zone set out by Clause 4.6 of LPS2.

Table 2: scheme requirements (Commercial zone)	
Requirement	Response
<p>4.6.1 Objective</p> <p>The objective of the Commercial Zone is to provide for the development of District, Neighbourhood and Local shopping facilities to cater for the present and future residents of the City consistent with the local government's Local Commercial Strategy and supported by any other Plan or Policy that the local government from time to time may adopt as a guide for the future development within the Zone.</p>	<p>The development is consistent with the objective of the Commercial zone. Refer to earlier sections of this report, including Section 5.4.1.</p>
<p>4.6.2 Form of Development</p> <p>a) In considering applications for development approval in the Commercial Zone, the local government shall ensure that that site planning, scale, built-form, elevations and landscaping of the development positively contribute to the streetscape, appearance and amenity of the locality.</p>	<p>The proposed neighbourhood centre is configured and designed in a manner which appropriately addresses its context and immediate surroundings. This is explained in detail in Section 4 and further explained in the 'ten principles' assessment at Appendix 5.</p>
<p>4.6.3 Parking</p> <p>Provision shall be made for the on-site parking of motor vehicles in all development in the Commercial Zone in accordance with the provisions of clause 4.15 and Table No.2.</p>	<p>A parking assessment is provided in Section 5.4.3 of this TIA and Section 7 of the TIA, which demonstrate the parking arrangements for this neighbourhood centre are acceptable.</p>
<p>4.6.4 Setbacks</p> <p>In assessing applications for development approval, the local government shall take into account the following requirements when determining the setbacks for developments in the Commercial Zone:-</p> <p>a) where a development is proposed to be located on a lot having a common boundary with a Residential zoned lot or residential use class, the setbacks shall not be less than those prescribed in the R-Codes for the particular density code of the adjoining residential lot;</p> <p>b) in all other cases, setbacks to be determined by the local government taking into account the principles outlined in clause 4.6.2 and the requirements of the Building Code of Australia.</p>	<p>The development site adjoins land zoned Residential R60 along a portion of the northern boundary.</p> <p>Development along this boundary is comprised of the northern wall of the liquor store, which contains no windows. The wall is 38.3m long and transitions in height from 5.4m-6.9m.</p> <p>Under the R-Codes, the setback requirement would technically be 2.5m-3.3m. The interface with this adjoining property is addressed in the following manner:</p> <ul style="list-style-type: none"> • A setback of 1.88m-2.11m along the wall. • The wall divided into separate 'sections', which are treated with patterned concrete panels and cladded finish. • A raised planter containing screen vegetation which provides articulation along the boundary, as well as an elevated green buffer significantly screening the liquor store wall. <p>Setbacks throughout the remainder of the development were determined based on the context and character of the applicable frontage road, as explained in Section 4 of this report.</p>

4.6.5 Landscaping

a) Subject to b) below, within any development in a Commercial Zone a minimum of ten percent (10%) of the total site area shall be provided as landscaping in the form approved by the local government. The area of the site required to be provided under this sub-clause shall not include areas which would normally be set aside for pedestrian movement.

b) Where the provision of ten percent (10%) of the total site area as landscaping is not practicable, the local government may consider an equivalent contribution towards streetscape works in the public streets adjoining the property, based on the principles outlined in clause 4.6.2. Streetscape works may incorporate elements such as kerbside parking, pedestrian footpaths, soft landscaping, street trees, lighting and street furniture.

The development site provides approximately 1,050sqm of soft landscaping area (not including verge upgrades external to the site boundaries), which equates to 8.5% of the total site area.

The landscaping area provided onsite is substantial, and offers a practical solution toward:

- Accommodating significant trees throughout the car park, setback areas, and street frontages reducing the urban heat island effect and enhances amenity.
- Effective green buffer along the northern boundary, enabling a soft interface with the adjoining residential property.
- A landscape response along the Warnbro Sound Avenue frontage to enhance the development's relationship with this regional road.
- Creating an attractive and viable landscape entry feature to Aurea Boulevard to create a sense of arrival.

The landscaping arrangements are further explained and depicted in the landscape plan prepared by Plan E, provided at **Appendix 4**.

5.4.5 MATTERS TO BE GIVEN DUE REGARD

Clause 67(2) of the Deemed Provisions provides a list of matters which require due regard when considering a development application. **Table 3** below provides an assessment against the relevant matters.

Table 3: matters to be given due regard	
Matter to be given due regard	Comment
(a) the aims and provisions of this Scheme and any other local planning scheme operating within the Scheme area	The content of this report addresses LPS2, and demonstrates the proposal is consistent with its aims and intent.
(c) any approved State planning policy	This application addresses SPP4.2 and SPP7.0.
(g) any local planning policy for the Scheme area	The subsequent sections of this report address the City's local planning policy framework.
(h) any structure plan or local development plan that relates to the development	The subsequent sections of this report address the applicable structure plan and local development plan.
(m) the compatibility of the development with its setting, including — (i) the compatibility of the development with the desired future character of its setting; and (ii) 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;	<ul style="list-style-type: none"> • The development site and surrounding land is zoned Commercial under LPS2. The six lots zoned Commercial are intended to form a neighbourhood centre precinct as outlined in the respective structure plan. • The mix of land uses is appropriate and provides for the daily to weekly household needs of residents, through the provision of a supermarket, liquor, fast food, and fuel. • The key emphasis of the neighbourhood centre precinct is the establishment of a

	<p>'main street' along Thundelarra Drive, intended to comprise shops opening directly onto the street, alfresco dining, continuous awnings and onstreet parking. The development proposal achieves this through the street edge setback of the supermarket, specialty shops, and provision of an arcade as a quality urban space. A high quality of design which creates pedestrian-level engagement is delivered through the layout and built form approach of the development.</p> <ul style="list-style-type: none"> • The established context of Aurea Boulevard is principally vehicle focused and not conducive to built form or meaningful activation, and is more suitable for access and car-based activity. This is due to the existence of three traffic lanes with a solid central median for most of the road frontage (as well as the proximity to a major signalised intersection). The provision of an access point, large landscape feature and service station along this frontage reasonably addresses its characteristics and maintains consistency with recently completed development at its southern side. • Warnbro Sound Avenue is a regional road carrying high traffic volumes, and is an appropriate frontage for exposure-based commercial development which would draw patrons into the centre via Aurea Boulevard. With this in mind, the architecturally designed liquor store and fast food outlets with landscape buffers form a suitable response to this road. <p>In consideration of the above, the arrangement and execution of the proposed development addresses the character of its setting.</p> <p>In terms of the scale, height, orientation and appearance of the development, each of the proposed buildings is designed through careful consideration of their surroundings with architectural treatments, materials, finishes reflective of the coastal character of the locality.</p> <p>Buildings achieve the minimum scale encouraged by the local planning framework and present to the public realm with the appropriate level of articulation/treatment. The arrangement of buildings along the periphery of the site with car parking in the centre significantly screens views of the car park from the public realm.</p> <p>The development is entirely compatible with its surroundings.</p>
<p>(n) the amenity of the locality including the following</p> <p>(i) environmental impacts of the development;</p>	<p>The proposed development will create positive environmental impacts, noting the site is currently in a derelict condition and contains</p>

<p>(ii) the character of the locality; (iii) social impacts of the development;</p>	<p>unfinished structures/infrastructure commenced but never completed in 2017. This would be replaced with a high quality neighbourhood centre development.</p> <p>As explained in earlier sections of this report, the character of the locality will be enhanced as a result of this development proposal. The neighbourhood centre features a suitable mix of land uses, and is designed in a manner which appropriately responds to its surroundings.</p> <p>The development will establish a vibrant neighbourhood centre on the site, which will deliver facilities catering for the daily and weekly needs of local residents. The uses will create site activity during all periods of the day and will create significant jobs for the surrounding community. Positive social impacts will result from the development.</p>
<p>(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</p>	<p>A landscape plan is provided with the DA package which demonstrates suitable landscaping arrangements throughout the site.</p>
<p>(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;</p>	<p>A TIA has been produced in support of the proposal which demonstrates the appropriateness and adequacy of proposed access arrangements.</p> <p>The TIA also includes swept path plans demonstrating the acceptable movements of waste collection vehicles, which can enter and exit the car park in forward gear.</p>
<p>(t) the amount of traffic likely to be generated by the development, particularly in relation to the capacity of the road system in the locality and the probable effect on traffic flow and safety</p>	<p>A TIA has been produced in support of the proposal which demonstrates the traffic generation of the neighbourhood centre is entirely capable of being accommodated by the surrounding road network. This includes peak hour traffic generation at the site crossovers and nearby intersections.</p>
<p>(w) the history of the site where the development is to be located</p>	<p>The site was formerly approved for a 'village centre' development, which included a supermarket of 1,050sqm, small retail tenancies totalling 1,115sqm, a standalone liquor store of 280sqm, and a medical facility with 6 consulting rooms. The development was commenced in 2017 but never completed, and the unfinished structures and other infrastructure have remained on the site since this time.</p>
<p>(x) the impact of the development on the community as a whole notwithstanding the impact of the development on particular individuals</p>	<p>The establishment of a vibrant neighbourhood centre on the site which includes a supermarket, specialty stores, liquor store, fast food facilities and local service station will cater for the daily and weekly needs of local residents. The development along Thundelarra Drive is arranged and designed in a manner which creates social cohesion and pedestrian interactivity, due to its main street typology and central arcade.</p>

5.4.6 DEVELOPMENT CONTRIBUTION AREA NO.2 (DCA2)

The development site is located within DCA2 of LPS2. Pursuant to the provisions of DCA2, contributions are levied based on the number of 'dwelling units'. As the development proposal is for non-residential land uses, no 'dwelling units' will be created and hence no contribution is triggered.

5.5 GOLDEN BAY STRUCTURE PLAN

The Golden Bay structure plan was initially endorsed in 2012 and most recently amended in 2021. The structure plan is intended to *guide* development outcomes.

The structure plan contemplated a commercial zoning for the development site and five other lots around it, to form a 'neighbourhood centre precinct'. This zoning is reflected as part of LPS2.

Part Two of the structure plan outlines potential outcomes for the neighbourhood centre, informed by a retail analysis undertaken in 2011. The key elements included:

- The establishment of a local 'main street' based neighbourhood centre.
- Approximately 3,500sqm of retail NLA, supported by community uses.
- A 'medium' sized supermarket of 1,800qm-2,000sqm plus 'special shops' equating to 1,100sqm-1,300sqm.
- Retail component located at the western side of Warnbro Sound Avenue.

The proposed development is broadly consistent with the structure plan, noting it establishes a 'retail core' comprised of a supermarket with a range of supporting tenancies offering local residents daily and weekly household shopping services. The total NLA provided by the development equates to 2,495sqm.

The positioning of the supermarket, specialty shops, service station retail building and local arcade along Thundelarra Drive with interactive building form (ie pedestrian level windows, entries to the arcade, awnings, etc) establishes the 'main street' outcomes envisaged by the structure plan.

The arcade is a particularly important element, as it creates a communal space on the site for alfresco dining, connection between the supermarket / speciality shops, and facilitates a strong pedestrian link through the site which connects to a bus stop on Warnbro Sound Avenue as well as the footpath network to the surrounding area. Foot traffic is funnelled through the arcade to create pedestrian exposure to the speciality tenancies. The main entry to the supermarket is deliberately positioned at the building's corner facing Thundelarra Drive as this ensures activation is achieved should patrons enter from the street or the car park.

The growth, development, and evolution of Warnbro Sound Avenue and Aurea Boulevard in the vicinity of the site have informed the development typology and response to these frontages, which are clearly car-based and represent important opportunities to enhance accessibility and receive exposure to a regional road with high traffic volumes (in turn also securing the viability of the project).

5.6 GOLDEN BAY LOCAL DEVELOPMENT PLAN (LDP)

The Golden Bay LDP is currently at version 8, most recently amended and endorsed in 2021.

The LDP contemplates a number of development and design standards for the development site, intended to *guide* development outcomes for the neighbourhood centre.

In accordance with Clause 56(1) of the Deemed Provisions, a decision maker “*must have due regard to, but is not bound by, the local development plan which deciding the application*”.

The objectives outlined in Section 1 of the LDP are extracted below:

1. Objectives

The objective of this DAP are to:

- a) Establish a ‘Main Street’ based Neighbourhood Activity Centre of a scale that is appropriate to its role as a focal point of a residential community and its role in the retail hierarchy of the region.
- b) Provide a context for higher-density residential development that capitalises on proximity to local services.

The proposed development establishes a main street along Thundelarra Drive, achieved through the positioning of the supermarket, piazza/arcade, speciality tenancies, and service station building facing the street with typical urban design features including:

- Street-edge setbacks addressing the street with architectural design features.
- Full height windows at pedestrian scale which create mutual views and interactivity.
- Entrances to the street edge, connectivity within the arcade, and alfresco seating to strengthen its role as a quality urban space.
- The use of awnings, trees in raised planters, and clearly defined pedestrian pathways to establish a legible and comfortable pedestrian environment.

The LDP map envisages a range of active frontages, architectural/landmark responses to corners, vehicle access, and a piazza space. The layout/configuration of the development proposal is broadly consistent with the LDP, though some minor/reasonable deviations are proposed which are a logical consequence of:

- The character/function of Warnbro Sound Avenue and Aurea Boulevard in the vicinity of the site, including the nature of development in the immediate area.
- Economic viability considerations associated with land use typology and restrictive building envelope constraints set out by the LDP.
- Optimal design outcomes striking an appropriate balance between context, functionality, and the factors outlined above.

Table 4 below provides an assessment against the provisions of the LDP.

Table 4: local development plan assessment

2. Standards	
a) Structure	
i. The road annotated as 'main street' must be the main street for the neighbourhood centre.	The development proposal respects the provision of a 'main street' along Thundelarra Drive, noting this is where the supermarket, specialty stores, arcade, and convenience building are provided with a nil setback and interactive design features.
b) Street interface	
i. All buildings must provide passive surveillance of adjacent street reserves by means of active or habitable frontage.	<p>This provision is achieved through:</p> <ul style="list-style-type: none"> • The supermarket, arcade, speciality stores, and convenience retail building providing active frontage to Thundelarra Drive with windows and openings. • The liquor store's western façade and drive through containing openings directly facing Wyloo Lane. • The service station's building and refuelling area providing clear and open views to Aurea Boulevard, as well as the 260sqm fast food's drive-through pick up area which operates 24 hours.
ii. Where active frontage is required and/or a Orn street setback has been provided, the frontage must incorporate a canopy(s) with continuous coverage to a minimum depth of 2.5m or to within 600mm of the back of the adjacent kerb where the verge is too narrow to accommodate a 2.5m deep canopy, and must extend across the entire street frontage of the building.	A 2.5m wide canopy is provided along all buildings with nil setback to Thundelarra Drive (the main street). The canopy extends into the piazza / arcade space to ensure shelter and comfort is provided for pedestrians and patrons.
iii. The street setback for multiple dwellings may be reduced to Orn in the case of mixed-use development, and also for residential building elements that provide architectural interest and where a reduction in the minimum setback (stated in the OAP) does not compromise the amenity of residents (for example, for vertical circulation elements, lobbies, and upper levels).	Not applicable.
iv. Delivery, loading and storage areas must be located and screened to minimise the visual impact on the public domain.	<p>This has been achieved as follows:</p> <ul style="list-style-type: none"> • Supermarket: siting the loading area at the eastern side of the building to face the car park, and providing an architecturally treated screen wall along its northern side. • Service station: internalise the service area to face eastward into the forecourt, with a small loading area not evident from the street. • Fast foods: siting the service yards at the northern side of both buildings, ensuring views are screened from most angles by both buildings. • Liquor: back of house area is sited at the eastern side of the shop, comprising architecturally treated walls and screen landscape planting along the northern and eastern boundaries to prevent visibility from the public realm.

	The development effectively and efficiently screens service areas, whilst ensuring they are accessible from within the car park.
v. Street elevations must be designed to create visual interest through building form, articulation of walls and openings, architectural features, texture and colour, with particular emphasis given to the ground floor level.	<p>The street elevations of the supermarket, specialty shops, and service station building achieve these requirements with:</p> <ul style="list-style-type: none"> • Pedestrian level windows and openings • Articulation and alternating textures • Colour tones and materials reflective of the coastal context of the site • Feature roof form for the service station and curved building returns for the supermarket and specialty stores. <p>The street elevations of the fast food sites achieve similar outcomes, paying particular attention to varied roof heights, alternating colours/materials, and the use of structural feature screens along drive-through spaces.</p> <p>The integration of landscaping and tree planting is a key element of the built form response and works to enhance the creation of visual interest.</p>
vi. Non-active portions of walls must be articulated by means of form, colour and texture to provide visual interest.	This is achieved on all facades facing a street, as evident on the elevations.
vii. Garage doors and supporting structures for residential development must not exceed 50% of the frontage at the front setback line from the Primary Street. This can be increased to 60% for two-storey dwellings in accordance with clause 5.2.2 of the R-Codes.	Not applicable.
c) Landscape	
i. The landscape material used for the footpath must be continued across driveways and the entrances to Rights of Way to maintain visual continuity of the pedestrian network and aid pedestrian legibility.	Noted.
ii. Street trees must be provided at a minimum rate of 1 tree per 14m on both sides of the streets within the DAP area.	A substantial number of street trees are proposed along all frontage roads of the development, achieving this requirement.
iii. Shade trees must be provided to all publically accessible and open car parks not otherwise provided with shade structures at a minimum rate of 1 tree per 8 car bays.	The development includes 105 marked bays, requiring 13 trees. The landscape plan significantly exceeds this requirement throughout the car park.
iv. The special vegetation screens' identified on the DAP must consist of trees and an under-storey of low-level shrubs, rather than mid-level shrubs, to maintain sightlines for pedestrians, and must be of a minimum of 3m in width.	A landscape strip up to 3.9m wide is provided along Warnbro Sound Avenue and a landscape strip up to 2.1m wide is provided along the northern boundary of the liquor store. The landscape concept demonstrates appropriate planting arrangements within these areas, ensuring a suitable response to the street and adjoining property.

d) Robustness	
i) The ground floor of all buildings in the Commercial area must be designed with a minimum floor-to-floor height of 3.2m to enable commercial uses even if used for interim residential use.	Noted.
ii) The ground level of all buildings in the Commercial area must be designed for disabled access regardless of the initial use.	Noted.
e) Fencing	
i. Any fencing to the primary or secondary street(s) frontage must be restricted to residential uses only. ii. Where street frontage fencing is employed, it must be no more than 1.8m high and must be at least 50% visually permeable from 0.9m above the ground level of the adjacent street with solid portions of fencing consisting of masonry construction. iii. Colorbond fencing is not permitted within any street setback area.	No street fencing is proposed.
f) On-street parking	
i. For the purpose of calculating parking provision, any on-street parking bays adjacent to a lot on the same side of the road may be included in the calculation of visitor parking provision for that lot.	Noted.
g) Open space	
<i>Not applicable</i>	
3. Design principles for the retail core	
a) Tenancies must present their main entrance to the main street or the community piazza space if frontage to either is provided.	This requirement is achieved as follows: <ul style="list-style-type: none"> • The supermarket's main entrance is provided at the corner facing Thundelarra Drive. • The specialty tenancies' entrances face the piazza/arcade and the corner fronting Thundelarra Drive. • The service station retail building includes an entrance facing Thundelarra Drive.
b) Tenancies must present active and visually permeable frontages to the main street or the community piazza space and any connecting mall between the main car park and the street.	This requirement is achieved, noting the street / arcade frontages of the supermarket, specialty tenancies, and service station retail building are all visually permeable with significant transparent windows and entrances.
c) Pedestrian movement from the main car park to the supermarket must be directed past the supporting tenancies to provide them with exposure and economic support.	This requirement is achieved, noting the entrance to the supermarket is provided at the corner facing Thundelarra Drive. This results in pedestrian movement from the car park passing through the arcade which creates foot traffic for the specialty tenancies.

d) Any public door between the supermarket and the main car park must be an exit only, to enable convenient trolley access and avoid trolleys in the main street.	No public door is provided between the supermarket and the car park.
e) Bin storage and other service areas must be discretely located to enable direct access (or via a service corridor) to a vehicle collection point.	The service area for the supermarket faces the car park and is appropriately screened such that it is not evident to the public realm.
f) The community piazza area must be designed to provide for greenery, shade, and casual seating.	The arcade/piazza includes greenery through trees in raised planters, shade through awnings, and casual seating within dedicated areas to establish a quality urban space.
4. Minimum building heights	
Commercial zoning: Sites developed exclusively for residential uses must be a minimum of two storeys in height to achieve a village scale, and must comply with the minimum ground floor floor-to-floor heights pursuant to Provision 2(d). Sites developed exclusively for commercial uses are permitted as single storey but with a minimum parapet height of 5.5m or a minimum eaves height of 4.5m where a pitched roof is utilised.	All of the proposed buildings are designed at the required scale, with parapet heights generally at 5.5m or higher. The buildings include varied roof heights which accentuate the higher components as architectural features to create visual interest, and to assist with achieving suitable response to street frontages and corner locations within the site.

5.7 LPP 3.1.2 LOCAL COMMERCIAL STRATEGY

The City's LCS sets out the retail hierarchy of the municipality, allocating activity centres and outlining the strategic planning principles in respect of the ongoing expansion and establishment of the centres.

Golden Bay forms part of the 'south coastal' precinct as outlined within the LCS. In accordance with Section 1.8 of the LCS, the key objectives relevant to this development proposal are extracted below:

- *Promote centre locations which offer a level of accessibility commensurate with the size and function of the centre.*
- *Promote centres as the foci for community activity and public transport.*
- *Prevent ad hoc ribbon development along major roads particularly Read Street / Warnbro Sound Avenue.*
- *Encourage the provision of ancillary convenience uses co-located at suburban shopping centres, retailing and other, that are operated independently and separately of the core retailing within the shopping centres and frequently operate extended trading hours. Such uses include fast food outlets, restaurants, video rental, chemist shops within medical centres, convenience shops attached to service stations and the like.*

The site forms part of the Golden Bay 'neighbourhood centre' which carries a recommended retail floorspace allocation of 3,540sqm under the LCS.

Section 2.3 of the LCS deals with neighbourhood and local shopping centres, setting out broad criteria for the siting and composition of such facilities.

The development site is identified as the 'core' of the neighbourhood centre, noting it is positioned centrally within the precinct and the most readily accessible by both car and foot. In this regard:

- The site is located at the western side of Warnbro Sound Avenue, connecting it to the emerging Golden Bay estate and the established parts of Golden Bay which are interconnected by a pedestrian footpath network. A connection does exist to the eastern side of Warnbro Sound Avenue, however given this is a regional road and the connection is through a major signalised intersection, the quality of the walkable connection is diminished and not convenient.
- The site benefits from corner frontage to the full movement Warnbro Sound Avenue / Aurea Boulevard signalised intersection. Warnbro Sound Avenue carries almost 10,000 daily vehicles and affords significant exposure to the development site.

With the above factors in mind, the neighbourhood centre development is configured and designed in response to its context, executed in a manner which has regard to the overarching principles of the LCS.

The uses are proposed on land appropriately zoned for commercial purposes under LPS2, and are distributed/designed such that Thundelarra Drive is established as the community focal point whilst the area fronting Warnbro Sound Avenue provides ancillary convenience uses which benefit from exposure to a regional/busy road whilst forming part of the core of the neighbourhood centre.

In terms of retail floorspace usage, the following is noted:

- A total retail floorspace of 3,540sqm is allocated to the Golden Bay neighbourhood centre, which is distributed between six lots zoned Commercial under LPS2.
- The development site, being the core of the neighbourhood centre, comprises 2,495sqm retail floor area including the supermarket, liquor, speciality tenancies, service station convenience building, and fast food premises. This represents 70% of the total floorspace allocation of the neighbourhood centre.
- The established development south of the development site includes a total of 490sqm commercial floor area associated with a convenience store and separate commercial building.
- 555sqm of retail floorspace remains for the two undeveloped lots zoned for commercial purposes (ie Lot 636 and Lot 9036).

The development proposal ensures the retail floorspace capacity of the neighbourhood centre is not fully exhausted, and will preserve development options for the two remaining commercial sites. In turn, this increases the likelihood of the vacant sites being considered for development in the foreseeable future.

5.8 LPP 3.3.1 CONTROL OF ADVERTISEMENTS

Proposals involving external signage are to be assessed against the City's Planning Policy 3.3.1.

The proposed neighbourhood centre development includes the following signage:

- Signage panels integrated into the facades of the supermarket, fast food facilities, liquor store, and service station. The signs are designed in a manner consistent with the buildings on which they're located and are signs ordinarily found as part of commercial development.
- Two 6m high freestanding 'neighbourhood centre' signs along Warnbro Sound Avenue, which will ensure the businesses forming part of the overall neighbourhood centre are appropriately identifiable to passing traffic.
- A 6m high freestanding 'neighbourhood centre' sign along Aurea Boulevard, which will ensure the businesses forming part of the overall neighbourhood centre are appropriately identifiable to the local area.
- A 6m high freestanding service station sign with digital priceboard along Aurea Boulevard, which will ensure the services offered by the service station and including the price of fuel is appropriately displayed to passing vehicles.
- A 3m high digital priceboard for the service station, which is integrated into the Thundelarra Drive façade of the retail building and allows the price of fuel to be displayed to the local area.
- A 4.8m high wall-mounted pylon sign integrated into the supermarket building, which would contain 'neighbourhood centre' signage fronting Thundelarra Drive. The sign is innovatively integrated into the building.

In accordance with Section 4.3.1 of the policy, a 'signage strategy' is required to be submitted for approval. The information provided on the plans is considered to constitute a 'signage strategy'.

Wall signs

With regard to the wall signs, the following is noted:

- No signage is included for the two fast food facilities, and will be subject to a separate application. Notwithstanding this, provision is made for these tenancies on the main centre pylon signs as part of this application.
- The extent of wall signs for the service station is typical of this type of land use, with individual signs provided above the entrances and on the canopy.
- The signs proposed for the specialty tenancies is characteristic of what would typically be seen in an 'arcade' setting, comprised of signs above entrances and small blade signs visible by foot traffic.
- Signs for the supermarket are relatively minimal, including supermarket tenant signage facing Thundelarra Drive and the car park, as a sign above the service area to indicate loading.

- The liquor store features the usual wall-mounted signage at the upper section of only two facades, facing Wyloo Lane and Warnbro Sound Avenue. Drive through signage is integrated into the canopy for directional purposes.

It is evident from the elevations and signage strategy that the wall-mounted signage does not dominate any of the building facades and is entirely consistent with what would be expected as part of a multi-use neighbourhood centre type development.

Pylon signs

With regard to the pylon signs, the following is noted:

- None of the proposed freestanding signs exceed 6m in height.
- The Warnbro Sound Avenue frontage of the development exceeds 120m in length, and is a regional road with high traffic volumes. It is appropriate for this frontage to contain two freestanding signs.
- The Aurea Boulevard frontage is almost 100m in length and serves an important connector function for the local area. It is appropriate for this frontage to contain two freestanding signs, and in particular, a sign which displays the price of fuel for the service station. The character of this road is clearly car-based and commercial in nature.
- None of the proposed signs project over a street, walkway or public area.
- None of the proposed signs exceed 3.5m of width.
- Along Thundelarra Drive, freestanding signs are eliminated by innovatively integrating these types of signs into the building façades. This preserves streetscape character and contributes toward a 'main street' feel.
- The extent of freestanding signs ensures all of the tenancies / businesses forming part of the neighbourhood centre have equitable advertisement space.

The number, extent, size and location of the proposed freestanding signs is acceptable and warrants the City's support.

5.9 LPP 3.3.9 FAST FOOD OUTLETS

The City's Planning Policy 3.3.9 applies to the development of fast food outlets throughout the municipality.

The development proposal is consistent with the City's fast food outlets policy for the following reasons:

- Section 4.1 of the policy clarifies that the preferred locations for fast food outlets are within *"approved Neighbourhood and District Town Centre zones and within the City Centre Zones"*.
- The fast food facilities are sited away from potentially sensitive residential properties and away from Thundelarra Drive (the 'main street'), and positioned adjacent to Warnbro Sound Avenue (a regional road with high traffic volumes).

The fast food facilities are appropriately separated from other uses on the site with kerbing and promote coordinated internal traffic flows.

- Landscape planting is proposed along the street frontages adjacent to the fast food facilities and the drive-through areas of both facilities comprise structural feature screening which enhances architectural design quality.
- The drive-through areas of both facilities exceed the minimum 10-car capacity outlined by the policy. In relation to parking provision, a detailed parking analysis is provided in the supporting TIA which demonstrates an overall adequate amount of car spaces for the development.

The development proposal appropriately addresses the City's fast food outlets policy and warrants support.

5.10 LPP 3.3.14 BICYCLE PARKING AND END OF TRIP FACILITIES

The City's Planning Policy 3.3.14 applies to all planning applications throughout the municipality.

The policy contains rates for the provision of 'short term' and 'long term' bicycle parking. For the sake of simplicity, the rates outlined for 'neighbourhood centre' shop have been applied to the entire development.

Based on a total gross leasable area of 2,495sqm across all of the proposed land uses, bicycle parking provision requirements are:

Short term: 8 spaces

Long term: 3 spaces

The development provides 15 bike racks. The total bicycle parking provision therefore exceeds the City's requirements.

End of trip facilities are only required following the first five long-term spaces, hence are not triggered by this development proposal.

5.11 LPP 3.3.25 PERCENT FOR ART

The City's percent for art policy applies to development proposals with an estimated cost of over \$5 million, and which is not an 'exempted' development as outlined under Section 3 of the policy.

The proposed Golden Bay neighbourhood centre development will require a public art contribution of \$110,000. The proponent will determine whether this contribution is paid as cash-in-lieu or delivered onsite in the later stages of the project.

If the public art is to be delivered onsite, this will most likely occur within the landscape feature area fronting Aurea Boulevard.

5.12 LPP 3.4.3 URBAN WATER MANAGEMENT

Planning Policy 3.4.3 applies to development proposals that facilitate commercial development and promotes water sensitive urban design outcomes.

The Golden Bay structure plan applies to the development site and the local area. Under Section 8 of the structure plan, an Urban Water Management Plan (**UWMP**) would be required at subdivision stage. The development site was created in 2016 in accordance with a subdivision approval, and a UWMP was established over the local area.

In accordance with Section 4.1.4 of the policy, the City may impose conditions of planning approval on a planning application requiring a stormwater management plan (**SMP**) to be prepared which demonstrates consistency with an approved UWMP.

As the general drainage management arrangements for the site and local area have been determined through a UWMP, it is appropriate for an SMP to be provided at building permit stage in accordance with Planning Policy 3.4.3.

5.13 EPA GUIDANCE STATEMENT NO. 3

The EPA's guidance statement for 'separation distances between industrial and sensitive land uses' was introduced in 2005 and provides guidance on the use of generic separation distances (buffers) between certain developments and 'sensitive' land uses.

The separation distances set out by EPA Guidance Statement No.3 are not absolute, and lesser distances are commonly accepted where it is demonstrated through justification that the potential impacts associated with the proposed development can be suitably managed.

For service stations, the potential impacts listed by the document are *gaseous, noise, odour and risk*. The subject development seeks approval for a 24 hour service station facility, which involves a suggested buffer distance based on 24 hour operations proposed.

In considering separation distances, it is important to note that:

- The modern service station is designed to a high standard and employs best practice design features relating to the storage and handling of fuel, stormwater treatment, external lighting, and noise mitigation to reduce site externalities.
- The storage and handling of fuel is a highly regulated activity, separate to the development approvals process. A site cannot store or sell fuel without first obtaining a licence from the Department of Mines, Industry Regulation and Safety (**DMIRS**) which requires strict criteria to be met and assessed through various detailed scientific assessments as part of the process regulated under the *Dangerous Goods Safety Act 2005*.

Table 5 below provides a response to the potential impacts listed by the guidance statement, demonstrating that a lesser separation distance is warranted and acceptable.

Table 5: response to EPA separation guidelines
Gaseous/Odour
<p>An emissions impact assessment was prepared to consider airborne pollutants associated with the proposed 24 hour service station against established standards. The assessment is provided at Appendix 8.</p> <p>The assessment conservatively considers potential emissions from the service station, including potential cumulative impacts due to the existence of a service station on the opposite side of Aurea Boulevard.</p> <p>The assessment demonstrates that the relevant airborne pollutants all fall <u>below</u> guideline exposure standards, subject to the proposed service station employing both Stage 1 and Stage 2 vapour recovery systems.</p> <p>In addition to the above, the dangerous goods licensing process addresses impacts associated with vapour. The fuel bowsters are required to achieve prescribed setbacks under the Dangerous Goods licensing requirements and a site-specific assessment is undertaken under that process to ensure the facility's design and layout meets regulatory requirements before fuel can be stored and sold from the site. The following considerations are assessed as part of the dangerous goods licensing process:</p> <ul style="list-style-type: none"> • Spill and leak containment • Segregation of dangerous goods • Control of ignition sources in hazardous areas • Control of hazardous substances that includes any gas, vapour, mist, fume or dust • Design, construction, maintenance and location of storage or handling systems, including location and separation distances so that as far as reasonably practicable they can be operated with minimal risk to people, property and the environment • Underground storage or handling systems for petroleum products designed, installed, operated and maintained so they don't leak
Noise
<p>The development has been assessed against the <i>Environmental Protection (Noise) Regulations 1997</i> by way of an environmental noise assessment produced by Lloyd George Acoustics. The assessment demonstrates the proposed development will generate acceptable and compliant noise levels over a 24 hour period.</p>
Risk
<p>The facility must obtain a dangerous goods licence under the <i>Dangerous Goods Safety Act 2004</i> before any fuel can be stored, handled or sold from the site. This process is regulated under separate legislation, and a licence is obtained after the development approvals process by a specialised consultant. The site has been designed to ensure it can obtain a dangerous goods licence.</p> <p>A risk assessment is required as part of an application for a dangerous goods licence. The risk assessment:</p> <ul style="list-style-type: none"> • Identifies all hazards relating to the dangerous good proposed to be stored at the site; • For each hazard, assesses the probability of the hazard causing a dangerous goods incident, and assesses the consequences of the incident to people, property and the environment; and • Identifies any required risk control measures. <p>If a coherent and acceptable risk assessment is not prepared, then a dangerous goods licence will not be issued. Risk is therefore comprehensively addressed through the dangerous goods licensing process.</p>

6 CONCLUSION

This application for planning approval involves the establishment of a neighbourhood centre development at Lot 622 (2) Aurea Boulevard, Golden Bay.

The proposal will create a vibrant and well-designed neighbourhood level shopping centre for the local community and will substantially enhance the site's contribution to local amenity. The mix of uses includes a supermarket with speciality tenancies, liquor store / fast food outlets (with drive-through components, meeting the contemporary standard of convenience), and service station.

The configuration of the proposed development is consistent with the site's commercial zoning and addresses the local planning framework, including the Golden Bay structure plan, local development plan, and applicable local planning policies.

The development site has remained in a vacant and derelict state for some time, resulting from a former 'village centre' development which was commenced but never completed. The proposal will significantly improve local conditions for the community by addressing this situation.

The proposed neighbourhood centre respects the provision of a 'main street' to Thundelarra Drive, incorporating a piazza/arcade area which will be a quality urban space and secures its viability by including suitable exposure-based uses along the site's Warnbro Sound Avenue frontage in response to local contextual conditions.

An attractive and engaging landscape approach has been formulated by a suitably experienced landscape architect which enables a sensitive and attractive relationship to adjoining properties and the public realm.

The proposal is also supported by a range of expert inputs demonstrating its acceptability from a traffic, noise, and emissions point of view.

The development proposal will create a significant community benefit and is consistent with the principles of orderly and proper planning.

It is respectfully requested that the City of Rockingham support the proposed development and that the Metro Outer JDAP grant approval to the proposed development.

APPENDIX 1

CONCEPTUAL SKETCH PLAN

APPENDIX 2

CERTIFICATE OF TITLE AND DEPOSITED PLAN

WESTERN



AUSTRALIA

REGISTER NUMBER

622/DP408508DUPLICATE
EDITION**N/A**

DATE DUPLICATE ISSUED

N/AVOLUME
2898FOLIO
430**RECORD OF CERTIFICATE OF TITLE**
UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts
REGISTRAR OF TITLES**LAND DESCRIPTION:**

LOT 622 ON DEPOSITED PLAN 408508

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)GOLDEN BAY VILLAGE PTY LTD OF 69 CHALLENGE BOULEVARD WANGARA WA 6065
(T N498728) REGISTERED 1/12/2016**LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:**
(SECOND SCHEDULE)

1. *F714364 EASEMENT TO THE WATER AUTHORITY OF WESTERN AUSTRALIA FOR SEWERAGE AND WATER PURPOSES - SEE SKETCH ON DEPOSITED PLAN 408508. REGISTERED 28/10/1994.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
Lot as described in the land description may be a lot or location.

-----END OF CERTIFICATE OF TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: DP408508
PREVIOUS TITLE: 2884-845
PROPERTY STREET ADDRESS: 2 AUREA BVD, GOLDEN BAY.
LOCAL GOVERNMENT AUTHORITY: CITY OF ROCKINGHAM

NOTE 1: DUPLICATE CERTIFICATE OF TITLE NOT ISSUED AS REQUESTED BY DEALING M834524
NOTE 2: N262655 DEPOSITED PLAN 407077 LODGED

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100 0 SCALE 1: 4000 @ A2 30

ALL DISTANCES ARE IN METRES



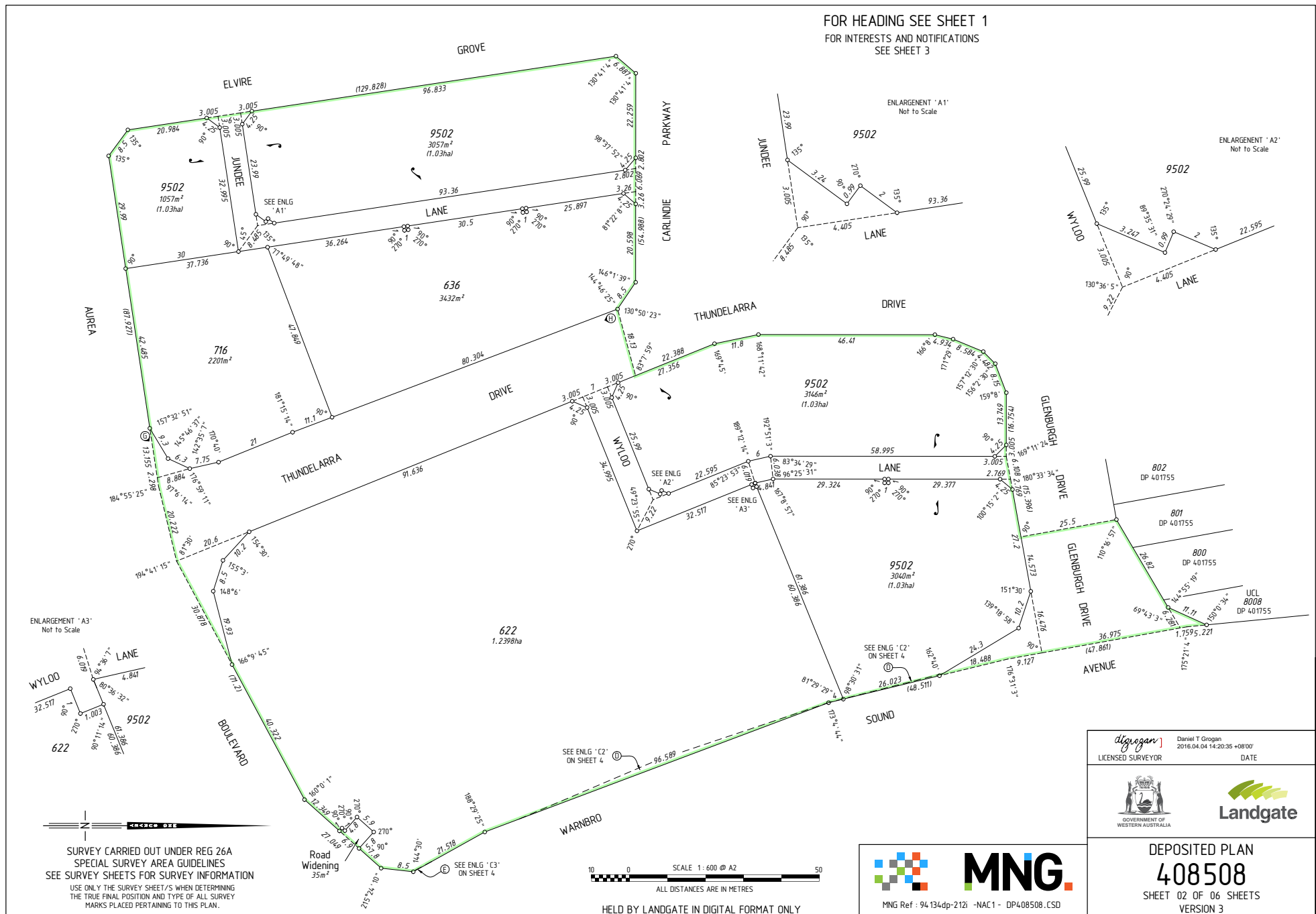
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WESTERN AUSTRALIA



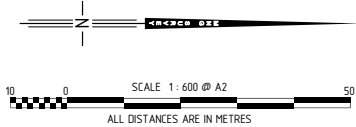
DEPOSITED PLAN
408508
SHEET 01 OF 06 SHEETS
(PLUS SURVEY SHEET(S))
VERSION 3



MNG Ref : 94134dp-2126 -NAC1 - DP408508.CSD

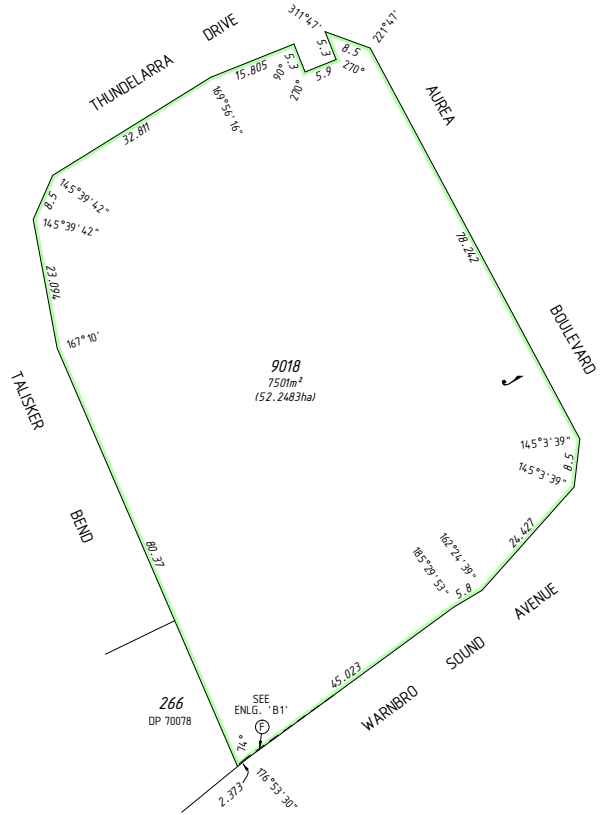


INTERESTS AND NOTIFICATIONS						
SUBJECT	PURPOSE	STATUTORY REFERENCE	ORIGIN	LAND BURDENED	BENEFIT TO	COMMENTS
(B)(C)	EASEMENT		DOC F714364	LOT 9018	SEE DOC	AS REDEFINED ON DP72062
(D)(E)	EASEMENT		DOC F714364	LOT 622	SEE DOC	AS REDEFINED ON DP72062
(I)	EASEMENT		DOC F714364	LOT 9502	SEE DOC	AS REDEFINED ON DP72062
(A)	EASEMENT		DOC F848983	LOT 9018	SEE DOC	AS REDEFINED ON DP72062
(33a) 8	EASEMENT (Drainage)	SEC 167 OF THE P. & D. ACT REG 33 (a)	DP 77745	LOT 9018	CITY OF ROCKINGHAM	
(33b) 16	EASEMENT (Sewerage)	SEC 167 OF THE P. & D. ACT REG 33 (b)	DP 77745	LOT 9018	WATER CORPORATION	
(33b) 17	EASEMENT (Water Supply)	SEC 167 OF THE P. & D. ACT REG 33 (b)	DP 77745	LOT 9018	WATER CORPORATION	
(33c) 9	EASEMENT (Electricity Supply)	SEC 167 OF THE P. & D. ACT REG 33 (c)	DP 77745	LOT 9018	ELECTRICITY NETWORKS CORPORATION	
(33d) 9	EASEMENT (Gas Supply)	SEC 167 OF THE P. & D. ACT REG 33 (d)	DP 77745	LOT 9018	W. A. GAS NETWORKS PTY LTD	
(33c) 8	EASEMENT (Electricity Supply)	SEC 167 OF THE P. & D. ACT REG 33 (c)	DP 405124	LOT 9018	ELECTRICITY NETWORKS CORPORATION	
(33c) 10	EASEMENT (Electricity Supply)	SEC 167 OF THE P. & D. ACT REG 33 (c)	DP 406711	LOT 9018	ELECTRICITY NETWORKS CORPORATION	
(G) (H)	COVENANT	SEC 150 OF THE P & D ACT	THIS PLAN	LOTS 636 & 716	CITY OF ROCKINGHAM	NO VEHICLE ACCESS OR INGRESS IS PERMITTED FROM THIS LOT ONTO THUNDERLARA DRIVE



FOR HEADING SEE SHEET 1
SURVEY CARRIED OUT UNDER REG 26A
SPECIAL SURVEY AREA GUIDELINES
SEE SURVEY SHEETS FOR SURVEY INFORMATION
USE ONLY THE SURVEY SHEET/S WHEN DETERMINING
THE TRUE FINAL POSITION AND TYPE OF ALL SURVEY
MARKS PLACED PERTAINING TO THIS PLAN.

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GOVERNMENT OF
WESTERN AUSTRALIA



Landgate



MNG

MNG Ref : 94.134dp-212i -NAC1 - DP408508.CSD

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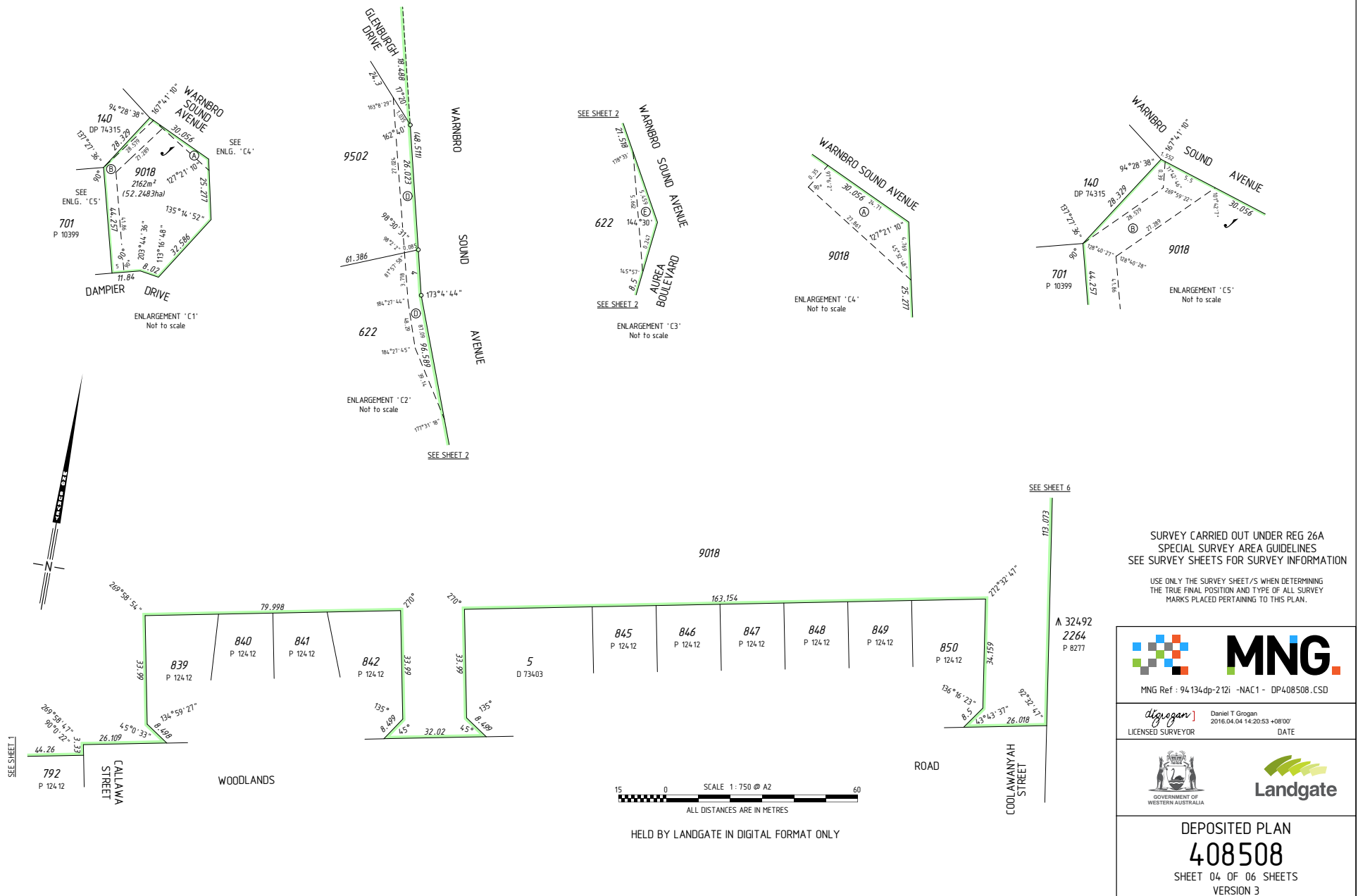
SHEET 03 OF 06 SHEETS
VERSION 3

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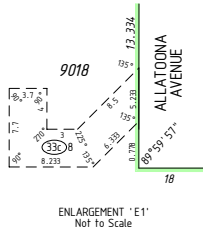
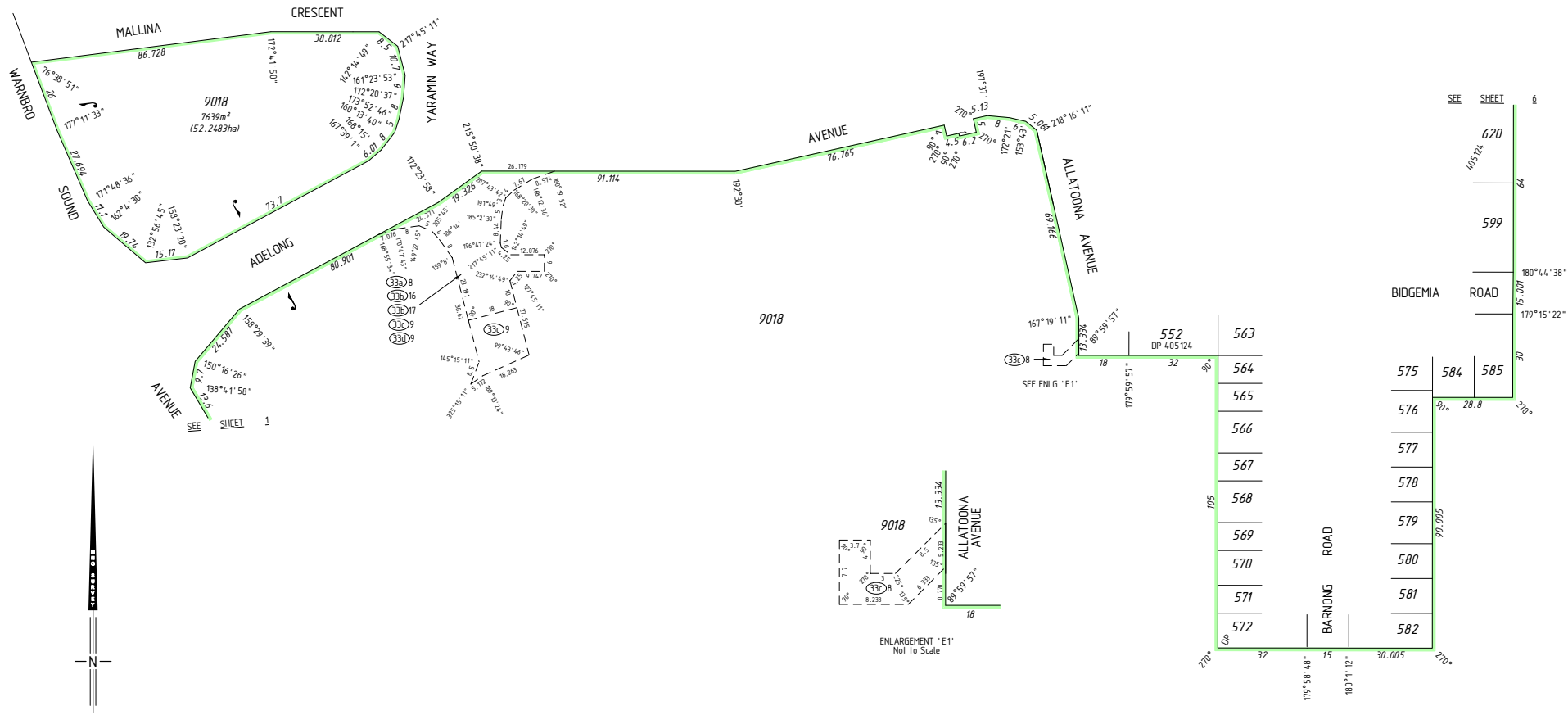
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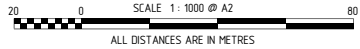
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FOR INTERESTS AND NOTIFICATIONS
SEE SHEET 3



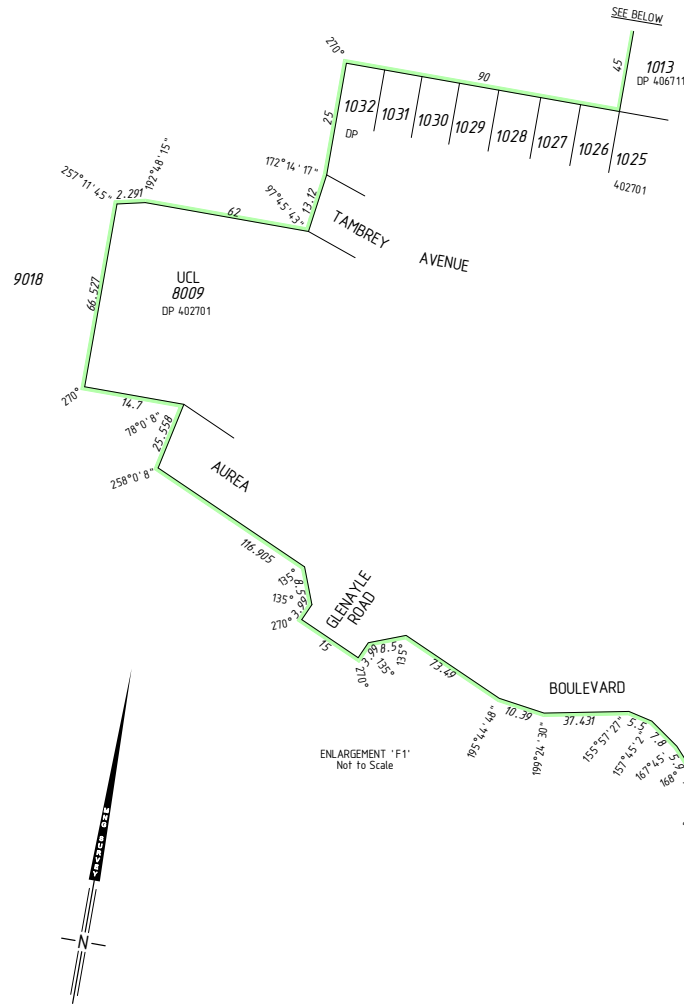
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SPECIAL SURVEY AREA GUIDELINES
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WESTERN AUSTRALIA
DEPOSITED PLAN
408508
SHEET 05 OF 06 SHEETS
VERSION 3

FOR HEADING SEE SHEET 1
FOR INTERESTS AND NOTIFICATIONS
SEE SHEET 3

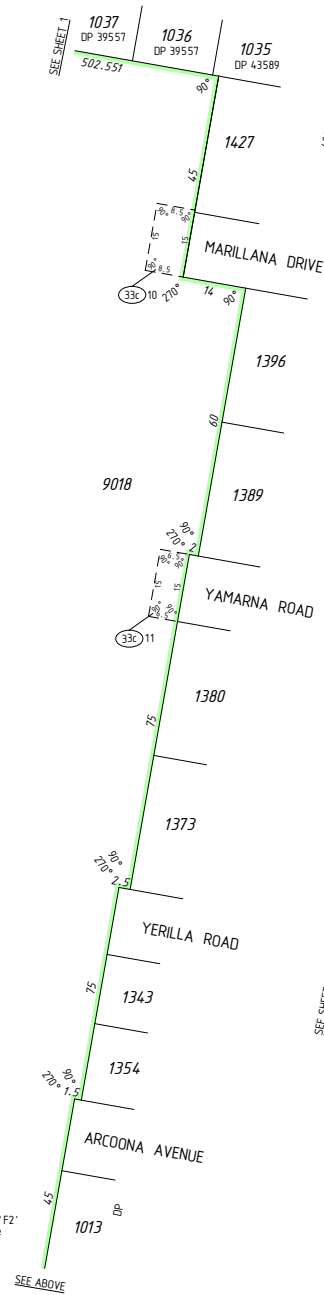


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SEE SURVEY SHEETS FOR SURVEY INFORMATION

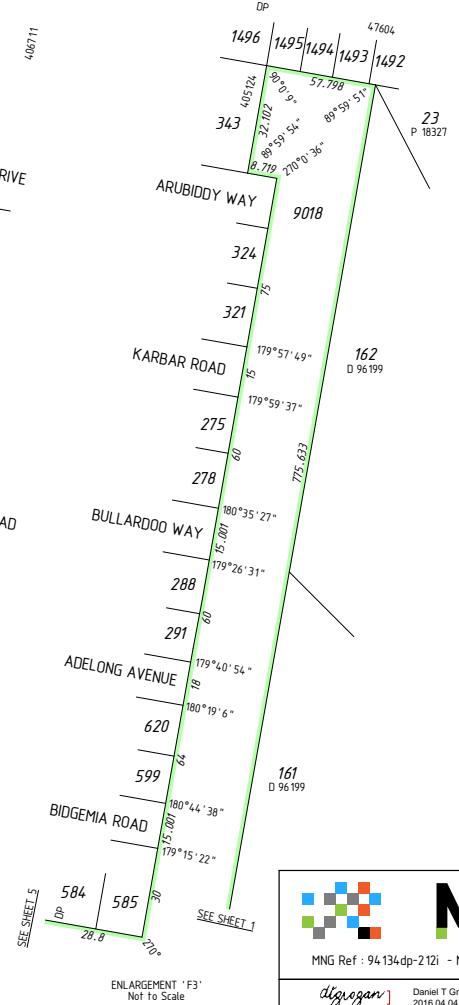
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THE TRUE FINAL POSITION AND TYPE OF ALL SURVEY
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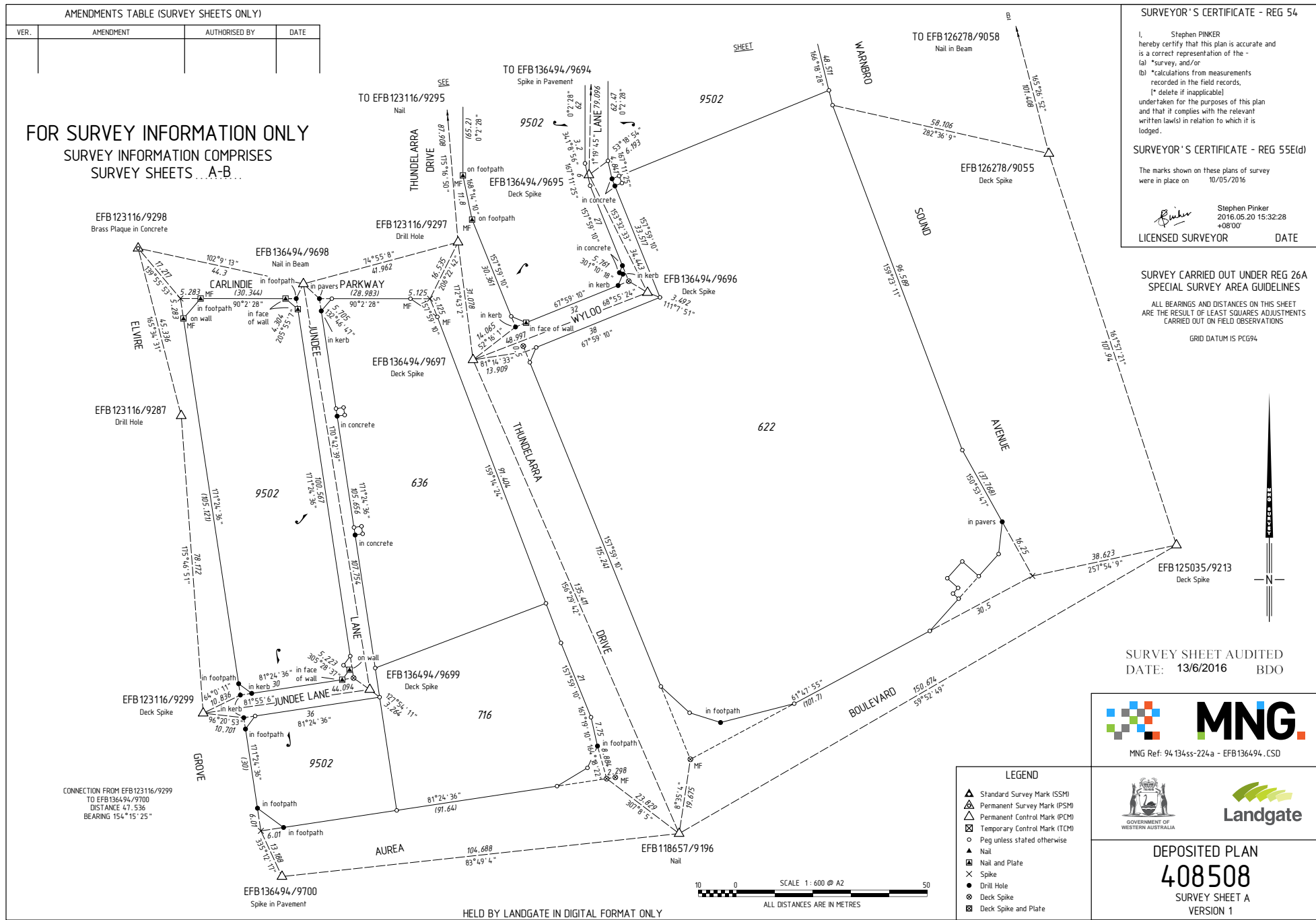


ENLARGEMENT 'F2'
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ENLARGEMENT 'F3'
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GOVERNMENT OF WESTERN AUSTRALIA	
DEPOSITED PLAN 408508	
SHEET 06 OF 06 SHEETS VERSION 3	



SURVEYOR'S CERTIFICATE - REG 54

I, Stephen PINKER hereby certify that this plan is accurate and is a correct representation of the -
(a) "survey, and/or
(b) "calculations from measurements recorded in the field records,
(If delete if inapplicable)
undertaken for the purposes of this plan and that it complies with the relevant written law(s) in relation to which it is lodged.

SURVEYOR'S CERTIFICATE - REG 55E(d)

The marks shown on these plans of survey were in place on 10/05/2016

Stephen Pinker
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LICENSED SURVEYOR DATE

SURVEY CARRIED OUT UNDER REG 26A SPECIAL SURVEY AREA GUIDELINES

ALL BEARINGS AND DISTANCES ON THIS SHEET ARE THE RESULT OF LEAST SQUARES ADJUSTMENTS CARRIED OUT ON FIELD OBSERVATIONS

GRID DATUM IS PCG94

SURVEY SHEET AUDITED
DATE: 13/6/2016 BDO

MNG
MNG Ref: 94134ss-224a - EFB136494.CSD

Landgate
GOVERNMENT OF WESTERN AUSTRALIA

DEPOSITED PLAN
408508
SURVEY SHEET A
VERSION 1

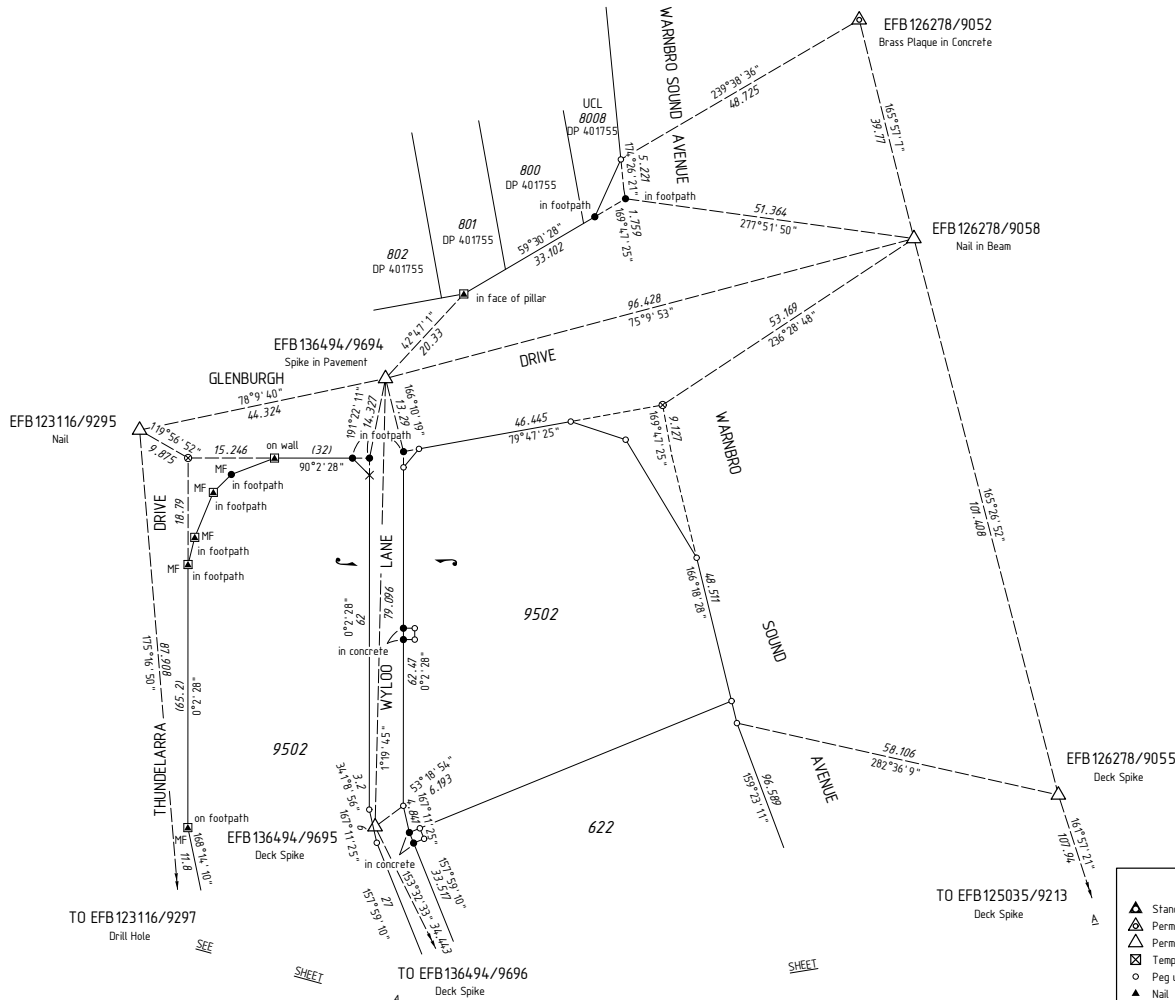
FOR SURVEY INFORMATION ONLY

SURVEY INFORMATION COMPRISES
SURVEY SHEETS A-B

SURVEY CARRIED OUT UNDER REG 26A
SPECIAL SURVEY AREA GUIDELINES

ALL BEARINGS AND DISTANCES ON THIS SHEET
ARE THE RESULT OF LEAST SQUARES ADJUSTMENTS
CARRIED OUT ON FIELD OBSERVATIONS

GRID DATUM IS PCG94



SURVEY SHEET AUDITED
DATE: 13/6/2016 BDO

HELD BY LANDGATE IN DIGITAL FORMAT ONLY

SURVEYOR'S CERTIFICATE - REG 54

I, Stephen PINKER
hereby certify that this plan is accurate and
is a correct representation of the -
(a) *survey, and/or
(b) *calculations from measurements
recorded in the field records,
[* delete if inapplicable]
undertaken for the purposes of this plan
and that it complies with the relevant
written law(s) in relation to which it is
lodged.

SURVEYOR'S CERTIFICATE - REG 55E(d)

The marks shown on these plans of survey
were in place on 10/05/2016

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DEPOSITED PLAN
408508
SURVEY SHEET B
VERSION 1

- LEGEND
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 - △ Permanent Survey Mark (PSM)
 - △ Permanent Control Mark (PCM)
 - ⊠ Temporary Control Mark (TCM)
 - Peg unless stated otherwise
 - ▲ Nail
 - ⊠ Nail and Plate
 - × Spike
 - Drill Hole
 - ⊠ Deck Spike
 - ⊠ Deck Spike and Plate



IMAGES ARE INDICATIVE ONLY

1 - VIEW FROM THUNDELARRA DRIVE

DRAWING LIST	
SHEET NO	SHEET TITLE
DA000	COVER SHEET
DA001	PERSPECTIVES
DA002	PERSPECTIVES
DA003	PERSPECTIVES
DA100	LOCATION & SURVEY PLAN
DA101	SITE PLAN
DA102	DEMOLITION PLAN
DA200	PROPOSED GROUND FLOOR PLAN
DA400	PROPOSED ELEVATIONS - STREETSIDE
DA401	PROPOSED ELEVATIONS - INTERNAL
DA900	PROPOSED SIGNAGE SCHEDULE
SK-CLP	CONTROL LEASE PLAN
DA901	MATERIAL SCHEDULE
DA902	MATERIAL SCHEDULE
DA905	PEDESTRIAN MOVEMENT DIAGRAM



COVER SHEET
GOLDEN BAY NEIGHBOURHOOD CENTRE

Status:DEVELOPMENT APPLICATION
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Scale: NTS

© Hames Sharley:

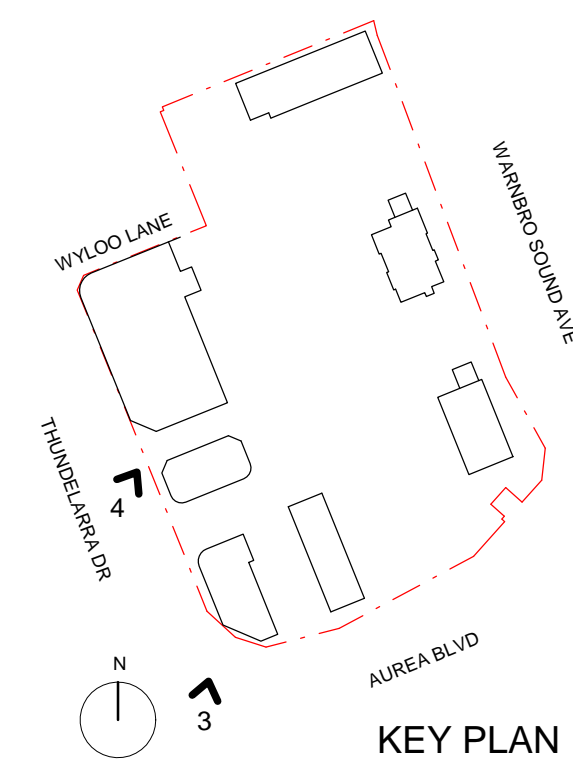
Project Number: 44634
Drawing Number: DA000
Revision: E
Date: 28.04.23





IMAGES ARE INDICATIVE ONLY

2 - AERIAL VIEW OF PROPOSED DEVELOPMENT



3 - VIEW OF CORNER OF THUNDELARRA DRIVE AND AUREA BOULEVARD

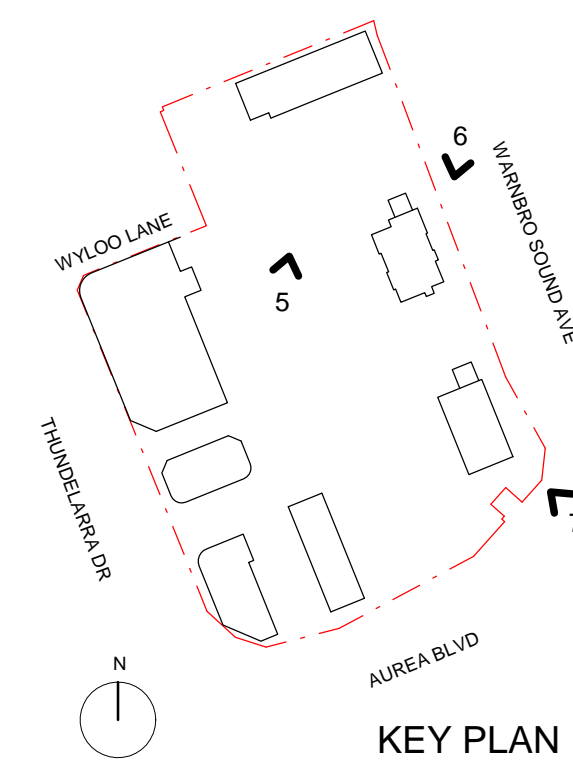


4 - VIEW OF ARCADE



IMAGES ARE INDICATIVE ONLY

5 - VIEW OF LIQUOR STORE AND ENTRY TO DRIVE THROUGH



KEY PLAN



IMAGES ARE INDICATIVE ONLY

6 - VIEW OF SCREENING TO DRIVE THROUGH



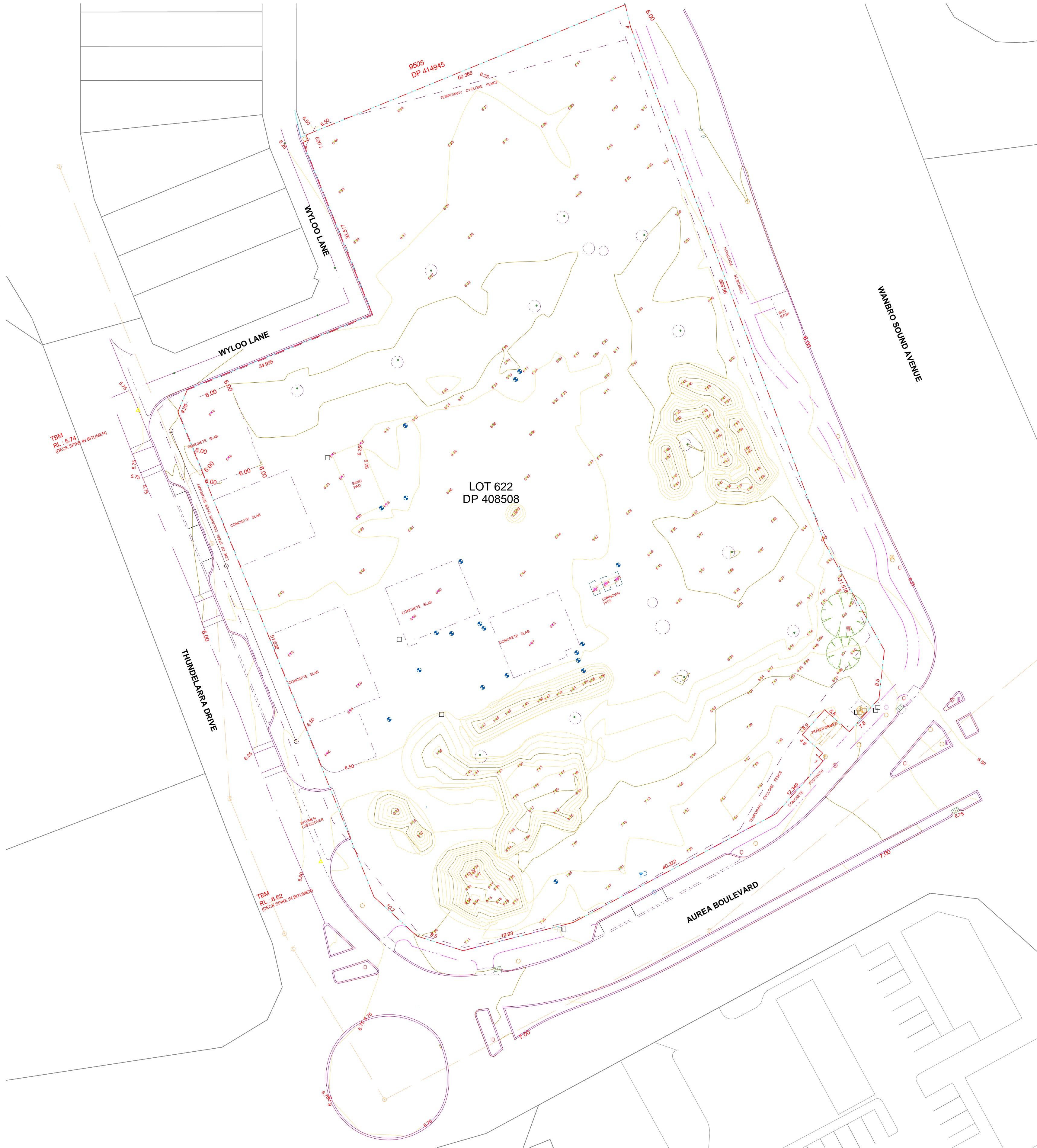
IMAGES ARE INDICATIVE ONLY

7 - VIEW OF CORNER OF WARNBRO SOUND AVENUE AND AUREA BOULEVARD



1 LOCATION PLAN
1 : 2000

LEGEND	LINE TYPES
▲ TBM	— ROAD CENTRELINE
+ NAT SURFACE PT	— BOTTOM OF KERB
□ COMMS PIT	— TOP OF KERB
○ WATER STOP	— EDGE OF BITUMEN
⊙ HYDRANT GROUND	— EDGE OF CONCRETE
⊕ WATER METER	— BRICK PAVING
⊕ WATER RISER	— FOOTPATH
⊕ RETIC CONTROL VALVE	— STOCKPILES
⊕ POWER DOME	— FENCE
⊕ LAMP POST	— COLUMNS
⊕ CABLE PIT	— BOUNDARY
⊕ EARTH ROD	— SEWER LINE
⊕ DISTRIBUTION BOARD	— POWER TRANSFORMER
⊕ SIDE ENTRY PIT	— UNKNOWN MANHOLE
⊕ DRAINAGE GRATE (ROUND)	
⊕ SEWER MANHOLE	
⊕ UNKNOWN PIT	
⊕ PVC RISER	
⊕ COLUMNS	
⊕ GIVE WAY	
⊕ SIGN - SINGLE POLE	
⊕ UNKNOWN BOX	
⊕ TRAFFIC LIGHT	
⊕ PAD LEVEL	



2 SITE SURVEY
1 : 400



OVERALL AREA (GLAR)	
TENANCY	AREA
FAST FOOD	525 m²
LIQUOR	230 m²
SERVICE STATION	305 m²
SPECIALTY	265 m²
SUPERMARKET	1165 m²
TOTAL GLAR	2490 m²

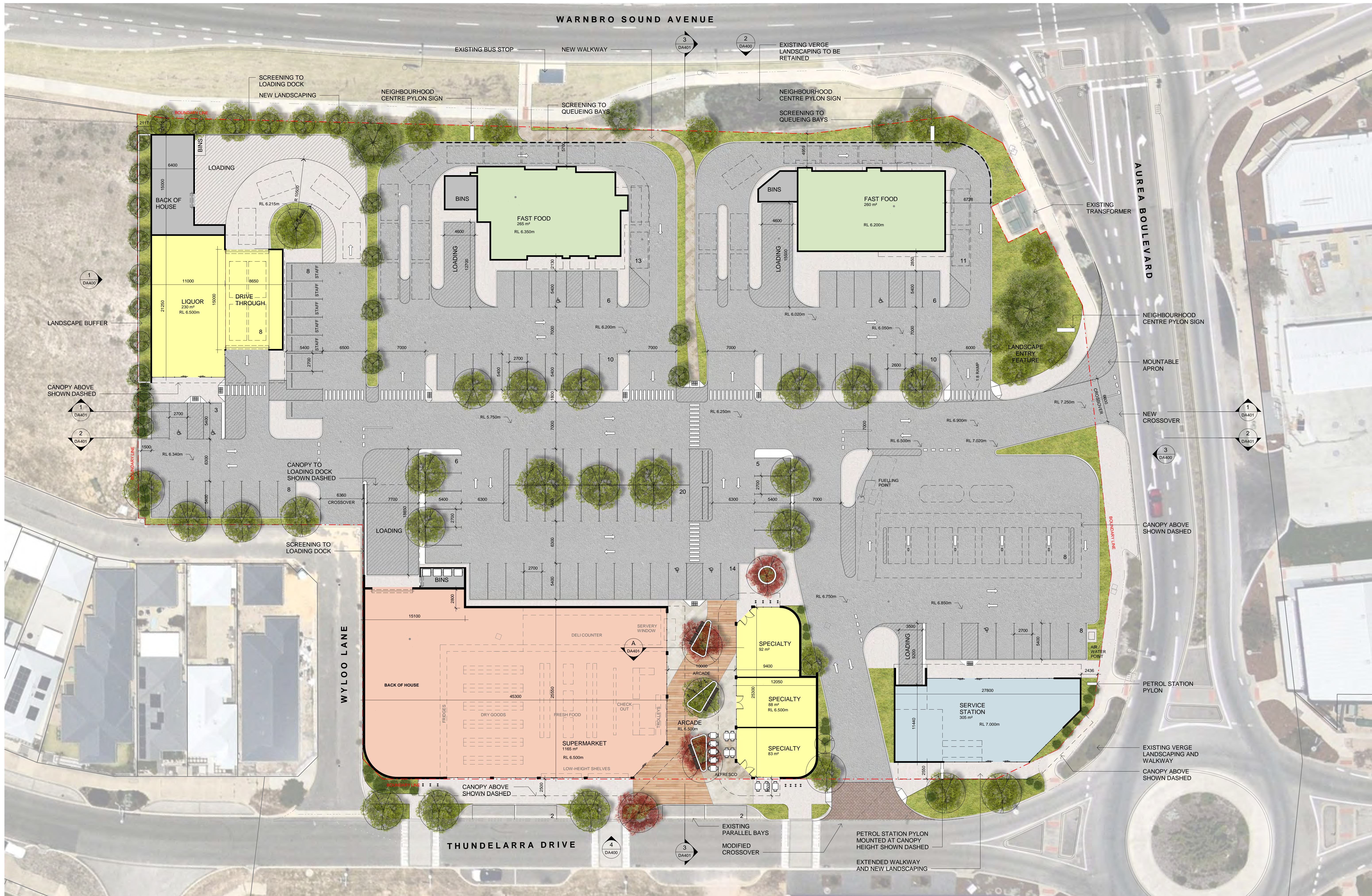
CAR PARKING PROVIDED - OVERALL	
TYPE	COUNT
STANDARD CAR BAY	97
QUEUEING BAY	40
ON-STREET PARKING	6
BICYCLE RACKS	15
ACROD BAYS	7
TOTAL BAYS	165

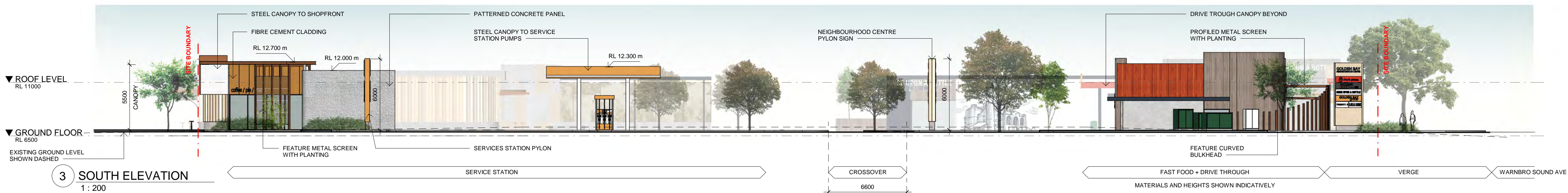
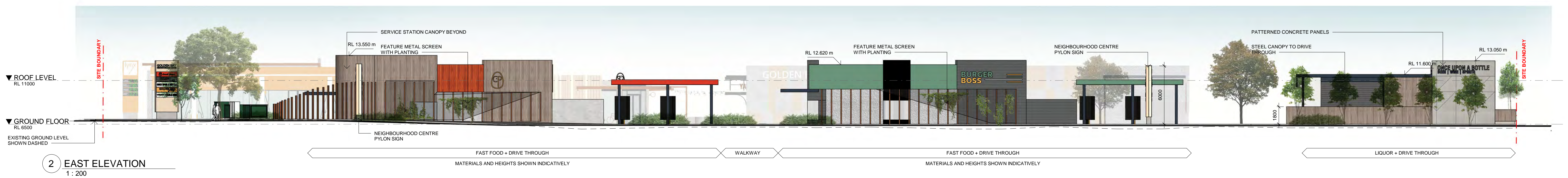
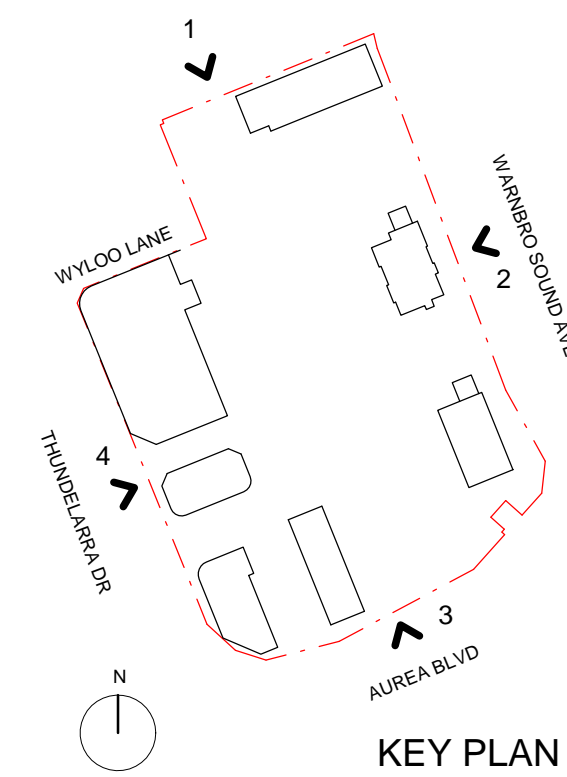
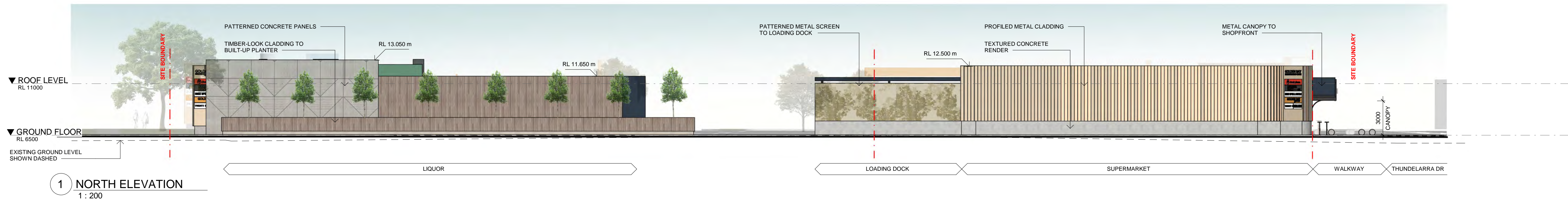


VIEW OF EXISTING STRUCTURE ALONG THUNDELARRA DRIVE

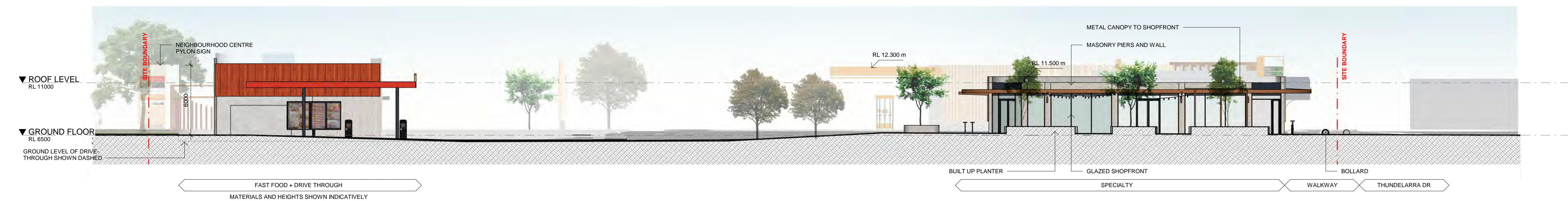
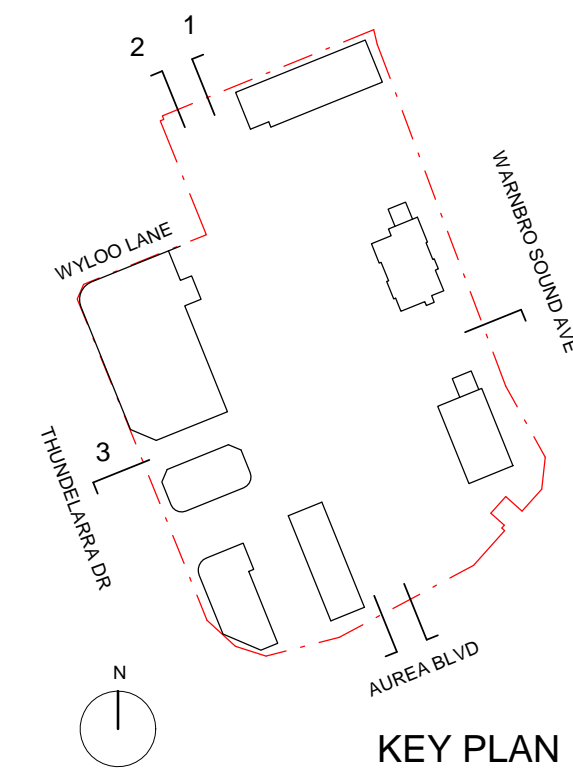
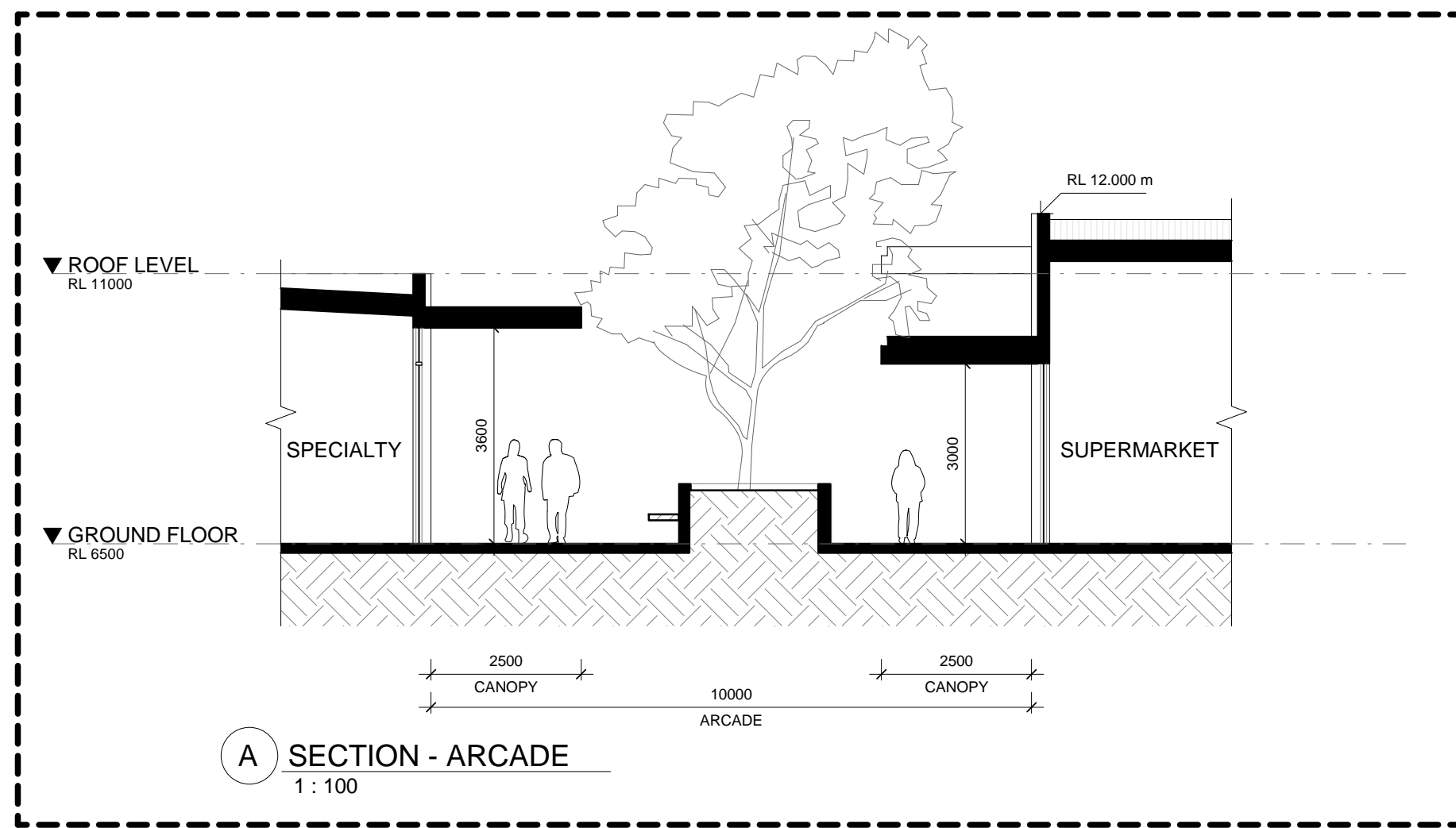


1 PROPOSED DEMOLITION PLAN
1:400





NOTE: ALL TENANT SIGNS SHOWN ARE INDICATIVE ONLY

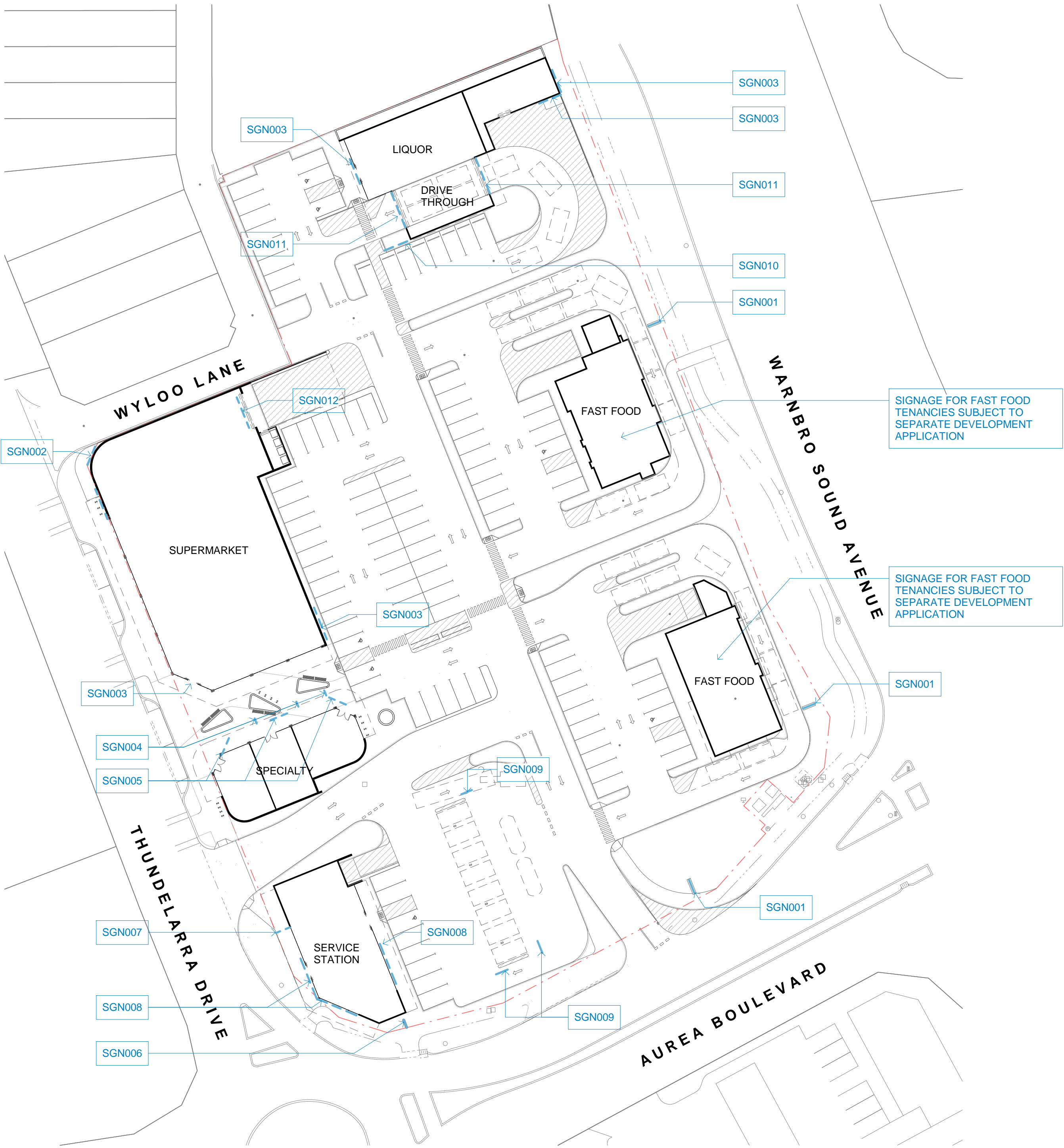


NOTE: ALL TENANT SIGNS SHOWN ARE INDICATIVE ONLY

SIGNAGE SCHEDULE

NOT TO SCALE

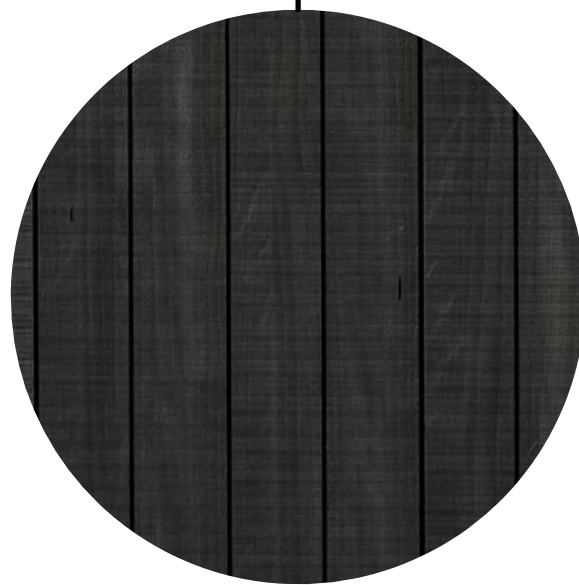
SIGN NO	INDICATIVE IMAGE	DESCRIPTION	INDICATIVE SIZE
SGN001		FREE-STANDING NEIGHBOURHOOD CENTRE PYLON SIGNAGE	2400mm W x 6000mm H
SGN002		WALL-MOUNTED NEIGHBOURHOOD CENTRE PYLON SIGNAGE	2400mm W x 4800mm H
SGN003		WALL-MOUNTED TENANT SIGNAGE	6000mm W x 1600mm H
SGN004		WALL-MOUNTED TENANT BLADE SIGNAGE	700mm W x 500mm H
SGN005		TENANT SHOPFRONT SIGNAGE	3000mm W x 500mm H
SGN006		FREE-STANDING SERVICE STATION PYLON SIGNAGE WITH DIGITAL PRICE BOARD	1800mm W x 6000mm H
SGN007		CANOPY-MOUNTED SERVICE STATION PYLON SIGNAGE WITH DIGITAL PRICE BOARD	1800mm W x 3000mm H
SGN008		SERVICE STATION SHOPFRONT SIGNAGE	7200mm W x 2000mm H
SGN009		SERVICE STATION CANOPY SIGNAGE	3000mm W x 1000mm H
SGN010		SUSPENDED TENANT SIGNAGE	6000mm W x 1000mm H
SGN011		WALL-MOUNTED TENANT DRIVE-THROUGH SIGNAGE	6000mm W x 500mm H
SGN012		WALL-MOUNTED TENANT LOADING SIGNAGE	4000mm W x 750mm H



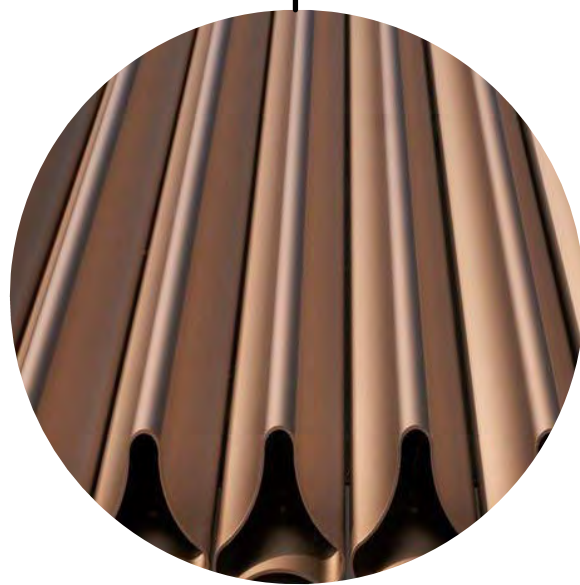
KEY PLAN - SIGNAGE
1 : 500



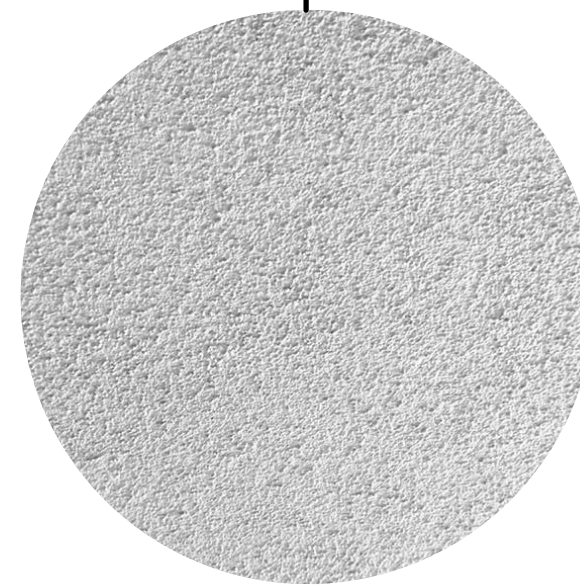
MASONRY-LOOK



TIMBER-LOOK CLADDING TO
SHOPFRONT



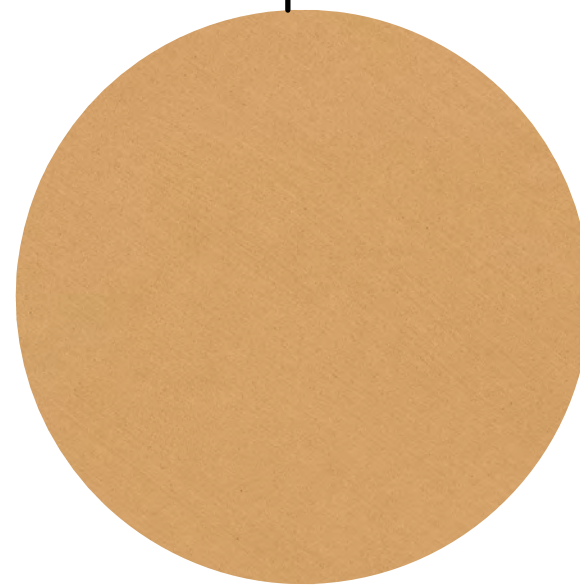
PROFILED METAL CLADDING



TEXTURED CONCRETE RENDER



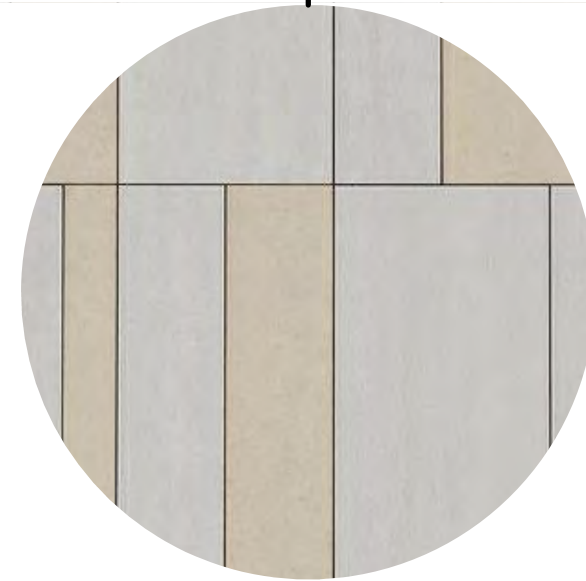
PATTERNED CONCRETE PANEL



BRONZE FIBRE CEMENT
CLADDING



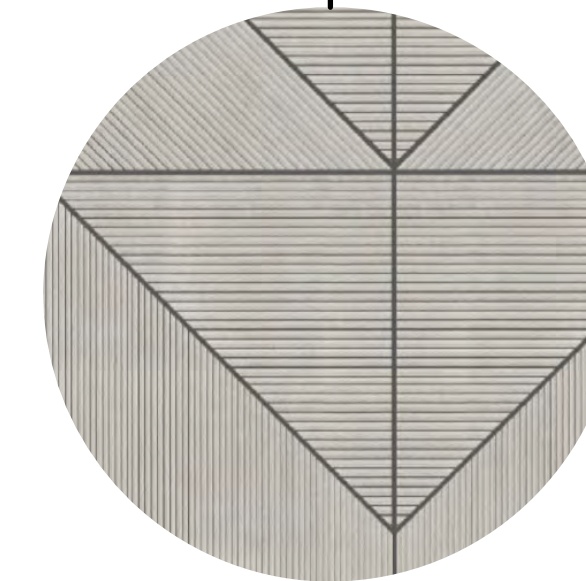
FEATURE METAL SCREEN
& TRELLIS



TILT-UP CONCRETE PANELS



TIMBER-LOOK CLADDING



PATTERNED CONCRETE
PANELS



METAL PERFORATED SCREEN

OVERALL LANDSCAPE SITE PLAN



LOT 622(2) AUREA BOULEVARD, GOLDEN BAY

LANDSCAPE CONCEPT PLAN
APRIL 2023

JOB NO. 2215201
1:250 @ A1

C1.101
0 5 10 20 30 50m
REV E

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LANDSCAPE ARCHITECTS
414 ROKEBY RD SUBIACO WA 6008
T: (08) 9388 9566 E: mail@plane.com.au

LANDSCAPE PIAZZA CONCEPT PLAN



- LEGEND**
- 01 EXPOSED AGGREGATE (COLOUR 1) CONCRETE TO SUPERMARKET AND SHOPS SURROUNDS
 - 02 PROPOSED UNIT PAVERS ON CONCRETE SLAB TO ALFRESCO SEATING AREA & OUTSIDE OF SHOP FRONTS
 - 03 PROPOSED TIMBER LOOK PAVERS ON CONCRETE SLAB TO DEFINE CENTRAL PATH
 - 04 LIMESTONE WALL/ RAISED PLANTERS WITH COASTAL STYLE PLANTING
 - 05 PROPOSED BENCH SEATS
 - 06 PROPOSED CAFE FURNITURE LOCATION
 - 07 PROPOSED BIKE RACKS
 - 08 PROPOSED BIN LOCATION
 - 09 FEATURE TREES I.E. NORFOLK ISLAND PINE TO DEFINE ENTRY
 - 10 SMALL SHADE TREES TO RAISED PLANTERS (EUCALYPTUS ERYTHROCORYS)
 - 11 NATIVE COASTAL STYLE PLANTING
 - 12 INSITU CONCRETE PATH TO CAR PARK
 - 13 PROPOSED PAVED CROSSOVER

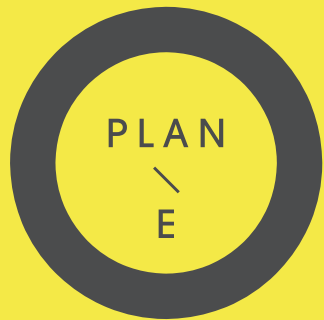
LOT 622(2) AUREA BOULEVARD, GOLDEN BAY

LANDSCAPE CONCEPT PLAN
APRIL 2023

JOB NO. 2215201
1:100 @ A1

C1.102
0 5 10 20 30 50m
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MATERIALS & PLANTING PALETTE



EXPOSED AGGREGATE CONCRETE



TIMBER LOOK PAVERS



FEATURE UNIT PAVERS



BENCH SEATING



RUBBISH BIN



BIKE RACK



LIMESTONE WALL TO PLANTER



ARAUCARIA HETEROPHYLLA



ALLOCASUARINA FRASERIANA



AGONIS FLEXUOSA



EUCALYPTUS ERYTHROCORYS



MAGNOLIA LITTLE GEM



WESTRINGIA NARINGA



HYPOCALYMMMA ANGUSTIFOLIUM



RHAGODIA BACCATA



LEUCOPHYTA SILVER NUGGET



CONOSTYLIS CANDICANS



CARPOBROTUS VIRESCENS



ANIGOZANTHOS SPP



WESTRINGIA MUNDI



SCAEVOLA AEMULA



ADENANTHOS SERICEUS COMPACT

LOT 622(2) AUREA BOULEVARD, GOLDEN BAY

LANDSCAPE CONCEPT PLAN
APRIL 2023

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GOLDEN BAY NEIGHBOURHOOD CENTRE

10 principles assessment

ISSUE: 16/02/2023

REVISION C

apex
planning

JARRA
PROPERTY

contents

- A
- B
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- I
- J

- Context & Character
- Landscape Quality
- Built Form & Scale
- Functionality & Build Quality
- Sustainability
- Amenity
- Legibility
- Safety
- Community
- Aesthetics

10 DESIGN PRINCIPLES

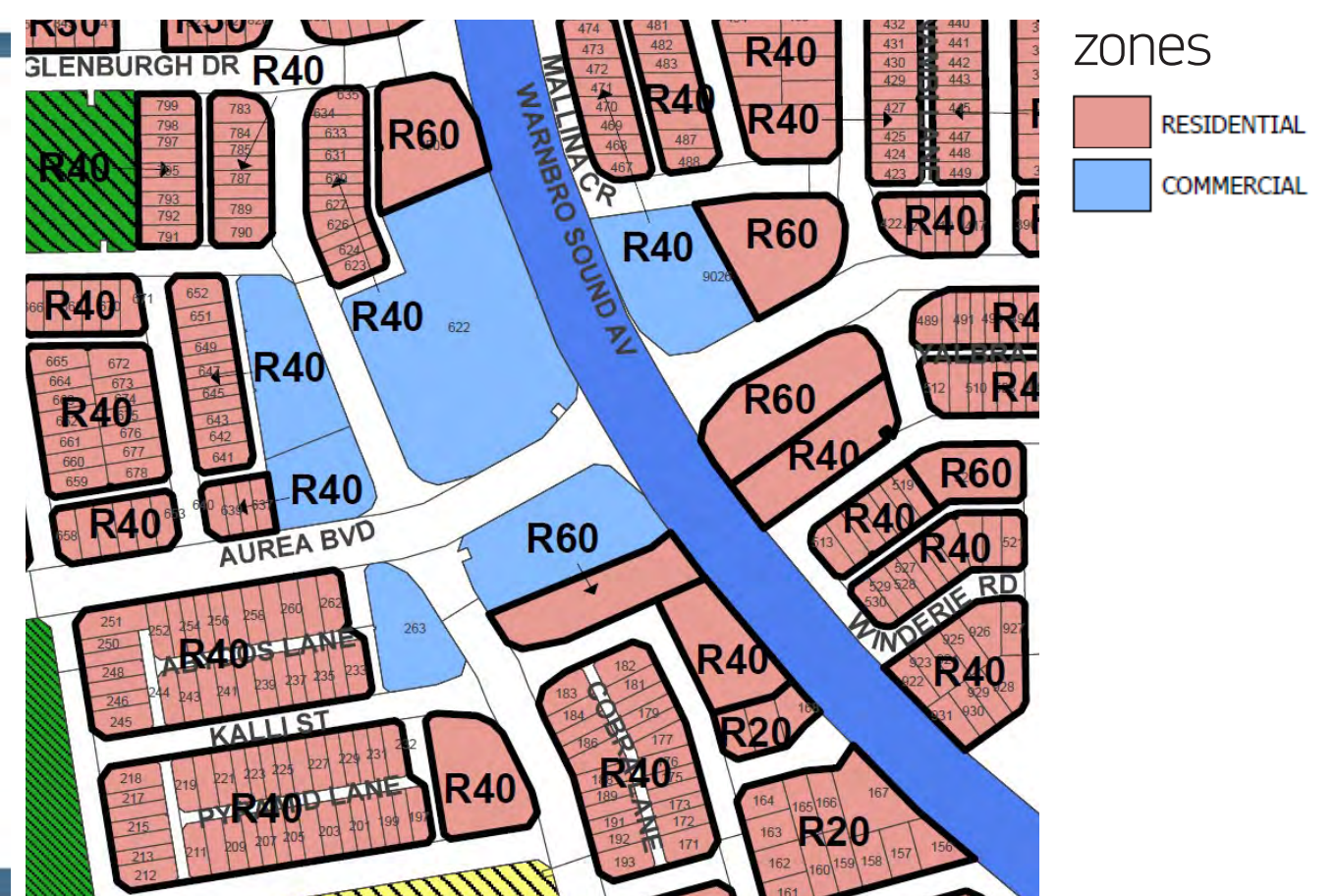
A planning context

Context & Character

Golden Bay Structure Plan Indicative Layout

Located within the 'Walking Precinct'. The surrounding path network to support walking and cycling to the neighbourhood centre

- Provision of a main street based neighbourhood centre that will service the future Golden Bay community and complement the existing District Centre at Secret Harbour
- Local main street based neighbourhood centre with shops opening directly onto the street, alfresco dining, continuous awnings and on street parking
- Minimum parapet heights of 5.5m
- Prominent corners along Aurea Boulevard, with a feature landscape entry off of Warnbro Sound Avenue
- The built form design will reflect the centres' coastal location
- Provides a notional/indicative vision, but with key principles for the neighbourhood centre.



A location plan

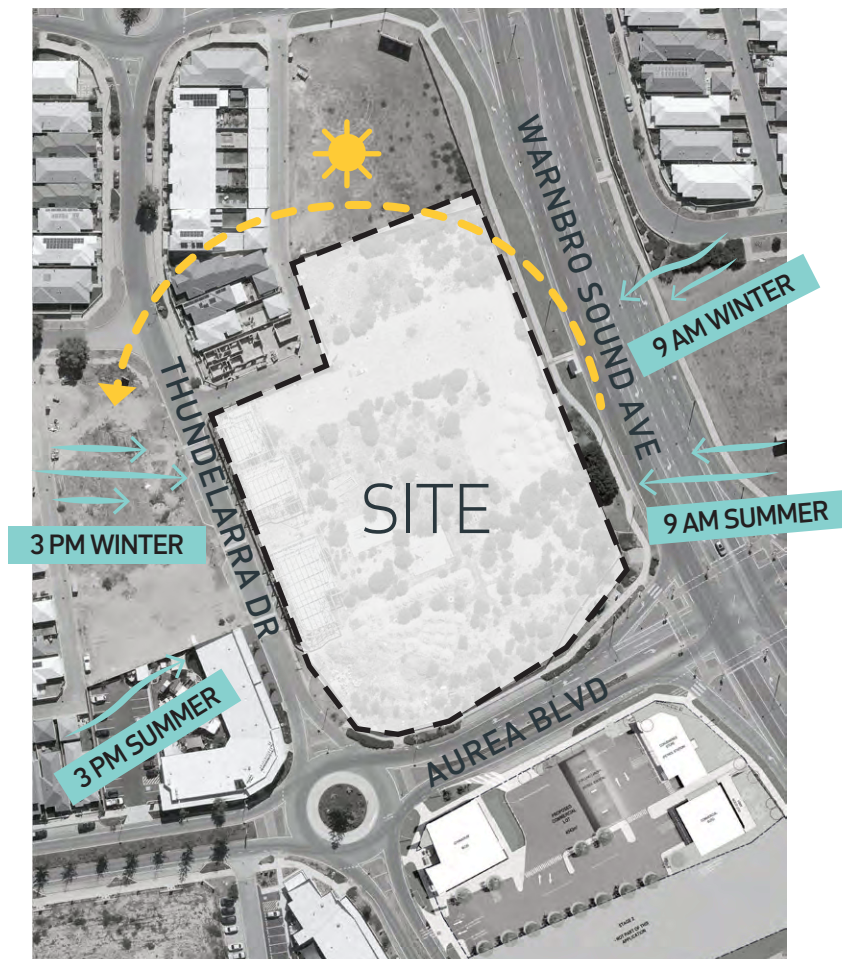
Context &
Character



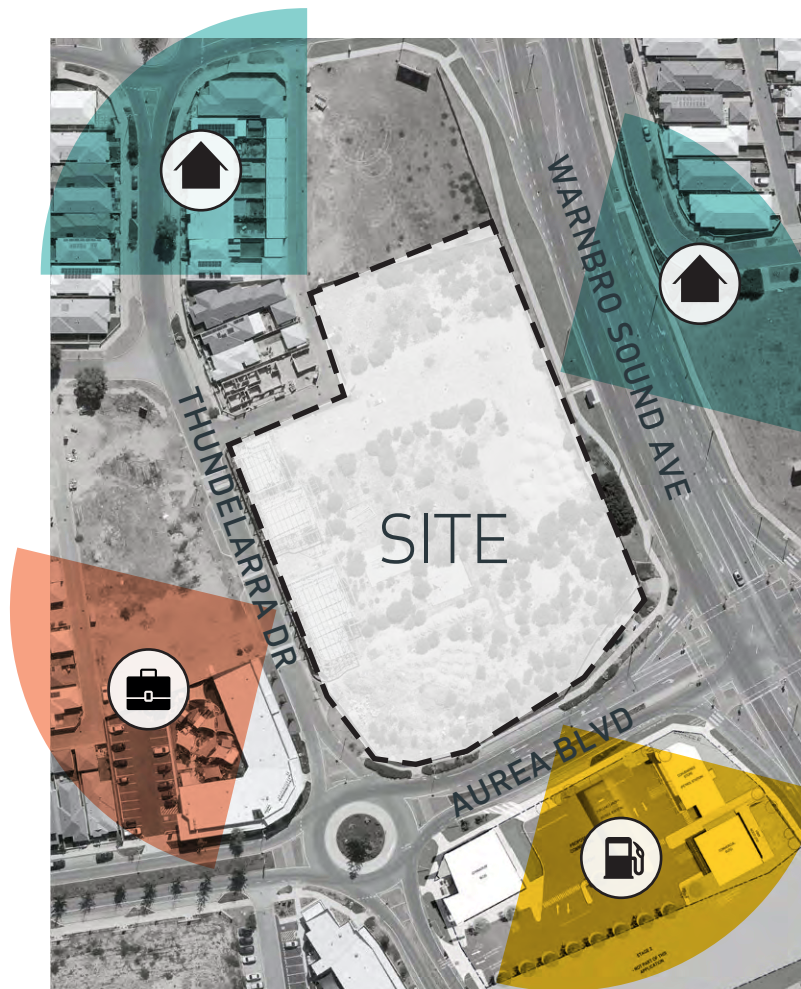
A context

Context &
Character

environment



views



movement



- regional road (9,700 VPD)
- main street
- local distributor (3,182 VPD)
- pedestrian walkways

A context

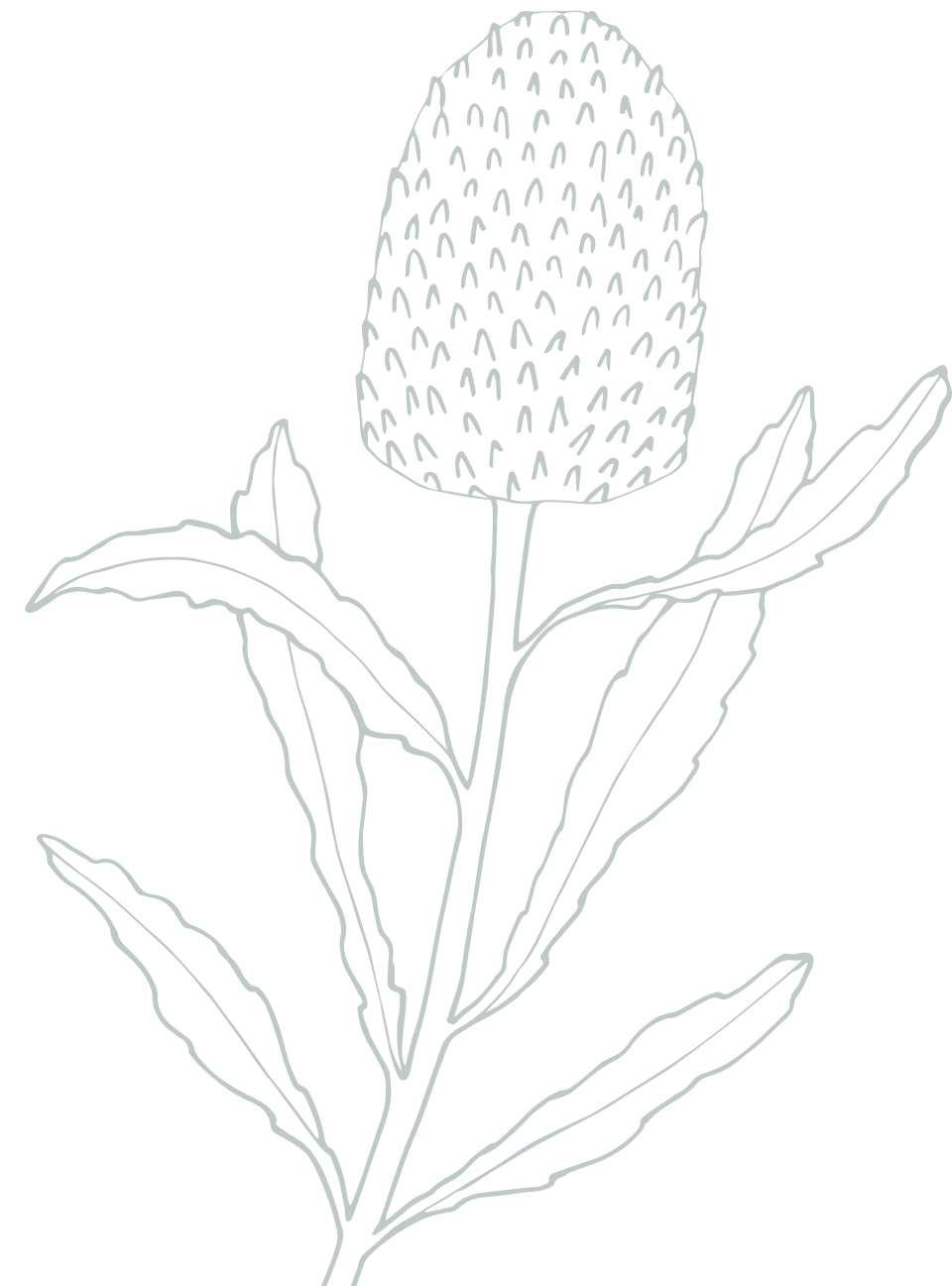
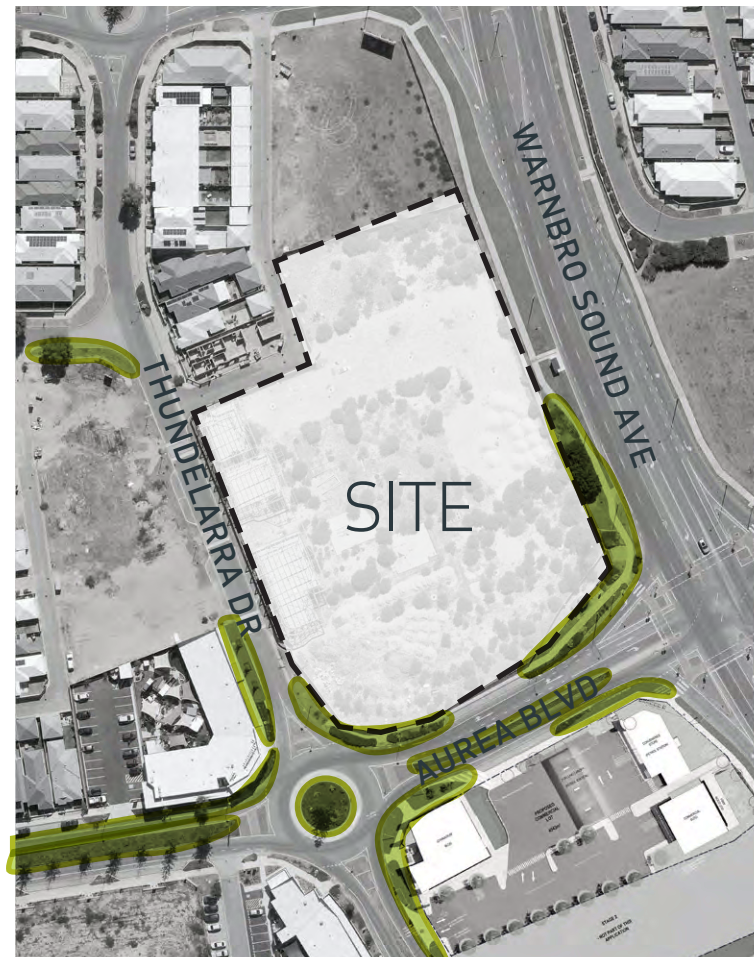
Context &
Character

interfaces



- main street frontage (pedestrian friendly main street environment)
- local distributor frontage
- residential frontage
- - regional road frontage (high vehicle exposure)
- prominent corners

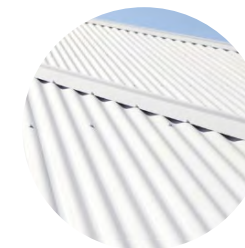
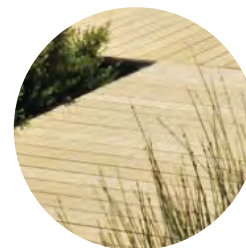
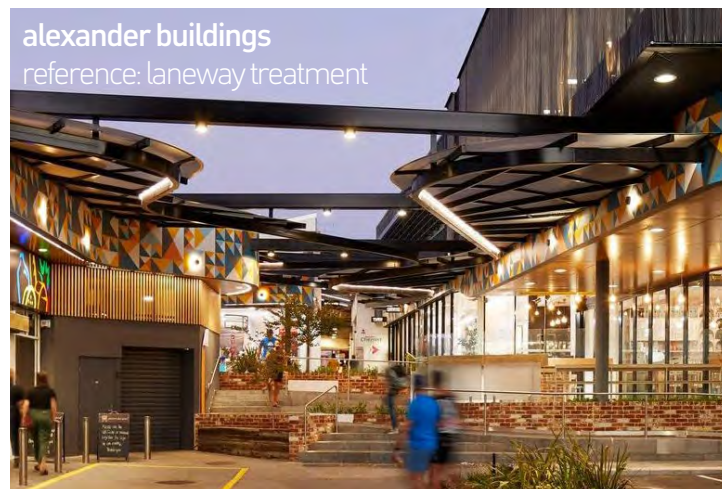
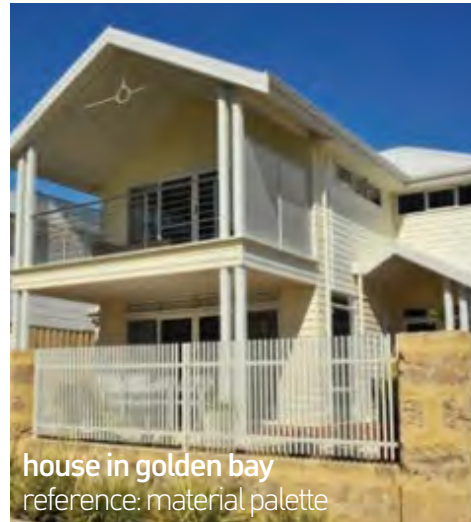
green edges



A local character

Context & Character

- + The existing built form context is primarily residential with a neutral palette and coastal influences, reinforced by the Golden Bay design guidelines that have been prepared and enforced by PEET, emphasising the use of:
 - + brick
 - + stone
 - + render
 - + tiles
 - + colourbond
 - + fence: vertical slats in white or light grey
- + Commercial development is adjacent to the site, in the form of existing child care premises and a mixed commercial development (service station and gym) under construction opposite the subject lot
- + Aspirations for Golden Bay include ties to the coast and the water. The shopping centre design will respond to this palette to ensure the development is integrated into its context
- + Thundelarra Drive is the main point of focus regarding the main street aesthetic and activation
- + Aurea Boulevard serves as a local distributor containing multiple lanes of traffic, including slip lanes and turning pockets, and the façades along this street focus on an aesthetic response

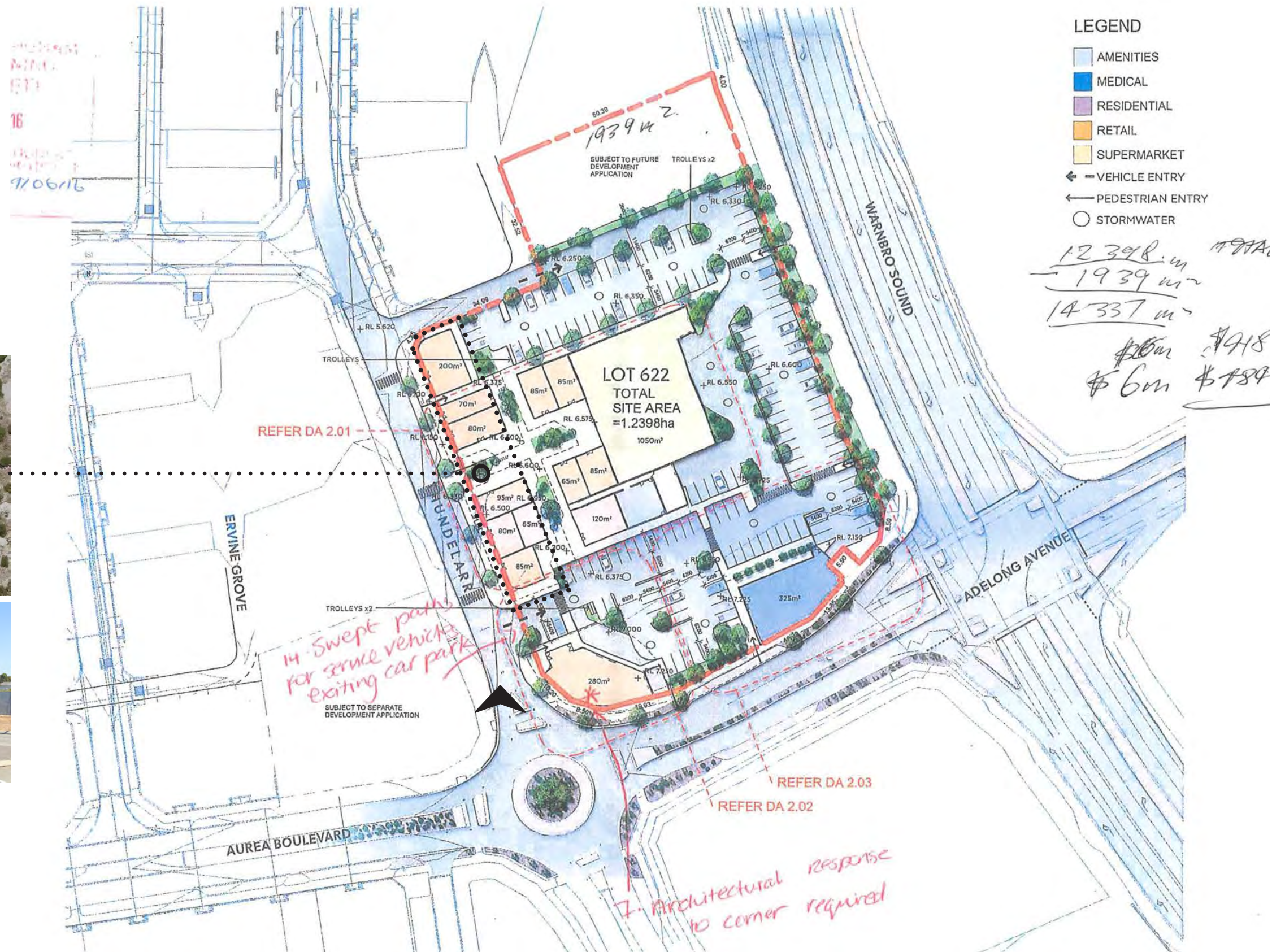


A previous approval

Context & Character

- + The previous development was approved June 2016
- + It has 2,444m² of Retail NLA
- + Construction commenced late 2017 but was never completed

Existing site conditions



A

Context &
Character

principles & design approach

convenient



- + **Main Street** - direct retail and f&b connection to the Thundelarra Drive **neighbourhood scale**
- + convenient **access to parking**

local



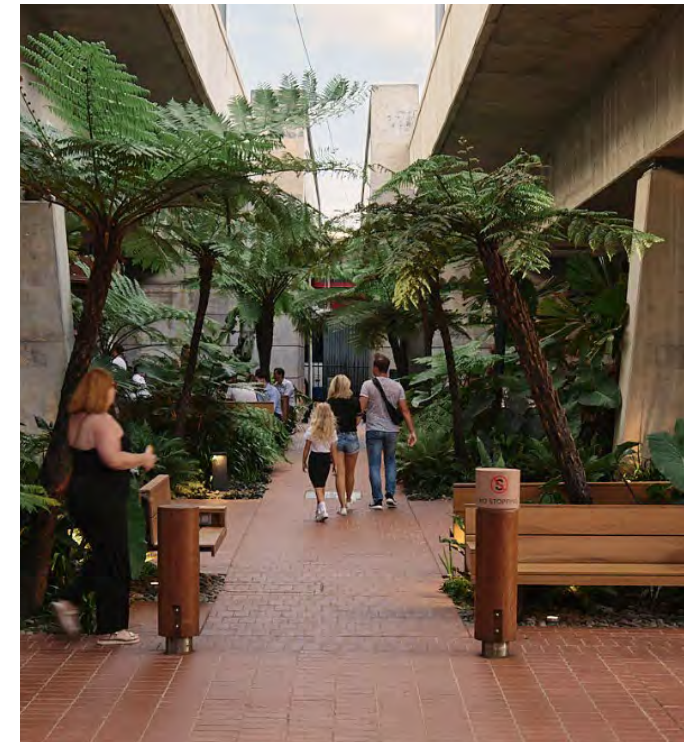
- + direct reference to **context**;
 - + creation of a **walkable spine** connecting Warnbro Sound Ave to Thundelarra Dr
 - + respond to the neighbouring **materiality**
 - + create a **specific identity** to Golden Bay, drawing on local coastal materials and colour palette
- + a new **neighbourhood hub**:
 - + different scales of accessible, low maintenance public **meeting spaces** to appeal to the whole community
 - + creation of a **public piazza** with alfresco seating protected by raised planters

engaging



- + encourage **inside outside** connection
- + extension of experience into the public realm
- + active and **lively shopfronts** to Thundelarra Drive
- + pedestrian access along Thundelarra Drive shopfronts and **visibility** into tenancies and alfresco

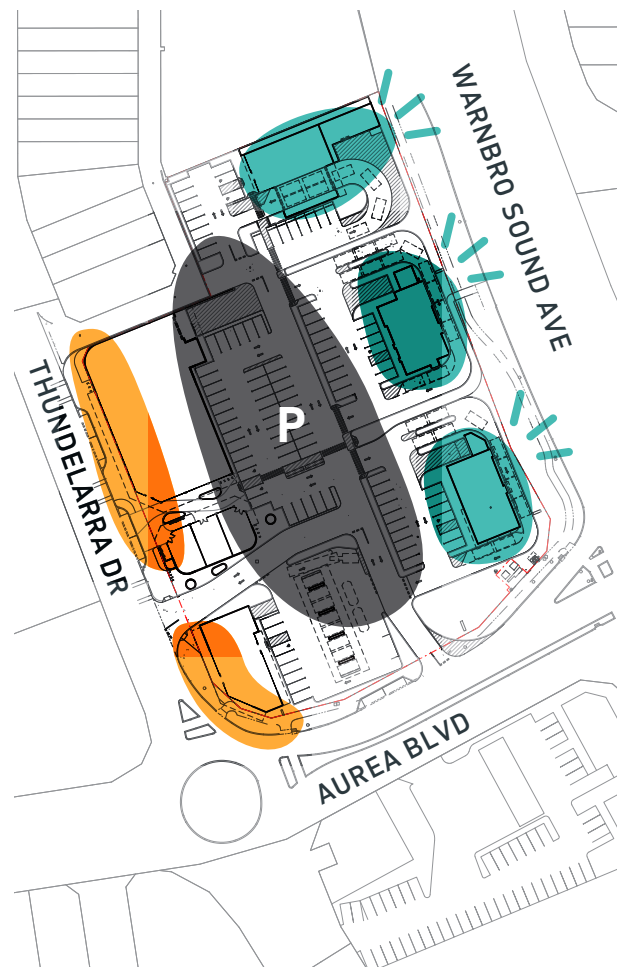
inviting






- + **warm materials** in key locations
- + **human scale** spaces
- + **integrated landscape**
- + **visible** and connected internal spaces

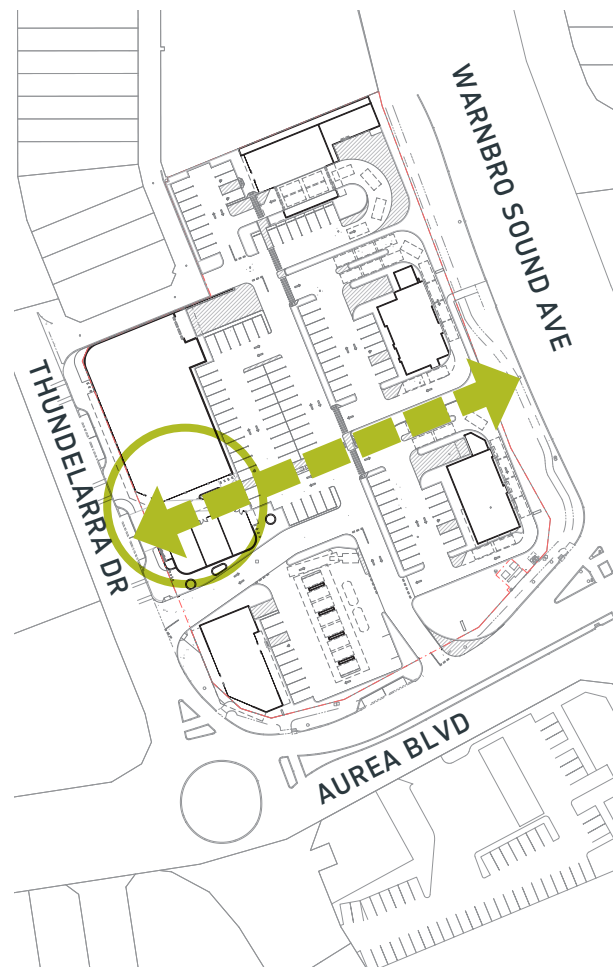
C built form approach

Built Form
& Scale





PLANNING APPROACH

-  ACTIVE USES PROVIDED ALONG THUNDELARRA DRIVE
-  EXPOSURE-BASED USES PROVIDED ALONG WARNBRO SOUND AVE WITH AN AESTHETIC EDGE
-  CAR PARKING AND ACCESSWAYS PROVIDED IN BETWEEN, SCREENED FROM PUBLIC REALM





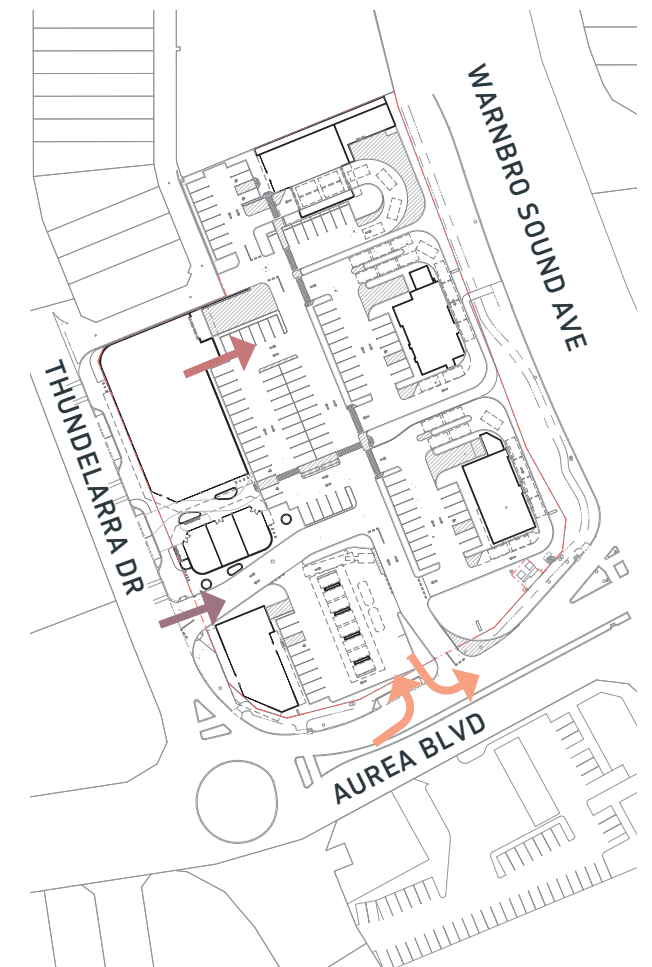
PUBLIC AMENITY + CONNECTIONS

-  CLEAR PEDESTRIAN CONNECTION FROM WARNBRO SOUND AVE (BUS STOP) TO THUNDELARRA DRIVE
-  ARCADE AND PUBLIC PIAZZA SERVES AS A GREEN SPACE AND SOCIAL HUB FOR VISITORS






SCREENING + CORNER STATEMENT

-  USING GREEN BUFFERS AND SCREENING TO ADDRESS INTERFACES TO THE NEIGHBOURS
-  TREATING THE SERVICE STATION AS A RECOGNISABLE FEATURE OF THE SITE
-  FEATURE LANDMARK OPPORTUNITY AT THE NEW CROSSOVER FROM AUREA BOULEVARD

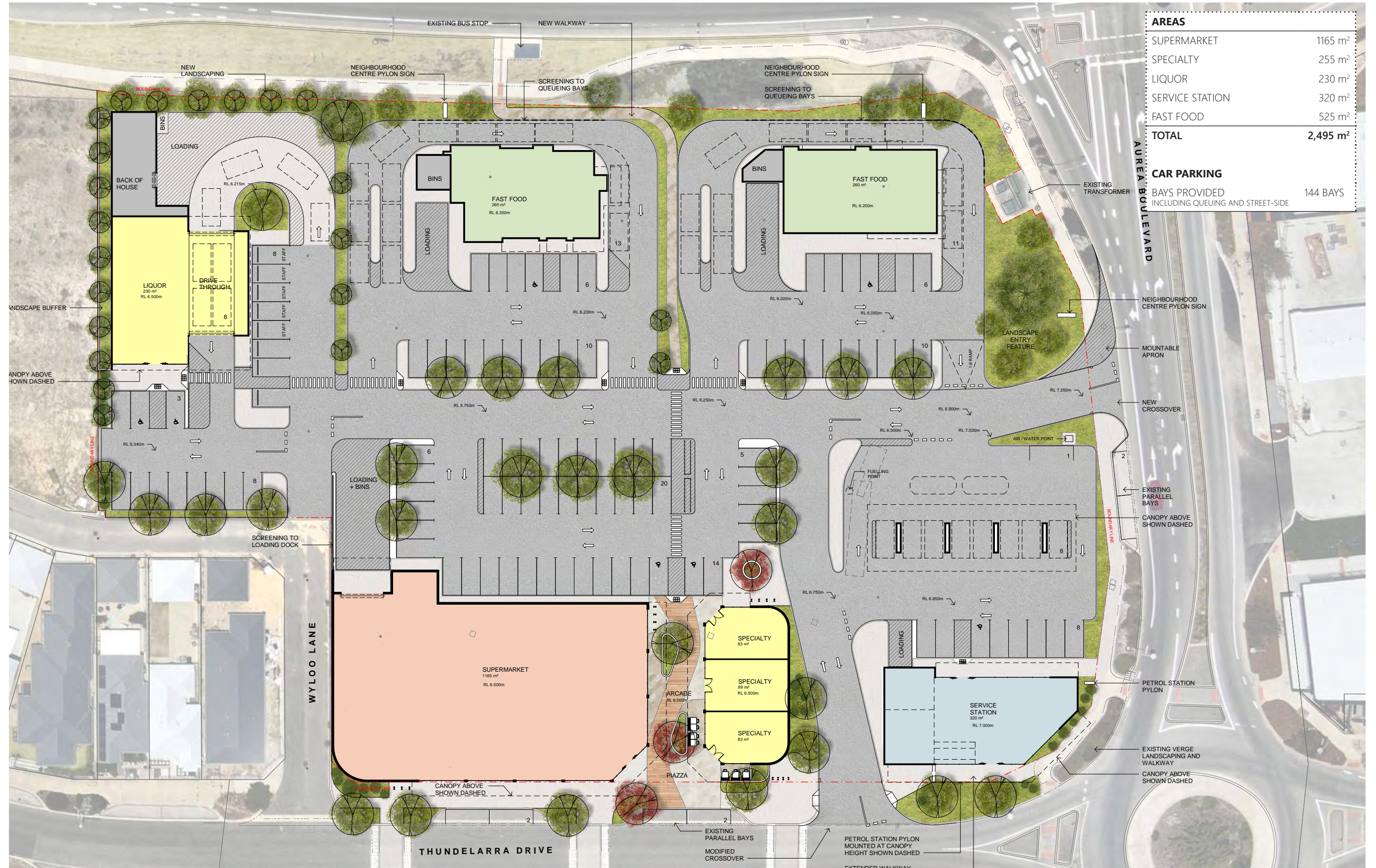


CONVENIENT VEHICULAR ACCESS

-  MODIFIED EXISTING CROSSOVER TO ALIGN WITH THE SITE USES
-  NEW CROSSOVER FOR CONVENIENT ACCESS OFF OF AUREA BLVD
-  LOADING ACCESS MAINLY OFF OF LANEWAY

C plan

Built Form
& Scale



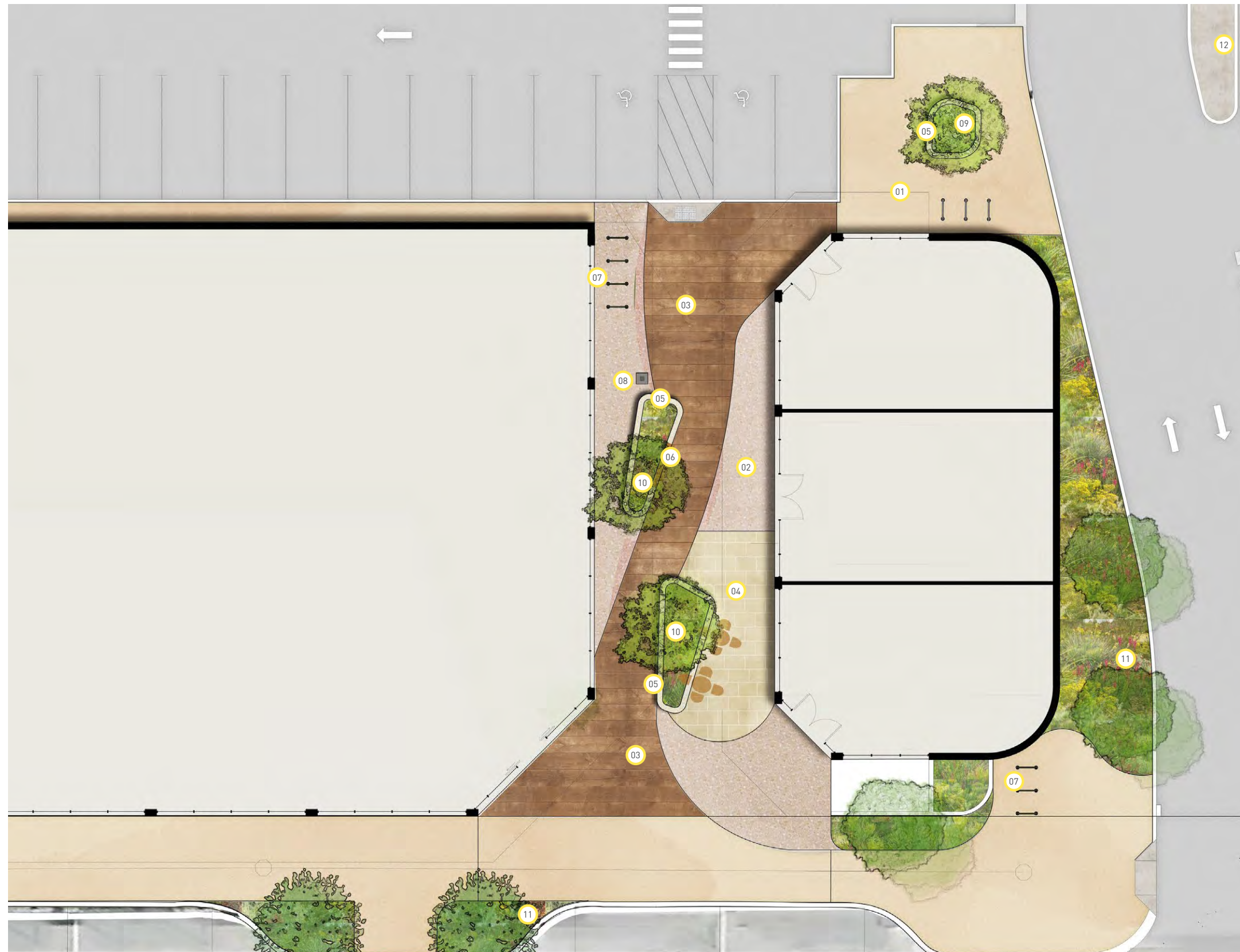
B plan

Landscape
Quality



B plan

Landscape
Quality



LEGEND

- 01 EXPOSED AGGREGATE (COLOUR 1) CONCRETE TO SUPERMARKET AND SHOPS SURROUNDS
- 02 EXPOSED AGGREGATE (COLOUR 2) TO OUTSIDE OF SHOP FRONTS
- 03 PROPOSED TIMBER LOOK PAVERS ON CONCRETE SLAB TO DEFINE CENTRAL PATH
- 04 PROPOSED UNIT PAVERS ON CONCRETE SLAB TO ALFRESCO SEATING AREA
- 05 LIMESTONE WALL/ RAISED PLANTERS WITH COASTAL STYLE PLANTING
- 06 BUILT-IN BENCH SEATS TO WALL
- 07 PROPOSED BIKE RACKS
- 08 PROPOSED BIN LOCATION
- 09 FEATURE TREES I.E. NORFOLK ISLAND PINE TO DEFINE ENTRY
- 10 SMALL SHADE TREES TO RAISED PLANTERS (EUCALYPTUS ERYTHROCORYS)
- 11 NATIVE COASTAL STYLE PLANTING
- 12 INSITU CONCRETE PATH TO CAR PARK

B landscape selection

Landscape
Quality



XPOSED AGGREGATE CONCRETE



UNIT PAVING



SEATING TO RAISED PLANTER



SEATING TO RAISED PLANTER



LIMESTONE WALL TO PLANTER



RAUCARIA HETEROPHYLLA



ALLOCASUARINA FRASERIANA



AGONIS FLEXUOSA



EUCALYPTUS ERYTHROCORYS



MAGNOLIA LITTLE GEM



WESTRINGIA NARINGA



HYPOCALYMMMA ANGUSTIFOLIUM



HAGODIA BACCATA



LEUCOPHYTA SILVER NUGGET



CONOSTYLIS CANDICANS



CARPOBROTUS VIRESCENS



ANIGOZANTHOS SPP



WESTRINGIA MUNDI



SCAEVOLA AEMULA



ADENANTHOS SERICEUS COMPACT

C isometric massing

Built Form
& Scale



D neighbourhood centre

Functionality
& Build
Quality

- + Landscape setback strip with raised planters to create an articulated visual screen and buffer to **residential interfaces**

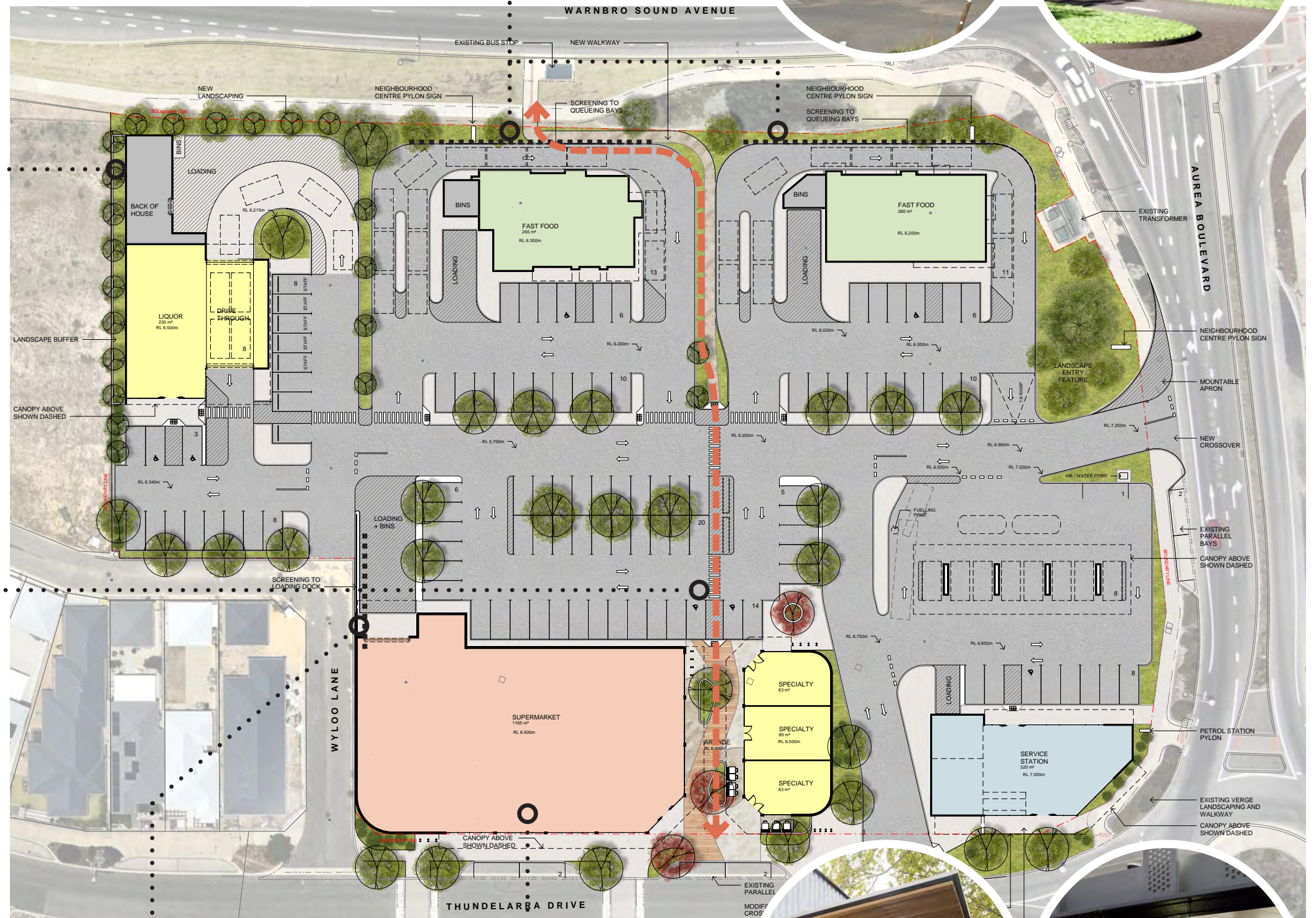


- + **Pedestrian walkway connection** from Warnbro Ave to Thundelarra Dr for enhanced accessibility to public transport

- + Arcade and piazza serve as a vibrant open space where the **community can gather, interact, and dine**



- + Screening to drive-through lanes incorporated as structural elements



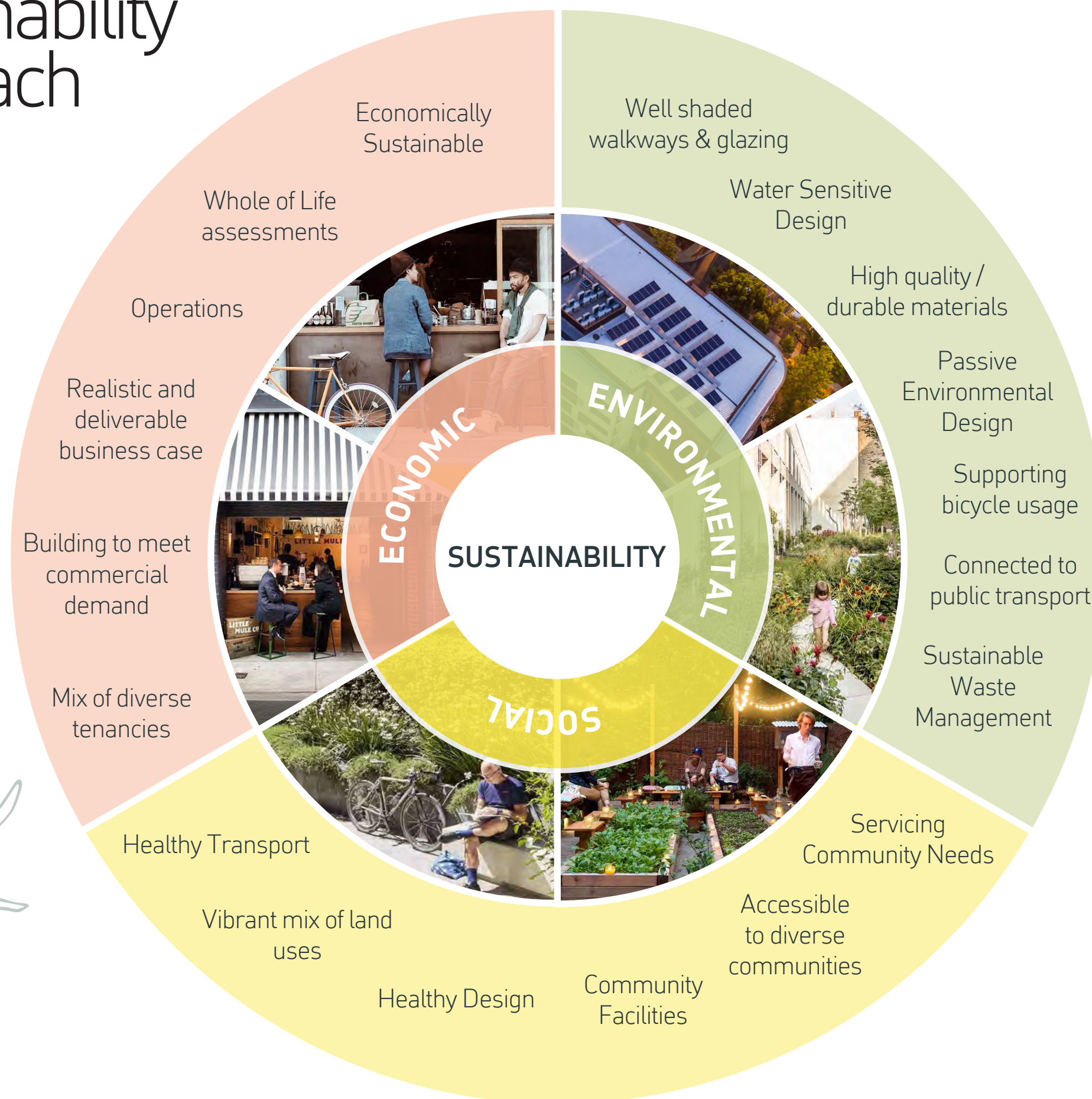
- + Screening to supermarket loading dock facing residential interfaces

- + Supermarket and specialty glazed shopfronts and a public piazza **activating main street**



E sustainability approach

Sustainability

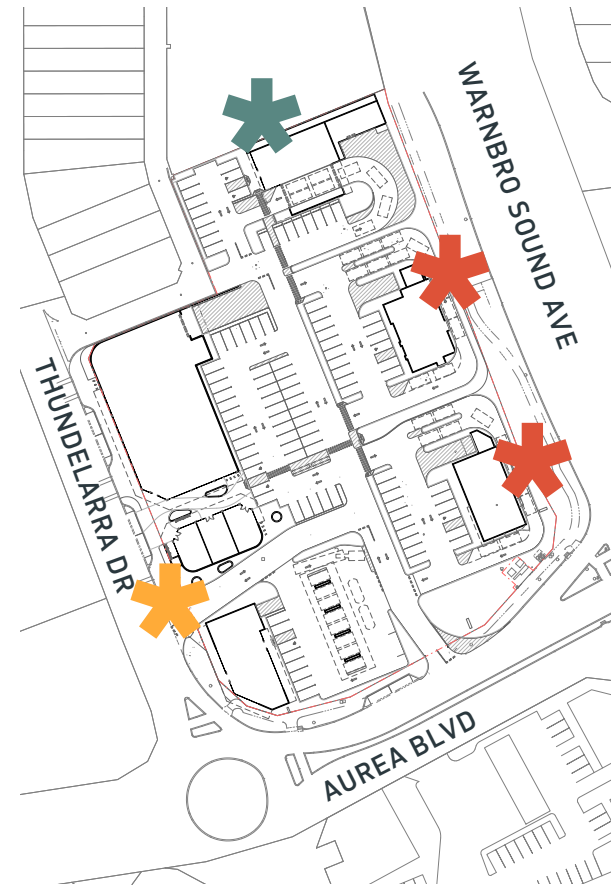


F
Amenity

neighbourly approach

east to west – green link

- + **A pedestrian link** enables better access to the main street for surrounding residents and connections to the bus stop
- + **Public piazza** encourages social interactions and activity within the centre, enabling passive surveillance and increasing interactivity with Tundelarra Drive



north – green buffer

- + **Landscaped edges** soften the interface between residential and retail uses



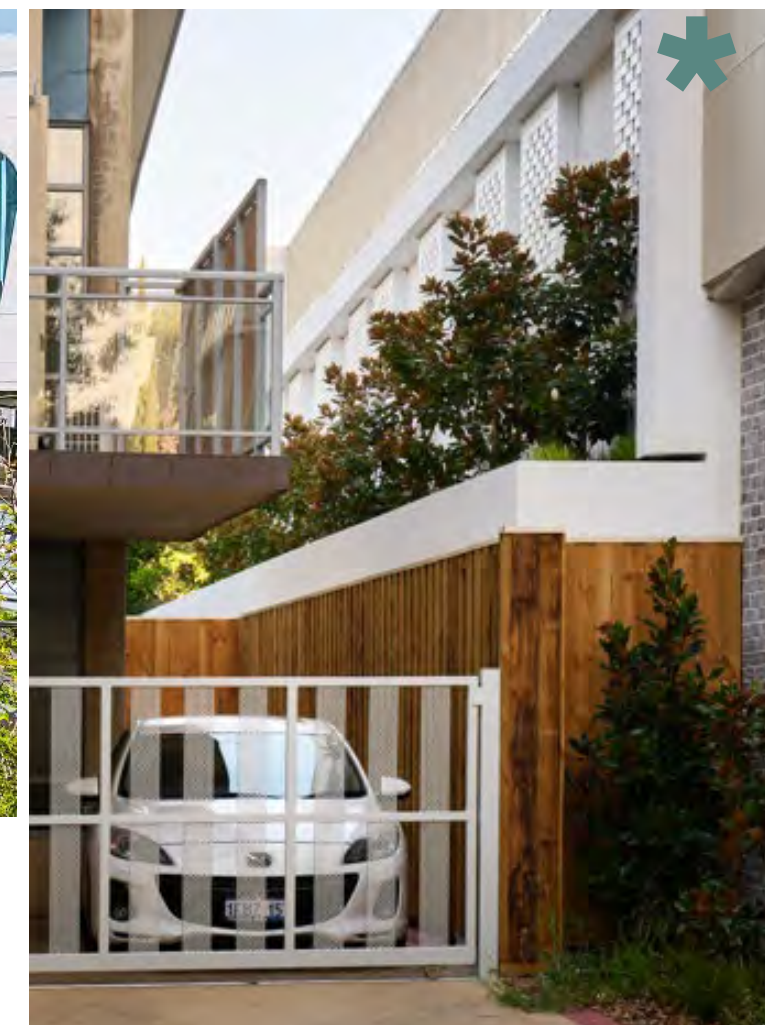
east – screened buffer

- + **Trellises** screen the drive-through queueing lanes from Warnbro Sound Ave



catering to the community

- + **Quality architectural design and provision of essential urban support uses** create a unique identity for the community and enhances local amenity



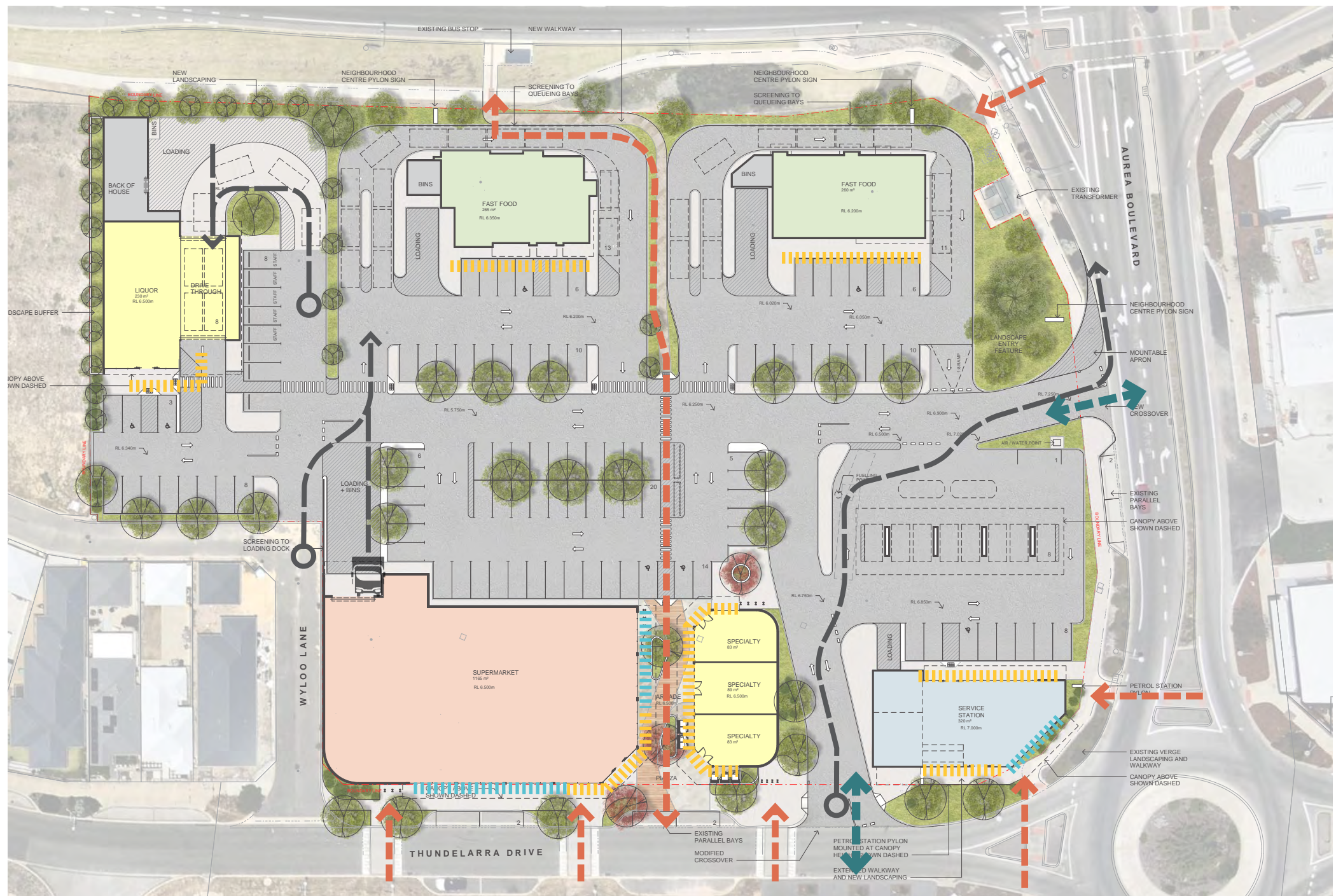
G connections

Legibility

- + **Multiple entries** for ease and convenience of access
- + **Active edges** along Thundelarra Drive with glazed shopfronts to facing the pedestrian walkway
- + **Visual & pedestrian links** bring people into the site via the piazza
- + **Interactive shopfronts** encourage activity and provide amenity for visitors
- + **Distinct design features** create recognisable building, fortifying the neighbourhood centre identity and enhancing legibility



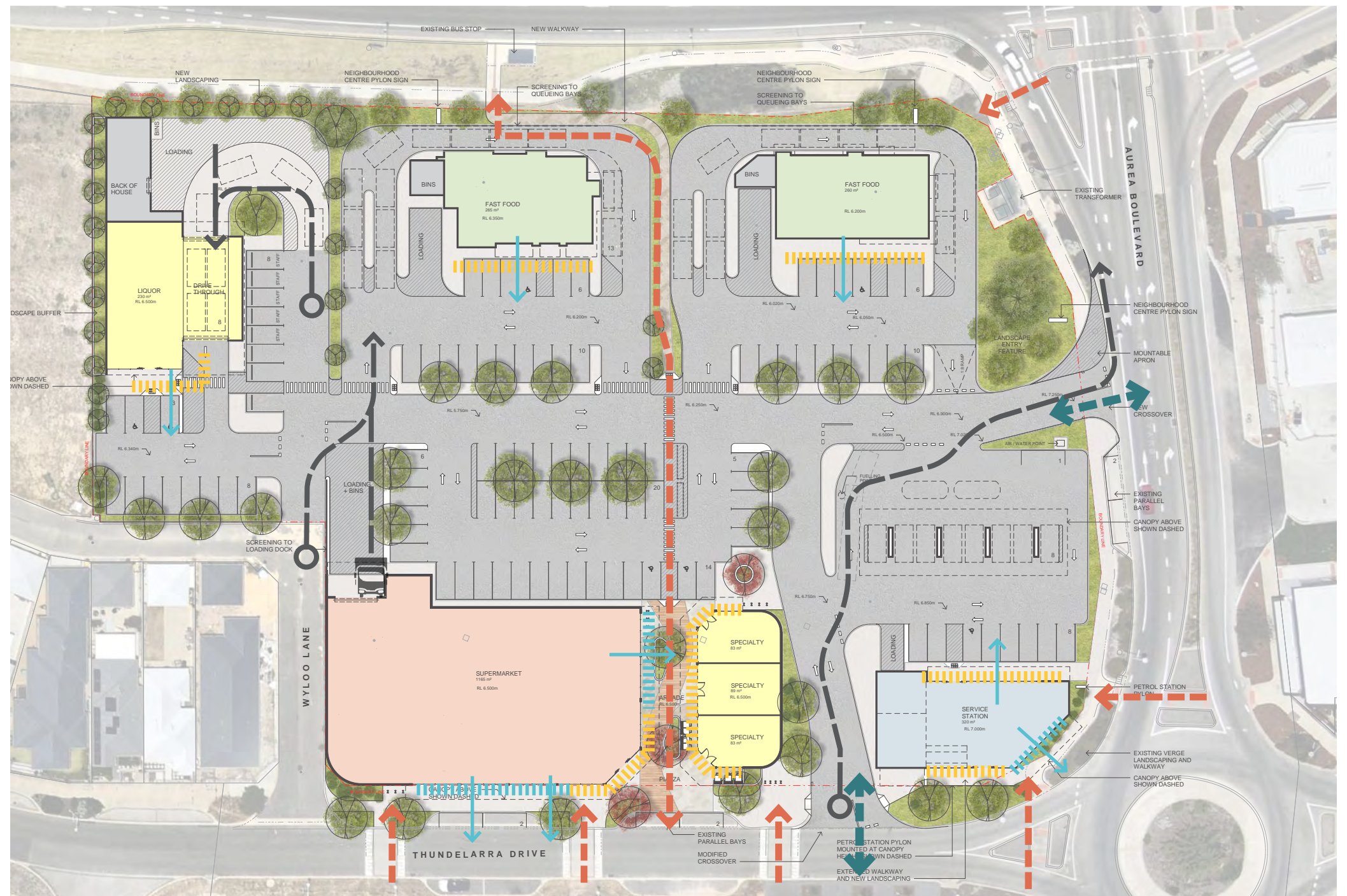
- ←→ MAIN ENTRY TO SITE
- SERVICE VEHICLE ACCESS
- PEDESTRIAN CONNECTIONS
- ||||| ACTIVE PUBLIC EDGES
- ||||| SEMI-ACTIVE PUBLIC EDGES



sightlines and safety

- + **Passive surveillance** of public spaces via the supermarket windows and F&B alfresco areas, ensuring the main street remains a safe and walkable space. The fuel forecourt and drive-through areas also provide public surveillance. The fuel will operate 24 hours and have CCTV which significantly improves passive surveillance of the local area at night time.
- + **Distinct footpath materials and line marking** clearly demarcating walkways
- + Semi-active edges provide additional **passive surveillance of the public domain**
- + **Loading zone and access** is separate from main visitor entries to site

- ←--→ MAIN ENTRY TO SITE
- SERVICE VEHICLE ACCESS
- PED. CONNECTIONS
- ||||| ACTIVE PUBLIC EDGES
- ||||| SEMI-ACTIVE PUBLIC EDGES



I placemaking for the community

Community

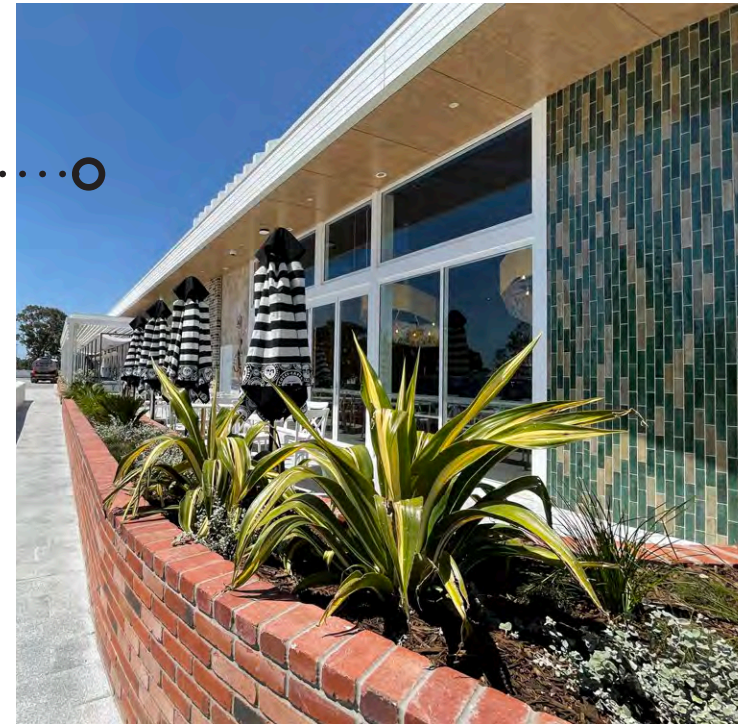


- + At its heart this development is a building for the community, creating a **neighbourhood hub** to the surrounding catchment
- + **Supporting social interaction** with the creation of public amenity including new centres of activity in the new public piazza and arcade
- + This design is accessible and inclusive, **supporting diversity**
- + Active shopfronts along Thundelarra Drive contribute to the **main street feel**



facade approach

- + Material palette **responds to the surrounding suburban context**. Traditionally residential materials like brick, weatherboard cladding, and metal sheeting are applied differently
- + The **neutral colour scheme** allows for focus on key areas of warm materials (limestone bricks and timber), active shop fronts, and landscaping

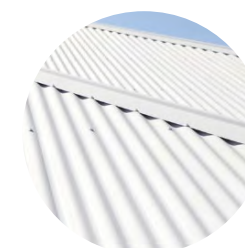
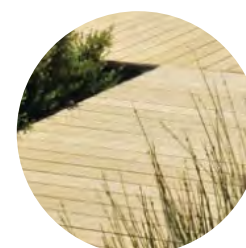
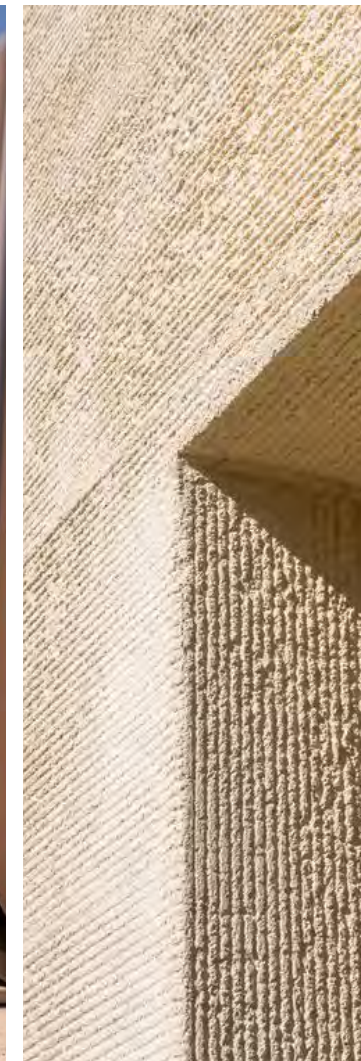
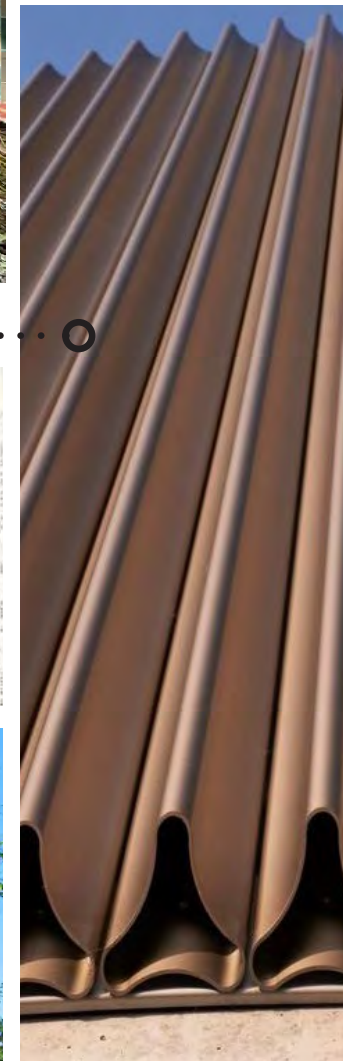


- + **Textured facade materials** to emphasise feature elevations

- + **Robust, resilient and low maintenance**. (Principle 4 - Functionality and Build Quality)

- + Lightweight canopies allowing **filtered light** through to public spaces, with **curved forms** to soften edges

- + Screening elements such as trellises and patterned screens serve as **visual buffers** between the street and back of house areas





thank you



EMISSIONS IMPACT ASSESSMENT OF PROPOSED 24HR FUEL SERVICE STATION

**LOT 622, (2) AUREA BOULEVARD,
GOLDEN BAY WESTERN AUSTRALIA**



Emissions Impact Assessment of Proposed 24Hr Fuel Service Station

Lot 622, (2) Aurea Boulevard, Golden Bay Western Australia

Prepared for: Ladybug Thirteen Pty Ltd

Project Ref: EAQ-22031
March 2023



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Signature



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Executive Summary

Environmental and Air Quality Consulting Pty Ltd undertook an Air Emissions Assessment of a proposed 24-hour Fuel Service Station to be located at Lot 622, (2) Aurea Boulevard, Golden Bay Western Australia.

The site-specific scientific study addressed the short-term exposure and long-term health risks associated with vapour emissions from the Fuel Service Station.

The Fuel Service Station is within an urban developed area and is part of an overall commercial development site which includes adjacent commercial activities to include an existing 7-Eleven service station that is located on the opposite side of Aurea Boulevard.

The Assessment utilised industry accepted standards for estimating pollutant emission rates of primary airborne pollutants from fuel storage and refuelling activities at the Fuel Service Station and assessed these pollutant emission rates utilising conventional dispersion modelling methods to predict the concentration of primary pollutants at the nearest sensitive receiver within the locality.

Additionally, the Assessment addressed cumulative emissions' impacts from the adjacent service station.

The outcomes of the Assessment found that the primary pollutants of Benzene, Toluene, Ethyl benzene, Xylenes, Cyclohexane, *n*-Hexane and Styrene were predicted to have ground level concentrations lower than acceptable exposure limits set by the National Environment Protection (Air Toxics) Measure and other relevant jurisdictional recommendations when utilising both Vapour Recovery Phase 1 (required) and Vapour Recovery Phase 2 (recommended).

The predicted ground level concentrations of these primary pollutants, utilising Vapour Recovery Phase 1 & 2 technologies, demonstrated that the proposed Fuel Service Station emissions will not have an unreasonable impact on the health of existing sensitive receptors or sensitive land uses, and moreover; the cumulative emissions from the proposed activity and that of the approved adjacent service station are predicted to be below the exposure criteria at key sensitive receptor locations.

1 Background & Scope

Environmental & Air Quality Consulting Pty Ltd (EAQ) was engaged by Ladybug Twenty Pty Ltd (the Proponent) to undertake an Air Emissions' Impact Assessment (the Assessment) of a proposed 24-hour Fuel Service Station (the Site) to be located at Lot 622, (2) Aurea Boulevard, Golden Bay Western Australia.

The Assessment addressed toxic emissions of principal chemical compounds in petrols by undertaking a site-specific scientific Assessment into the short and long-term health risks associated with vapour emissions from the Site.

The Assessment accounted for cumulative emissions' impacts by including those emissions' contributions from an adjacent service station (the Adjacent site) that resides opposite the Site along Aurea Boulevard.

Vapour emission rates assessed were developed from:

- NPI Emission Estimation Technique Manual ([NPI, 1999](#)) for Aggregated Emissions from Service Stations (Environment Australia);
- Air Toxics "Hot Spots" Program: Gasoline Service Stations Industry wide Assessment Guidelines – Toxics Committee of the California Air Pollution Control Officers Association ([CAPCOA, 1997](#)); and
- Brisbane City Council methodology for service stations (BCC, 2017).

The BCC, 2017 methodology was utilised to derive hourly throughput rates for service stations based on normal and peak traffic flows. This method is widely accepted as the input "parameter" for traffic flows in urban areas.

1.1 Assessment Scope

The Assessment was undertaken to determine the extent of offsite pollutant impacts beyond the boundary of the Site, and in accounting for cumulative emissions from the Adjacent site, and subsequently determining the risk of health and amenity impacts for existing and future sensitive receivers and/or sensitive land uses (receptors).

The Assessment predicted ground level concentrations (GLCs) of primary pollutants from vapour losses using regulatory standard dispersion modelling techniques.

Importantly, the Adjacent site has been previously assessed by another consultant (LWC) ^[1] and those assumptions and emissions' sources presented by LWC have been adopted herein to represent the Adjacent site.

The predicted GLCs were compared to the regulatory criteria for each pollutant assessed to determine if those GLCs would cause a health or amenity impact at the nearest receptor.

The model of choice was Aermid and its supporting pre- and post- processors.

¹ Land and Water Consulting (LWC) Emissions Impact Assessment, Proposed Service Station, Aurea Boulevard, Golden Bay, Western Australia: July 2021

1.1.1 Legislative Context

The Western Australia (WA) Environmental Protection Authority (EPA) 2005 Guidance for the Assessment of Environmental Factors document, *Separation Distances between Industrial and Sensitive Land Uses* recommends a buffer separation distance for Service Stations / Convenience Store Fuel Facilities and the nearest sensitive receptor as follows:

Table 1-1: WA EPA Guidance for Separation Distances

50 m	Operating during normal business hours of Monday – Saturday from 0700 – 1900 hours
100 m	Freeway service stations
200 m	Service stations in operations for 24 hours daily

Buffer separation distances are recommended in the absence of any site-specific technical assessments.

The proposed Site activity is not a Prescribed Premise with regard to the WA Department of Water and Environmental Regulation (DWER).

On this basis the EPA recommended buffer of 200 metres (m) implies that where the separation distance is not met, a further assessment of applicable emissions should be undertaken to support the application and thus inform the risk of health and amenity impacts at the nearest receptor.

“Sensitive land uses include residential development, hospitals, hotels, motels, hostels, caravan parks, schools, nursing homes, child care facilities, shopping centres, playgrounds and some public buildings. Some commercial, institutional and industrial land uses which require high levels of amenity or are sensitive to particular emissions may also be considered “sensitive land uses”. Examples include some retail outlets, offices and training centres, and some types of storage and manufacturing.”

The emission sources at the Site comprise the ventilation of the sub-terrain fuel storage tanks, and the refuelling bowzers (4 bowzers, i.e., 8 dispensers). Incidental spills can also be a source of vapour release, albeit minor. Emission sources are primarily passive vapour losses from refilling (storage tanks) and bowser refuelling processes.

1.1.2 Assessment Substances

Principal chemical compounds (pollutants) typically emitted from service station activities are listed below. These compounds are part of the Total Volatile Organic Compounds (VOCs) emitted, which are assessed in the first instance, and those individual pollutant contributions are then derived based on the percentage contribution of those pollutants within the Total VOC emissions.

Table 1-2: Assessment Substances (pollutants)

Pollutants			
Benzene	Cyclohexane	Ethyl benzene	Styrene
Toluene	n-Hexane	Xylenes	

1.2 Guidance for Assessing Impacts

The National Environment Protection (Air Toxics) Measure (NEPM) prescribes ambient air emission limits for a range of air toxics' pollutants. These limits, together with other jurisdictional recommendations and those of the WA DWER have been adopted for this Assessment. These receptor exposure limits are listed in **Table 1-3** to follow.

Table 1-3: Assessment Criteria for Toxic Substances

Substance	Averaging Period	Criteria Source	Maximum (ambient) concentration	
			ppm	µg/m ³ at 25°C
Benzene	1 hour	EPA NSW 2016	0.009	29
	Annual	NEPM 2011	0.003	9.6
Toluene	24 hour		1	3,770
	Annual		0.1	377
Ethyl benzene	1 hour	EPA NSW 2016	1.8	8,000
	Annual	Toxicos 2011		270
Xylenes	24 hour	NEPM 2011	0.25	1,080
	Annual		0.2	870
Cyclohexane	1 hour	EPA NSW 2016	5	190
n-Hexane			0.9	3,200
Styrene	1 hour	Dept. of Health WA	70	64

1.3 The Site

The Assessment Site is located at Lot 622, (2) Aurea Boulevard, Golden Bay Western Australia.

It is part of a commercial site that comprises this service station Site, fast food outlet(s), liquor store, specialty shop(s) and supermarket, and multiple parking bays.

The Site is proposed to be located on the corner of Aurea Boulevard and Thundelarra Drive. This corner is part of a "roundabout" intersection with commercial sites on all four exit corners of the roundabout.

Directly to the south-east and approximately 70 m from the Site is an existing Adjacent service station site which is currently operational.

The proposed Site is directly east of, and north-east of existing commercial sites to include a Child Care Facility. There is also an additional Child Care Facility to the south-west of the proposed Site, and directly west of the Adjacent service station site.

Importantly, both Child Care Facility's have 5-day week operational hours between the maximal hours of 6AM-7PM inclusive. The Child Care Facilities are not exposed to airborne emissions continuously given that childcare staff and children do not inhabit these properties outside of operational childcare hours.

The nearest existing and future urban dwellings (house), from the Site's central refuelling bowser location, are approximately 100 m to the north, 75 m south-west, 90 m west and 130 m south of the proposed Site.

The proposed Site will comprise the following main features:

- 4 bowser ranks comprising a total of 8 bowser outlets at any one time;
- 8 x refuelling bays, 6 parking bays and 2 x disabled parking bays & general convenience store;
- The types of fuels proposed are;
 - Diesel (40 kL),
 - ULP 91 (80 kL),
 - ULP 95 (30 kL),
 - ULP 98 (30 kL),
- Bulk refuelling events will take place up to three times weekly, or every 3 days annually averaged;
 - Tanker delivery of up to 1,000 Litres per minute (60,000 Litres per hour).
- Average refuelling volume daily 26,610 Litres; and
- The peak flow of vehicles per hour is anticipated at 40-50.

The Locality of the Site and assessed sensitive receptors, the Site design and Model depiction are illustrated in the following **Figures**.

Figure 3-1 illustrates the two service stations and the adjacent Child Care Facilities. The “red” crosses are those discrete receptor locations used to assess impacts at each of the Child Care Facilities.

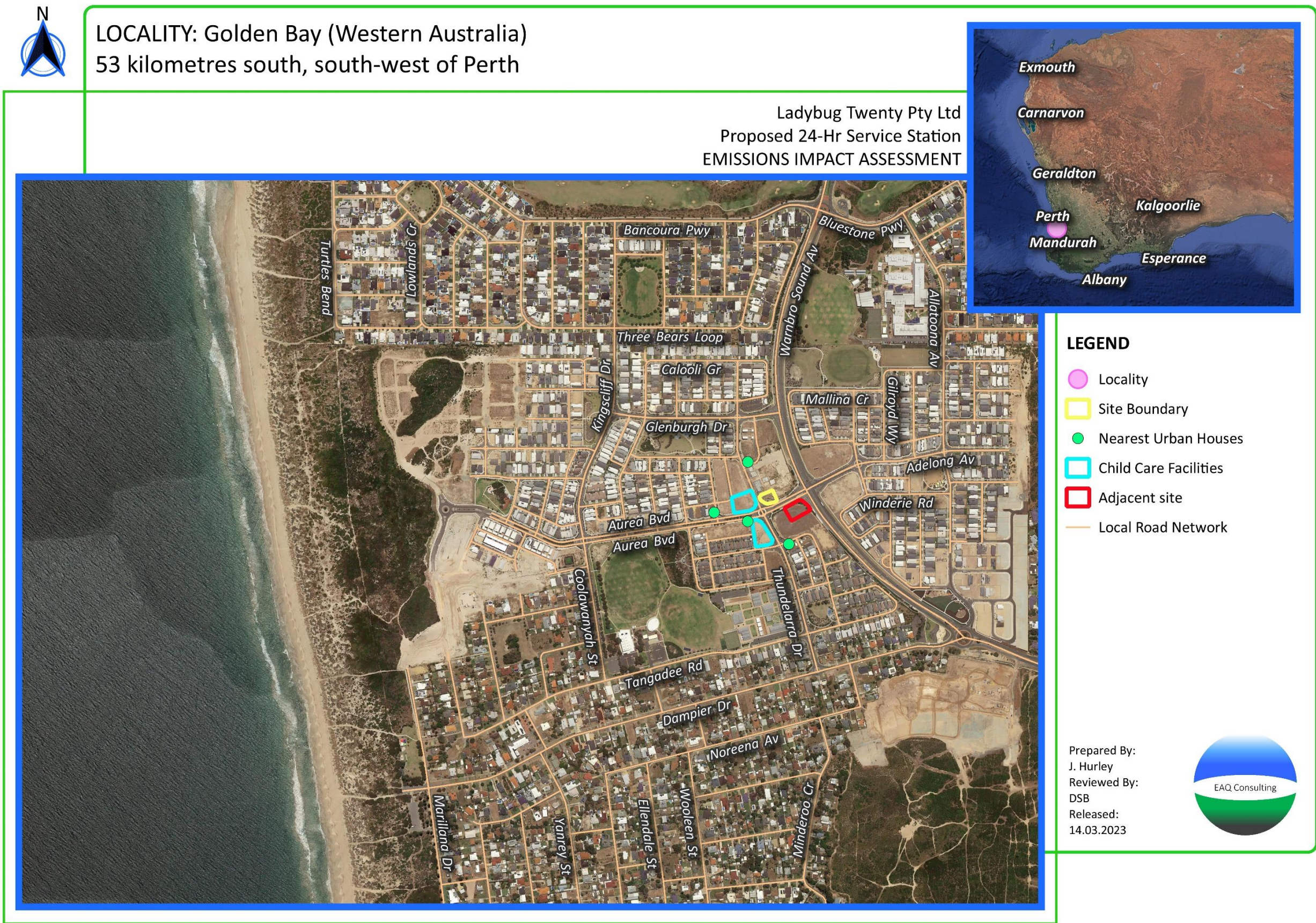


Figure 1-1: Proposed 24-hr Golden Bay Service Station (assessed)

C plan

Built Form
& Scale

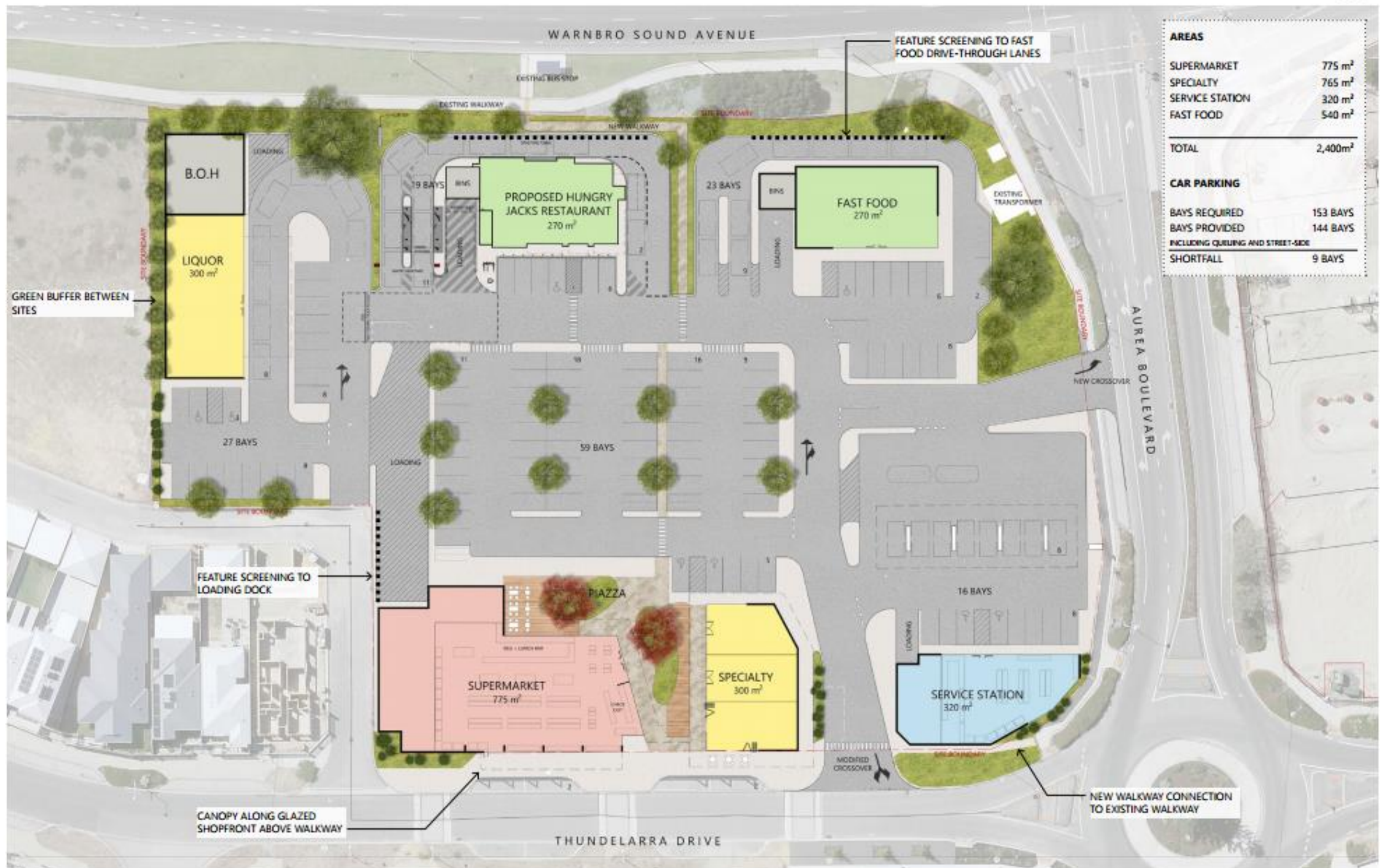


Figure 1-2: Lot 622 (2) Aurea Boulevard, Golden Bay Western Australia

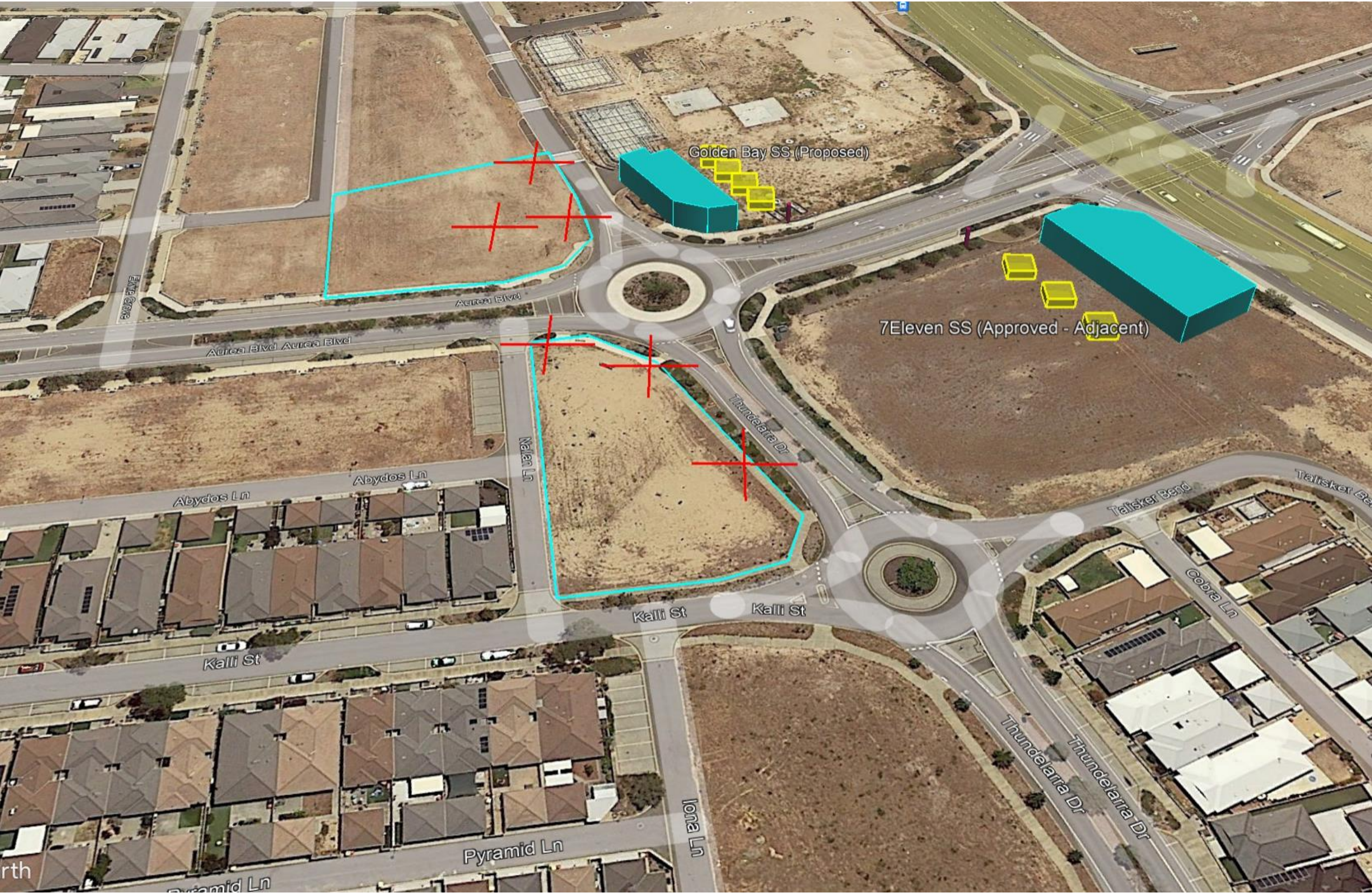


Figure 1-3: Modelling Depiction of Site Layout (Proposed) and Adjacent site (Approved)

2 Emission Estimation

Activities at the Site that will produce emissions are related to losses of fuels through vapourisation or spillage and subsequent vapourisation of the spill(s). These specific activities comprise:

- Submerged filling of underground storage tanks;
- Underground tank breathing losses;
- Vehicle refuelling;
- “Whoosh” emissions from removal of vehicle fuel cap; and
- Fuel spills, typically at the bowser.

The proposed Site throughputs are estimated based on the technology providers’ typical infrastructure design and average throughputs from similar Western Australian service stations. Precise hourly throughputs are however unknown at this stage, although there is negligible variability in refuelling characteristics for metropolitan service stations based on comparable populations.

There is a dearth of information within other Australian jurisdictions for estimating hourly throughputs based on typical traffic flows at metropolitan service stations, as a result the widely referenced 2017 Brisbane City Council (BCC) methodology for service stations has been used to estimate hourly emissions at the Site.

Emission estimates based on specific emission compounds (**refer Table 1-2**) were derived using the NPI, 1999 and CAPCOA, 1997 guidelines for emission estimation factors.

Vapour recovery (VR) at the Site will be in place for submerged underground storage tank(s) referred to as VR1 and at the bowser refuelling points i.e., VR2.

2.1 Bulk Deliveries and Emissions

The maximum volume of fuel that can be dispensed into the storage tanks at the Site is approximately 60,000 L/hour. The estimated total daily sale of fuels is 25,610 Litres. The Site will receive, on average, approximately 3 bulk deliveries of fuels per 7 days, between the daily hours of 0700 hrs – 2200hrs.

Although there are approx., 3 deliveries per week of 60,000 L or less, the schedule will shift based on fuel volumes dispensed. To account for variability in daily hours where deliveries are made; the delivery of bulk fuels is modelled 1-hourly, for each day and successive hour during those delivery times.

Table 2-1 lists an example of the delivery schedule and subsequent hourly emissions trend for bulk fuel deliveries.

Table 2-1: Example of Bulk Fuel Delivery Schedule (L/hr)

Time (24 hrs)	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
0100							
0200							
0300							
0400							
0500							
0600							
0700	60,000						
0800		60,000					
0900			60,000				
1000				60,000			
1100					60,000		
1200						60,000	
1300							60,000
1400	60,000						
1500		60,000					
1600			60,000				
1700				60,000			
1800					60,000		
1900						60,000	
2000							60,000
2100	60,000						
2200		60,000					
2300							
2400							

2.2 VOC Emissions

Of the fuel types proposed, ULP emissions represent approximately 78% of total fuel storage with diesel representing approximately 22%. ULP contains the higher volatile fraction compared to diesel, as such all emissions in this Assessment have been assumed as ULP. This approach is conservative. There are no proposed Ethanol blend fuels e.g., E5, E10. The vapour composition of VOCs in petroleum fuel ([NPI, 1999](#)), are listed in **Table 2-2**. It is likely that the composition of Benzene will be lower than the NPI, 1999 recommendations given the improvements in fuel refining, however; in the absence of specific detail for the composition of fuels within the Assessment airshed, the NPI, 1999 recommendations have been adopted and assessed.

Table 2-2: Composition of Petrol (NPI, 1999)

Species	Petrol Liquid (% weight)	Petrol Vapour (% weight)
Benzene	2.9	0.950
Cyclohexane	0.2	0.06370
Ethylbenzene	2.0	0.07910
<i>n</i> -Hexane	3.5	1.730
Styrene	0.1	0.00282
Toluene	10.4	1.080
Xylenes	12.2	0.433

The composition percentages of the compounds listed above were applied to the modelling outcomes of the final time-averaged emission rate GLC estimates (vapour and spill vapour losses) to derive individual pollutant contributions to airborne vapour impacts at the nearest receptor.

2.3 Site Operational Data

Table 2-3: Proposed Site Operating Detail

Parameter	Operational Data
Operating hours	24 hours / 7 days per week
Tanker delivery	Maximum 60,000 L/hour
Average Daily Refuelling Volume	25,610 L
Vent stack	4.5 m high
Filling Stations/Bowsers	4 x Bowsers / 8 x Grade filling points (located below full canopy)
Fuel Storage	Diesel 40 kL, ULP 91 80 kL, ULP 95 30 kL, ULP 30 kL.

2.4 Derived Emission Factors

Emissions generated from activities at the Site have been derived based on those vapour losses published by the NPI and CAPCOA guidance. **Table 2-4** lists those emission factors that apply to those processes where vapour losses occur.

Table 2-4: Emissions Factors for Service Stations

Emission Source	NPI, 1999 Mg / L throughput	CAPCOA, 1997 Lbs / 1000 Gallons throughput
<i>Underground Tank Filling</i>	-	-
Submerged Filling	880	8.4
Splash Filling	1380	-
Submerged filling with vapour balance	40	0.42
Underground tank breathing losses	120	0.84
<i>Vehicle Refuelling</i>	-	-
Displacement Losses (uncontrolled)	1320	8.4
Displacement Losses (90% controlled i.e., VR 2)	132	0.74
<i>Spillages</i>	-	-
Uncontrolled	80	0.61
Controlled	-	0.41
<i>"Whoosh" Emissions (fuel cap removal)</i>	-	0.26 - 0.66

The refuelling activities are considered to be volume emission sources. These have been assessed utilising the CAPCOA, 1997 emission factors. Vent emissions from storage tank filling has been assessed using the NPI, 1999 emission factors.

2.4.1 Fuel Throughput Trends

There are two approaches to determining the hourly throughputs of fuel dispensing for service stations in accordance with the BCC, 2017 recommendations.

Method 1 considers known daily or weekly fuel dispensing trends where an estimate of hourly dispensing volumes (L) can be derived. Where the peak hourly dispensing volume is known, the daily hourly trends can then be derived using the BCC, 2017 published profiles as listed in **Table 2-5**.

Table 2-5: Representative Fuel Throughputs (BCC, 2017)

Hour	Hourly Profile (%)
1	1.20%
2	0.80%
3	0.60%
4	0.80%
5	1.90%
6	4.60%
7	5.50%
8	5.70%
9	5.50%
10	5.70%
11	6.00%
12	6.00%
13	5.70%
14	5.60%
15	5.90%
16	6.15%
17	6.15%
18	5.80%
19	5.10%
20	4.00%
21	3.50%
22	3.40%
23	2.60%
24	1.80%

If no fuel data is available for the proposal, then Method 2 is employed; where the number of bowsers and refuelling points are counted and assuming the average dispensing rate per vehicle of 35 L, with each vehicle taking approximately 5 minutes to refuel, the hourly profile in **Table 2-5** is applied to the peak

amount of fuel dispensed over 24 hours to derive those other hourly volumes. In **Table 2-5** the peak throughput hours are 4-5pm.

Method 1 was employed for this Assessment and utilising the operational detail in **Table 2-3**.

Applying the Average Daily Refuelling Volume of 25,610 L, the emission factors in **Table 2-4**, and deriving the hourly profiles based on **Table 2-5**, the hourly Total VOC mass emission rates in grams per second (g/s) are developed. These mass emission rates represent the combined (ALL) number of filling points (8) at any one time, and single bowser (SINGLE) operations, and are listed in **Table 2-6**.

Table 2-6: Factored Total VOC Emission Rates per Hour (VR1 + VR2)

Hour	Throughput % daily volume/hr	Petrol Throughput (L/hr)	% to Peak Daily Hour	ALL Bowsers Mass Emission Rate (g/s)	SINGLE Bowser Mass Emission Rate (g/s)
1	1.20%	307	19.51%	0.198	0.050
2	0.80%	205	13.01%	0.132	0.033
3	0.60%	154	9.76%	0.099	0.025
4	0.80%	205	13.01%	0.132	0.033
5	1.90%	487	30.89%	0.314	0.078
6	4.60%	1,178	74.80%	0.759	0.190
7	5.50%	1,409	89.43%	0.908	0.227
8	5.70%	1,460	92.68%	0.941	0.235
9	5.50%	1,409	89.43%	0.908	0.227
10	5.70%	1,460	92.68%	0.941	0.235
11	6.00%	1,537	97.56%	0.990	0.248
12	6.00%	1,537	97.56%	0.990	0.248
13	5.70%	1,460	92.68%	0.941	0.235
14	5.60%	1,434	91.06%	0.924	0.231
15	5.90%	1,511	95.93%	0.974	0.243
16	6.15%	1,575	100.00%	1.015	0.254
17	6.15%	1,575	100.00%	1.015	0.254
18	5.80%	1,485	94.31%	0.957	0.239
19	5.10%	1,306	82.93%	0.842	0.210
20	4.00%	1,024	65.04%	0.660	0.165
21	3.50%	896	56.91%	0.578	0.144
22	3.40%	871	55.28%	0.561	0.140
23	2.60%	666	42.28%	0.429	0.107
24	1.80%	461	29.27%	0.297	0.074

Table 2-7 lists the summarised maximum emission rates for the proposed Site adopting VR1 and VR2 emissions controls.

Table 2-7: Summary of Proposed Site's Fuel Service Station Emissions

Emission Source	Emission Type	Peak VOC Mass Emission Rate (g/s)	Stack Diameter (m)	Emission Velocity (m/s)
Storage Tanker Vent Stack	Bulk Filling (Vapour Balance and Breathing Losses) – VR1	0.267	0.1	0.1
Passive Emissions from Vehicle Refuelling (VR 1 & 2)	Refuelling Losses (Controlled), Spillages (controlled/uncontrolled), and maximum "Whoosh" Emissions	1.015 (all 8 filling points)	-	-

[Appendix A](#) presents the summary calculations for the derived mass emission rates.

2.4.2 Cumulative Emissions Impacts

To adequately assess the Adjacent service station site together with the proposed Site, EAQ has adopted the reported operational data in the LWC report (footnote 1) as listed in **Table 2-8**.

Table 2-8: Adjacent service station site's operational data

Parameter	Operational Data
Operating hours	24 hours / 7 days per week
Tanker delivery	Maximum 40,000 L/hour
Average Daily Refuelling Volume	13,800 L
Vent stack	4.0 m high @ 75mm diameter
Filling Stations/Bowsers	3 x Bowsers / 6 x Grade filling points
Fuel Storage	Diesel 50 kL, ULP 130 kL.

Table 2-9 lists the summarised maximum emission rates, derived as described above, for the Adjacent service station site adopting VR1 and VR2 emissions controls.

Table 2-9: Summary of Adjacent site's Fuel Service Station Emissions

Emission Source	Emission Type	Peak VOC Mass Emission Rate (g/s)	Stack Diameter (m)	Emission Velocity (m/s)
Storage Tanker Vent Stack	Bulk Filling (Vapour Balance and Breathing Losses) – VR1	0.178	0.075	0.1
Passive Emissions from Vehicle Refuelling (VR 1 & 2)	Refuelling Losses (Controlled), Spillages (controlled/uncontrolled), and maximum "Whoosh" Emissions	0.410 (all 6 filling points)	-	-

3 Aermod Dispersion Modelling Methods

3.1 Meteorology

A 2-year annual dataset (April-2020-to-April-2022) of meteorology was developed using surface observations from the Mandurah Bureau of Meteorology (BoM) Automatic Weather Station (AWS) and CSIRO's TAPM prognostic model for upper air characteristics. The Mandurah BoM AWS is approximately 12 kms south, south-west of the Site and representative of the assessment domain given the Site's and AWS's proximity to the coastline and separated by approximately 0.05 decimal degrees of latitude (approx., 4 kms).

3.2 Sensitive Receptors

Discrete sensitive receptors representing commercial, residential, and the Child Care Facilities were placed at locations closest and surrounding the Site (refer **Figure 1-1**). These receptors were analysed for their ground level impact concentrations of vapour emissions and compared against regulatory guidelines.

3.3 Building Profile Input Program (BPIP)

Building wake effects occur for those vertical stack emissions, in this case passive ventilation of the storage tank vent. An example of the Aermod Input File is presented in [Appendix B](#).

3.4 Dispersion Modelling Limitations

By definition, air quality models can only approximate atmospheric processes. Many assumptions and simplifications are required to describe real phenomena in mathematical equations. Model uncertainties can result from:

- Simplifications and accuracy limitations related to source data;
- Extrapolation of meteorological data from selected locations to a larger region; and
- Simplifications to model physics to replicate the random nature of atmospheric dispersion processes.

Models are reasonable and reliable in estimating the maximum concentrations occurring on an average basis. That is, the maximum concentration that may occur at a given time somewhere within the model domain, as opposed to the exact concentration at a point at a given time will usually be within the $\pm 10\%$ to $\pm 40\%$ range (US EPA, 2003).

Typically, a model is viewed as replicating dispersion processes if it can predict within a factor of two, and if it can replicate the temporal and meteorological variations associated with monitoring data. Model predictions at a specific site and for a specific hour, however, may correlate poorly with the associated observations due to the above-indicated uncertainties. For example, an uncertainty of 5° to 10° in the measured wind direction can result in concentration errors of 20% to 70% for an individual event (US EPA, 2003).

4 Assessment Results & Discussion

The Assessment of the Proposed Aurea Boulevard Fuel Service Station, and accounting for cumulative emissions' impacts from the Adjacent service station site, has projected ground level concentrations (GLCs) at the nearest sensitive receptors (refer **Figures 1-1** and **1-3**) for assessed pollutants of BTEX (Benzene, Toluene, Ethyl benzene, Xylenes), Cyclohexane, *n*-Hexane and Styrene that are below the guideline exposure standards when employing both VR1 and VR2.

These pollutants were assessed by firstly modelling Total VOCs as a function of emission factors for fuel storage and vehicle dispensing volumes according to those methods in [Section 2](#).

Those Total VOC GLCs projected were then revised to determine the percentage mass emission rate contributions for these pollutants (**refer Table 2-2**).

Table 4-1 list each predicted pollutant concentration for each averaging period at those assessed sensitive receptors. These pollutant concentrations are revised based on each compounds vapour contribution to petrol VOC emissions. Additionally, these predicted pollutant concentrations reflect both VR1 and VR2 vapour recovery.

Within **Table 4-1** is each pollutants respective assessment criteria, the projected GLCs from the modelling Assessment and the revised projected GLCs at the nearest sensitive receptor (refer **Figures 1-1** and **1-3**) with a Percentage of Exposure Limit Value (%). This value represents the percentage ratio of projected GLCs compared to the assessment criteria for each pollutant.

A % < 100 % shows that the projected concentration at the sensitive receptor location achieves less than the assessment criteria i.e PASS, whereas % ≥ 100 % shows non-compliance against the assessment criteria i.e., FAIL.

The magnitude of the compliance PASS/FAIL can be readily gauged by the size of the Percentage of Exposure Limit Value (%).

- All GLC values reported for each sensitive receptor are the maximum, Rank 1 values for all averaging periods; and
- All units of concentration are in $\mu\text{g}/\text{m}^3$ unless stated otherwise.

In reviewing the predicted GLCs for those pollutants in **Table 4-1**, within this Assessment, the pollutant emissions at the nearest sensitive receptors are less than the exposure limits in ambient air when employing VR1 and VR2 vapour recovery.

Based on the predicted ground level concentrations using VR1 and VR2, vapours from the Site, and cumulative vapours from the Site and Adjacent site, will not negatively impact the health of the nearest sensitive receptor or sensitive land use within the Locality.

Table 4-1: Proposed Site - Assessment Results for GLC's of Pollutants (VR1 & VR2) @ Nearest Urban Dwellings

Receptor Location	Pollutant	Averaging Period	Exposure Limit (DWER) $\mu\text{g}/\text{m}^3$ at 25°C	Predicted GLC ($\mu\text{g}/\text{m}^3$)	% of CF	Pass/Fail	Averaging Period	Exposure Limit (DWER) $\mu\text{g}/\text{m}^3$ at 25°C	Predicted GLC ($\mu\text{g}/\text{m}^3$)	% of CF	Pass/Fail
North	Benzene	1-hour	29	7.69	26.52%	Pass	Annual	9.6	0.17	1.79%	Pass
West				8.27	28.53%	Pass			0.15	1.58%	Pass
SW				8.94	30.82%	Pass			0.21	2.22%	Pass
SSE				4.84	16.70%	Pass			0.10	1.03%	Pass
North	Toluene	24-hour	3,770	0.84	0.02%	Pass	Annual	377	0.20	0.05%	Pass
West				0.83	0.02%	Pass			0.17	0.05%	Pass
SW				1.01	0.03%	Pass			0.24	0.06%	Pass
SSE				0.68	0.02%	Pass			0.11	0.03%	Pass
North	Ethyl benzene	1-hour	8,000	0.64	0.01%	Pass	Annual	270	0.01	0.01%	Pass
West				0.69	0.01%	Pass			0.01	0.00%	Pass
SW				0.74	0.01%	Pass			0.02	0.01%	Pass
SSE				0.40	0.01%	Pass			0.01	0.00%	Pass
North	Xylenes	24-hour	1,080	0.34	0.03%	Pass	Annual	870	0.08	0.01%	Pass
West				0.33	0.03%	Pass			0.07	0.01%	Pass
SW				0.40	0.04%	Pass			0.10	0.01%	Pass
SSE				0.27	0.03%	Pass			0.05	0.01%	Pass
North	Cyclohexane	1-hour	190	0.52	0.27%	Pass					
West				0.55	0.29%	Pass					
SW				0.60	0.32%	Pass					
SSE				0.32	0.17%	Pass					
North	n-Hexane	1-hour	3,200	14.00	0.44%	Pass					
West				15.07	0.47%	Pass					
SW				16.27	0.51%	Pass					
SSE				8.82	0.28%	Pass					
North	Styrene	1-hour	64	0.02	0.04%	Pass					
West				0.02	0.04%	Pass					
SW				0.03	0.04%	Pass					
SSE				0.01	0.02%	Pass					

Table 4-2: Proposed Site & Adjacent site – CUMULATIVE Assessment Results for GLC's of Pollutants (VR1 & VR2) @ Nearest Urban Dwellings

Receptor Location	Pollutant	Averaging Period	Exposure Limit (DWER) $\mu\text{g}/\text{m}^3$ at 25°C	Predicted GLC ($\mu\text{g}/\text{m}^3$)	% of CF	Pass/Fail	Averaging Period	Exposure Limit (DWER) $\mu\text{g}/\text{m}^3$ at 25°C	Predicted GLC ($\mu\text{g}/\text{m}^3$)	% of CF	Pass/Fail
North	Benzene	1-hour	29	8.86	30.56%	Pass	Annual	9.6	0.19	2.02%	Pass
West				12.87	44.36%	Pass			0.18	1.83%	Pass
SW				10.98	37.86%	Pass			0.26	2.67%	Pass
SSE				9.43	32.52%	Pass			0.22	2.28%	Pass
North	Toluene	24-hour	3,770	0.95	0.03%	Pass	Annual	377	0.22	0.06%	Pass
West				1.12	0.03%	Pass			0.20	0.05%	Pass
SW				1.22	0.03%	Pass			0.29	0.08%	Pass
SSE				1.25	0.03%	Pass			0.25	0.07%	Pass
North	Ethyl benzene	1-hour	8,000	0.74	0.01%	Pass	Annual	270	0.02	0.01%	Pass
West				1.07	0.01%	Pass			0.01	0.01%	Pass
SW				0.91	0.01%	Pass			0.02	0.01%	Pass
SSE				0.79	0.01%	Pass			0.02	0.01%	Pass
North	Xylenes	24-hour	1,080	0.38	0.04%	Pass	Annual	870	0.09	0.01%	Pass
West				0.45	0.04%	Pass			0.08	0.01%	Pass
SW				0.49	0.05%	Pass			0.12	0.01%	Pass
SSE				0.50	0.05%	Pass			0.10	0.01%	Pass
North	Cyclohexane	1-hour	190	0.59	0.31%	Pass					
West				0.86	0.45%	Pass					
SW				0.74	0.39%	Pass					
SSE				0.63	0.33%	Pass					
North	n-Hexane	1-hour	3,200	16.14	0.50%	Pass					
West				23.43	0.73%	Pass					
SW				19.99	0.62%	Pass					
SSE				17.17	0.54%	Pass					
North	Styrene	1-hour	64	0.03	0.04%	Pass					
West				0.04	0.06%	Pass					
SW				0.03	0.05%	Pass					
SSE				0.03	0.04%	Pass					

Table 4-3: Proposed Site & Adjacent site – CUMULATIVE Assessment Results for GLC's of Pollutants (VR1 & VR2) @ Child Care Facilities

Receptor Location	Pollutant	Averaging Period	Exposure Limit (DWER) $\mu\text{g}/\text{m}^3$ at 25°C	Predicted GLC ($\mu\text{g}/\text{m}^3$)	% of CF	Pass/Fail	Averaging Period	Exposure Limit (DWER) $\mu\text{g}/\text{m}^3$ at 25°C	Predicted GLC ($\mu\text{g}/\text{m}^3$)	% of CF	Pass/Fail
CC1	Benzene	1-hour	29	21.93	75.62%	Pass	Annual	9.6	0.40	4.16%	Pass
CC2				26.98	93.03%	Pass			0.58	6.03%	Pass
CC3				17.00	58.61%	Pass			0.30	3.07%	Pass
CC4				13.61	46.92%	Pass			0.20	2.12%	Pass
CC5				15.19	52.37%	Pass			0.23	2.44%	Pass
CC6				10.88	37.52%	Pass			0.15	1.56%	Pass
CC1	Toluene	24-hour	3,770	1.93	0.05%	Pass	Annual	377	0.45	0.12%	Pass
CC2				2.68	0.07%	Pass			0.66	0.17%	Pass
CC3				1.49	0.04%	Pass			0.34	0.09%	Pass
CC4				1.11	0.03%	Pass			0.23	0.06%	Pass
CC5				1.25	0.03%	Pass			0.27	0.07%	Pass
CC6				0.85	0.02%	Pass			0.17	0.05%	Pass
CC1	Ethyl benzene	1-hour	8,000	1.83	0.02%	Pass	Annual	270	0.03	0.01%	Pass
CC2				2.25	0.03%	Pass			0.05	0.02%	Pass
CC3				1.42	0.02%	Pass			0.02	0.01%	Pass
CC4				1.13	0.01%	Pass			0.02	0.01%	Pass
CC5				1.26	0.02%	Pass			0.02	0.01%	Pass
CC6				0.91	0.01%	Pass			0.01	0.00%	Pass
CC1	Xylenes	24-hour	1,080	0.77	0.07%	Pass	Annual	870	0.18	0.02%	Pass
CC2				1.08	0.10%	Pass			0.26	0.03%	Pass
CC3				0.60	0.06%	Pass			0.13	0.02%	Pass
CC4				0.44	0.04%	Pass			0.09	0.01%	Pass
CC5				0.50	0.05%	Pass			0.11	0.01%	Pass
CC6				0.34	0.03%	Pass			0.07	0.01%	Pass



Receptor Location	Pollutant	Averaging Period	Exposure Limit (DWER) $\mu\text{g}/\text{m}^3$ at 25°C	Predicted GLC ($\mu\text{g}/\text{m}^3$)	% of CF	Pass/Fail
CC1	Cyclohexane	1-hour	190	1.47	0.77%	Pass
CC2				1.81	0.95%	Pass
CC3				1.14	0.60%	Pass
CC4				0.91	0.48%	Pass
CC5				1.02	0.54%	Pass
CC6				0.73	0.38%	Pass
CC1	<i>n</i> -Hexane	1-hour	3,200	39.94	1.25%	Pass
CC2				49.13	1.54%	Pass
CC3				30.95	0.97%	Pass
CC4				24.78	0.77%	Pass
CC5				27.66	0.86%	Pass
CC6				19.82	0.62%	Pass
CC1	Styrene	1-hour	64	0.07	0.10%	Pass
CC2				0.08	0.13%	Pass
CC3				0.05	0.08%	Pass
CC4				0.04	0.06%	Pass
CC5				0.05	0.07%	Pass
CC6				0.03	0.05%	Pass



Appendix A: Emissions Calculations

Bowser		Number of Dispensing Nozzles		8		hour		% daily volume/hr		Petrol Throughput (L/hr)		% to peak hr		L/hr		L/s		g/s		Final Value		Per Bowser		Emission Source		NPI 1999		CAPCOA		CAPCOA	
VR2		Peak Hourly Volume at Bowsers (transactions [40-50/hr] x Litres per car)		1,575		1		1.20%		307		19.51%		307		0.085		0.198		0.198		0.050				mg/L throughput		Lbs/1000 Gallons throughput		mg/L throughput	
		CAPCOA (Lbs/1000gallons to mg/L)		2,320		2		0.80%		205		13.01%		205		0.057		0.132		0.132		0.033		Underground Tank Filling							
		CAPCOA (Lbs/1000gallons to g/L)		2.320		3		0.60%		154		9.76%		154		0.043		0.099		0.099		0.025		Submerged Filling		880		8.4		1007	
		Losses (g/L)		2.320		4		0.80%		205		13.01%		205		0.057		0.132		0.132		0.033		Splash Filling		1380					
		VR 2 - 10% Losses (g/L)		2.320		5		1.90%		487		30.89%		487		0.135		0.314		0.314		0.078		Submerged filling with vapour balance		40		0.42		50	
		ESTIMATED TOTAL DAILY (24hr) VOLUME (L)		25,610		6		4.60%		1,178		74.80%		1,178		0.327		0.759		0.759		0.190		Underground tank breathing losses		120		0.84		101	
		E10 Volatilisation		1.5		7		5.50%		1,409		89.43%		1,409		0.391		0.908		0.908		0.227		Vehicle Refuelling							
		E10 % of T-Volumes		0%		8		5.70%		1,460		92.68%		1,460		0.405		0.941		0.941		0.235		Displacement Losses (uncontrolled)		1320		8.4		1007	
		E10 Fuel Ratio Factor		0		9		5.50%		1,409		89.43%		1,409		0.391		0.908		0.908		0.227		Displacement Losses (90% controlled e.g VRU 7)		132		0.74		89	
		% of Other Fuels		100%		10		5.70%		1,460		92.68%		1,460		0.405		0.941		0.941		0.235		Spillages							
		Fuel Ratio Factor		1.000		11		6.00%		1,537		97.56%		1,537		0.427		0.990		0.990		0.248		Uncontrolled		80		0.61		73	
						12		6.00%		1,537		97.56%		1,537		0.427		0.990		0.990		0.248		Controlled				0.41		49	
Storage Tanks		Time to Fill Tank		40		13		5.70%		1,460		92.68%		1,460		0.405		0.941		0.941		0.235		"Whoosh" Emissions				0.26 - 0.66		79	
VR 1		Total Volume/hr		60000		14		5.60%		1,434		91.06%		1,434		0.398		0.924		0.924		0.231		"Whoosh" Emissions (averaged)				0.46		79	
		NPI 1999		160		15		5.90%		1,511		95.93%		1,511		0.420		0.974		0.974		0.243		Diesel		176					
				9600000		16		6.15%		1,575		100.00%		1,575		0.438		1.015		1.015		0.254		LPG		0.04					
				9600.000		17		6.15%		1,575		100.00%		1,575		0.438		1.015		1.015		0.254									
				2.667		18		5.80%		1,485		94.31%		1,485		0.413		0.957		0.957		0.239									
		4.5m High Vent Rate		0.00079		19		5.10%		1,306		82.93%		1,306		0.363		0.842		0.842		0.210									
		VR1 10% losses		0.267		20		4.00%		1,024		65.04%		1,024		0.285		0.660		0.660		0.165									
		Final Value		0.267		21		3.50%		896		56.91%		896		0.249		0.578		0.578		0.144									
		Annually		8410666.667		22		3.40%		871		55.28%		871		0.242		0.561		0.561		0.140									
				8410.666667		23		2.60%		666		42.28%		666		0.185		0.429		0.429		0.107									
				23.04292237		24		1.80%		461		29.27%		461		0.128		0.297		0.297		0.074									
		Deliveries weekly		2.869				100.0%		25610						Max		1.015		0.254											
		Per delivery		0.960												SUM		16.5029		4.1257											
				0.267												Per Nozzle		2.0629		2.0629											
		Cars per hour		45																											
		L per car on average		35																											
		Peak Volumes Dispensed		1575																											
		Maximum Tanker Delivery (kL/hr)		60																											
		Types of Fuel		Diesel, ULT Diesel, 91, 95, 98																											
		Fuel Storage (kL)		Diesel		40		22.22%																							
				ULP 91		80		44.44%																							
				ULP 95		30		16.67%																							
				ULP 98		30		16.67%																							
		Daily Sales		25610																											
		Annual Sales		9,347,561																											
		Tanker Volume		90000																											
		Deliveries per week		3.0																											

Bowser		Number of Dispensing Nozzles		6	
VR2	Peak Hourly Volume at Bowsers (transactions [40-50/hr] x Litres per car)	849			
	CAPCOA (Lbs/1000gallons to mg/L)	1,740 mg/L			
	CAPCOA (Lbs/1000gallons to g/L)	1.740 g/L			
	Losses (g/L)	1.740 g/L/hr			
	VR 2 - 10% Losses (g/L)	1.740 g/L/hr			
	ESTIMATED TOTAL DAILY (24hr) VOLUME (L)	13,800			
	E10 Volatilisation	1.5			
	E10 % of T-Volumes	0%			
	E10 Fuel Ratio Factor	0			
	% of Other Fuels	100%			
	Fuel Ratio Factor	1.000			
Storage Tanks		Time to Fill Tank		40 minutes	
VR 1	Total Volume/hr	40000 L/hr			
	NPI 1999	160 mg/L			
		6400000 mg/hr			
		6400.000 g/hr			
		1.778 g/s			
	4.0m High Vent Rate	0.00044 m3/s			
	VR1 10% losses	0.178 g/s			
	Final Value	0.178 g/s			
	Annually	5607111.111 grams			
		5607.111111 kgs			
		15.36194825 kgs/day			
	Deliveries weekly	1.546 kgs			
	Per delivery	0.640 kg/hr			
		0.178 g/s			
		Cars per hour		45	
		L per car on average		35	
		Peak Volumes Dispensed		1575	
		Maximum Tanker Delivery (kL/hr)		40	
		Types of Fuel Diesel, ULT Diesel, 91, 95, 98			
		Fuel Storage (kL) Diesel		50	
		ULP 91		130	
		ULP 95			
		ULP 98			
		Daily Sales		13800	
		Annual Sales		5,037,089	
		Tanker Volume		60000	
		Deliveries per week		2.4	
		Annual Fuel Sales		5,037,089	
		Annual Bulk Volume		6,240,000	
		hour		% daily volume/hr	
		1		1.20%	
		2		0.80%	
		3		0.60%	
		4		0.80%	
		5		1.90%	
		6		4.60%	
		7		5.50%	
		8		5.70%	
		9		5.50%	
		10		5.70%	
		11		6.00%	
		12		6.00%	
		13		5.70%	
		14		5.60%	
		15		5.90%	
		16		6.15%	
		17		6.15%	
		18		5.80%	
		19		5.10%	
		20		4.00%	
		21		3.50%	
		22		3.40%	
		23		2.60%	
		24		1.80%	
		100.0%		13800	
		L/hr		% to peak hr	
		166		19.51%	
		110		13.01%	
		83		9.76%	
		110		13.01%	
		262		30.89%	
		635		74.80%	
		759		89.43%	
		787		92.68%	
		759		89.43%	
		787		92.68%	
		828		97.56%	
		828		97.56%	
		787		92.68%	
		773		91.06%	
		814		95.93%	
		849		100.00%	
		849		100.00%	
		800		94.31%	
		704		82.93%	
		552		65.04%	
		483		56.91%	
		469		55.28%	
		359		42.28%	
		248		29.27%	
		Max		0.410	
		SUM		6.6697	
		Per Nozzle		1.1116	
		Per Bowser		0.027	
		0.018		0.018	
		0.013		0.013	
		0.018		0.018	
		0.042		0.042	
		0.102		0.102	
		0.122		0.122	
		0.127		0.127	
		0.122		0.122	
		0.127		0.127	
		0.133		0.133	
		0.133		0.133	
		0.127		0.127	
		0.125		0.125	
		0.131		0.131	



Appendix B: Example of AERMOD Input File

```

1  **
2  *****
3  **
4  ** AERMOD Input Produced by:
5  ** AERMOD View Ver. 11.2.0
6  ** Lakes Environmental Software Inc.
7  ** Date: 14/03/2023
8  ** File: D:\MyAERMOD\22031\CCare\CCare.ADI
9  **
10 *****
11 **
12 **
13 *****
14 ** AERMOD Control Pathway
15 *****
16 **
17 **
18 CO STARTING
19     TITLEONE D:\MyAERMOD\22025\22025\22025.isc
20     MODELOPT CONC FLAT ELEV
21     AVERTIME 1 24 ANNUAL
22     POLLUTID VOC
23     RUNORNOT RUN
24     ERRORFIL CCare.err
25 CO FINISHED
26 **
27 *****
28 ** AERMOD Source Pathway
29 *****
30 **
31 **
32 SO STARTING
33 ** Source Location **
34 ** Source ID - Type - X Coord. - Y Coord. **
35     LOCATION BOWS1          VOLUME      383440.786   6412281.504       5.740
36 ** DESCRSRC Bowser 1
37     LOCATION BOWS2          VOLUME      383433.068   6412293.656       5.910
38 ** DESCRSRC Bowser 2
39     LOCATION BOWS3          VOLUME      383429.824   6412299.970       6.000
40 ** DESCRSRC Bowser 3
41     LOCATION BOWS4          VOLUME      383437.060   6412287.672       5.780
42 ** DESCRSRC Bowser 4
43     LOCATION VOL1           VOLUME      383496.907   6412254.851       5.360
44 ** DESCRSRC Bowser 1 Adjacent
45     LOCATION VENT           POINTCAP    383447.028   6412275.848       5.700
46 ** DESCRSRC Tank Breather
47     LOCATION VOL2           VOLUME      383503.634   6412244.716       5.730
48 ** DESCRSRC Bowser 1 Adjacent
49     LOCATION VOL3           VOLUME      383510.446   6412233.859       5.960
50 ** DESCRSRC Bowser 1 Adjacent
51     LOCATION STCK2          POINTCAP    383487.087   6412266.425       5.080
52 ** DESCRSRC Tank Breather Adjacent
53 ** Source Parameters **
54     SRCPARAM BOWS1          1.0         1.200         1.395         2.233
55     SRCPARAM BOWS2          1.0         1.200         1.395         2.233
56     SRCPARAM BOWS3          1.0         1.200         1.395         2.233
57     SRCPARAM BOWS4          1.0         1.200         1.395         2.233
58     SRCPARAM VOL1           1.0         1.200         1.395         2.233
59     SRCPARAM VENT           1.0         4.500        298.150         0.1           0.1
60     SRCPARAM VOL2           1.0         1.200         1.395         2.233
61     SRCPARAM VOL3           1.0         1.200         1.395         2.233
62     SRCPARAM STCK2          1.0         4.500        298.150         0.1           0.75
63
64 ** Building Downwash **
65     BUILDHGT VENT           0.00        0.00        0.00        0.00        0.00        7.00
66     BUILDHGT VENT           7.00        7.00        7.00        7.00        7.00        7.00
67     BUILDHGT VENT           7.00        0.00        0.00        0.00        0.00        0.00
68     BUILDHGT VENT           0.00        0.00        0.00        0.00        0.00        7.00
69     BUILDHGT VENT           7.00        7.00        7.00        7.00        7.00        7.00
70     BUILDHGT VENT           7.00        0.00        0.00        0.00        0.00        0.00
71
72     BUILDHGT STCK2          0.00        0.00        0.00        0.00        0.00        0.00
73     BUILDHGT STCK2          0.00        0.00        0.00        0.00        0.00        0.00

```


74	BUILDHGT	STCK2	7.00	0.00	0.00	0.00	0.00	0.00
75	BUILDHGT	STCK2	0.00	0.00	0.00	0.00	0.00	0.00
76	BUILDHGT	STCK2	7.00	7.00	7.00	7.00	7.00	7.00
77	BUILDHGT	STCK2	7.00	0.00	0.00	0.00	0.00	0.00
78								
79	BUILDWID	VENT	0.00	0.00	0.00	0.00	0.00	31.87
80	BUILDWID	VENT	30.15	28.01	25.75	23.49	20.82	18.95
81	BUILDWID	VENT	16.51	0.00	0.00	0.00	0.00	0.00
82	BUILDWID	VENT	0.00	0.00	0.00	0.00	0.00	31.87
83	BUILDWID	VENT	30.15	28.01	25.75	23.49	20.82	18.95
84	BUILDWID	VENT	16.51	0.00	0.00	0.00	0.00	0.00
85								
86	BUILDWID	STCK2	0.00	0.00	0.00	0.00	0.00	0.00
87	BUILDWID	STCK2	0.00	0.00	0.00	0.00	0.00	0.00
88	BUILDWID	STCK2	29.12	0.00	0.00	0.00	0.00	0.00
89	BUILDWID	STCK2	0.00	0.00	0.00	0.00	0.00	0.00
90	BUILDWID	STCK2	44.01	43.53	41.72	38.65	35.78	32.95
91	BUILDWID	STCK2	29.12	0.00	0.00	0.00	0.00	0.00
92								
93	BUILDLLEN	VENT	0.00	0.00	0.00	0.00	0.00	14.08
94	BUILDLLEN	VENT	19.35	24.04	28.00	31.11	33.27	34.42
95	BUILDLLEN	VENT	34.52	0.00	0.00	0.00	0.00	0.00
96	BUILDLLEN	VENT	0.00	0.00	0.00	0.00	0.00	14.08
97	BUILDLLEN	VENT	19.35	24.04	28.00	31.11	33.27	34.42
98	BUILDLLEN	VENT	34.52	0.00	0.00	0.00	0.00	0.00
99								
100	BUILDLLEN	STCK2	0.00	0.00	0.00	0.00	0.00	0.00
101	BUILDLLEN	STCK2	0.00	0.00	0.00	0.00	0.00	0.00
102	BUILDLLEN	STCK2	47.05	0.00	0.00	0.00	0.00	0.00
103	BUILDLLEN	STCK2	0.00	0.00	0.00	0.00	0.00	0.00
104	BUILDLLEN	STCK2	28.75	34.86	39.92	43.76	46.28	47.38
105	BUILDLLEN	STCK2	47.05	0.00	0.00	0.00	0.00	0.00
106								
107	XBADJ	VENT	0.00	0.00	0.00	0.00	0.00	-26.39
108	XBADJ	VENT	-31.92	-36.49	-39.95	-42.19	-43.16	-42.81
109	XBADJ	VENT	-41.16	0.00	0.00	0.00	0.00	0.00
110	XBADJ	VENT	0.00	0.00	0.00	0.00	0.00	12.31
111	XBADJ	VENT	12.57	12.45	11.95	11.09	9.89	8.39
112	XBADJ	VENT	6.63	0.00	0.00	0.00	0.00	0.00
113								
114	XBADJ	STCK2	0.00	0.00	0.00	0.00	0.00	0.00
115	XBADJ	STCK2	0.00	0.00	0.00	0.00	0.00	0.00
116	XBADJ	STCK2	12.11	0.00	0.00	0.00	0.00	0.00
117	XBADJ	STCK2	0.00	0.00	0.00	0.00	0.00	0.00
118	XBADJ	STCK2	-45.20	-51.84	-56.91	-60.25	-61.76	-61.39
119	XBADJ	STCK2	-59.16	0.00	0.00	0.00	0.00	0.00
120								
121	YBADJ	VENT	0.00	0.00	0.00	0.00	0.00	18.51
122	YBADJ	VENT	15.48	11.74	7.26	2.97	-1.29	-6.23
123	YBADJ	VENT	-10.98	0.00	0.00	0.00	0.00	0.00
124	YBADJ	VENT	0.00	0.00	0.00	0.00	0.00	-18.51
125	YBADJ	VENT	-15.48	-11.74	-7.26	-2.97	1.29	6.23
126	YBADJ	VENT	10.98	0.00	0.00	0.00	0.00	0.00
127								
128	YBADJ	STCK2	0.00	0.00	0.00	0.00	0.00	0.00
129	YBADJ	STCK2	0.00	0.00	0.00	0.00	0.00	0.00
130	YBADJ	STCK2	13.07	0.00	0.00	0.00	0.00	0.00
131	YBADJ	STCK2	0.00	0.00	0.00	0.00	0.00	0.00
132	YBADJ	STCK2	24.65	19.81	14.36	8.48	1.64	-5.80
133	YBADJ	STCK2	-13.07	0.00	0.00	0.00	0.00	0.00
134								
135								
136	** Variable Emissions Type:	"By Hour-of-Day (HROFDY)"						
137	** Variable Emission Scenario:	"HrOfDay-LBug20"						
138	EMISFACT	BOWS1	HROFDY	0.0	0.0	0.0	0.0	0.19
139	EMISFACT	BOWS1	HROFDY	0.227	0.235	0.227	0.235	0.248
140	EMISFACT	BOWS1	HROFDY	0.235	0.231	0.243	0.254	0.239
141	EMISFACT	BOWS1	HROFDY	0.0	0.0	0.0	0.0	0.0
142	EMISFACT	BOWS2	HROFDY	0.0	0.0	0.0	0.0	0.19
143	EMISFACT	BOWS2	HROFDY	0.227	0.235	0.227	0.235	0.248
144	EMISFACT	BOWS2	HROFDY	0.235	0.231	0.243	0.254	0.239
145	EMISFACT	BOWS2	HROFDY	0.0	0.0	0.0	0.0	0.0
146	EMISFACT	BOWS3	HROFDY	0.0	0.0	0.0	0.0	0.19

147	EMISFACT	BOWS3	HROFDY	0.227	0.235	0.227	0.235	0.248	0.248
148	EMISFACT	BOWS3	HROFDY	0.235	0.231	0.243	0.254	0.254	0.239
149	EMISFACT	BOWS3	HROFDY	0.0	0.0	0.0	0.0	0.0	0.0
150	EMISFACT	BOWS4	HROFDY	0.0	0.0	0.0	0.0	0.0	0.19
151	EMISFACT	BOWS4	HROFDY	0.227	0.235	0.227	0.235	0.248	0.248
152	EMISFACT	BOWS4	HROFDY	0.235	0.231	0.243	0.254	0.254	0.239
153	EMISFACT	BOWS4	HROFDY	0.0	0.0	0.0	0.0	0.0	0.0
154									
155	** Variable	Emissions Type: "By Hour / Seven Days (HRDOW7)"							
156	** Variable	Emission Scenario: "LBUG20 Vent"							
157	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.267
158	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.267
159	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.0
160	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.267
161	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.267
162	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.0
163	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.0
164	EMISFACT	VENT	HRDOW7	0.267	0.0	0.0	0.0	0.0	0.267
165	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.0
166	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.0
167	EMISFACT	VENT	HRDOW7	0.0	0.267	0.0	0.0	0.0	0.0
168	EMISFACT	VENT	HRDOW7	0.267	0.0	0.0	0.0	0.0	0.0
169	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.0
170	EMISFACT	VENT	HRDOW7	0.0	0.0	0.267	0.0	0.0	0.0
171	EMISFACT	VENT	HRDOW7	0.0	0.267	0.0	0.0	0.0	0.0
172	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.0
173	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.267	0.0	0.0
174	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.0
175	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.0
176	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.267	0.0
177	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.0
178									
179	** Variable	Emissions Type: "By Hour-of-Day (HROFDY)"							
180	** Variable	Emission Scenario: "HrOfDay-Adjacent"							
181	EMISFACT	VOL1	HROFDY	0.0	0.0	0.0	0.0	0.0	0.102
182	EMISFACT	VOL1	HROFDY	0.122	0.127	0.122	0.127	0.133	0.133
183	EMISFACT	VOL1	HROFDY	0.127	0.125	0.131	0.137	0.137	0.129
184	EMISFACT	VOL1	HROFDY	0.0	0.0	0.0	0.0	0.0	0.0
185	EMISFACT	VOL2	HROFDY	0.0	0.0	0.0	0.0	0.0	0.102
186	EMISFACT	VOL2	HROFDY	0.122	0.127	0.122	0.127	0.133	0.133
187	EMISFACT	VOL2	HROFDY	0.127	0.125	0.131	0.137	0.137	0.129
188	EMISFACT	VOL2	HROFDY	0.0	0.0	0.0	0.0	0.0	0.0
189	EMISFACT	VOL3	HROFDY	0.0	0.0	0.0	0.0	0.0	0.102
190	EMISFACT	VOL3	HROFDY	0.122	0.127	0.122	0.127	0.133	0.133
191	EMISFACT	VOL3	HROFDY	0.127	0.125	0.131	0.137	0.137	0.129
192	EMISFACT	VOL3	HROFDY	0.0	0.0	0.0	0.0	0.0	0.0
193									
194	** Variable	Emissions Type: "By Hour / Seven Days (HRDOW7)"							


```
220 SO FINISHED
221 **
222 *****
223 ** AERMOD Receptor Pathway
224 *****
225 **
226 **
227 RE STARTING
228     INCLUDED CCare.rou
229 RE FINISHED
230 **
231 *****
232 ** AERMOD Meteorology Pathway
233 *****
234 **
235 **
236 ME STARTING
237     SURFFILE 22025.SFC
238     PROFFILE 22025.PFL
239     SURFDATA 0 2020
240     UAIRDATA 0 2020
241     SITEDATA 0 2020
242     PROFBASE 7.0 METERS
243 ME FINISHED
244 **
245 *****
246 ** AERMOD Output Pathway
247 *****
248 **
249 **
250 OU STARTING
251     RECTABLE ALLAVE 1ST
252     RECTABLE 1 1ST
253     RECTABLE 24 1ST
254 ** Auto-Generated Plotfiles
255     PLOTFILE 1 ALL 1ST CCARE.AD\01H1GALL.PLT 31
256     PLOTFILE 24 ALL 1ST CCARE.AD\24H1GALL.PLT 32
257     PLOTFILE 1 Adjacent 1ST CCARE.AD\01H1G001.PLT 33
258     PLOTFILE 24 Adjacent 1ST CCARE.AD\24H1G001.PLT 34
259     PLOTFILE 1 LBug20 1ST CCARE.AD\01H1G002.PLT 35
260     PLOTFILE 24 LBug20 1ST CCARE.AD\24H1G002.PLT 36
261     PLOTFILE ANNUAL ALL CCARE.AD\AN00GALL.PLT 37
262     PLOTFILE ANNUAL Adjacent CCARE.AD\AN00G001.PLT 38
263     PLOTFILE ANNUAL LBug20 CCARE.AD\AN00G002.PLT 39
264     SUMMFILE CCare.sum
265 OU FINISHED
266 **
267 *****
268 ** Project Parameters
269 *****
270 ** PROJCTN  CoordinateSystemUTM
271 ** DESCPTN   UTM: Universal Transverse Mercator
272 ** DATUM     World Geodetic System 1984
273 ** DTMRGN    Global Definition
274 ** UNITS     m
275 ** ZONE      -50
276 ** ZONEINX   0
277 **
278
```



Engineering a better future for over 20 years!

Golden Bay Neighbourhood Centre

No.2 Aurea Boulevard Golden Bay

Revised Transport Impact Assessment

PREPARED FOR:
Ladybug Twenty Pty Ltd

May 2023

Document history and status

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1 Introduction

This Revised Transport Impact Assessment (TIA) has been prepared by Transcore on behalf of Ladybug Twenty Pty Ltd with regards to the proposed Golden Bay Neighbourhood Centre to be located at 2 Aurea Boulevard, Golden Bay.

This revised TIA aims to address the City of Rockingham's comments on the original TIA prepared by Transcore in February 2023. **Appendix A** of this TIA details the City's comments and Transcore responses to each comment. Accordingly, the development plan has been updated to address the relevant comments by City and this revised TIA also reflects the updated development plan.

The site is located at the north-west corner of the existing signalised intersection of Warnbro Sound Avenue/Aurea Boulevard (refer **Figure 1**). Thudelarra Drive forms the western boundary of the site and Aurea Blvd is located to the south of the site.

This revised TIA will establish the traffic generation and distribution of the proposed development. The operation of the proposed development left in/left out crossover on Aurea Blvd and the nearby intersections (Warnbro Sound Ave/ Aurea Blvd and Thudelarra Dr/ Aurea Blvd) for existing, post development and 10-year post development scenarios will also be investigated in this TIA.

This revised TIA also will review the development plan with respect to parking layout, parking supply and demand, access, egress, circulation and fuel tanker and service vehicle movements.

It should be noted that Transcore was involved with a similar development on the opposite side of Aurea Boulevard. This development has been approved by JDAP and is operational.



Figure 1: Location of the subject site

2 Development Proposal

The development proposal is for a Neighbourhood Centre comprising the following elements:

- Two Fast-food outlets with drive through facilities (approximately 525m² GFA in total);
- A Liquor Store with drive through facility (approximately 230m² GFA);
- A Supermarket (approximately 1,165m² GFA);
- Specialty shops (approximately 255m² GFA); and,
- A Service Station with eight filling points.

Parking provision shown in the development plan (**Appendix B**) is a total of 147 bays including four on-street bays and eight ACROD Bays. More discussions on parking supply and demand are provided in **section 7** of this TIA.

The proposed access/egress system intended to serve the development is shown in **Figure 2** and comprises the following elements:

- A full movement crossover on Thundelarra Drive (crossover 1);
- A left in/ left out crossover on Aurea Boulevard (crossover 2); and,
- A full movement crossover on Wyloo Lane (crossover 3).

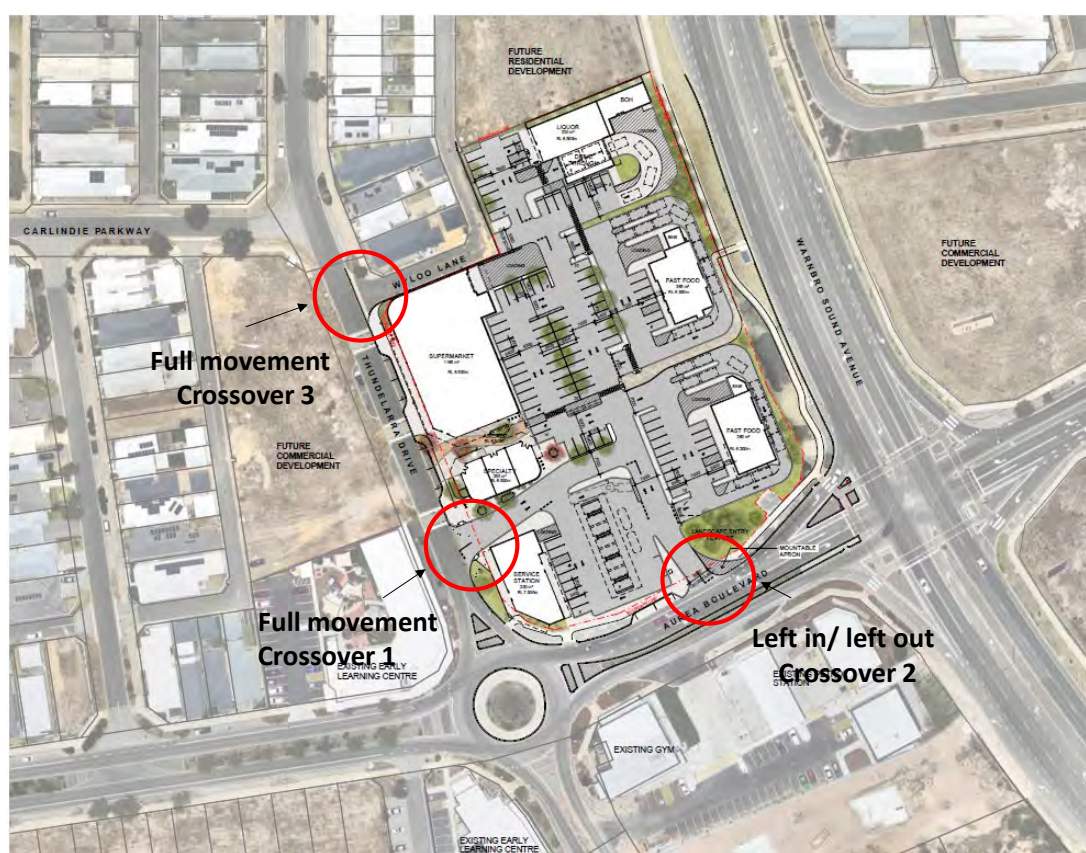


Figure 2. Proposed access/egress system

The Thundelarra Drive crossover is an existing crossover which would be modified slightly to accommodate the turning movements of service vehicles and fuel tanker.

The proposed crossover on Aurea Blvd is a left in/ left out crossover and would be located before the 70-degree left turn slip lane on Aurea Blvd. This crossover is important for effective and efficient circulation system for the development and in particular the land uses closest to the Aurea Boulevard.

The stacking capacity of the proposed fast-food outlets is reviewed against the RTA Guidelines requirements.

Section 5.8.1 of RTA Traffic Generating Developments document deals with the parking requirements for the drive-in and take-away food outlets. With respect to the drive through facilities this section states that:

An exclusive area for queuing of cars for a drive through is required (queue length of 5 to 12 cars measured from pick up point). There should also be a minimum of four car spaces for cars queued from the ordering point.

The proposed fast-food outlet 1 (265m²) provides a drive through facility with two Customer Order Booth (COB) and provision of 13 car stacking capacity including two waiting bays with minimum four car spaces available from the ordering points. Accordingly, the proposed drive through facility for the fast-food outlet 1 meets and exceeds the RTA drive through requirements.

The proposed fast-food outlet 2 (260m²) provides a drive through facility with two Customer Order Booth (COB) and provision of 11 car stacking capacity including two waiting bays with minimum four car spaces available from the ordering points. Accordingly, the proposed drive through facility for the fast-food outlet 2 meets the RTA drive through requirements.

The proposed liquor store drive through facility also provides eight car stacking capacity which is expected to be sufficient for its operations.

The stacking capacity of the proposed service station have been assessed in more detail in the next section of the report.

2.1 Stacking Capacity for service station

The stacking capacity of the service station component of the proposed development and detailed queue analysis at the filling points has been assessed in more detail to investigate the impacts of the higher than average site patronage during peak weekday operational periods. This analysis was undertaken to confirm the capacity of the service station to operate satisfactory under amplified traffic activity conditions (i.e. "cheap fuel" day).

Based on the estimated peak hour trip generation for the service station outlined in this report, it is estimated that the subject service station would attract up to 56 vehicles during the regular weekday PM peak hour (busiest peak hour). In order to

ensure a robust assessment, it is assumed that the trade on “cheap fuel” day would be 50% higher than the typical peak weekday PM hour. Accordingly, it is conservatively assumed that the proposed service station would attract about 84 cars per hour on this occasion.

The experience indicates that, under normal circumstances, the rate of service per fill point (time taken for a vehicle to arrive, park at a fill point, get fuel, pay for fuel and leave the fill point and service station site) is usually between 2-3 minutes. In some circumstances refuelling time may extend to about 5 minutes when window washing or other similar activities are practiced. However, during the “cheap fuel” day periods and due to high turnover of vehicles and “pressure” from the patrons waiting behind the parked vehicle to access the bowser, the refuelling activity is always shortened and typically in order of up to 3min maximum. In this case, and in order to allow for a robust assessment, the service time is assumed to be conservatively 4 minutes. Accordingly, a service rate of 240sec (15 vehicles per hour) was assumed for weekday PM peak “cheap fuel” peak hour.

It is assumed that all bowsers will be in operation during the peak periods, giving an order taking service rate and capacity of 120 vehicles per hour, which is significantly more than the estimated higher ‘cheap fuel day’ PM peak hour trip generation. It is also assumed that cars would enter the service channel with the shortest queue, therefore over the peak hour the transactions at each service channel would be evenly split.

A queue length analysis was undertaken to assess the provision of storage for vehicles within the service channels. For this purpose, an M/M/1 queuing model was adopted for each bowser. The M/M/1 is a single-server queue model that can be used to approximate simple systems.

The queuing model adopts the following assumptions:

- ✚ Vehicles arrive unevenly following Poisson’s probability distribution;
- ✚ Service time is exponentially distributed;
- ✚ There is one server per queue, i.e. there are 8 queues, one for each bowser;
- ✚ The capacity of the queue in which arriving users wait before being served is infinite (for the purposes of identifying queue space requirements);
- ✚ The population of users (i.e. the pool of users) available to join the system is infinite; and,
- ✚ The queue is serviced on a first come, first served basis.

The results of the queuing analysis are detailed in **Figure 3**. In summary, critical “cheap fuel” hour queuing analysis of the service station established the following for the worst-case scenario:

- ✚ The system utilisation is at 70% during the “cheap fuel” hour;
- ✚ The expected number in the system (refuelling) is 7 vehicles;
- ✚ The expected time in the queue is 267 seconds; and,
- ✚ The 95th percentile queue within the whole system is 12 cars (8 cars refuelling and 4 cars waiting).

The queue length usually adopted for robust analysis is the 95th percentile queue. Assuming equal queue distribution it is estimated that in the worst-case scenario there will be one vehicle waiting behind each refuelling vehicle at four bowzers. The service station layout can accommodate this level of queuing.

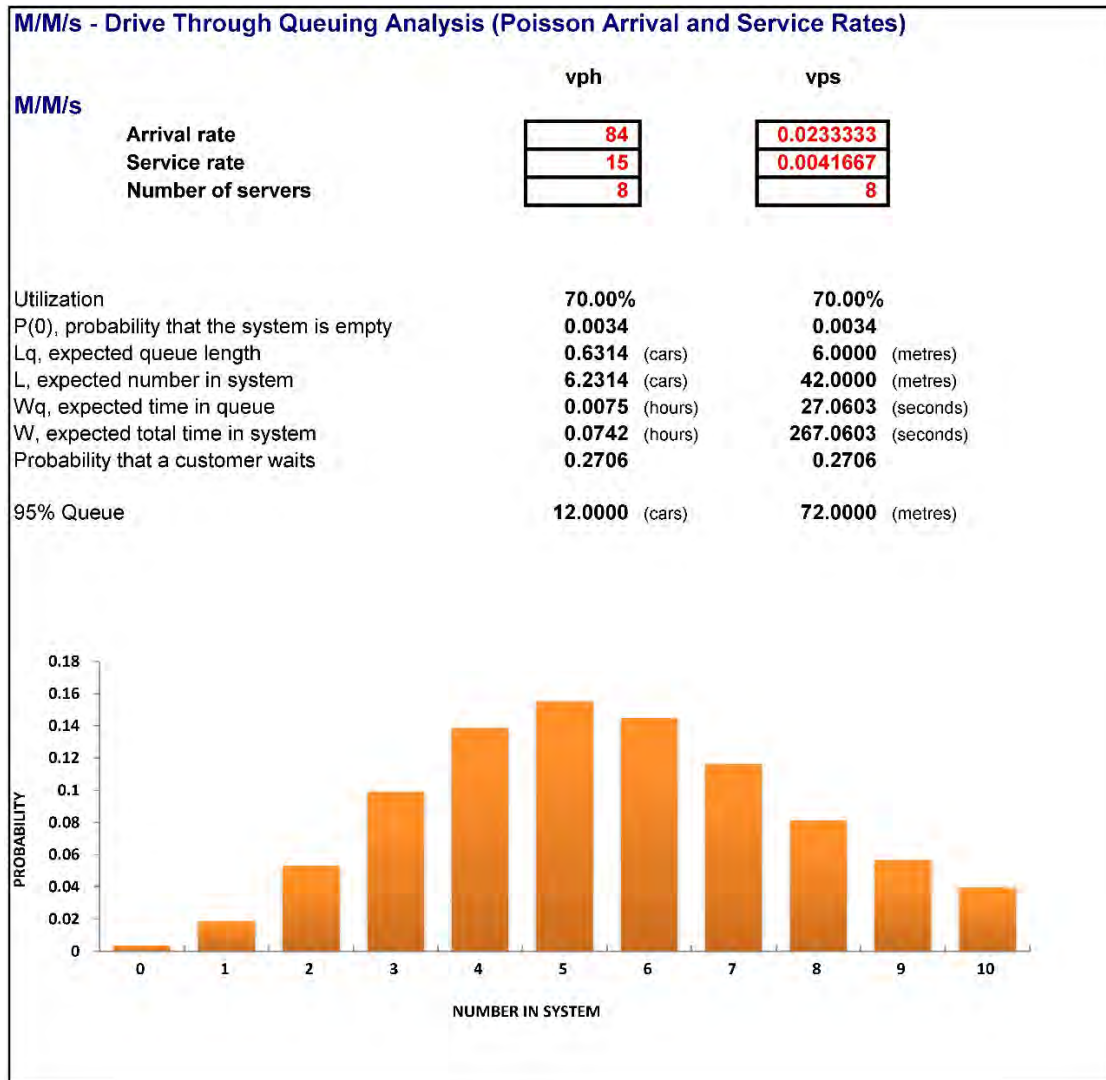


Figure 3. Peak “cheap fuel” hour queuing analysis

To investigate if vehicles are waiting behind fill points, still a B99 car can navigate the site, Sk15a in **Figure 4** is prepared which shows that at worst case scenario that 2 vehicles wait at both sides of the last two bowzers, still a B99 car can move around the parked cars. Regardless, there will be an alternative anti-clockwise route also available for vehicles to access the parking bays in front of the shop.

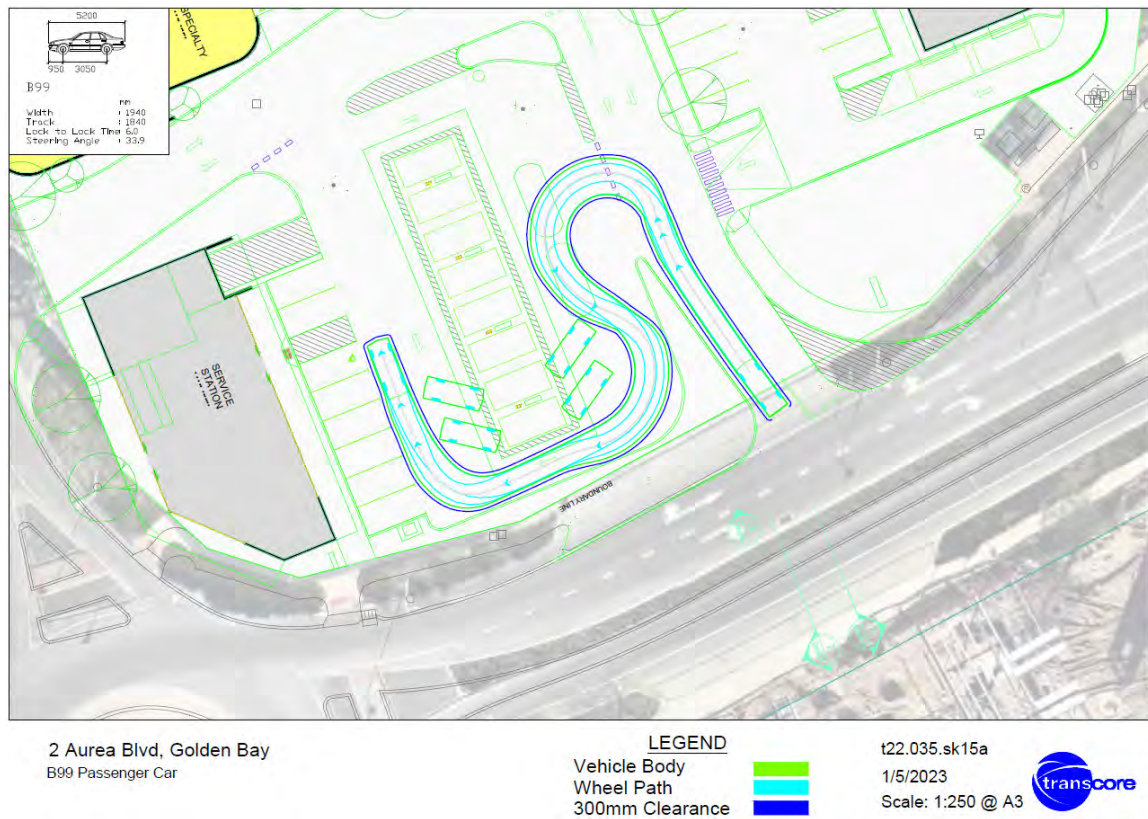


Figure 4: Movement of a B99 car around parked vehicles at the bowzers

3 Existing Situation

3.1 Existing Road Network

The road hierarchy of the surrounding roads in accordance with Main Roads WA Functional Road Hierarchy is illustrated in **Figure 5**. As evident Aurea Blvd is classified as a Local Distributor and Thundelarra Drive is classified as an Access Road in the Main Roads WA *Functional Road Hierarchy*.



Figure 5: Existing road hierarchy

Aurea Boulevard as shown in **Figure 6**, is constructed as single carriageway standard with a solid median, on-street parking bays, on road cycle lanes and pedestrian paths on both sides of the road in the vicinity of the subject site. Aurea Boulevard operates under the default, built up area speed limit of 50km/h.

Aurea Boulevard connects to Thundelarra Drive in the form of a roundabout intersection and to Warnbro Sound Avenue as a signalised intersection.



Figure 6: Aurea Blvd adjacent to the subject site (looking east)

Thundelarra Drive as shown in **Figure 7**, is constructed as a single carriageway with on- road cycle lanes and shared paths on both sides of the road. It operates under the built-up area speed limit of 50km/h.



Figure 7: Thundelarra Dr adjacent to the subject site (looking south)

Warnbro Sound Avenue forms the eastern boundary of the site and is constructed as dual carriageway standard road with shared paths on paths on both sides of the road. Warnbro Sound Ave is classified as a Distributor B road in the Main Roads WA Perth Metropolitan Area Functional Road Hierarchy. The intersection of Warnbro Sound Avenue/ Aurea Blvd/ Adelong Ave in the form of a signalised intersection.

3.2 Existing Traffic Volumes on Roads

The latest SCATS data the signalised intersection of Warnbro Sound Avenue/ Aurea Blvd/ Adelong Ave was sourced and analysed to establish the hourly and daily traffic volumes at the intersection.

Review of the February 2022 SCATS data indicated that Warnbro Sound Avenue and Aurea Blvd carried approximately 9,700vpd and 3,182vpd during the weekday.

Transcore also undertook video traffic counts at the existing roundabout intersection of Aurea Blvd/ Thundelarra Drive during the weekday AM (8:00 – 9:00) and PM (4:00-5:00) peak hours in September 2022. **Figure 7** shows the existing turning movements at the intersections.

The video counts indicated slightly higher traffic volumes on Aurea Blvd. Therefore, the SCATS traffic data were factored up to match the outcome of the video traffic counts on Aurea Blvd, resulting in a robust assessment.

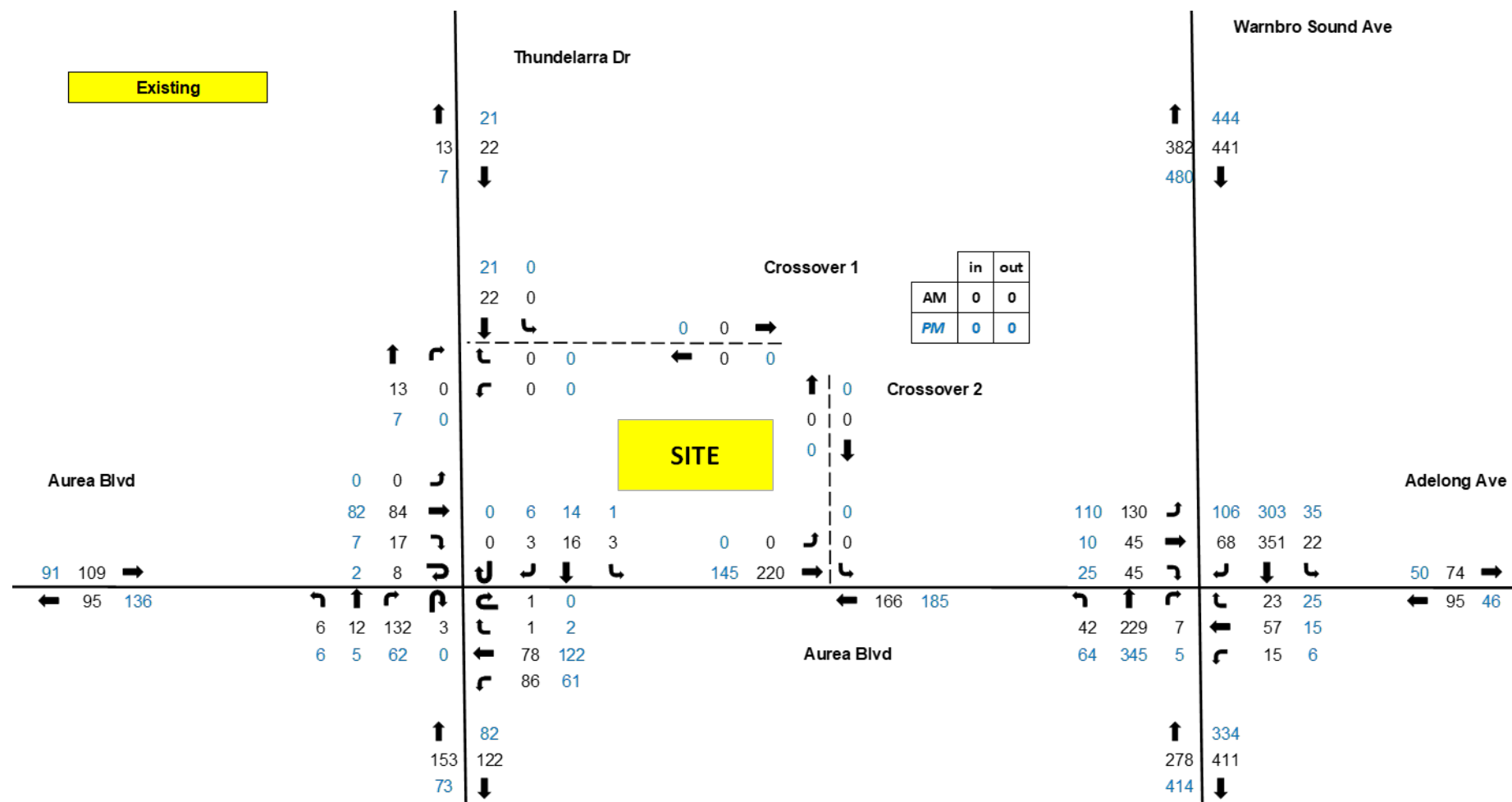


Figure 8: Existing traffic counts AM/ PM peak hour

3.3 Heavy Vehicles

Restricted Access Vehicle (RAV) Network routes are designated for access by large heavy vehicle combinations, which is managed by Main Roads WA.

As shown in **Figure 9**, the adjacent roads are not part of the RAV network and would be able to accommodate "as of right" vehicles (up to 19m semi-trailers).

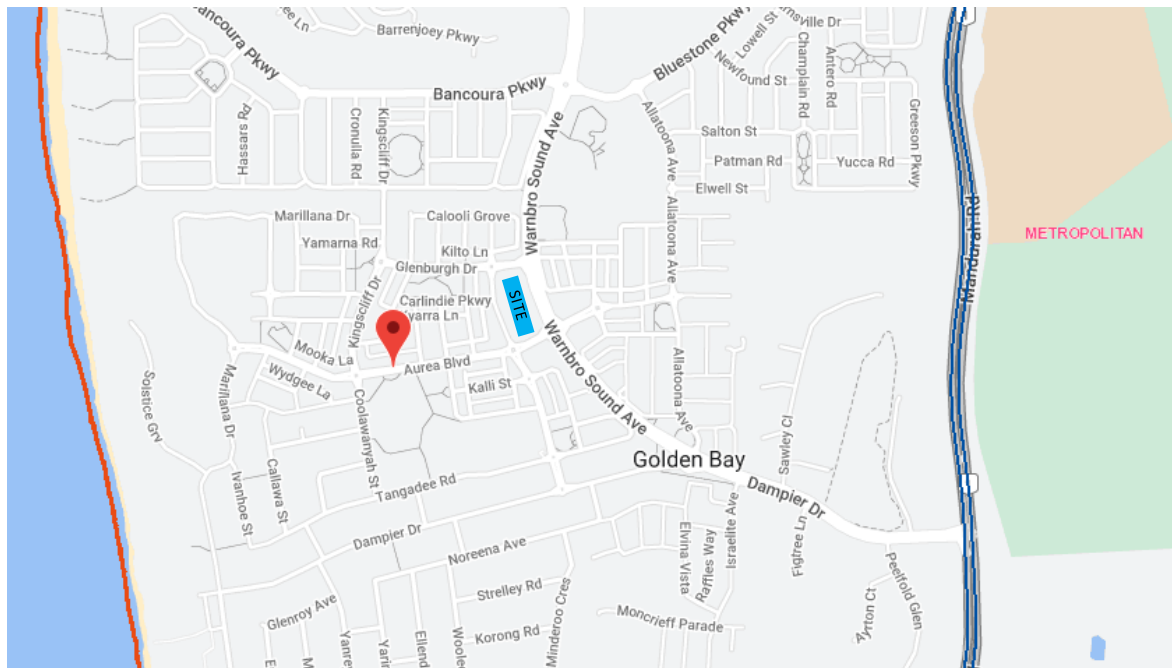


Figure 9. Existing heavy vehicle road network classification (RAV)

3.4 Public Transport Access

Available nearby public transport services are present in **Figure 10**. Bus route 558 provides a connection between Mandurah and Rockingham with Bus stops located on Warnbro Sound Avenue. This bus route operates on a half hourly basis throughout the day with additional services provided during the peak hour. This bus route provides an opportunity to transfer to other connecting bus and rail services.



Figure 10: Existing bus routes (source: Transperth)

3.5 Pedestrian and Cyclist Facilities

The Department of Transport's Perth Bike Map series (refer **Figure 11**) shows that "High Quality Shared paths" are currently in place on both sides of Warnbro Sound Avenue. Shared Paths are also in place on both sides of Aurea Blvd and Thundelarra Drive. Both these roads also entail on road cycle lanes.

Pedestrian will have direct access to the proposed development via the existing external path network along the surrounding roads.

4 Changes to Surrounding Transport Networks

There are no changes to the surrounding road network as part of the proposed development. A left in/ left out crossover is proposed on Aurea Blvd fronting the site as part of this proposal with a connection to Wyloo Lane. The Thundelarra Drive crossover shown in the development plan is an existing crossover which would be modified slightly as part of the proposed development.

5 Integration with Surrounding Area

The proposed development entails a neighbourhood centre which is in line with the existing and future surrounding land uses in the area.

6 Traffic Assessment

6.1 Assessment Period

The assessment years that are adopted for the analysis are 2023 and 2033.

6.2 Trip Generation and Distribution

The trip generation of the proposed land uses was sourced from the RTA NSW Guide to Traffic Generating Developments and the Institute of Transport Engineers Trip Generation Manual (11th Edition).

The trip rates which were used to estimate the proposed development traffic generation are shown in **Table 2**. This table also summarises the trip generation of the proposed development. **Table 3** shows the passing trade component of the development.

Due to the land use mix within the proposed Lots incidences of multi-purpose trips¹ (i.e., cross-trade) are anticipated. Accordingly, the applied cross-trade adjustment is calculated to result in approximately 25% reduction in total trip generation (in line with RTA NSW Guidelines).

Therefore, the net addition of traffic when accounting for passing trade is **+123vph** (AM peak hour) and **+213vph** (PM peak hour) on the surrounding road network.

The distribution of traffic to and from the proposed developments was evaluated by considering the catchment area of the proposed development as well as the available access and egress routes to and from the site. Accordingly, total development traffic is shown in **Figure 11**.

¹ Multi-purpose trips are incidences where more than one shop/outlet are visited within the development (also referred to as “cross-trade”)

Table 2: Weekday daily, morning peak and afternoon peak hour trip generation for the proposed land uses

Land use	Quantity	Daily Rate	Weekd-AM Peak	Weekd-PM Peak	Cross Trade	Daily Trips	Weekd-AM trips	Weekd-PM trips	AM		PM	
									IN	OUT	IN	OUT
Fast food outlet with drive through	525	5.069	0.433	0.352	0.25	1996	170	138	85	85	69	69
Liquor	230	1.092	0	0.176	0.25	188	0	30	0	0	15	15
Supermarket	1165	1.550	0.016	0.160	0.25	1354	14	140	7	7	70	70
Specialty	255	0.330	0.004	0.042	0.25	63	1	8	0	1	4	4
Service Station	8	205.360	12.470	13.990	0.25	1232	75	84	37	38	42	42
TOTAL TRAFFIC						4834	260	401	129	131	200	201

Table 3: Passing trade and primary trips components of the trip generation

Passing Trade Component					
	AM		PM		
	IN	OUT	IN	OUT	Daily Trips
50%	43	43	35	35	998
50%	0	0	8	8	94
36%	3	3	25	25	488
28%	0	0	1	1	18
60%	22	23	25	25	739
	68	69	94	94	2337

Primary Trips Component					
	AM		PM		
	IN	OUT	IN	OUT	Daily Trips
	42	42	34	34	998
	0	0	7	7	94
	4	4	45	45	866
	0	1	3	3	45
	15	15	17	17	493
	61	62	106	107	2497

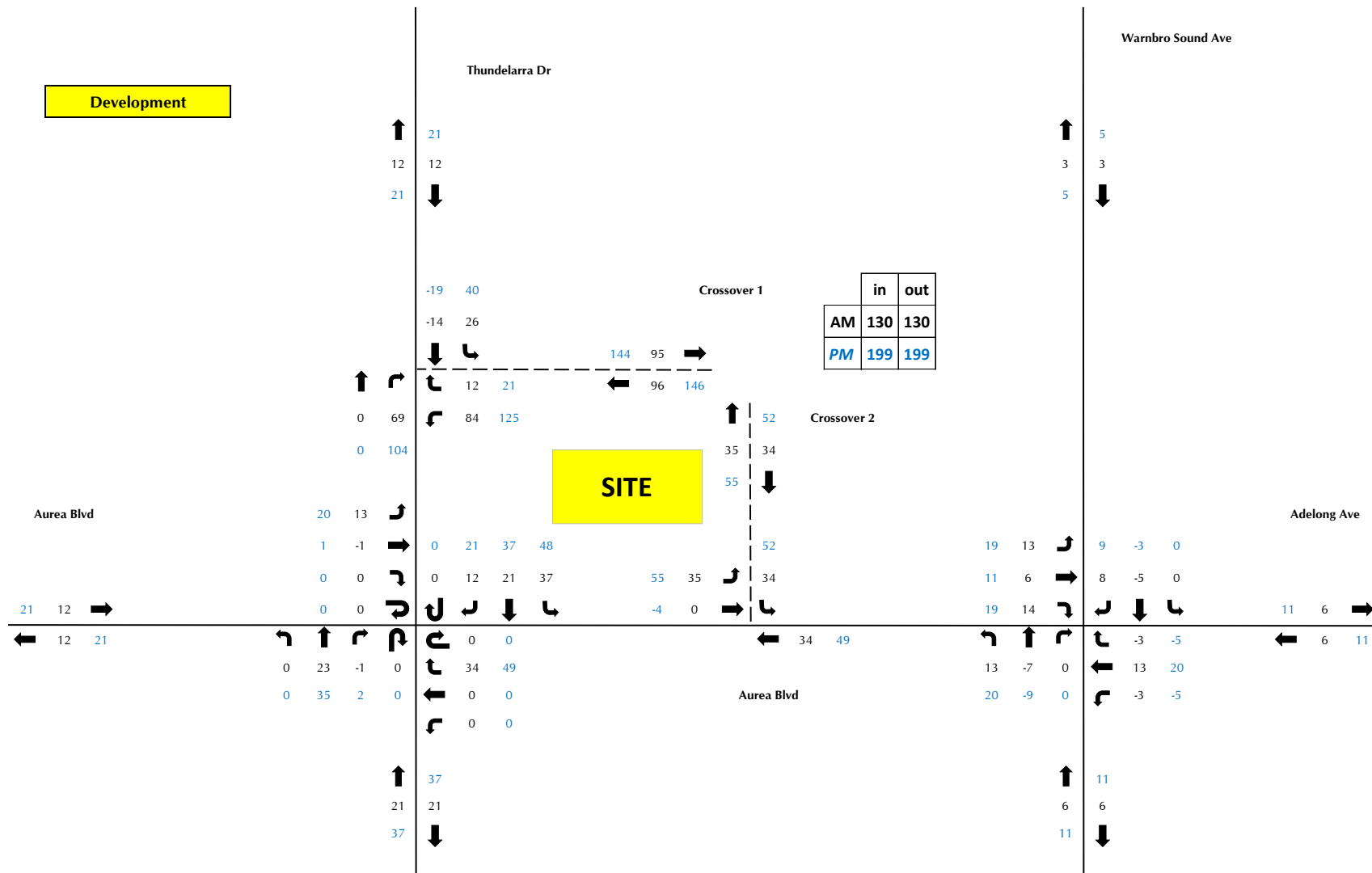
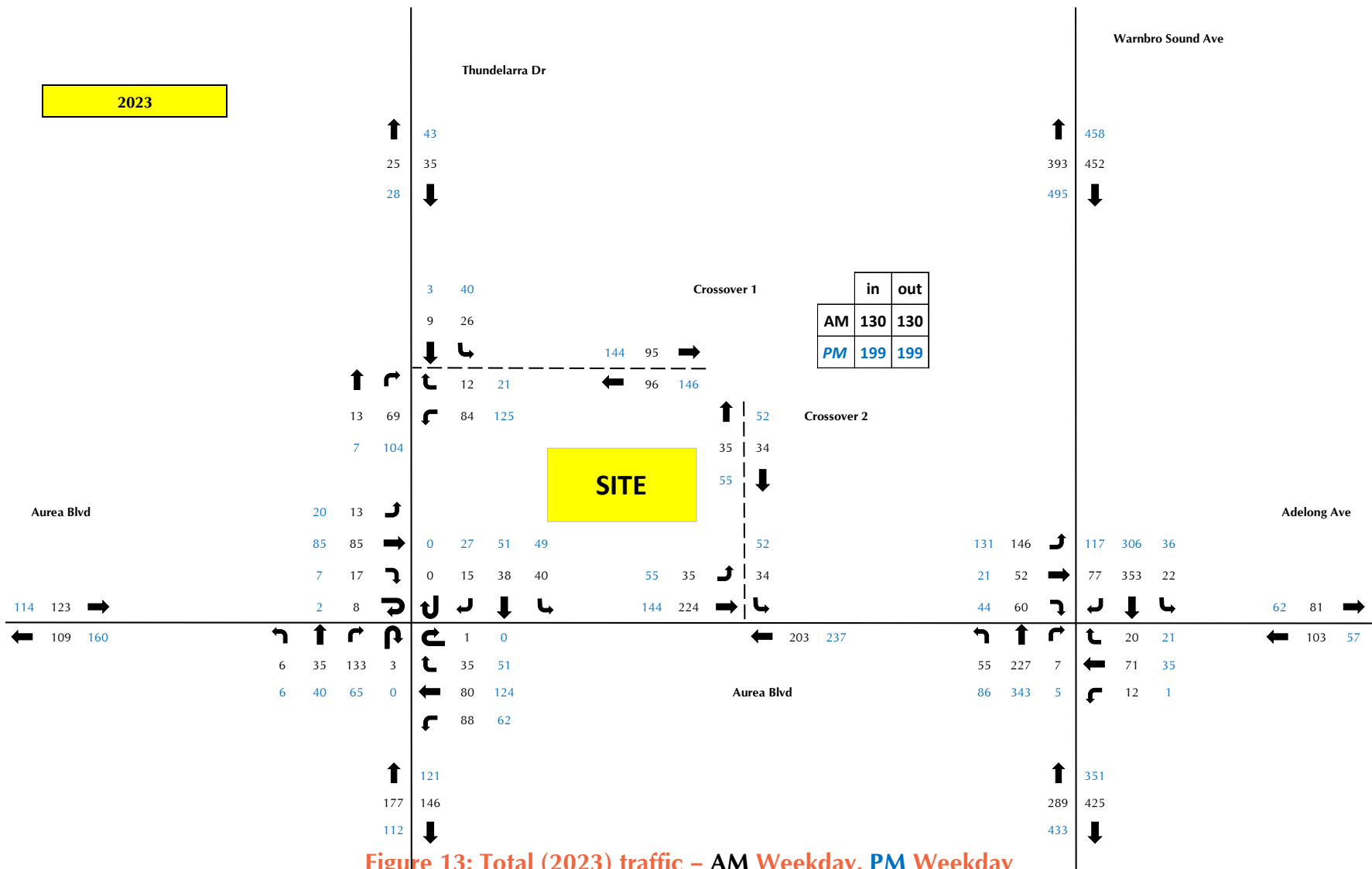


Figure 12: Proposed development traffic – AM Weekday, PM Weekday

6.3 Traffic Flow Forecasts

The existing traffic counts were established by review of the SCATS data at the existing signalised intersection of Warnbro Sound Ave/ Aurea Blvd/ Adelong Ave and the video traffic counts undertaken by Transcore (refer **Figure 8**). The total post development traffic for the assessment year of 2023 and 2033 was calculated with the existing background traffic plus the development traffic. For both years 2023 and 2033 a 2% annual traffic growth was applied to the background traffic.

The total projected traffic volumes for year 2023 and 2033 are presented in **Figure 13** and **Figure 14**.



6.4 Analysis of Local Intersections & Crossovers

Capacity network analysis was undertaken using the SIDRA computer software package for year 2023 and 2033. SIDRA is an intersection modelling tool commonly used by traffic engineers for all types of intersections. SIDRA outputs are presented in the form of Degree of Saturation, Level of Service, Average Delay and 95% Queue. These characteristics are defined as follows:

- ✚ Degree of Saturation is the ratio of the arrival traffic flow to the capacity of the approach during the same period. The Degree of Saturation ranges from close to zero for infrequent traffic flow up to one for saturated flow or capacity.
- ✚ Level of Service is the qualitative measure describing operational conditions within a traffic stream and the perception by motorists and/or passengers. In general, there are 6 levels of service, designated from A to F, with Level of Service A representing the best operating condition (i.e., free flow) and Level of Service F the worst (i.e., forced or breakdown flow).
- ✚ Average Delay is the average of all travel time delays for vehicles through the intersection.
- ✚ 95% Queue is the queue length below which 95% of all observed queue lengths fall.

Network SIDRA models (refer **Figure 15**) were developed to assess the development crossovers on Thundelarra Drive and Aurea Blvd and nearby intersections as an integrated traffic network.

The results of the SIDRA network analysis are summarised in **Appendix C**. The SIDRA intersection models were coded with reference to Main Roads WA Operation Modelling Guidelines. All relevant parameters such as heavy vehicle groups, PCU factors etc. were coded as per the Main Roads WA Guidelines.

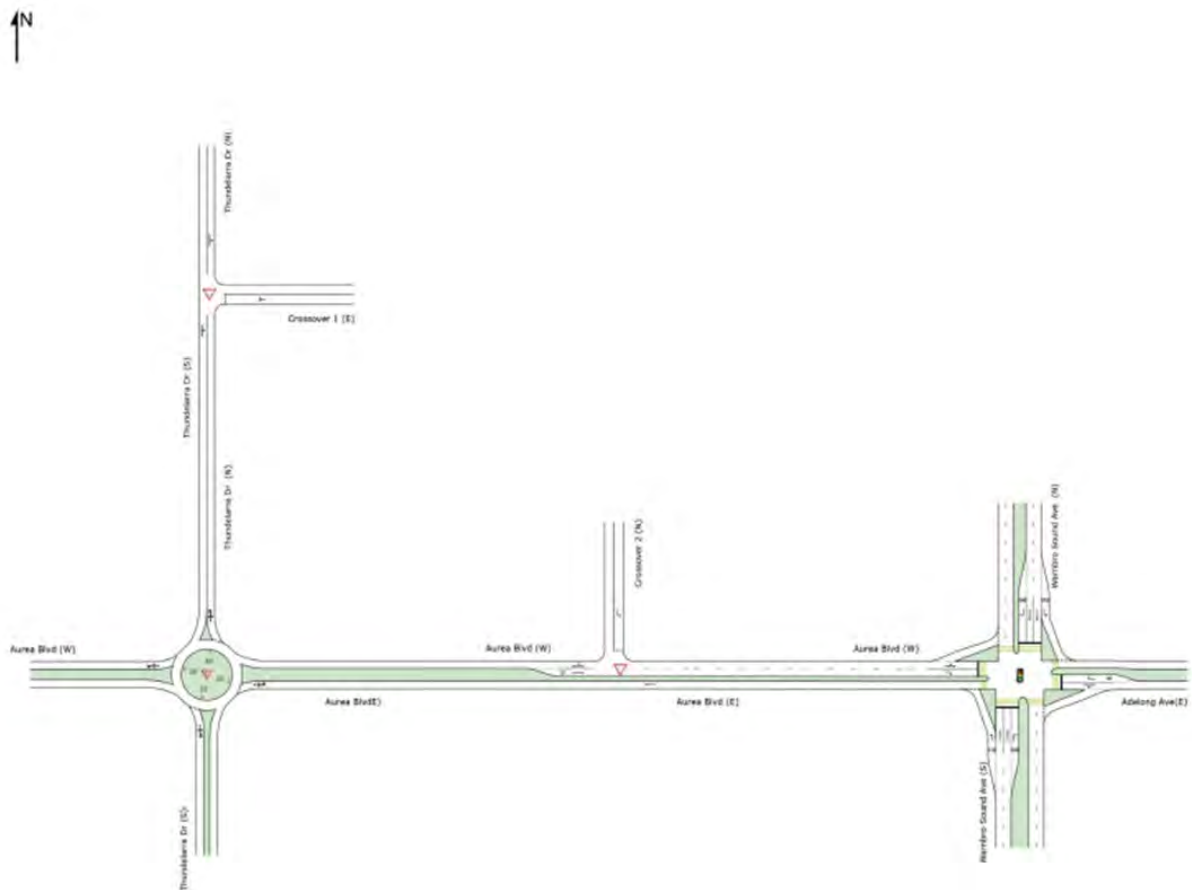


Figure 15: SIDRA Network Model

NEARBY INTERSECTIONS

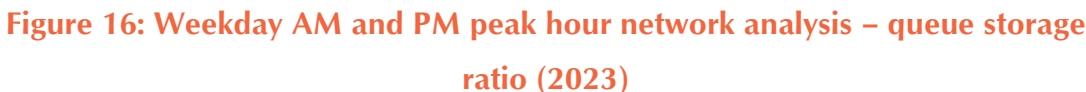
The SIDRA analysis results and site observations indicate that the existing signalised and roundabout intersections presently operates satisfactorily (overall LoS C for signalised intersection and LoS A for roundabout intersection) with moderate queues and delays during both weekday peak hours for the signalised intersection and no queues and delays at the roundabout intersection.

The addition of the development-generated traffic resulted in negligible increases in overall queues and delays. No major change in overall LoS for the intersections is reported.

The SIDRA assessment for the 10-year post development scenario during the nominated peak periods rendered similar results to post-development scenario with marginal increases in delays and queues and no changes to the Level of Service for any of the movements of the intersections. Importantly, both intersections retain ample spare capacity for future traffic growth.

NETWORK OPERATION

As detailed in **Figure 15** and **Figure 16** there are no queue back from the nearby intersections to the development crossovers. Similarly, no queue back from the development crossovers to the nearby intersections are reported.



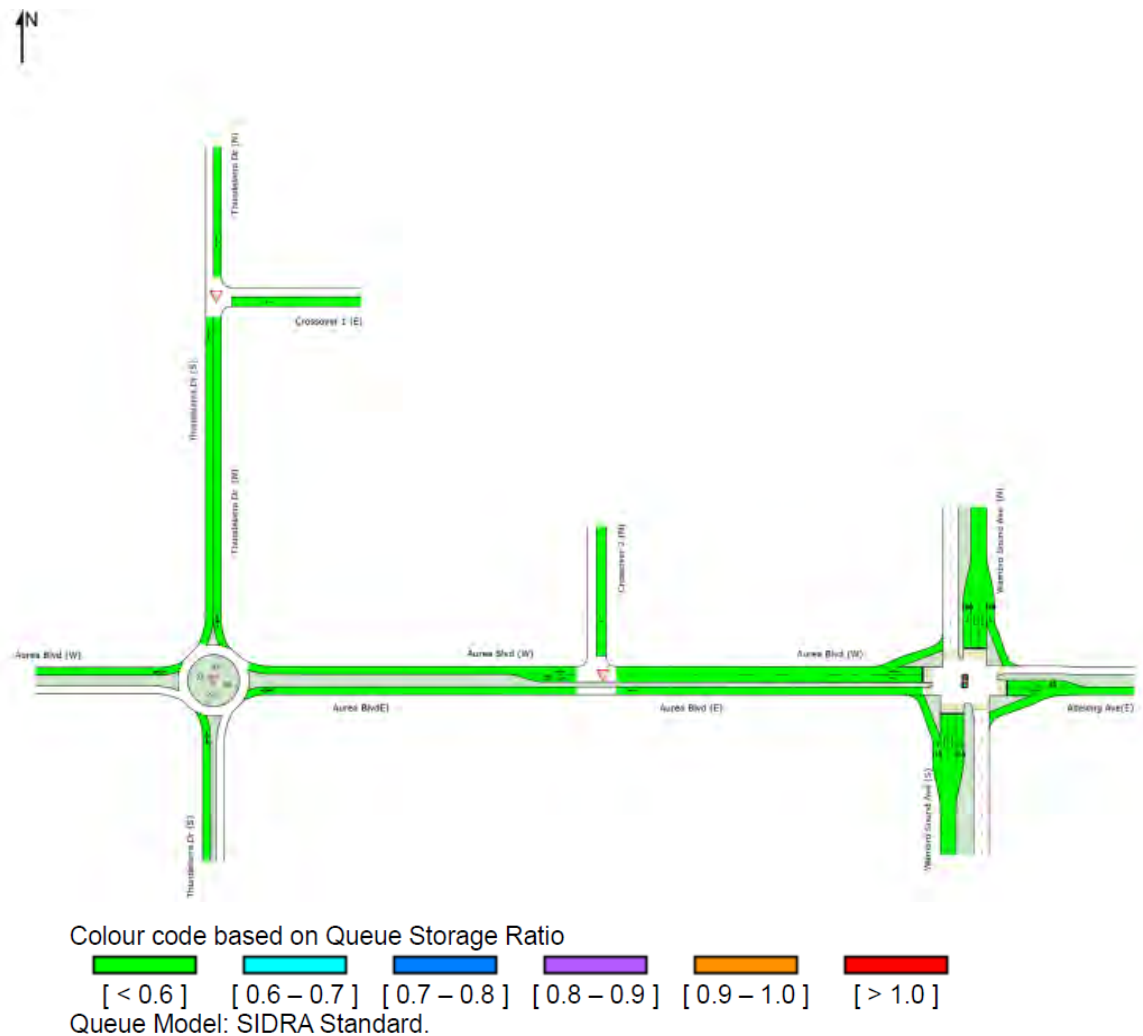


Figure 17: Weekday AM and PM peak hour network analysis – queue storage ratio (2033)

6.5 Impact on Surrounding Roads

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

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

The proposed development will not increase traffic on any lanes on the surrounding road network by more than 100vph, except for a short section of Thundelarra Drive between the roundabout and the development crossover which would result in total

traffic projection of about 245vph (or 2450vpd) during the PM peak hour in 2033. The current standard of Thundelarra Drive as a neighbourhood connector B road would be able to comfortably accommodate the 2033 projected traffic volumes along this section of the road.

Therefore, the proposed development will not increase traffic flows near the quoted WAPC threshold on most of the surrounding roads to warrant further detailed analysis.

6.6 Impact on Neighbouring Areas

Due to the location of the subject site, its accessibility via a major regional road, significant passing trade component and limited number of residential dwellings within the immediate vicinity, the traffic impact from the development in the area will be limited.

6.7 Traffic Noise and Vibration

Due to the location of the subject site, its accessibility via major regional road, significant passing trade component, the traffic impact from the development in the area will be limited.

It generally requires a doubling of traffic volumes on a road to produce a perceptible 3dB(A) increase in road noise. The proposed development will not increase traffic volumes or noise on surrounding roads anywhere near this level.



7 Parking

The parking supply and demand for the proposed neighbourhood centre is summarised in **Table 4**.

Table 4: Car parking assessment

Use	Required	Provided	Surplus / Shortfall (+/-)
Supermarket	70	50	-20
Specialty shops	16	5	-11
Fast Food outlets	49	46	-3
Service station	22	15	-7
Liquor store	18	27	+9
On-street bays		4	+4
Total theoretical shortfall considering the on-street bays			-28

The total parking requirement based on relevant City's scheme requirement is estimated to be 175 bays and the total parking supply including the on-street parking is 147 bays and therefore, there is a theoretical 28-car bay shortfall for the proposed neighbourhood centre site.

As the peak parking demand periods for the various land-uses within the subject site do not completely overlap, a daily parking demand profile was developed for each of the proposed land-uses to estimate the combined parking demand throughout the day (for a typical Friday and a typical Saturday).

The percentage of parking demand assumptions outlined in **Table 5** (for a typical Friday) and **Table 7** (for a typical Saturday) are conservative to result in a robust assessment and outcome.

The anticipated demand for car parking is then calculated by multiplying the anticipated percentage of parking demand for each land-use by its theoretical parking requirement. The estimated number of parking bays required are summarised in **Table 6** (for a typical Friday) and **Table 8** (for a typical Saturday). The parking surplus (+)/shortfall (-) for each land-use and time period is estimated by subtracting the total anticipated parking demand from the proposed number of bays provided (147 bays).

Table 5: Percentage of parking demand temporal analysis – typical Friday

TIME	Estimated Percentage of Parking Demand - Typical Friday				
	Liquor	Supermarket	Fast Food	Specialty	Service station
6:00	0%	10%	10%	10%	50%
7:00	0%	20%	10%	20%	70%
8:00	10%	30%	40%	30%	100%
9:00	10%	40%	50%	40%	70%
10:00	20%	50%	70%	50%	60%
11:00	30%	70%	80%	70%	40%
12:00	30%	80%	80%	90%	40%
13:00	30%	80%	90%	80%	50%
14:00	30%	70%	80%	70%	50%
15:00	30%	60%	70%	60%	60%
16:00	50%	70%	60%	70%	70%
17:00	60%	80%	50%	70%	100%
18:00	80%	80%	70%	70%	80%
19:00	80%	60%	90%	70%	50%
20:00	50%	40%	50%	50%	40%
21:00	40%	10%	50%	10%	30%
Requirements based on TPS	18	70	49	16	22
Provided	27	50	46	5	15
surplus / shortfall (+/-)	9	-20	-3	-11	-7

175

147

-28

including on-street

Table 6: Parking demand temporal analysis – typical Friday

TIME	Estimated Number of Parking Bays Required - Typical Friday						Onsite Parking Surplus/Shortfall (150 - Total)
	Liquor	Supermarket	Fast Food	Specialty	Service station	Total	
6:00	0	7	5	2	11	25	123
7:00	0	14	5	3	15	38	110
8:00	2	21	20	5	22	69	78
9:00	2	28	25	6	15	76	71
10:00	4	35	34	8	13	94	53
11:00	5	49	39	11	9	114	33
12:00	5	56	39	14	9	124	23
13:00	5	56	44	13	11	129	18
14:00	5	49	39	11	11	116	31
15:00	5	42	34	10	13	105	43
16:00	9	49	29	11	15	114	33
17:00	11	56	25	11	22	125	23
18:00	14	56	34	11	18	134	14
19:00	14	42	44	11	11	123	24
20:00	9	28	25	8	9	78	69
21:00	7	7	25	2	7	47	100

As detailed in **Table 6**, the maximum combined parking demand for a typical Friday is anticipated to occur at 18:00PM. During this period, it is estimated that a surplus of 14 bays would be available within the proposed development.

Similarly, As detailed in **Table 8**, the maximum combined parking demand for a typical Saturday is anticipated to occur at 11:00PM. During this period, it is estimated that a surplus of three bays would be available.

On this basis, considering that the peak parking demand of the respective land uses within the proposed neighbourhood centre is different, reciprocal parking can be considered. The parking assessment undertaken indicates that there would be surplus parking available during the weekday and weekends and therefore the proposed parking supply is sufficient to address the parking requirements of the proposed development. Further, for assessment of parking supply and demand consideration should be given to the following:

- ✚ Variance of peak times between various land uses;
- ✚ Multi-use trips generated by the co-location of complementary land uses; and,
- ✚ Walkability of the area.

Table 7: Percentage of Parking demand temporal analysis – typical Saturday

TIME	Estimated Percentage of Parking Demand - Typical Saturday					
	Liquor	Supermarket	Fast Food	Specialty	Service station	
6:00	0%	10%	10%	10%	50%	
7:00	0%	20%	10%	20%	70%	
8:00	10%	30%	40%	30%	100%	
9:00	10%	40%	50%	40%	70%	
10:00	20%	50%	80%	60%	60%	
11:00	30%	100%	90%	100%	40%	
12:00	30%	90%	100%	90%	40%	
13:00	40%	90%	90%	80%	50%	
14:00	40%	80%	80%	70%	50%	
15:00	40%	70%	70%	60%	60%	
16:00	50%	70%	60%	70%	70%	
17:00	80%	70%	50%	70%	100%	
18:00	100%	50%	90%	50%	80%	
19:00	100%	20%	90%	20%	50%	
20:00	70%	20%	50%	20%	40%	
21:00	50%	10%	50%	10%	30%	
Requirements based on TPS	18	70	49	16	22	175
Provided	27	50	46	5	15	147
surplus / shortfall (+/-)	9	-20	-3	-11	-7	-28

including on-street

Table 8: Parking demand temporal analysis – typical Saturday

TIME	Estimated Number of Parking Bays Required - Typical Saturday						Onsite Parking Surplus/Shortfall (150 - Total)
	Liquor	Supermarket	Fast Food	Specialty	Service station	Total	
6:00	0	7	5	2	11	25	123
7:00	0	14	5	3	15	38	110
8:00	2	21	20	5	22	69	78
9:00	2	28	25	6	15	76	71
10:00	4	35	39	10	13	101	46
11:00	5	70	44	16	9	144	3
12:00	5	63	49	14	9	141	6
13:00	7	63	44	13	11	138	9
14:00	7	56	39	11	11	125	22
15:00	7	49	34	10	13	113	34
16:00	9	49	29	11	15	114	33
17:00	14	49	25	11	22	121	26
18:00	18	35	44	8	18	123	24
19:00	18	14	44	3	11	90	57
20:00	13	14	25	3	9	63	84
21:00	9	7	25	2	7	49	98

8 Provision of Heavy Vehicles

The largest fuel tanker and a service vehicle which are expected to use the subject site are 19m fuel tankers and 12.5m service trucks.

19m fuel tanker

Turn path analysis has been undertaken for a 19m fuel tanker to enter the site from Thundelarra Drive full movement crossover, access the refuelling point and exit the site and turn left onto Aurea Blvd in forward gear. Mountable kerb/painted area has been provided at Aurea Blvd crossover to facilitate the left turn exit movement of fuel tankers.

service trucks

12.5m service trucks are expected to service the proposed supermarket. The service truck for the supermarket would enter the site from Wyloo Lane crossover and would exit the site via the proposed left in/ left out crossover on Aurea Blvd.

8.8m service trucks are expected to service the proposed service station. The service truck would enter the site from Thundelarra Drive full movement crossover and exit via the proposed left in/ left out crossover on Aurea Blvd.

The largest service truck that would service the proposed fast-food outlets is an 8.8m rigid truck. The service truck would enter the site from Thundelarra Drive full movement crossover and exit via the proposed left in/ left out crossover on Aurea Blvd.

The largest truck that can service the proposed liquor store is an 8.8m rigid truck which would enter and exit the site via Wyloo Lane crossover.

The service vehicles would attend the site outside the peak periods to minimise the internal and external impact.

Turn path analysis undertaken for fuel tanker and service vehicles confirm satisfactory access, egress and circulation. The turn path analysis plans are included in **Appendix D**.

Turn path plan demonstrate that the tanker will require to use almost the full width of Thundelarra Drive southern crossover to access the site. As the fuel tanker is expected to access the site about twice per week and outside peak operating conditions, traversing almost the full width of the crossover is acceptable in accordance with the relevant Australian Standard.

9 Conclusions

This Revised TIA has been prepared by Transcore on behalf of Ladybug Twenty Pty Ltd with regards to the proposed Golden Bay Neighbourhood Centre to be located at 2 Aurea Boulevard, Golden Bay.

The proposed development would utilise the existing crossover on Thundelarra Drive and is providing a left in/ left out crossover on Aurea Blvd and a connection to Wyloo Lane.

The net addition of traffic as a result of the proposed development when accounting for passing trade is **+125vph** (AM peak hour) and **+220vph** (PM peak hour) on the surrounding road network.

The stacking capacity of the proposed fast-food outlets satisfy the RTA Guidelines requirements.

Queue analysis undertaken for the proposed service station indicated that under typical “cheap fuel day” peak conditions the queuing associated with the service station will be accommodated within the site without impacting the internal driveways and development crossovers.

Network SIDRA models were developed to assess the development crossovers on Thundelarra Drive and Aurea Blvd and nearby intersections as an integrated traffic network. The analysis result indicates satisfactory traffic operations of the intersections and the crossovers.

Total of 147 bays including four on-street bays and eight ACROD Bays are proposed for the proposed neighbourhood centre which represents theoretical parking shortfall of about 28 bays. Considering that the peak parking demand of the respective land uses within the proposed neighbourhood centre is different, reciprocal parking can be considered. The parking assessment undertaken in this report indicates that there would be surplus parking available on site during the weekday and weekend peak periods and therefore the proposed parking supply is sufficient to address the parking requirements of the proposed development.

In conclusion, the findings of this Transport Impact Assessment are supportive of the proposed development.

Appendix A



TRANSCORE RESPONSES TO CITY'S COMMENTS

Golden Bay Neighbourhood Centre| CITY OF ROCKINGHAM COMMENTS

02 May 2023

Note: responses in green are addressed in the revised TIA.

	CITY COMMENTS	STATUS/COMMENT
1	<p>Concerns over the proposed left-in, left-out off Aurea Boulevard and its proximity to the Warnbro Sound Avenue intersection – awaiting MRWA comments.</p> <p>Impact on the performance of surrounding intersections and increased traffic safety risks</p> <p>The stop line distance between the signalised intersection (Warnbro Sound Avenue/Aurea Boulevard/Adelong Avenue) and the roundabout (Aurea Boulevard/Thundelarra Drive) is approximately 95m which is considered too short to have an access located between the intersections. LDI is concerned that the introduction of an access off Aurea Boulevard would significantly impact the performance of the two existing intersections (queues from the traffic signal may block access to the site, queues from the proposed access may impact on the adjacent roundabout intersections, very short distance if needing to turn right into Warnbro Sound Avenue from the proposed crossover, etc.) as well as increases traffic safety risks. It should be noted that the Transport Assessment for the Golden Bay Comprehensive Development Plan estimates a daily traffic volume of 9,400 and 5,000 for Aurea Boulevard and Thundelarra Drive respectively therefore an access off Thundelarra is recommended in order to minimise traffic safety risks.</p>	<p>The crossover is a left in/ left out only and would be located before the 70-degree left turn slip lane on Aurea Blvd. Also, this crossover is important for effective and efficient circulation system for the development and in particular the land uses closest to the Aurea Boulevard.</p> <p>The SIDRA network analysis undertaken indicates no queue back from the signalised intersection or back to the roundabout intersection to the proposed left in/ left out crossover (refer Figures 15 and 16 of the TIA). The crossover also operates with good LOS during the AM and PM peak hours. Therefore, the provision of the proposed left in/ left out crossover would not undermine traffic operations in the immediate locality.</p> <p>The traffic projections for the Golden Bay Comprehensive Development Plan Update (prepared by Transcore, dated 1st April 2011) reflects the full development of the Golden Bay by year 2031. It is our understanding that it is unlikely that the Golden Bay Development Plan and the surrounding areas would be fully developed by year 2031 and the projected traffic volumes on Aurea Blvd and Thundelarra Drive would reach to the level that was reported for the full development of the Golden Bay Structure Plan. As a result, Transcore adopted the methodology of 2% annual growth on the existing traffic volumes. According to the Golden Bay Comprehensive Development Plan Update (prepared by Transcore, dated 1st April 2011) Aurea Boulevard (between Warnbro Sound Avenue and Thundelarra Drive) is classified as “Integrator B”. The intersection spacing on an “Integrator B” is recommended</p>

<p>Insufficient separation distance between intersections to accommodate an access</p> <ul style="list-style-type: none"> Austroads' Guide to Road Design Part 4 – Intersections and Crossings – General recommends a minimum access spacing of 55m (based on "Stopping Sight Distance"). This suggests that the existing distance between the stop lines of the existing intersection should be at least 110m therefore an access is unlikely able to be located between the roundabout and traffic signal. The proposed vehicle crossover is located within the functional area of the traffic signal as well as the eastern wing is encroaching into the left turning slip lane. <p>Queue from the traffic signal impacting on the access</p> <ul style="list-style-type: none"> There is a concern that with heavy traffic expected on Aurea Boulevard (i.e. 9,400vpd), the vehicle queue length for the western approach to the traffic signal is likely to impact on the proposed access. The Golden Bay Village Centre – Revised Development Application Transport Impact Assessment – Addendum (Lot 622 Thundelarra Drive, prepared by Uloth dated 16th March 2018) had completed an intersection analysis for the traffic signal at Warnbro Sound Avenue/Aurea Boulevard/Adelong Avenue and the results suggest an expected queue length of 122m for the western approach. <p>The Transport Assessment for the existing child care (Lot 716 Aurea Boulevard, prepared by Cardo, dated 1st March 2017) suggests an expected queue length of 49.4m for the western approach.</p> <p>The distance between the stop line for the traffic signal to the centre of the proposed access is approximately 45m. This suggests</p>	<p>as 40m in accordance with LN Guidelines. Therefore, there is sufficient separation distance between the intersections. The LN or any other guidelines do not prohibit crossovers within this separation.</p> <p>The Austroads Guidelines Part 4 does provide guidelines on stopping sight distance however, the stopping distance is measured on a straight section of road and not on sections intersected by intersections which is the case here. Further, although Austroads and Liveable Neighbourhoods provide guidelines for intersection spacing, they do not prohibit provision of crossovers within that spacing.</p> <p>The location of the crossover with respect to an intersection is addressed in Australian Standards 2890.1. Section 3.2.3 and Figure 3.1 of the Standard provides guidelines on prohibited location of access driveways with respect to an intersection. Basically, an access driveway should be located at least 6m from the corner truncation of an intersection. The Aurea Boulevard crossover satisfies this requirement for both intersections at both ends of this road.</p> <p>The proposed left in/ left out crossover is located before the existing left turn slip lane at Aurea Blvd and therefore it is not located within the effective functional area of the traffic signal. A mountable apron is suggested for the exit of the trucks at this crossover. This apron ties into the proposed left turn slip lane at the signalised intersection.</p> <p>The traffic report by U&A and Cardno are now 5 and 6 years old. The SIDRA analysis results and site observations undertaken by Transcore in 2023 indicate that the existing signalised and roundabout intersections presently operate satisfactorily (overall LoS C for signalised intersection and LoS A for roundabout intersection) with moderate queues and delays during both weekday peak hours for the signalised intersection and no queues and delays at the roundabout intersection. The SIDRA assessment for the 10-year post development scenario during the nominated peak periods rendered similar</p>
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	<p>that the queue from the traffic signal is likely to impact on the proposed access.</p> <p>Neighbourhood Centre Detailed Area Plan</p> <p>The approved plan suggests that no access is to be provided off Aurea Boulevard and Warnbro Sound Avenue</p>	<p>results to post-development scenario with marginal increases in delays and queues and no changes to the Level of Service for any of the movements of the intersections. Importantly, both intersections retain ample spare capacity for future traffic growth. For the 10-year post development analysis a 2% annual traffic growth was applied to the background traffic. The 2% annual growth reflects the current conditions. It is not clear what traffic projections has been used by Uloth and Cardno for preparation of the traffic reports prepared by these two consultants.</p> <p>The Golden Bay Neighbourhood Centre Detailed Area Plan is a guide for future development of the proposed neighbourhood centre. The DAP does not show any crossover on Aurea Blvd to the other side of the development however a left in/ left out crossover was approved and constructed on the other side of Aurea Boulevard for a similar development opposite the subject development. This constructed crossover has been operating with now traffic issues.</p>
2	Removal of the two on-street bays on Aurea Boulevard due to restricted sight lines at the vehicle crossover.	The two on-street bays on Aurea Boulevard have been removed in the updated development plan.
3	Concerns that queuing from the service station will spill out onto public roads, with additional queuing required – only 1 vehicle can be accommodated behind the bowser where a minimum of 2 should be provided for. Vehicles are able to come into the bowser from other directions which is likely to reduce the efficiency of the restricted queuing space and the potential to block internal traffic flow, increasing risk that vehicle queuing from the service station may overflow onto public street	<p>The stacking capacity of the proposed service station have been assessed in the TIA. The outcome of the queue length analysis indicates that during a busy day the 95th percentile queue within the proposed service station is 12 cars (8 cars refuelling and 4 cars waiting). The service station layout can comfortably accommodate this level of queuing.</p> <p>In order to investigate if four additional cars park behind four fill points, still a B99 car can navigate the site, Figure 4 in the revised TIA is prepared. This sketch shows that at worst case scenario that 2 cars park at both sides of the last two bowzers, still a B99 car can move around the parked cars.</p>

4	Confusing arrangements regarding the hatched area for the service station due to location and geometry of bower location – kerbing may be required.	The line marked kerb should be sufficient, however mountable kerb can also be provided if needs be. This is a design issue and can be addressed during the detailed design stage of the project.
5	The proposed HRV loading bay for the service station does not conform to AS2890.2. Confirmation is required in the TIA that the maximum commercial vehicle servicing the supermarket is a 12.5m HRV. Swept path analysis is required to demonstrate that it is possible to enter and exit the site in forward gear (without encroaching into the area where vehicles queue for the bowser, as well as no reversing movement along the parking aisle.	The proposed loading bay in the updated plan has been adjusted to conform to AS2890.2. An 8.8m truck is expected to service the loading bay. The updated turn paths indicates that an 8.8m truck can enter and exit the site in forward gear satisfactorily. The service trucks are expected to attend the site after hours to minimis the traffic conflict at the site. This type of operations is not unusual for service stations.
6	Provision for cars to turn around at the end of the blind aisle(s) near the liquor store, and drive out forward to be provided in accordance with AS2890.2	<p>The provision of a turnaround bay is not required because the length of the blind isle is less than six 90-degree bays plus 1m as suggested by AS2890.1.</p> <p>Please note that the proposed liquor store drive through would also facilitate the turnaround for cars that enter the blind isle.</p>
7	Advise how were differences in turning volumes sourced by using SCAT and video survey in determining the existing turning volumes for the two intersections	The video turning movement counts were undertaken for the existing roundabout intersection. The SCATS data was sourced for the signalised intersection. The video counts indicated slightly higher traffic volumes on Aurea Blvd. Therefore, the SCATS traffic data were factored up to match the outcome of the video traffic counts on Aurea Blvd, resulting in a robust assessment.
8	References used for trip generation rates, passing trade and directional split are required to be provided in an extract to verify validity	Transcore referenced ITE guidelines for trip rates. The City trip generation assessments provided to Transcore also used the same guideline and provide almost similar results to Transcore assessments when applying no cross trade to the trips (refer below table). As evident Transcore's trip generation estimation for critical PM peak hour is higher than CoR and also DPLH (DPLH estimate is 503 trips during the PM peak hour). However, Transcore applied 25% cross trade in line with RTA NSW Guidelines to allow for internal trips between different land uses.

			AM trips Transcore	AM trips COR	PM trips Transcore	PM trips COR
		Fast food outlet with drive through	227	227	185	185
		Liquor	0	0	41	41
		Supermarket	19	48	186	116
		Specialty	1	19	11	8
		Service Station	100	100	112	112
		Total	347	394	534	462
9	The reference for assuming 25% cross-trade is required	The RTA NSW Guidelines indicates a discount rate of 25% for centres less than 10,000 m2 GLFA.				
10	Trip distribution is to be shown on a plan – query why only small amount of traffic is associated with Warnbro Sound Avenue?	Figure 11 of the TIA shows the proposed development traffic for the AM and PM Weekday peak hours. According to this plan about 25% of the total trips have been distributed to the traffic signal and the balance have been distributed to the west of the Warnbro Sound Avenue. As the proposed centre is located to the west of Warnbro Sound Avenue, it is expected that mainly residents to the west of Warnbro Sound Avenue would access the site via Thundelarra Drive and Aurea Blvd.				
11	Plan showing passing and non-passing trade is required	The Figure 11 of the TIA is the summation of the passing and non-passing trip distribution and is sufficient for the purpose of TIA.				
12	Number of vehicle trips entering and exiting the site does not appear to match with the external road links as shown in Figure 11	<p>It matches. See below calculations extracted from Figure 11 of the TIA. It should be noted that passing trips already exists on the roads and would only appear at development crossovers.</p> <p>AM inbound = 35 + 95 = 130 PM inbound = 55 + 144 = 199 AM outbound = 96 + 34 = 130 PM outbound = 55 + 144 = 199</p>				

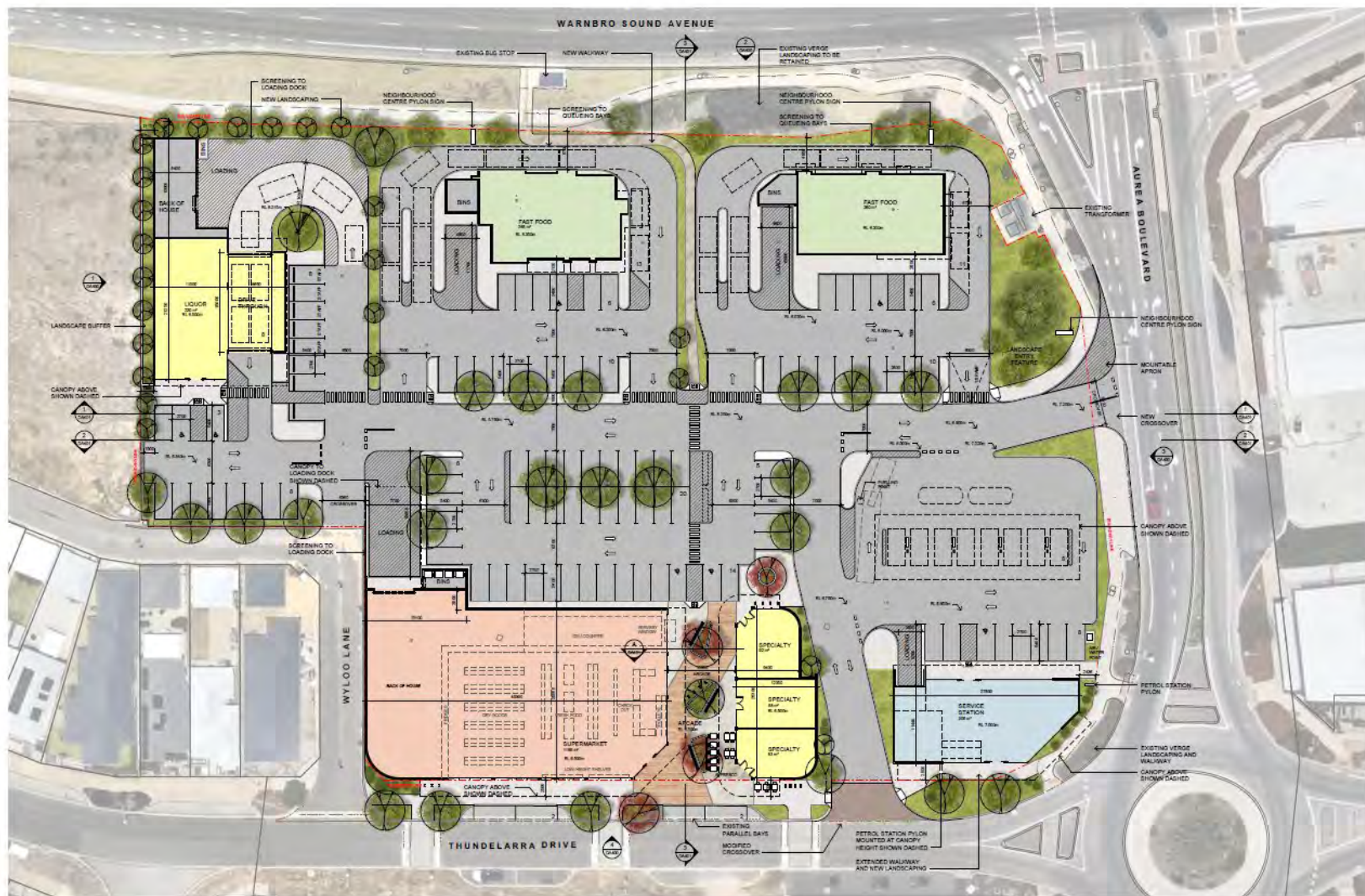
13	Validity of traffic assessment is queried (i.e. estimated daily traffic volumes are significantly different when compared with the approved Structure Plan for Golden Bay	The traffic projections for the Golden Bay Comprehensive Development Plan Update (prepared by Transcore, dated 1st April 2011) reflects the full development of the Golden Bay by year 2031. It is our understanding that it is unlikely that the Golden Bay Development Plan and the surrounding areas would be fully developed by year 2031 and the projected traffic volumes on Aurea Blvd and Thundelarra Drive would reach to the level that was reported for the full development of the Golden Bay Structure Plan. As a result, Transcore adopted the methodology of 2% annual growth on the existing traffic volumes. This approach was accepted as part of the approved and constructed development opposite the subject site on the other side of Aurea Boulevard.
14	Confirm whether SIDRA models been calibrated to match existing conditions	Yes, the SIDRA models were calibrated against the existing queues at the signalised and roundabout intersections. The outcome of the existing assessments is provided in Appendix B of the TIA.
15	Kerb ramps for universal access across site	The updated plan shows the Kerb ramps for universal access
16	Pedestrian refuge within Thundelarra crossover to be shown	The fuel tanker needs to full width of the crossover to turn in. Therefore, provision of a refuge may not be feasible. Also, review of the Nearmap images indicates that there are no refuges at any of the t-intersections or crossovers in this area. Therefore, the pedestrian refuge at Thundelarra crossover is not required. In any case, the updated development plan shows the crossover with red paving to indicate pedestrian priority at the crossover.
17	Relocation of bicycle parking so as not to restrict pedestrian flow	The proposed bicycle parking does not restrict pedestrian flow
18	Concerns regarding swept path analysis: <ul style="list-style-type: none"> o Encroaching into the opposing traffic lane o Clash with kerbing o Insufficient horizontal clearance to the kerb ramp o Reversing movement 	<ol style="list-style-type: none"> 1. The body of the fuel tanker or 12.5m truck would not encroach onto the right turn lane on Aurea Blvd when exiting the proposed LiLo crossover. 2. The body of the vehicle would not clash with the kerbs; 3. The clearance maybe insufficient at some kerbs but the body of the truck would not clash with the kerbs. 4. the 12.5m truck reverse back to the supermarket loading bay for a short distance which would not undermine traffic operations or safety.

		It should be noted that service vehicles will visit the site infrequently and generally outside the peak operating times when the traffic on surrounding roads are lower and less activity is happening within the development.
19	An independent trip generation exercise found that results are significantly different, especially during the AM peak hour (i.e. the City's generation volume is 52% more).	The 25% relates to the cross-trade which was assumed in Transcore calculations. Refer response to item 8 above.
20	The total number of trips entering and exiting does not appear to match with the external road links	Refer response to item 12 above.
21	Section 6.5 suggests that the proposed development will not increase traffic on any lanes by more than 100 vph however Figure 11 clearly suggests that some traffic lanes increase by more than 100 vph which suggests contradictory	The increase of just over 100vph per lane would happen during the PM peak hour for a short section of Thundelarra Dr between the roundabout and the development crossover which would result in total traffic projection of about 245vph or 2450vpd during the PM peak hour in 2033. The current standard of Thundelarra Dr as a neighbourhood connector B road would be able to comfortably accommodate the 2033 projected traffic volumes along this section of the road.

Appendix B

PROPOSED DEVELOPMENT PLAN





PROPOSED GROUND FLOOR PLAN
GOLDEN BAY NEIGHBOURHOOD CENTRE

Status: **DEVELOPMENT APPLICATION**
Path: C:\Users\jara\Documents\Bay Local Plan\GDS\GDS4\Golden Bay Neighbourhood Centre\JARRA

Scale: 1:250 @ A1
© Hames Sharley



Project Number: 44634
Drawing Number: DA200
Revision: K
Date: 28.04.23

Hames Sharley

Appendix C

INTERSECTION ANALYSIS – SIDRA RESULTS

MOVEMENT SUMMARY

 Site: [Thundelarra Dr & Aurea Blvd - Existing - AM (Site Folder: Existing)]

 Network: N102 [AM (Network Folder: Existing)]

Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total veh/h]	[HV %]	v/c	sec		[Veh. veh]	[Dist m]				km/h
South: Thundelarra Dr (S)														
1	L2	6	4.0	6	4.0	0.130	3.1	LOS A	0.8	6.6	0.29	0.55	0.29	41.5
2	T1	13	4.0	13	4.0	0.130	3.0	LOS A	0.8	6.6	0.29	0.55	0.29	39.2
3	R2	139	4.0	139	4.0	0.130	7.7	LOS A	0.8	6.6	0.29	0.55	0.29	25.5
3u	U	3	4.0	3	4.0	0.130	9.6	LOS A	0.8	6.6	0.29	0.55	0.29	28.5
Approach		161	4.0	161	4.0	0.130	7.2	LOS A	0.8	6.6	0.29	0.55	0.29	28.9
East: Aurea Blvd(E)														
4	L2	91	4.0	91	4.0	0.131	3.0	LOS A	0.7	5.1	0.16	0.36	0.16	37.7
5	T1	82	4.0	82	4.0	0.131	2.9	LOS A	0.7	5.1	0.16	0.36	0.16	47.9
6	R2	1	4.0	1	4.0	0.131	7.7	LOS A	0.7	5.1	0.16	0.36	0.16	46.4
6u	U	1	4.0	1	4.0	0.131	9.5	LOS A	0.7	5.1	0.16	0.36	0.16	36.2
Approach		175	4.0	175	4.0	0.131	3.0	LOS A	0.7	5.1	0.16	0.36	0.16	44.6
North: Thundelarra Dr (N)														
7	L2	3	4.0	3	4.0	0.024	4.2	LOS A	0.1	1.0	0.45	0.46	0.45	38.0
8	T1	17	4.0	17	4.0	0.024	4.1	LOS A	0.1	1.0	0.45	0.46	0.45	39.2
9	R2	3	4.0	3	4.0	0.024	8.9	LOS A	0.1	1.0	0.45	0.46	0.45	46.4
9u	U	1	4.0	1	4.0	0.024	10.7	LOS B	0.1	1.0	0.45	0.46	0.45	46.3
Approach		24	4.0	24	4.0	0.024	5.0	LOS A	0.1	1.0	0.45	0.46	0.45	41.0
West: Aurea Blvd (W)														
10	L2	1	4.0	1	4.0	0.103	3.7	LOS A	0.6	4.7	0.38	0.46	0.38	44.3
11	T1	88	4.0	88	4.0	0.103	3.6	LOS A	0.6	4.7	0.38	0.46	0.38	42.7
12	R2	18	4.0	18	4.0	0.103	8.4	LOS A	0.6	4.7	0.38	0.46	0.38	41.8
12u	U	8	4.0	8	4.0	0.103	10.2	LOS B	0.6	4.7	0.38	0.46	0.38	48.3
Approach		116	4.0	116	4.0	0.103	4.8	LOS A	0.6	4.7	0.38	0.46	0.38	43.2
All Vehicles		476	4.0	476	4.0	0.131	5.0	LOS A	0.8	6.6	0.27	0.45	0.27	40.5



MOVEMENT SUMMARY

Site: [Warnbro sound Ave & Aurea Blvd & Adelong Ave - Existing - AM (Site Folder: Existing)]

Network: N102 [AM (Network Folder: Existing)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 101 seconds (Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total HV veh/h	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Wambro Sound Ave (S)														
1	L2	44	4.0	44	4.0	0.031	6.5	LOS A	0.2	1.9	0.18	0.59	0.18	49.7
2	T1	241	5.8	241	5.8	0.276	34.2	LOS C	4.9	38.3	0.86	0.69	0.86	33.2
3	R2	7	4.0	7	4.0	0.047	52.3	LOS D	0.3	2.7	0.94	0.66	0.94	24.5
Approach		293	5.5	293	5.5	0.276	30.4	LOS C	4.9	38.3	0.76	0.67	0.76	34.2
East: Adelong Ave(E)														
4	L2	16	4.0	16	4.0	0.178	26.2	LOS C	2.3	18.0	0.83	0.66	0.83	35.4
5	T1	60	4.0	60	4.0	*0.178	21.6	LOS C	2.3	18.0	0.83	0.66	0.83	15.2
6	R2	24	4.0	24	4.0	0.064	38.4	LOS D	0.9	7.4	0.82	0.69	0.82	19.0
Approach		100	4.0	100	4.0	0.178	26.4	LOS C	2.3	18.0	0.83	0.67	0.83	21.1
North: Warnbro Sound Ave (N)														
7	L2	23	4.0	23	4.0	0.022	12.4	LOS B	0.4	3.2	0.42	0.62	0.42	35.1
8	T1	369	9.8	369	9.8	*0.440	35.8	LOS D	7.9	64.1	0.90	0.74	0.90	32.4
9	R2	72	4.0	72	4.0	*0.460	55.4	LOS E	3.5	27.7	0.99	0.76	0.99	10.9
Approach		464	8.6	464	8.6	0.460	37.7	LOS D	7.9	64.1	0.89	0.74	0.89	29.5
West: Aurea Blvd (W)														
10	L2	137	4.0	137	4.0	0.191	10.3	LOS B	2.8	22.0	0.48	0.60	0.48	36.8
11	T1	47	4.0	47	4.0	*0.191	5.7	LOS A	2.8	22.0	0.48	0.60	0.48	32.8
12	R2	47	4.0	47	4.0	0.125	39.1	LOS D	1.9	14.8	0.84	0.72	0.84	27.8
Approach		232	4.0	232	4.0	0.191	15.2	LOS B	2.8	22.0	0.56	0.62	0.56	32.6
All Vehicles		1088	6.4	1088	6.4	0.460	29.9	LOS C	7.9	64.1	0.78	0.69	0.78	30.8



MOVEMENT SUMMARY

Site: [Thundelarra Dr & Aurea Blvd - Existing - PM (Site Folder: Existing)]

Network: N102 [PM (Network Folder: Existing)]

Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Thundelarra Dr (S)														
1	L2	6	4.0	6	4.0	0.067	3.3	LOS A	0.4	3.2	0.34	0.55	0.34	41.5
2	T1	5	4.0	5	4.0	0.067	3.2	LOS A	0.4	3.2	0.34	0.55	0.34	39.2
3	R2	65	4.0	65	4.0	0.067	7.9	LOS A	0.4	3.2	0.34	0.55	0.34	25.3
3u	U	1	4.0	1	4.0	0.067	9.8	LOS A	0.4	3.2	0.34	0.55	0.34	28.4
Approach		78	4.0	78	4.0	0.067	7.3	LOS A	0.4	3.2	0.34	0.55	0.34	30.0
East: Aurea Blvd(E)														
4	L2	64	4.0	64	4.0	0.139	2.9	LOS A	0.7	5.6	0.13	0.34	0.13	38.2
5	T1	128	4.0	128	4.0	0.139	2.7	LOS A	0.7	5.6	0.13	0.34	0.13	48.1
6	R2	2	4.0	2	4.0	0.139	7.5	LOS A	0.7	5.6	0.13	0.34	0.13	46.6
6u	U	1	4.0	1	4.0	0.139	9.4	LOS A	0.7	5.6	0.13	0.34	0.13	36.9
Approach		196	4.0	196	4.0	0.139	2.9	LOS A	0.7	5.6	0.13	0.34	0.13	46.3
North: Thundelarra Dr (N)														
7	L2	1	4.0	1	4.0	0.021	3.6	LOS A	0.1	0.9	0.36	0.45	0.36	38.1
8	T1	15	4.0	15	4.0	0.021	3.5	LOS A	0.1	0.9	0.36	0.45	0.36	39.2
9	R2	6	4.0	6	4.0	0.021	8.3	LOS A	0.1	0.9	0.36	0.45	0.36	46.3
9u	U	1	4.0	1	4.0	0.021	10.1	LOS B	0.1	0.9	0.36	0.45	0.36	46.2
Approach		23	4.0	23	4.0	0.021	5.1	LOS A	0.1	0.9	0.36	0.45	0.36	42.4
West: Aurea Blvd (W)														
10	L2	1	4.0	1	4.0	0.079	3.2	LOS A	0.5	3.6	0.26	0.36	0.26	45.3
11	T1	86	4.0	86	4.0	0.079	3.0	LOS A	0.5	3.6	0.26	0.36	0.26	44.1
12	R2	7	4.0	7	4.0	0.079	7.8	LOS A	0.5	3.6	0.26	0.36	0.26	43.0
12u	U	2	4.0	2	4.0	0.079	9.7	LOS A	0.5	3.6	0.26	0.36	0.26	49.2
Approach		97	4.0	97	4.0	0.079	3.5	LOS A	0.5	3.6	0.26	0.36	0.26	44.2
All Vehicles		394	4.0	394	4.0	0.139	4.0	LOS A	0.7	5.6	0.21	0.39	0.21	43.5



MOVEMENT SUMMARY

Site: [Warnbro sound Ave & Aurea Blvd & Adelong Ave - Existing - PM (Site Folder: Existing)]

Network: N102 [PM (Network Folder: Existing)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 104 seconds (Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Wambro Sound Ave (S)														
1	L2	67	4.0	67	4.0	0.049	6.6	LOS A	0.4	3.1	0.19	0.59	0.19	49.5
2	T1	363	5.8	363	5.8	*0.429	37.2	LOS D	8.0	62.4	0.90	0.74	0.90	31.9
3	R2	5	4.0	5	4.0	0.026	50.2	LOS D	0.2	1.9	0.91	0.65	0.91	25.1
Approach		436	5.5	436	5.5	0.429	32.7	LOS C	8.0	62.4	0.79	0.72	0.79	33.2
East: Adelong Ave(E)														
4	L2	6	4.0	6	4.0	0.052	26.7	LOS C	0.7	5.4	0.79	0.60	0.79	34.9
5	T1	16	4.0	16	4.0	0.052	22.2	LOS C	0.7	5.4	0.79	0.60	0.79	14.7
6	R2	26	4.0	26	4.0	*0.071	40.1	LOS D	1.1	8.4	0.83	0.70	0.83	18.5
Approach		48	4.0	48	4.0	0.071	32.5	LOS C	1.1	8.4	0.81	0.65	0.81	20.4
North: Warnbro Sound Ave (N)														
7	L2	37	4.0	37	4.0	0.034	12.2	LOS B	0.6	5.0	0.41	0.63	0.41	35.3
8	T1	319	9.8	319	9.8	0.391	36.9	LOS D	6.9	56.5	0.89	0.73	0.89	32.0
9	R2	112	4.0	112	4.0	*0.554	54.6	LOS D	5.6	43.7	0.99	0.79	0.99	11.1
Approach		467	8.0	467	8.0	0.554	39.2	LOS D	6.9	56.5	0.88	0.74	0.88	27.5
West: Aurea Blvd (W)														
10	L2	116	4.0	116	4.0	0.098	6.1	LOS A	1.1	8.4	0.23	0.54	0.23	41.1
11	T1	11	4.0	11	4.0	*0.098	1.6	LOS A	1.1	8.4	0.23	0.54	0.23	37.4
12	R2	26	4.0	26	4.0	0.071	40.1	LOS D	1.1	8.4	0.83	0.70	0.83	27.5
Approach		153	4.0	153	4.0	0.098	11.7	LOS B	1.1	8.4	0.34	0.56	0.34	35.7
All Vehicles		1104	6.3	1104	6.3	0.554	32.5	LOS C	8.0	62.4	0.77	0.70	0.77	30.3



MOVEMENT SUMMARY

 Site: [Thundelarra Dr & Aurea Blvd - 2023 - AM (Site Folder: 2023)]

 Network: N101 [AM (Network Folder: 2023)]

Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total veh/h]	[HV %]	v/c	sec		[Veh. veh]	[Dist m]				km/h
South: Thundelarra Dr (S)														
1	L2	6	4.0	6	4.0	0.164	3.5	LOS A	1.0	7.7	0.39	0.57	0.39	41.7
2	T1	37	4.0	37	4.0	0.164	3.4	LOS A	1.0	7.7	0.39	0.57	0.39	25.5
3	R2	140	4.0	140	4.0	0.164	8.1	LOS A	1.0	7.7	0.39	0.57	0.39	25.5
3u	U	3	4.0	3	4.0	0.164	9.9	LOS A	1.0	7.7	0.39	0.57	0.39	28.6
Approach		186	4.0	186	4.0	0.164	7.0	LOS A	1.0	7.7	0.39	0.57	0.39	27.1
East: Aurea Blvd(E)														
4	L2	93	4.0	93	4.0	0.171	2.7	LOS A	1.1	8.4	0.30	0.43	0.30	33.5
5	T1	84	4.0	84	4.0	0.171	2.6	LOS A	1.1	8.4	0.30	0.43	0.30	47.0
6	R2	37	4.0	37	4.0	0.171	7.2	LOS A	1.1	8.4	0.30	0.43	0.30	29.1
6u	U	1	4.0	1	4.0	0.171	9.0	LOS A	1.1	8.4	0.30	0.43	0.30	29.1
Approach		215	4.0	215	4.0	0.171	3.5	LOS A	1.1	8.4	0.30	0.43	0.30	41.9
North: Thundelarra Dr (N)														
7	L2	43	4.0	43	4.0	0.098	2.9	LOS A	0.6	4.3	0.48	0.51	0.48	23.9
8	T1	40	4.0	40	4.0	0.098	3.1	LOS A	0.6	4.3	0.48	0.51	0.48	32.5
9	R2	16	4.0	16	4.0	0.098	7.1	LOS A	0.6	4.3	0.48	0.51	0.48	47.5
9u	U	1	4.0	1	4.0	0.098	8.9	LOS A	0.6	4.3	0.48	0.51	0.48	23.9
Approach		100	4.0	100	4.0	0.098	3.7	LOS A	0.6	4.3	0.48	0.51	0.48	36.7
West: Aurea Blvd (W)														
10	L2	14	4.0	14	4.0	0.123	4.1	LOS A	0.7	5.6	0.46	0.50	0.46	42.4
11	T1	89	4.0	89	4.0	0.123	4.0	LOS A	0.7	5.6	0.46	0.50	0.46	42.4
12	R2	18	4.0	18	4.0	0.123	8.8	LOS A	0.7	5.6	0.46	0.50	0.46	41.6
12u	U	8	4.0	8	4.0	0.123	10.6	LOS B	0.7	5.6	0.46	0.50	0.46	48.1
Approach		129	4.0	129	4.0	0.123	5.1	LOS A	0.7	5.6	0.46	0.50	0.46	42.9
All Vehicles		631	4.0	631	4.0	0.171	4.9	LOS A	1.1	8.4	0.38	0.50	0.38	38.7



MOVEMENT SUMMARY

Site: [Warnbro sound Ave & Aurea Blvd & Adelong Ave - 2023
- AM (Site Folder: 2023)]

Network: N101 [AM
(Network Folder: 2023)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total veh/h]	[HV %]	v/c	sec		[Veh. veh]	[Dist m]				km/h
South: Wambro Sound Ave (S)														
1	L2	58	4.0	58	4.0	0.042	6.8	LOS A	0.3	2.7	0.22	0.60	0.22	49.3
2	T1	239	5.8	239	5.8	0.279	30.9	LOS C	4.4	34.2	0.86	0.69	0.86	34.6
3	R2	7	4.0	7	4.0	0.042	46.3	LOS D	0.3	2.4	0.93	0.66	0.93	26.2
Approach		304	5.4	304	5.4	0.279	26.7	LOS C	4.4	34.2	0.74	0.67	0.74	36.0
East: Adelong Ave(E)														
4	L2	13	4.0	13	4.0	0.285	28.6	LOS C	2.7	20.9	0.91	0.71	0.91	34.3
5	T1	75	4.0	75	4.0	*0.285	24.0	LOS C	2.7	20.9	0.91	0.71	0.91	14.2
6	R2	21	4.0	21	4.0	0.078	40.3	LOS D	0.8	6.3	0.88	0.69	0.88	18.4
Approach		108	4.0	108	4.0	0.285	27.7	LOS C	2.7	20.9	0.91	0.71	0.91	19.0
North: Wambro Sound Ave (N)														
7	L2	23	4.0	23	4.0	0.024	13.2	LOS B	0.4	3.2	0.47	0.63	0.47	34.3
8	T1	372	9.8	372	9.8	*0.451	32.5	LOS C	7.1	58.2	0.91	0.75	0.91	33.9
9	R2	81	4.0	81	4.0	*0.464	49.2	LOS D	3.6	27.8	0.99	0.77	0.99	12.0
Approach		476	8.5	476	8.5	0.464	34.4	LOS C	7.1	58.2	0.90	0.74	0.90	30.7
West: Aurea Blvd (W)														
10	L2	154	4.0	154	4.0	0.198	7.7	LOS A	2.3	18.1	0.43	0.57	0.43	38.4
11	T1	55	4.0	55	4.0	*0.198	3.8	LOS A	2.3	18.1	0.43	0.57	0.43	33.6
12	R2	63	4.0	63	4.0	0.148	33.0	LOS C	2.2	17.2	0.82	0.72	0.82	29.1
Approach		272	4.0	272	4.0	0.198	12.8	LOS B	2.3	18.1	0.52	0.61	0.52	33.4
All Vehicles		1160	6.2	1160	6.2	0.464	26.7	LOS C	7.1	58.2	0.77	0.69	0.77	31.8



MOVEMENT SUMMARY

Site: [Thundelarra Dr & Crossover 1 - 2023 - AM (Site Folder: 2023)]

Network: N101 [AM (Network Folder: 2023)]

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

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Thundelarra Dr (S)														
2	T1	14	4.0	14	4.0	0.050	0.1	LOS A	0.2	1.8	0.12	0.40	0.12	43.9
3	R2	74	2.0	74	2.0	0.050	2.5	LOS A	0.2	1.8	0.12	0.40	0.12	30.2
Approach		87	2.3	87	2.3	0.050	2.2	NA	0.2	1.8	0.12	0.40	0.12	35.2
East: Crossover 1 (E)														
4	L2	91	2.0	91	2.0	0.068	0.0	LOS A	0.3	2.1	0.04	0.02	0.04	19.4
6	R2	13	2.0	13	2.0	0.068	0.9	LOS A	0.3	2.1	0.04	0.02	0.04	37.5
Approach		103	2.0	103	2.0	0.068	0.1	LOS A	0.3	2.1	0.04	0.02	0.04	25.3
North: Thundelarra Dr (N)														
7	L2	27	2.0	27	2.0	0.020	4.6	LOS A	0.0	0.0	0.00	0.40	0.00	36.6
8	T1	9	4.0	9	4.0	0.020	0.0	LOS A	0.0	0.0	0.00	0.40	0.00	40.9
Approach		37	2.5	37	2.5	0.020	3.4	NA	0.0	0.0	0.00	0.40	0.00	37.6
All Vehicles		227	2.2	227	2.2	0.068	1.4	NA	0.3	2.1	0.06	0.23	0.06	32.4

MOVEMENT SUMMARY

Site: [Aurea Blvd & Crossover 2 - 2023 - AM (Site Folder: 2023)]



Network: N101 [AM (Network Folder: 2023)]

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

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
East: Aurea Blvd (E)														
5	T1	214	4.0	214	4.0	0.116	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	50.0
Approach		214	4.0	214	4.0	0.116	0.0	NA	0.0	0.0	0.00	0.00	0.00	50.0
North: Crossover 2 (N)														
7	L2	36	2.0	36	2.0	0.024	0.3	LOS A	0.1	0.7	0.19	0.07	0.19	17.9
Approach		36	2.0	36	2.0	0.024	0.3	LOS A	0.1	0.7	0.19	0.07	0.19	17.9
West: Aurea Blvd (W)														
10	L2	38	2.0	38	2.0	0.075	3.9	LOS A	0.0	0.0	0.00	0.15	0.00	24.5
11	T1	236	4.0	236	4.0	0.075	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	45.3
Approach		274	3.7	274	3.7	0.075	0.5	NA	0.0	0.0	0.00	0.07	0.00	39.4
All Vehicles		523	3.7	523	3.7	0.116	0.3	NA	0.1	0.7	0.01	0.04	0.01	41.1



MOVEMENT SUMMARY

 Site: [Thundelarra Dr & Aurea Blvd - 2023 - PM (Site Folder:  Network: N101 [PM (Network Folder: 2023)]]

Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS [Total HV] veh/h %		ARRIVAL FLOWS [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. Dist] veh m		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Thundelarra Dr (S)														
1	L2	6	4.0	6	4.0	0.114	3.9	LOS A	0.7	5.2	0.45	0.57	0.45	42.2
2	T1	43	4.0	43	4.0	0.114	3.8	LOS A	0.7	5.2	0.45	0.57	0.45	26.0
3	R2	69	4.0	69	4.0	0.114	8.5	LOS A	0.7	5.2	0.45	0.57	0.45	26.0
3u	U	1	4.0	1	4.0	0.114	10.4	LOS B	0.7	5.2	0.45	0.57	0.45	29.1
Approach		120	4.0	120	4.0	0.114	6.6	LOS A	0.7	5.2	0.45	0.57	0.45	28.4
East: Aurea Blvd(E)														
4	L2	65	4.0	65	4.0	0.202	2.8	LOS A	1.3	10.3	0.33	0.44	0.33	33.0
5	T1	131	4.0	131	4.0	0.202	2.7	LOS A	1.3	10.3	0.33	0.44	0.33	46.6
6	R2	55	4.0	55	4.0	0.202	7.3	LOS A	1.3	10.3	0.33	0.44	0.33	28.7
6u	U	1	4.0	1	4.0	0.202	9.1	LOS A	1.3	10.3	0.33	0.44	0.33	28.7
Approach		252	4.0	252	4.0	0.202	3.8	LOS A	1.3	10.3	0.33	0.44	0.33	43.0
North: Thundelarra Dr (N)														
7	L2	54	4.0	54	4.0	0.126	2.4	LOS A	0.7	5.7	0.40	0.48	0.40	25.2
8	T1	56	4.0	56	4.0	0.126	2.6	LOS A	0.7	5.7	0.40	0.48	0.40	33.3
9	R2	29	4.0	29	4.0	0.126	6.5	LOS A	0.7	5.7	0.40	0.48	0.40	47.8
9u	U	1	4.0	1	4.0	0.126	8.4	LOS A	0.7	5.7	0.40	0.48	0.40	25.2
Approach		140	4.0	140	4.0	0.126	3.4	LOS A	0.7	5.7	0.40	0.48	0.40	39.1
West: Aurea Blvd (W)														
10	L2	22	4.0	22	4.0	0.110	3.8	LOS A	0.6	5.0	0.40	0.44	0.40	43.3
11	T1	89	4.0	89	4.0	0.110	3.7	LOS A	0.6	5.0	0.40	0.44	0.40	43.3
12	R2	7	4.0	7	4.0	0.110	8.4	LOS A	0.6	5.0	0.40	0.44	0.40	42.3
12u	U	2	4.0	2	4.0	0.110	10.3	LOS B	0.6	5.0	0.40	0.44	0.40	48.8
Approach		121	4.0	121	4.0	0.110	4.1	LOS A	0.6	5.0	0.40	0.44	0.40	43.4
All Vehicles		633	4.0	633	4.0	0.202	4.3	LOS A	1.3	10.3	0.38	0.47	0.38	40.7



MOVEMENT SUMMARY

Site: [Warnbro sound Ave & Aurea Blvd & Adelong Ave - 2023] **Network:** N101 [PM (Network Folder: 2023)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total veh/h]	[HV %]	v/c	sec		[Veh. veh]	[Dist m]				km/h
South: Wambro Sound Ave (S)														
1	L2	91	4.0	91	4.0	0.067	7.0	LOS A	0.6	4.7	0.23	0.61	0.23	49.1
2	T1	360	5.8	360	5.8	*0.519	36.4	LOS D	7.3	57.3	0.95	0.78	0.95	32.2
3	R2	5	4.0	5	4.0	0.021	41.6	LOS D	0.2	1.6	0.88	0.65	0.88	27.7
Approach		456	5.4	456	5.4	0.519	30.6	LOS C	7.3	57.3	0.81	0.74	0.81	34.0
East: Adelong Ave(E)														
4	L2	1	4.0	1	4.0	0.135	35.2	LOS D	1.3	10.5	0.89	0.67	0.89	31.4
5	T1	38	4.0	38	4.0	*0.135	30.6	LOS C	1.3	10.5	0.89	0.67	0.89	12.1
6	R2	22	4.0	22	4.0	0.081	40.3	LOS D	0.8	6.6	0.89	0.70	0.89	18.4
Approach		61	4.0	61	4.0	0.135	34.2	LOS C	1.3	10.5	0.89	0.68	0.89	15.5
North: Wambro Sound Ave (N)														
7	L2	38	4.0	38	4.0	0.039	13.2	LOS B	0.7	5.2	0.47	0.64	0.47	34.3
8	T1	322	9.8	322	9.8	0.483	36.1	LOS D	6.5	53.0	0.94	0.76	0.94	32.3
9	R2	123	4.0	123	4.0	*0.488	45.4	LOS D	5.2	40.5	0.97	0.79	0.97	12.8
Approach		483	7.9	483	7.9	0.488	36.7	LOS D	6.5	53.0	0.91	0.76	0.91	28.3
West: Aurea Blvd (W)														
10	L2	139	4.0	139	4.0	0.127	5.6	LOS A	1.2	9.8	0.27	0.53	0.27	41.0
11	T1	22	4.0	22	4.0	*0.127	1.7	LOS A	1.2	9.8	0.27	0.53	0.27	36.4
12	R2	47	4.0	47	4.0	0.111	32.6	LOS C	1.6	12.7	0.81	0.71	0.81	29.2
Approach		208	4.0	208	4.0	0.127	11.3	LOS B	1.6	12.7	0.40	0.57	0.40	35.1
All Vehicles		1208	6.1	1208	6.1	0.519	29.9	LOS C	7.3	57.3	0.78	0.72	0.78	30.8



MOVEMENT SUMMARY

Site: [Thundelarra Dr & Crossover 1 - 2023 - PM (Site Folder:  Network: N101 [PM (Network Folder: 2023)])]

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

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Thundelarra Dr (S)														
2	T1	7	4.0	7	4.0	0.070	0.1	LOS A	0.3	2.5	0.13	0.44	0.13	43.3
3	R2	113	2.0	113	2.0	0.070	2.6	LOS A	0.3	2.5	0.13	0.44	0.13	28.9
Approach		120	2.1	120	2.1	0.070	2.4	NA	0.3	2.5	0.13	0.44	0.13	31.2
East: Crossover 1 (E)														
4	L2	136	2.0	136	2.0	0.105	0.0	LOS A	0.4	3.3	0.01	0.02	0.01	19.5
6	R2	23	2.0	23	2.0	0.105	1.0	LOS A	0.4	3.3	0.01	0.02	0.01	37.6
Approach		159	2.0	159	2.0	0.105	0.2	LOS A	0.4	3.3	0.01	0.02	0.01	26.3
North: Thundelarra Dr (N)														
7	L2	43	2.0	43	2.0	0.025	4.6	LOS A	0.0	0.0	0.00	0.51	0.00	35.2
8	T1	2	4.0	2	4.0	0.025	0.0	LOS A	0.0	0.0	0.00	0.51	0.00	39.0
Approach		45	2.1	45	2.1	0.025	4.4	NA	0.0	0.0	0.00	0.51	0.00	35.4
All Vehicles		324	2.1	324	2.1	0.105	1.6	NA	0.4	3.3	0.05	0.24	0.05	30.5

MOVEMENT SUMMARY

Site: [Aurea Blvd & Crossover 2 - 2023 - PM (Site Folder:  Network: N101 [PM (Network Folder: 2023)])]

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

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
East: Aurea Blvd (E)														
5	T1	252	4.0	252	4.0	0.137	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		252	4.0	252	4.0	0.137	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
North: Crossover 2 (N)														
7	L2	57	2.0	57	2.0	0.037	0.1	LOS A	0.1	1.1	0.12	0.03	0.12	18.6
Approach		57	2.0	57	2.0	0.037	0.1	LOS A	0.1	1.1	0.12	0.03	0.12	18.6
West: Aurea Blvd (W)														
10	L2	60	2.0	60	2.0	0.058	3.9	LOS A	0.0	0.0	0.00	0.30	0.00	22.6
11	T1	152	4.0	152	4.0	0.058	0.0	LOS A	0.0	0.0	0.00	0.09	0.00	43.5
Approach		212	3.4	212	3.4	0.058	1.1	NA	0.0	0.0	0.00	0.15	0.00	32.9
All Vehicles		520	3.6	520	3.6	0.137	0.5	NA	0.1	1.1	0.01	0.07	0.01	37.4



MOVEMENT SUMMARY

 Site: [Thundelarra Dr & Aurea Blvd - 2033 - AM (Site Folder: 2033)]

 Network: N101 [AM (Network Folder: 2033)]

Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total HV veh/h	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Thundelarra Dr (S)														
1	L2	7	4.0	7	4.0	0.200	3.6	LOS A	1.2	9.7	0.43	0.59	0.43	41.4
2	T1	40	4.0	40	4.0	0.200	3.5	LOS A	1.2	9.7	0.43	0.59	0.43	25.2
3	R2	172	4.0	172	4.0	0.200	8.3	LOS A	1.2	9.7	0.43	0.59	0.43	25.2
3u	U	4	4.0	4	4.0	0.200	10.1	LOS B	1.2	9.7	0.43	0.59	0.43	28.3
Approach		223	4.0	223	4.0	0.200	7.3	LOS A	1.2	9.7	0.43	0.59	0.43	26.7
East: Aurea Blvd(E)														
4	L2	113	4.0	113	4.0	0.203	2.8	LOS A	1.3	10.3	0.33	0.43	0.33	33.4
5	T1	102	4.0	102	4.0	0.203	2.8	LOS A	1.3	10.3	0.33	0.43	0.33	47.0
6	R2	37	4.0	37	4.0	0.203	7.3	LOS A	1.3	10.3	0.33	0.43	0.33	28.9
6u	U	1	4.0	1	4.0	0.203	9.1	LOS A	1.3	10.3	0.33	0.43	0.33	28.9
Approach		253	4.0	253	4.0	0.203	3.4	LOS A	1.3	10.3	0.33	0.43	0.33	42.0
North: Thundelarra Dr (N)														
7	L2	43	4.0	43	4.0	0.109	3.3	LOS A	0.6	4.9	0.53	0.55	0.53	22.8
8	T1	44	4.0	44	4.0	0.109	3.5	LOS A	0.6	4.9	0.53	0.55	0.53	31.6
9	R2	17	4.0	17	4.0	0.109	7.5	LOS A	0.6	4.9	0.53	0.55	0.53	47.0
9u	U	1	4.0	1	4.0	0.109	9.3	LOS A	0.6	4.9	0.53	0.55	0.53	22.8
Approach		105	4.0	105	4.0	0.109	4.1	LOS A	0.6	4.9	0.53	0.55	0.53	35.9
West: Aurea Blvd (W)														
10	L2	14	4.0	14	4.0	0.154	4.4	LOS A	0.9	7.2	0.50	0.53	0.50	42.1
11	T1	109	4.0	109	4.0	0.154	4.3	LOS A	0.9	7.2	0.50	0.53	0.50	42.1
12	R2	22	4.0	22	4.0	0.154	9.1	LOS A	0.9	7.2	0.50	0.53	0.50	41.3
12u	U	11	4.0	11	4.0	0.154	10.9	LOS B	0.9	7.2	0.50	0.53	0.50	47.9
Approach		156	4.0	156	4.0	0.154	5.4	LOS A	0.9	7.2	0.50	0.53	0.50	42.6
All Vehicles		737	4.0	737	4.0	0.203	5.1	LOS A	1.3	10.3	0.42	0.52	0.42	38.5



MOVEMENT SUMMARY

Site: [Warnbro sound Ave & Aurea Blvd & Adelong Ave - 2033
- AM (Site Folder: 2033)]

Network: N101 [AM
(Network Folder: 2033)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Wambro Sound Ave (S)														
1	L2	68	4.0	68	4.0	0.050	6.9	LOS A	0.4	3.5	0.23	0.60	0.23	49.1
2	T1	293	5.8	293	5.8	0.342	31.5	LOS C	5.4	42.7	0.88	0.71	0.88	34.4
3	R2	9	4.0	9	4.0	0.054	46.4	LOS D	0.4	3.0	0.93	0.67	0.93	26.2
Approach		371	5.4	371	5.4	0.342	27.3	LOS C	5.4	42.7	0.76	0.69	0.76	35.6
East: Adelong Ave(E)														
4	L2	16	4.0	16	4.0	0.339	28.2	LOS C	3.1	24.3	0.92	0.73	0.92	34.5
5	T1	88	4.0	88	4.0	*0.339	23.6	LOS C	3.1	24.3	0.92	0.73	0.92	14.4
6	R2	26	4.0	26	4.0	0.097	40.5	LOS D	1.0	7.9	0.89	0.70	0.89	18.4
Approach		131	4.0	131	4.0	0.339	27.6	LOS C	3.1	24.3	0.92	0.73	0.92	19.2
North: Wambro Sound Ave (N)														
7	L2	28	4.0	28	4.0	0.029	13.2	LOS B	0.5	3.9	0.47	0.63	0.47	34.3
8	T1	455	9.8	455	9.8	*0.552	33.4	LOS C	9.0	73.2	0.93	0.78	0.93	33.5
9	R2	97	4.0	97	4.0	*0.555	49.8	LOS D	4.3	33.7	1.00	0.78	1.01	11.9
Approach		580	8.5	580	8.5	0.555	35.2	LOS D	9.0	73.2	0.92	0.77	0.92	30.4
West: Aurea Blvd (W)														
10	L2	184	4.0	184	4.0	0.238	7.7	LOS A	2.6	20.0	0.45	0.58	0.45	38.4
11	T1	65	4.0	65	4.0	*0.238	3.7	LOS A	2.6	20.0	0.45	0.58	0.45	33.6
12	R2	74	4.0	74	4.0	0.173	33.2	LOS C	2.6	20.2	0.83	0.73	0.83	29.0
Approach		323	4.0	323	4.0	0.238	12.7	LOS B	2.6	20.2	0.53	0.62	0.53	33.4
All Vehicles		1404	6.3	1404	6.3	0.555	27.2	LOS C	9.0	73.2	0.79	0.71	0.79	31.6



MOVEMENT SUMMARY

Site: [Thundelarra Dr & Crossover 1 - 2033 - AM (Site Folder: 2033)]

Network: N101 [AM (Network Folder: 2033)]

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

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	HV %	[Total veh/h]	HV %	v/c	sec		[Veh. veh]	[Dist m]				km/h
South: Thundelarra Dr (S)														
2	T1	17	4.0	17	4.0	0.052	0.1	LOS A	0.2	1.9	0.12	0.39	0.12	44.0
3	R2	74	2.0	74	2.0	0.052	2.6	LOS A	0.2	1.9	0.12	0.39	0.12	30.4
Approach		91	2.4	91	2.4	0.052	2.1	NA	0.2	1.9	0.12	0.39	0.12	36.1
East: Crossover 1 (E)														
4	L2	91	2.0	91	2.0	0.068	0.0	LOS A	0.3	2.1	0.05	0.03	0.05	19.2
6	R2	13	2.0	13	2.0	0.068	0.9	LOS A	0.3	2.1	0.05	0.03	0.05	37.4
Approach		103	2.0	103	2.0	0.068	0.1	LOS A	0.3	2.1	0.05	0.03	0.05	25.1
North: Thundelarra Dr (N)														
7	L2	27	2.0	27	2.0	0.023	4.6	LOS A	0.0	0.0	0.00	0.35	0.00	37.3
8	T1	15	4.0	15	4.0	0.023	0.0	LOS A	0.0	0.0	0.00	0.35	0.00	41.8
Approach		42	2.7	42	2.7	0.023	3.0	NA	0.0	0.0	0.00	0.35	0.00	38.7
All Vehicles		236	2.3	236	2.3	0.068	1.4	NA	0.3	2.1	0.07	0.22	0.07	33.2

MOVEMENT SUMMARY

Site: [Aurea Blvd & Crossover 2 - 2033 - AM (Site Folder: 2033)]


Network: N101 [AM (Network Folder: 2033)]

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

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total veh/h]	[HV %]				[Veh. veh]	[Dist m]				
East: Aurea Blvd (E)														
5	T1	254	4.0	254	4.0	0.138	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		254	4.0	254	4.0	0.138	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
North: Crossover 2 (N)														
7	L2	36	2.0	36	2.0	0.025	0.4	LOS A	0.1	0.7	0.22	0.09	0.22	17.6
Approach		36	2.0	36	2.0	0.025	0.4	LOS A	0.1	0.7	0.22	0.09	0.22	17.6
West: Aurea Blvd (W)														
10	L2	38	2.0	38	2.0	0.089	3.9	LOS A	0.0	0.0	0.00	0.13	0.00	24.8
11	T1	287	4.0	287	4.0	0.089	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	45.8
Approach		325	3.8	325	3.8	0.089	0.5	NA	0.0	0.0	0.00	0.06	0.00	40.7
All Vehicles		615	3.8	615	3.8	0.138	0.3	NA	0.1	0.7	0.01	0.04	0.01	42.2



MOVEMENT SUMMARY

Site: [Thundelarra Dr & Aurea Blvd - 2033 - PM (Site Folder:  Network: N101 [PM (Network Folder: 2033)]]

Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Thundelarra Dr (S)														
1	L2	7	4.0	7	4.0	0.133	4.1	LOS A	0.8	6.1	0.49	0.59	0.49	41.9
2	T1	44	4.0	44	4.0	0.133	4.0	LOS A	0.8	6.1	0.49	0.59	0.49	25.5
3	R2	83	4.0	83	4.0	0.133	8.8	LOS A	0.8	6.1	0.49	0.59	0.49	25.5
3u	U	1	4.0	1	4.0	0.133	10.6	LOS B	0.8	6.1	0.49	0.59	0.49	28.7
Approach		136	4.0	136	4.0	0.133	7.0	LOS A	0.8	6.1	0.49	0.59	0.49	28.0
East: Aurea Blvd(E)														
4	L2	80	4.0	80	4.0	0.239	2.8	LOS A	1.6	12.6	0.35	0.44	0.35	33.0
5	T1	160	4.0	160	4.0	0.239	2.8	LOS A	1.6	12.6	0.35	0.44	0.35	46.6
6	R2	56	4.0	56	4.0	0.239	7.3	LOS A	1.6	12.6	0.35	0.44	0.35	28.6
6u	U	1	4.0	1	4.0	0.239	9.2	LOS A	1.6	12.6	0.35	0.44	0.35	28.6
Approach		297	4.0	297	4.0	0.239	3.7	LOS A	1.6	12.6	0.35	0.44	0.35	43.2
North: Thundelarra Dr (N)														
7	L2	54	4.0	54	4.0	0.135	2.6	LOS A	0.8	6.2	0.44	0.50	0.44	24.5
8	T1	59	4.0	59	4.0	0.135	2.8	LOS A	0.8	6.2	0.44	0.50	0.44	32.8
9	R2	31	4.0	31	4.0	0.135	6.8	LOS A	0.8	6.2	0.44	0.50	0.44	47.5
9u	U	1	4.0	1	4.0	0.135	8.6	LOS A	0.8	6.2	0.44	0.50	0.44	24.5
Approach		144	4.0	144	4.0	0.135	3.6	LOS A	0.8	6.2	0.44	0.50	0.44	38.6
West: Aurea Blvd (W)														
10	L2	22	4.0	22	4.0	0.131	3.9	LOS A	0.8	6.1	0.43	0.45	0.43	43.1
11	T1	108	4.0	108	4.0	0.131	3.8	LOS A	0.8	6.1	0.43	0.45	0.43	43.1
12	R2	9	4.0	9	4.0	0.131	8.6	LOS A	0.8	6.1	0.43	0.45	0.43	42.2
12u	U	2	4.0	2	4.0	0.131	10.4	LOS B	0.8	6.1	0.43	0.45	0.43	48.6
Approach		142	4.0	142	4.0	0.131	4.2	LOS A	0.8	6.1	0.43	0.45	0.43	43.2
All Vehicles		719	4.0	719	4.0	0.239	4.4	LOS A	1.6	12.6	0.41	0.48	0.41	40.7



MOVEMENT SUMMARY

Site: [Warnbro sound Ave & Aurea Blvd & Adelong Ave - 2033] **Network:** N101 [PM (Network Folder: 2033)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Wambro Sound Ave (S)														
1	L2	106	4.0	106	4.0	0.080	7.1	LOS A	0.8	6.0	0.25	0.61	0.25	48.8
2	T1	441	5.8	441	5.8	*0.636	37.5	LOS D	9.2	72.5	0.97	0.82	0.99	31.7
3	R2	6	4.0	6	4.0	0.025	41.7	LOS D	0.2	1.9	0.88	0.66	0.88	27.7
Approach		554	5.4	554	5.4	0.636	31.8	LOS C	9.2	72.5	0.83	0.77	0.85	33.5
East: Adelong Ave(E)														
4	L2	3	4.0	3	4.0	0.150	28.4	LOS C	1.3	10.3	0.89	0.67	0.89	34.6
5	T1	41	4.0	41	4.0	*0.150	23.8	LOS C	1.3	10.3	0.89	0.67	0.89	14.4
6	R2	27	4.0	27	4.0	0.101	40.5	LOS D	1.1	8.2	0.89	0.70	0.89	18.4
Approach		72	4.0	72	4.0	0.150	30.4	LOS C	1.3	10.3	0.89	0.68	0.89	17.7
North: Warnbro Sound Ave (N)														
7	L2	46	4.0	46	4.0	0.048	13.2	LOS B	0.8	6.4	0.48	0.65	0.48	34.2
8	T1	393	9.8	393	9.8	0.588	37.0	LOS D	8.1	66.1	0.96	0.79	0.96	32.0
9	R2	148	4.0	148	4.0	*0.589	46.2	LOS D	6.4	49.8	0.98	0.80	0.99	12.7
Approach		587	7.9	587	7.9	0.589	37.4	LOS D	8.1	66.1	0.93	0.78	0.93	28.0
West: Aurea Blvd (W)														
10	L2	165	4.0	165	4.0	0.153	6.2	LOS A	1.8	14.3	0.31	0.55	0.31	39.9
11	T1	25	4.0	25	4.0	*0.153	2.2	LOS A	1.8	14.3	0.31	0.55	0.31	35.2
12	R2	53	4.0	53	4.0	0.123	32.7	LOS C	1.8	14.2	0.81	0.72	0.81	29.1
Approach		243	4.0	243	4.0	0.153	11.5	LOS B	1.8	14.3	0.42	0.59	0.42	34.7
All Vehicles		1456	6.1	1456	6.1	0.636	30.6	LOS C	9.2	72.5	0.81	0.74	0.81	30.6



MOVEMENT SUMMARY

Site: [Thundelarra Dr & Crossover 1 - 2033 - PM (Site Folder:  Network: N101 [PM (Network Folder: 2033)])]

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

Vehicle Movement Performance														
Mov ID	Tum	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	HV %	[Total HV veh/h]	%	v/c	sec		[Veh. veh]	[Dist m]				km/h
South: Thundelarra Dr (S)														
2	T1	9	4.0	9	4.0	0.072	0.2	LOS A	0.3	2.6	0.14	0.44	0.14	43.3
3	R2	113	2.0	113	2.0	0.072	2.6	LOS A	0.3	2.6	0.14	0.44	0.14	28.9
Approach		122	2.2	122	2.2	0.072	2.4	NA	0.3	2.6	0.14	0.44	0.14	31.8
East: Crossover 1 (E)														
4	L2	136	2.0	136	2.0	0.106	0.0	LOS A	0.4	3.3	0.03	0.02	0.03	19.4
6	R2	23	2.0	23	2.0	0.106	1.1	LOS A	0.4	3.3	0.03	0.02	0.03	37.6
Approach		159	2.0	159	2.0	0.106	0.2	LOS A	0.4	3.3	0.03	0.02	0.03	26.2
North: Thundelarra Dr (N)														
7	L2	43	2.0	43	2.0	0.028	4.6	LOS A	0.0	0.0	0.00	0.46	0.00	35.9
8	T1	7	4.0	7	4.0	0.028	0.0	LOS A	0.0	0.0	0.00	0.46	0.00	39.9
Approach		51	2.3	51	2.3	0.028	4.0	NA	0.0	0.0	0.00	0.46	0.00	36.4
All Vehicles		332	2.1	332	2.1	0.106	1.6	NA	0.4	3.3	0.07	0.24	0.07	31.1

MOVEMENT SUMMARY

Site: [Aurea Blvd & Crossover 2 - 2033 - PM (Site Folder:  Network: N101 [PM (Network Folder: 2033)])]

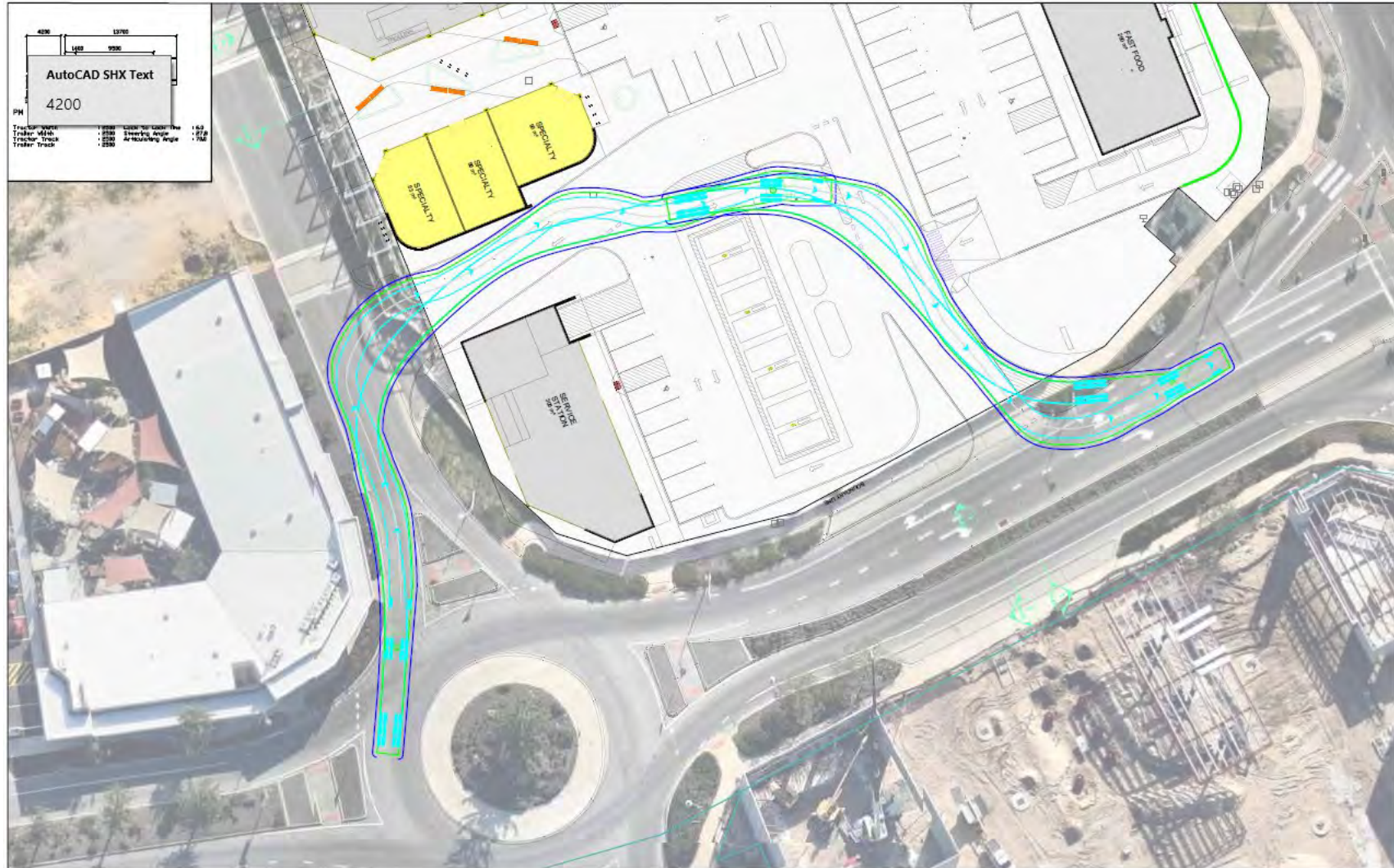
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total veh/h]	[HV %]				[Veh. veh]	[Dist m]				
East: Aurea Blvd (E)														
5	T1	295	4.0	295	4.0	0.160	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		295	4.0	295	4.0	0.160	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
North: Crossover 2 (N)														
7	L2	57	2.0	57	2.0	0.037	0.2	LOS A	0.1	1.1	0.15	0.04	0.15	18.3
Approach		57	2.0	57	2.0	0.037	0.2	LOS A	0.1	1.1	0.15	0.04	0.15	18.3
West: Aurea Blvd (W)														
10	L2	60	2.0	60	2.0	0.067	3.9	LOS A	0.0	0.0	0.00	0.26	0.00	23.0
11	T1	185	4.0	185	4.0	0.067	0.0	LOS A	0.0	0.0	0.00	0.09	0.00	43.7
Approach		245	3.5	245	3.5	0.067	1.0	NA	0.0	0.0	0.00	0.13	0.00	34.3
All Vehicles		597	3.6	597	3.6	0.160	0.4	NA	0.1	1.1	0.01	0.06	0.01	38.6



Appendix C

TURN PATH ANALYSIS



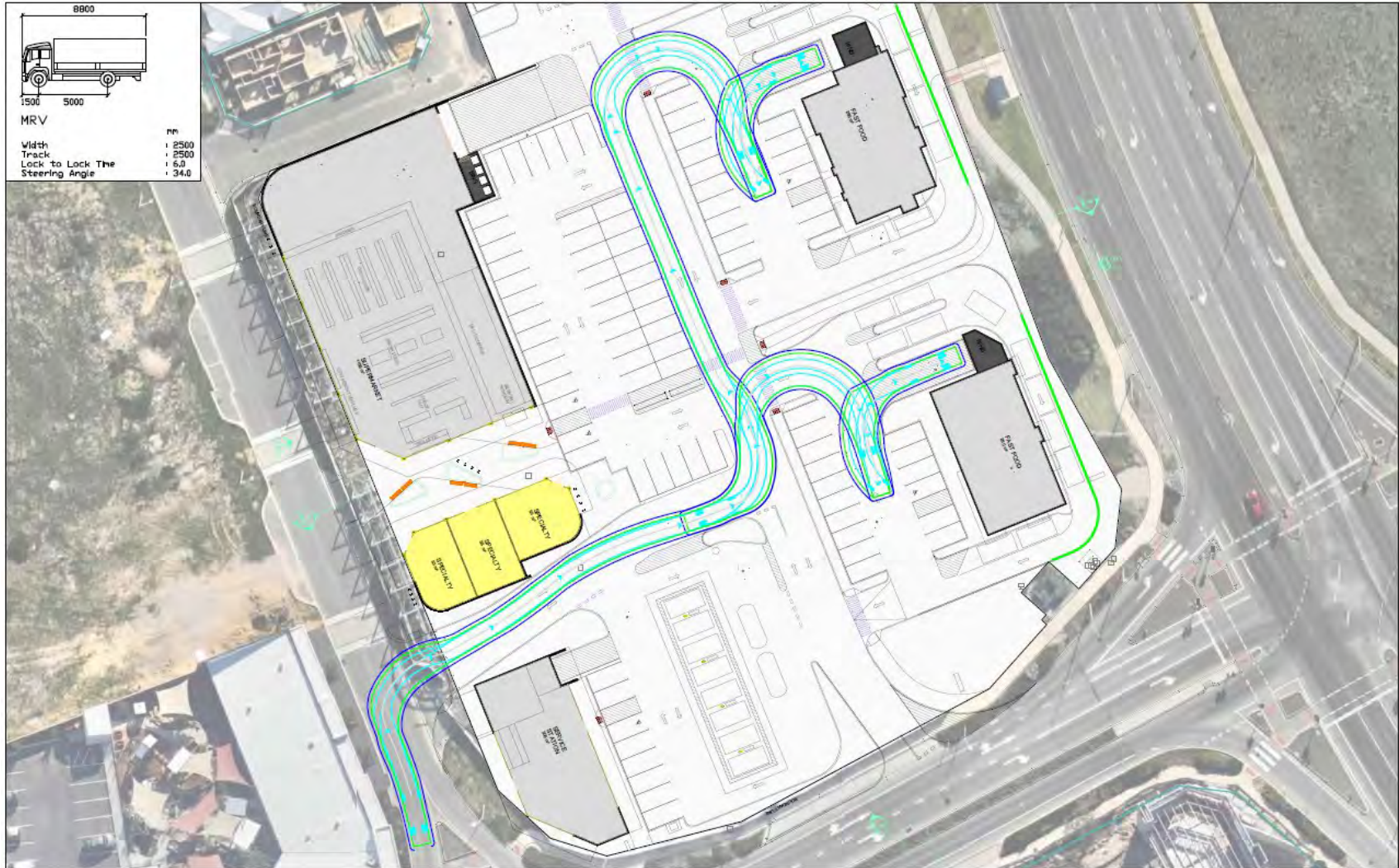
2 Aurea Blvd, Golden Bay
19.0 m Semi-railers
Fuel tanker circulation

LEGEND
Vehicle Body
Wheel Path
500mm Clearance



t22.035.s01b
1/5/2023
Scale: 1:400 @ A3





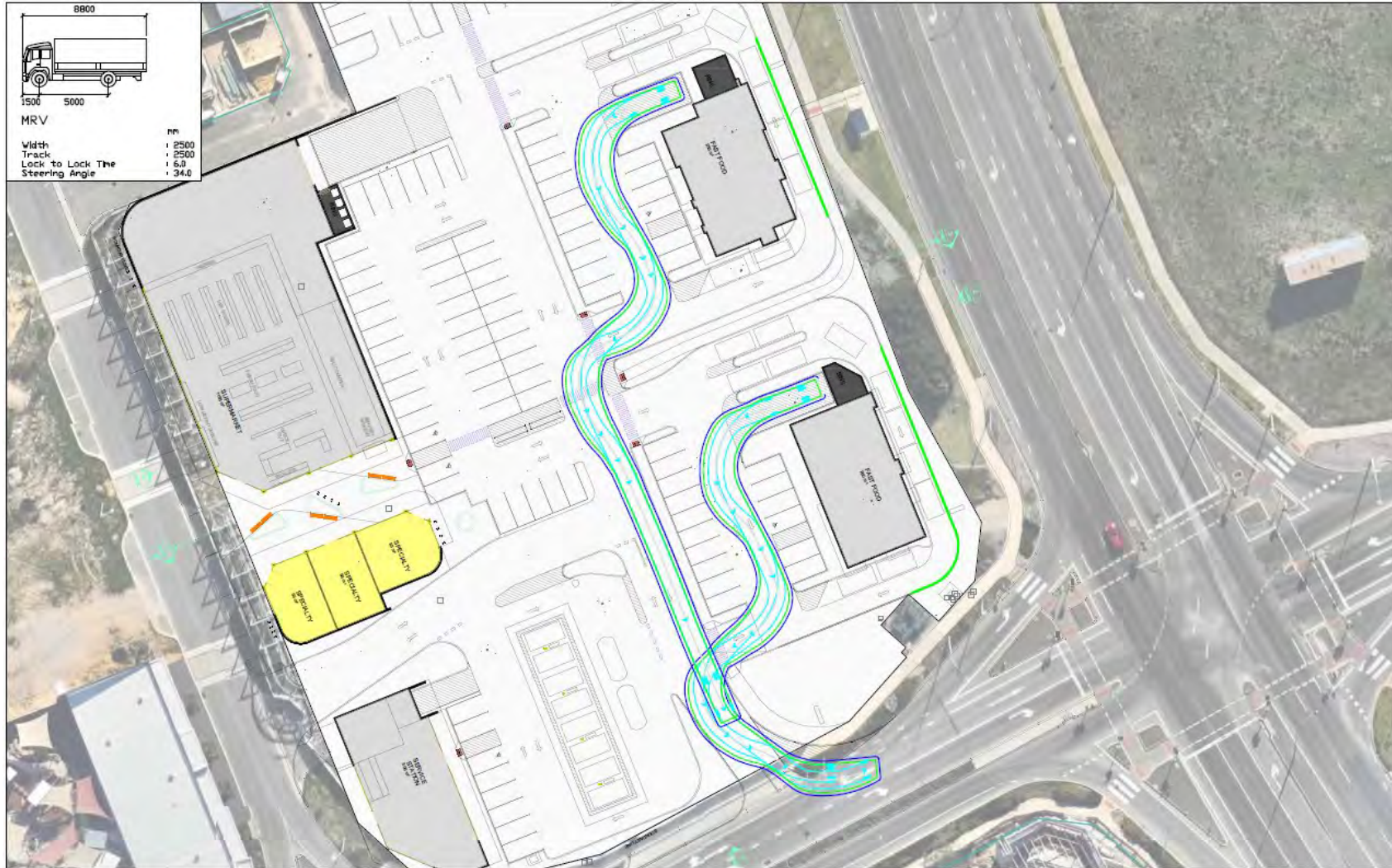
2 Aurea Blvd, Golden Bay
8.8 MRV
Service vehicle entry

LEGEND
Vehicle Body
Wheel Path
500mm Clearance



t22.035.sk03b
1/5/2023
Scale: 1:500 @ A3





2 Aurea Blvd, Golden Bay

8.8 MRV

Service vehicle exit

LEGEND

Vehicle Body

Wheel Path

500mm Clearance



t22.035.sk04b

1/5/2023

Scale: 1:500 @ A3





2 Aurea Blvd, Golden Bay
 12.5 Rigid Truck
 Service vehicle entry

LEGEND
 Vehicle Body
 Wheel Path
 500mm Clearance

t22.035.sk06b
 1/5/2023
 Scale: 1:300 @ A3





2 Aurea Blvd, Golden Bay
12.5 Rigid Truck
Service vehicle exit

LEGEND
Vehicle Body
Wheel Path
500mm Clearance

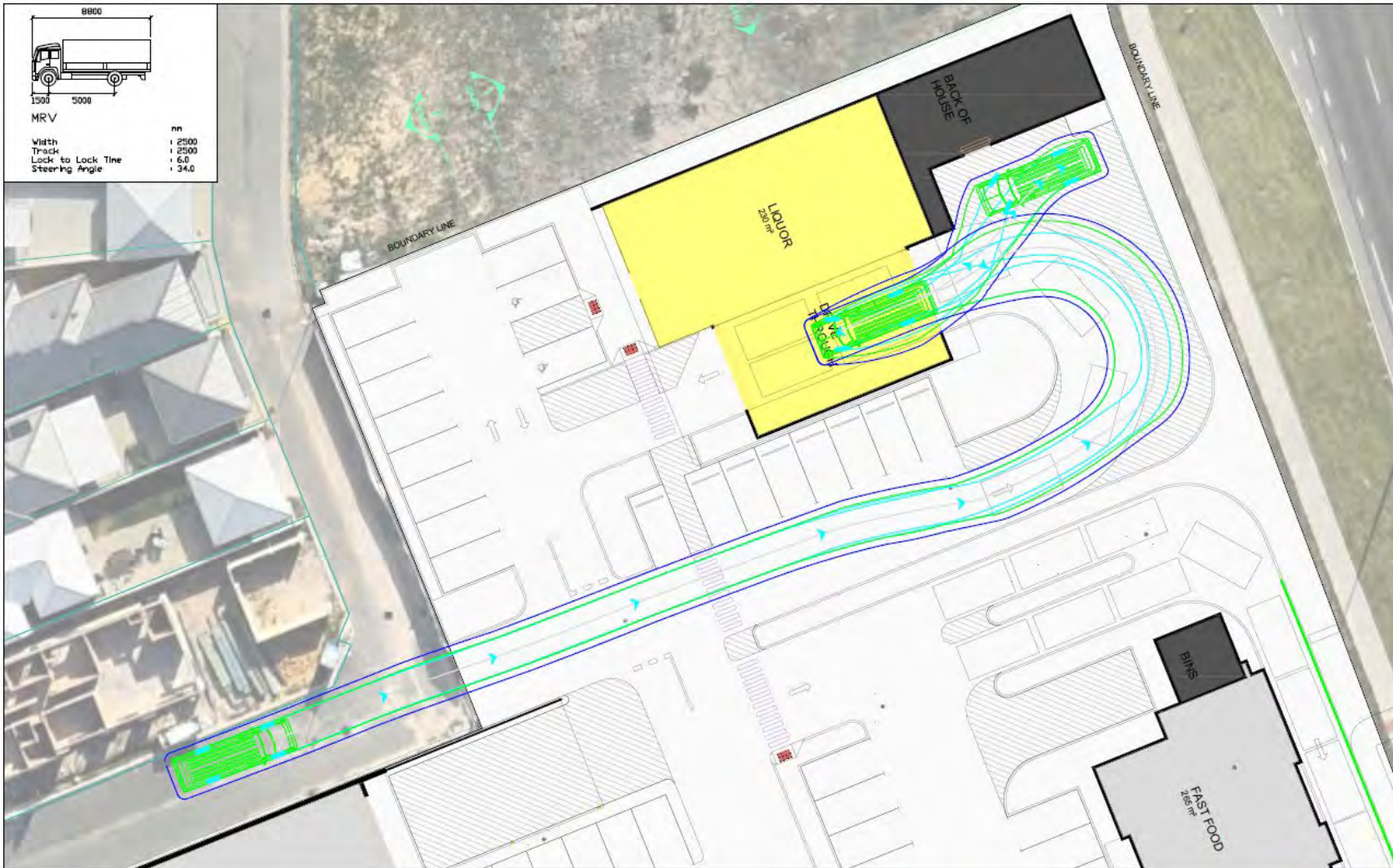


t22.035.sk06b

1/5/2023

Scale: 1:300 @ A3





2 Aurea Blvd, Golden Bay
8.8 m MRV
Service vehicle entry

LEGEND

Vehicle Body
Wheel Path
500mm Clearance

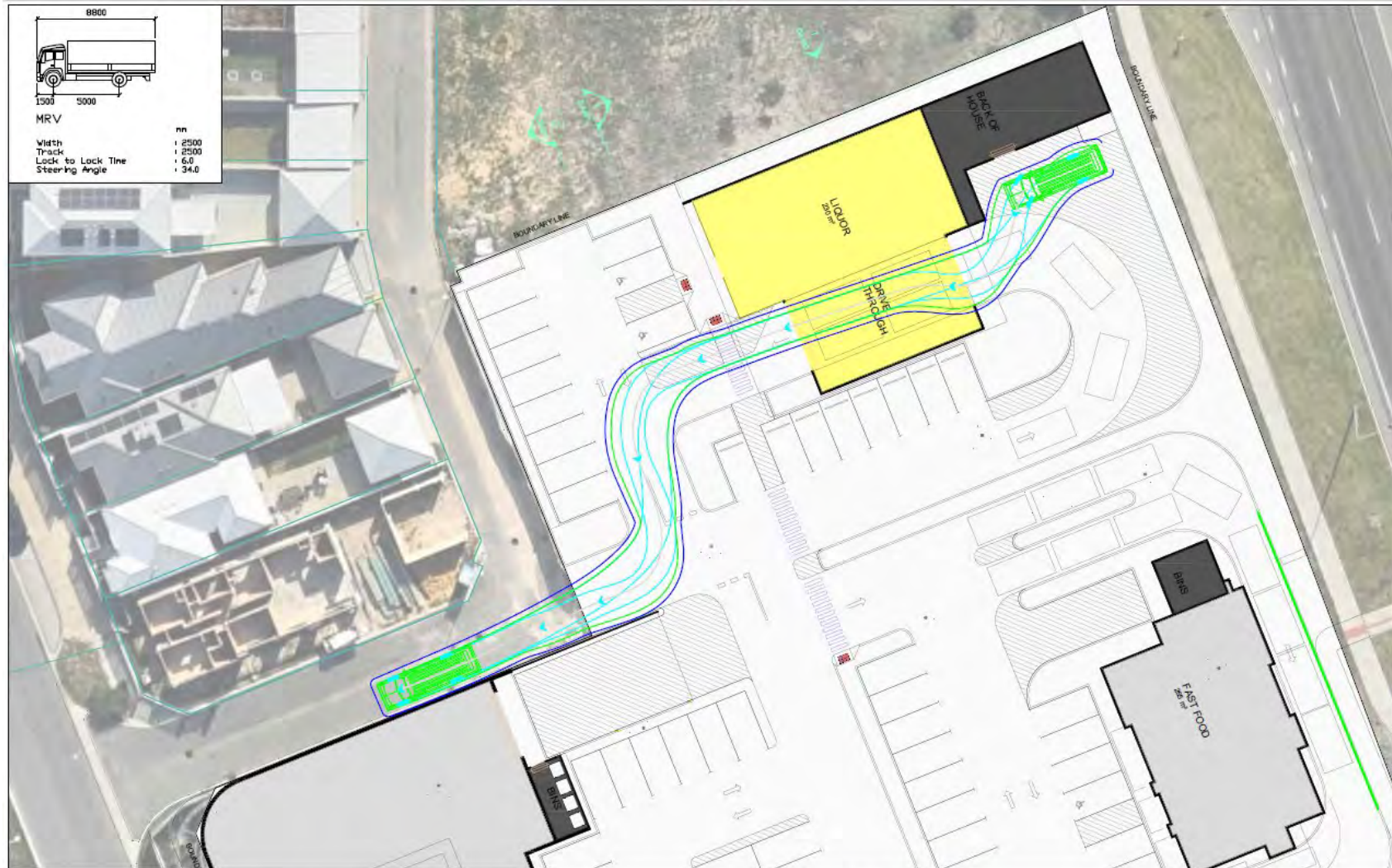


t22.035.sk11b

1/5/2023

Scale: 1:250 @ A3





2 Aurea Blvd, Golden Bay
8.8 m MRV
Service vehicle exit

LEGEND
Vehicle Body
Wheel Path
500mm Clearance



t22.035.sk12b
1/5/2023
Scale: 1:300 @ A3





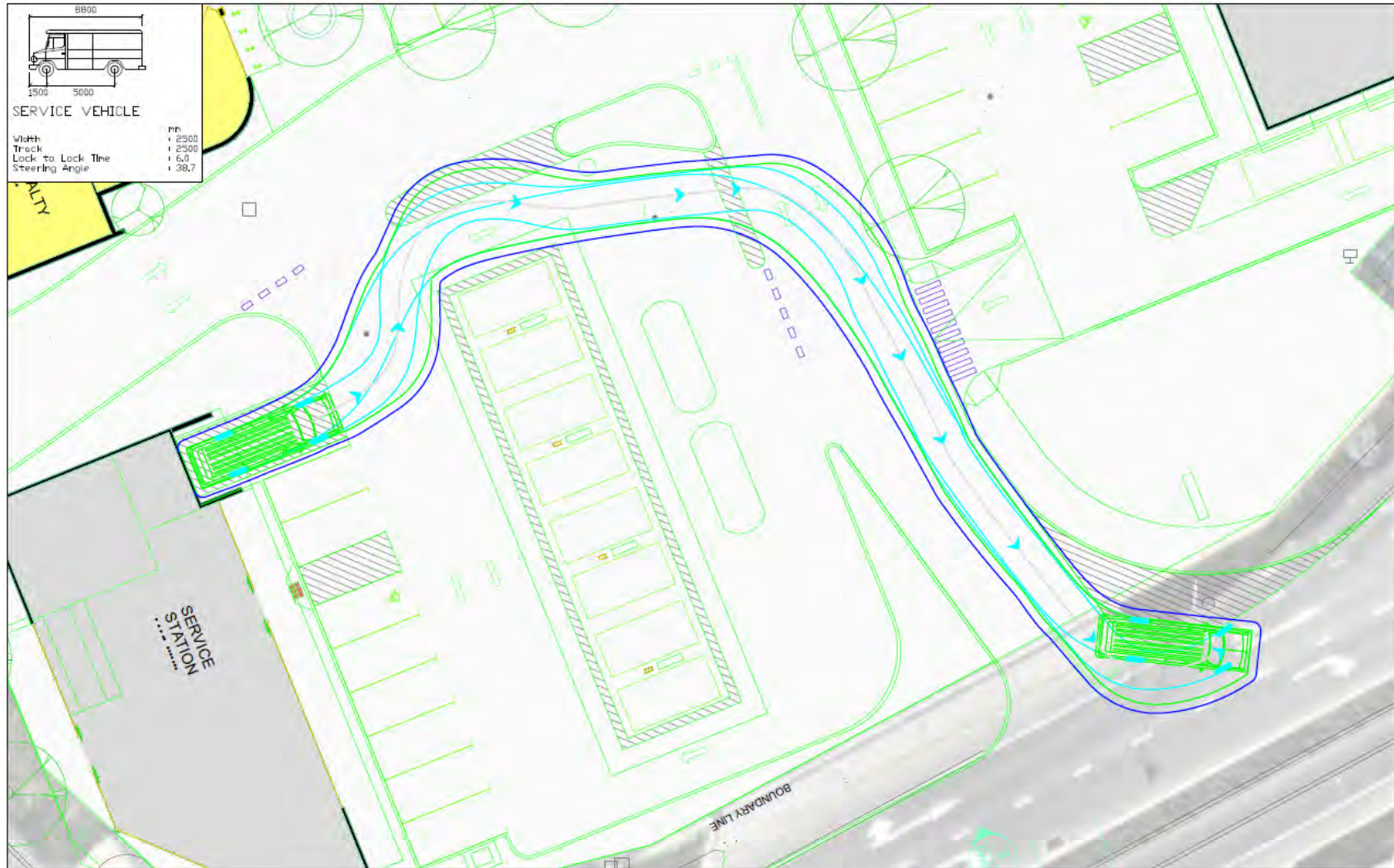
2 Aurea Blvd, Golden Bay
 8.8m Service Vehicle
 Service vehicle entry

LEGEND
 Vehicle Body
 Wheel Path
 500mm Clearance



t22.035.sk16a
 1/5/2023
 Scale: 1:200 @ A3





Environmental Noise Assessment - Commercial Development

Golden Bay Neighbourhood Centre,
2 Aurea Bvd, Golden Bay

Reference: 22117749-01A

Prepared for:
Ladybug Twenty Pty Ltd

Reference: 22117749-01A

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This report has been prepared in accordance with the scope of services described in the contract or agreement between Lloyd George Acoustics Pty Ltd and the Client. The report relies upon data, surveys, measurements and results taken at or under the particular times and conditions specified herein. Any findings, conclusions or recommendations only apply to the aforementioned circumstances and no greater reliance should be assumed or drawn by the Client. Furthermore, the report has been prepared solely for use by the Client, and Lloyd George Acoustics Pty Ltd accepts no responsibility for its use by other parties.

Date	Rev	Description	Author	Verified
23-Dec-22	0	Draft Issued to Client	Matt Moyle	Terry George
9-Feb-23	-	Finalised Issue	Matt Moyle	Terry George
28-Apr-23	A	Updated IF and Mitigation Recommendations	Matt Moyle	Terry George

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EXECUTIVE SUMMARY

Lloyd George Acoustics was engaged by Ladybug Twenty Pty Ltd to undertake a noise assessment for a proposed commercial development to be located at Golden Bay Neighbourhood Centre, 2 Aurea Bvd, Golden Bay. This report considered noise emissions from the proposed development to surrounding properties by way of noise modelling. The proposed development is to comprise of a service station, drive-through liquor shop, supermarket, two fast food outlets (with drive-throughs), and minor specialty tenancies. Noise impacts considered include those of mechanical plant, vehicle noise, air service equipment, deliveries and fuel bowzers.

Noise emissions are predicted by way of computer noise modelling and assessed against assigned levels in accordance with the *Environmental Protection (Noise) Regulations 1997*.

The predicted noise levels are demonstrated to be compliant without the need for mitigation measures.

1. INTRODUCTION

Lloyd George Acoustics was engaged by Ladybug Twenty Pty Ltd to undertake an environmental noise assessment of a proposed commercial development to be located at Golden Bay Neighbourhood Centre, 2 Aurea Blvd, Golden Bay (refer *Figure 1-1*) with the site plan shown in *Figure 1-2* and full Development Application (DA) plans provided in *Appendix A*. The development will comprise of the following elements:

- A 24-hour service station and convenience store;
- A liquor tenancy with drive-through lane; and
- A supermarket and three adjacent specialty retail tenancies;
- Two fast food tenancies with drive-through lanes.



Figure 1-1: Subject Site Location (Source: DPLH PlanWA)

The proposed service station will be open 7 days a week, 24-hours a day. The supermarket, liquor tenancy (with drive through) and two fast food tenancies are assumed to operate during the night time period as well. With regard to noise emissions, consideration is given to noise at neighbouring properties from mechanical plant, drive through speakers, air servicing equipment, deliveries, vehicles and fuel bowsers, against the prescribed standards of the *Environmental Protection (Noise) Regulations 1997*.

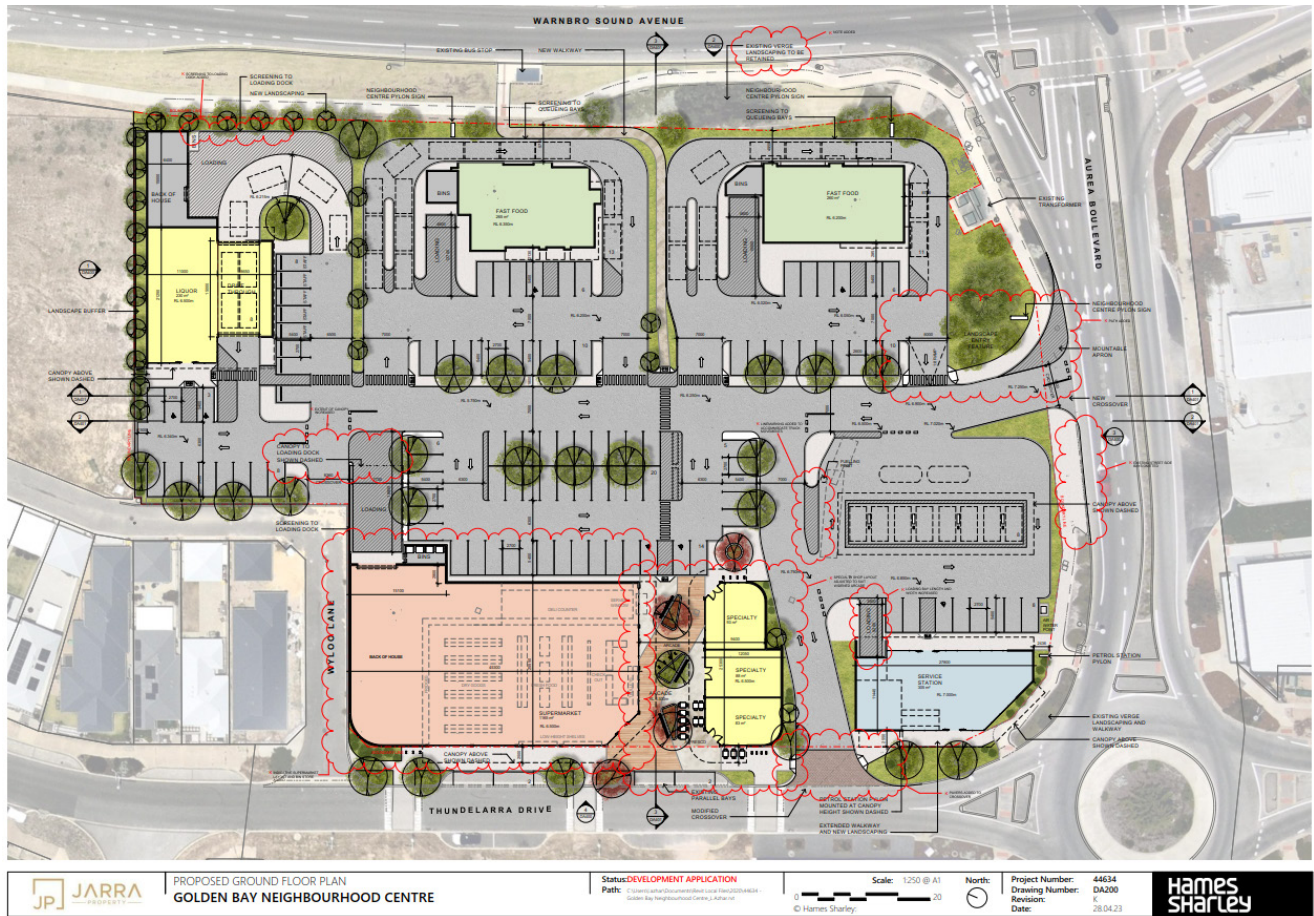


Figure 1-2: Proposed Site Plan

Appendix C contains a description of some of the terminology used throughout this report

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.

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 2 and 4 dB, as determined in *Appendix B*. *Table 2-3* shows the assigned noise levels including the influencing factor and transport factor at the receiving premises groups shown in *Figure 2-1*.



Figure 1-1: Subject Site Location (Source: DPLH PlanWA)

Table 2-3 Assigned Levels

Premises Receiving Noise	Time Of Day	Assigned Level (dB)		
		L _{A10}	L _{A1}	L _{Amax}
R1, R2, R6 +4 dB IF Noise sensitive premises: highly sensitive area ¹	0700 to 1900 hours Monday to Saturday (Day)	53	63	73
	0900 to 1900 hours Sunday and public holidays (Sunday)	48	58	73
	1900 to 2200 hours all days (Evening)	48	58	63
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night)	39	49	63
R3, R4 +5 dB IF Noise sensitive premises: highly sensitive area ¹	0700 to 1900 hours Monday to Saturday (Day)	50	60	70
	0900 to 1900 hours Sunday and public holidays (Sunday)	44	54	70
	1900 to 2200 hours all days (Evening)	44	54	60
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night)	40	50	60
R5, R7, R8 Commercial Premises	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. Where this was not possible to be achieved due to the close proximity of existing buildings and/or fences, the noise emissions were assessed at a point within 1 metre from building facades and a -2 dB adjustment was made to the predicted noise levels to account for reflected noise.

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 service station car park is considered a road and therefore vehicle noise (propulsion and braking) is not assessed. Noise from vehicle car doors and refrigeration units on trucks however are assessed, since these are not part of the propulsion or braking system. However, vehicle propulsion noise in the drive-through area has been considered assessable in this report due to the nature of the lanes being solely for food ordering purposes and not road access.

It is understood that bulk refuelling at the service station is done during the daytime and gravity fed (no pump) with the engine turned off. As such, this activity is not assessed as noise impact is considered negligible.

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.

3. METHODOLOGY

Computer modelling has been used to predict the noise emissions from the development. The software used was *SoundPLAN 8.2* with the ISO 9613 algorithms (ISO 17534-3 improved method) selected, as they include the influence of wind and are considered appropriate given the relatively short source to receiver distances. 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	Night (7.00pm to 7.00am)
Temperature (°C)	15
Humidity (%)	50
Wind Speed (m/s)	Up to 5
Wind Direction*	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 adapted from publicly available information (e.g. *Google*) in the form of spot heights and combined with the site plan, including a 1.2-metre high parapet around all new buildings.

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 with receivers 1.4 metres above ground. It is noted that many houses close to the development have laneway type garage access and these are not considered habitable or sensitive facades, so predictions are made to the nearest habitable facades.

Figure 3-1 shows a 2D overview of the noise model with the location of all relevant receivers and noise sources identified. A 3.0m high solid screening wall has also been included to the north of the supermarket loading bay as indicated on DA plans. This is assumed to be minimum 15 kg/m² surface mass and free of gaps. The north boundary fence is assumed to be 1.8m high. A 1.6m high *colorbond* style (or equivalent) fence is also noted along the north east drive-through liquor lane.

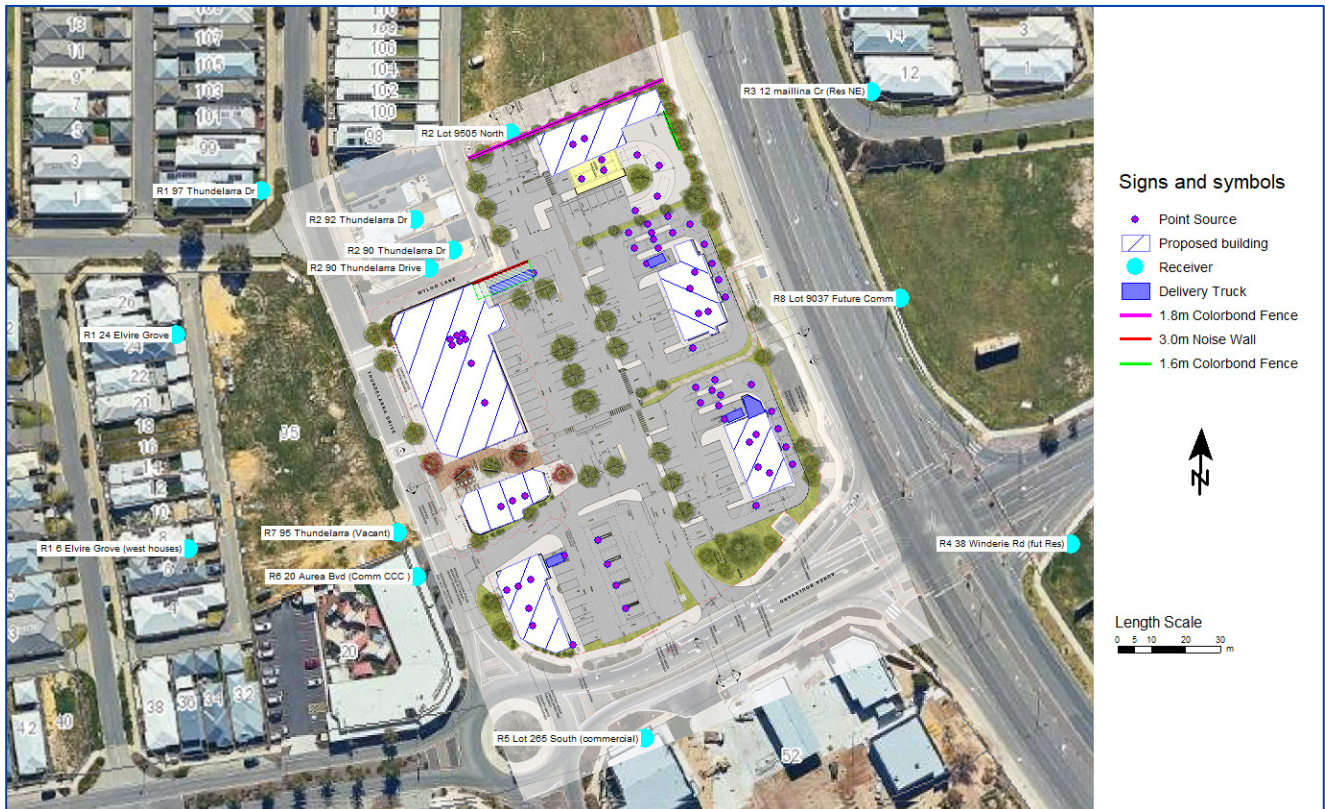


Figure 3-1: Overview of Noise Model

3.3. Ground Absorption

The ground absorption has been assumed to be 0.0 (0%) for the roads and 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 levels used in the modelling are provided in *Table 3-2*.

Table 3-2: Source Sound Levels, dB

Description	Octave Band Centre Frequency (Hz)								Overall dB(A)
	63	125	250	500	1k	2k	4k	8k	
Fuel Bowsers x 4 – L ₁₀	-	65	68	65	67	65	59	50	71
Air Service Alarm – L _{max}	-	-	-	-	-	91	96	92	99
Refrigeration Condenser Packages – L _{A10}	88	87	85	81	76	70	64	59	82
General Exhaust Fan – L ₁₀	72	70	64	61	53	53	51	45	63
Toilet Exhaust Fan – L ₁₀	-	61	67	61	64	60	52	46	67
Typical AC Condensers – L ₁₀	-	77	75	72	70	67	62	56	75
Pulford Silenced Compressor – L ₁₀	73	72	75	71	67	63	59	51	73
Ice Box Compressor – L ₁₀	51	61	61	63	63	59	56	47	68
Car Door Closings – L _{max}	71	74	77	81	80	78	72	61	84
Large Refrigerated Truck Condenser – L ₁	88	79	92	90	92	91	85	76	98
Drive-Through Speaker – L _{A1}	62	64	66	77	80	73	57	42	82
Drive-Through Car Idling – L _{A10}	81	78	74	72	74	74	67	64	79

The following is noted in relation to *Table 3-2*:

- Mechanical plant sound levels are estimated from previous projects;
- Exhaust fans are located 0.5m above roof;
- The Pulford Compressor is located in the service yard of the service station, 1.0m above ground level;
- A/C plant (Condensers) for all stores are located on the rooftop (1.0m above roof level) and screened with parapets;
- The Ice Box is located at the front of the convenience store, 1.8m above ground level;
- Fuel bowsers, air service alarm and car doors are modelled as 1.0m above ground level;
- Refrigerated truck condenser is modelled at 2.3m above ground;
- Car door and all engine sources are modelled at 0.5m above ground;
- For each of the three drive through tenancies, 5 to 10 vehicles are modelled idling in the Drive-Through queuing, ordering and waiting areas, depending on the calculation scenario (see below).

4. RESULTS AND ASSESSMENT

Noise modelling was undertaken for the following scenarios:

- Night-time (L_{A10}) – Includes all L_{A10} noise sources of *Table 3-2*, with a total of 15 idling cars in drive through lanes (5 per tenancy);
- Night-time (L_{A1}) – Includes a refrigerated delivery truck in each loading area (cold deliveries) and 30 cars in drive through lanes (10 per tenancy) and the drive through speakers of both fast food outlets;
- Night-time (L_{Amax}) – Considers car door closings and air service alarm.

4.1. Scenario 1 – All Plant and Drive Thru Tenancies L_{A10}

The results for night-time operations are provided in *Table 4-1*. A noise contour plot is also provided in *Figure 4-1* showing noise levels at ground floor. It should be noted that the assessment has assumed all fuel plant including fuel bowzers will be used simultaneously during the night, which is conservative as they will generally cycle intermittently.

Table 4-1: Scenario 1 Predicted Levels and Assessment, dB L_{A10}

Receiver	Fuel Bowzers	All Mech Plant	15 Drive Through Vehicles	Total	Night Assigned Noise Level	Assessment
R1 6 Elvire Gr (west houses)	17	25	25	28	39	Complies
R1 24 Elvire Gr (west houses)	14	27	27	30	39	Complies
R1 97 Thundelarra Dr	12	28	20	29	39	Complies
R2 90-92 Thundelarra Dr	13	36	36	39	39	Complies
R2 Lot 9505 North	18	31	33	35	39	Complies
R3 12 Mallina Cr (Res NE)	21	25	38	38	40	Complies
R4 38 Winderie Rd (Future Res)	22	24	36	36	40	Complies
R5 Lot 265 South (Commercial)	31	28	33	36	60	Complies
R6 15 Aurea Bvd (CCC)	25	26	28	31	39	Complies
R6 17 Aurea Bvd (south housing)	20	25	24	28	39	Complies
R6 20 Aurea Bvd (Comm CCC)	28	33	31	36	39	Complies
R7 95 Thundelarra Dr (Vacant)	27	33	29	35	60	Complies
R8 Lot 9037 Future Comm	17	28	41	41	60	Complies

The mechanical plant and vehicles in drive through lanes are the dominant sources and given the number and range of sources operating simultaneously in this scenario, tonality of the mechanical plant is not considered

detectable. Therefore, the predicted level is compliant at all the worst-case locations. Note compliance is still achieved even if the + 5 dB tonality adjustment was applied to the mechanical plant noise only.

As the analysis is based on file data, it is recommended that a follow up verification of mechanical plant selections be carried out at detailed design by a suitably qualified acoustical consultant.

4.2. Scenario 2 – Refrigerated Trucks and Full Drive-Through Lanes L_{A1}

The predicted noise levels from all four refrigerated delivery trucks and the fully loaded drive through lanes are provided in *Table 4-2*. A noise contour plot is also provided in *Figure 4-2* showing noise levels at ground floor. This assumes deliveries will take less than 24 minutes in a 4-hour period, which is considered sufficient time for a scale stores. It should also be noted that it is unlikely that all four stores will be receiving deliveries simultaneously, and during peak drive through usage, therefore the assessment is to be considered as a conservative worst-case scenario.

Table 4-2: Scenario 2 Predicted Levels and Assessment, dB L_{A1}

Receiver	4 Delivery Trucks	30 Drive Through Vehicles	Total*	Night-time Assigned Noise Level	Assessment
R1 6 Elvire Gr (west houses)	36	29	37	49	Complies
R1 24 Elvire Gr (west houses)	32	32	35	49	Complies
R1 97 Thundelarra Dr	30	24	33	49	Complies
R2 90-92 Thundelarra Dr	44	41	46	49	Complies
R2 Lot 9505 North	48	37	48	49	Complies
R3 12 Mallina Cr (Res NE)	45	43	47	50	Complies
R4 38 Winderie Rd (Future Res)	42	40	44	50	Complies
R5 Lot 265 South (Commercial)	48	37	49	75	Complies
R6 15 Aurea Bvd (CCC)	39	32	40	49	Complies
R6 17 Aurea Bvd (south housing)	33	28	35	49	Complies
R6 20 Aurea Bvd (Comm CCC)	43	35	44	49	Complies
R7 95 Thundelarra Dr (Vacant)	40	32	42	75	Complies
R8 Lot 9037 Future Comm	42	46	47	75	Complies

*Includes all Mech Plant Sources from Scenario 1

Compliance at all receivers is predicted at night and therefore mitigation measures are not required. Note that with the number of vehicle sources (including 4 delivery trucks) present in the scenario, it is unlikely that tonality would be detectable in the L_{A1} measured level. Note also that some sensitive receivers are identified as Childcare Centres (CCC) and would likely be unoccupied during the evening and night time periods.

4.3. Scenario 3 – Night L_{Amax}

The results for night-time L_{Amax} scenario (car doors and air service alarm) are provided in *Table 4-3*. A noise contour plot (non-cumulative) is also provided in *Figure 4-3* showing noise levels at ground floor. Car door closing noise levels are adjusted by + 10 dB for impulsiveness and air service alarms adjusted by + 5 dB for tonality and assessed against the night-time L_{Amax} assigned level.

Table 4-3: Scenario 1 Predicted Levels and Assessment, dB L_{Amax}

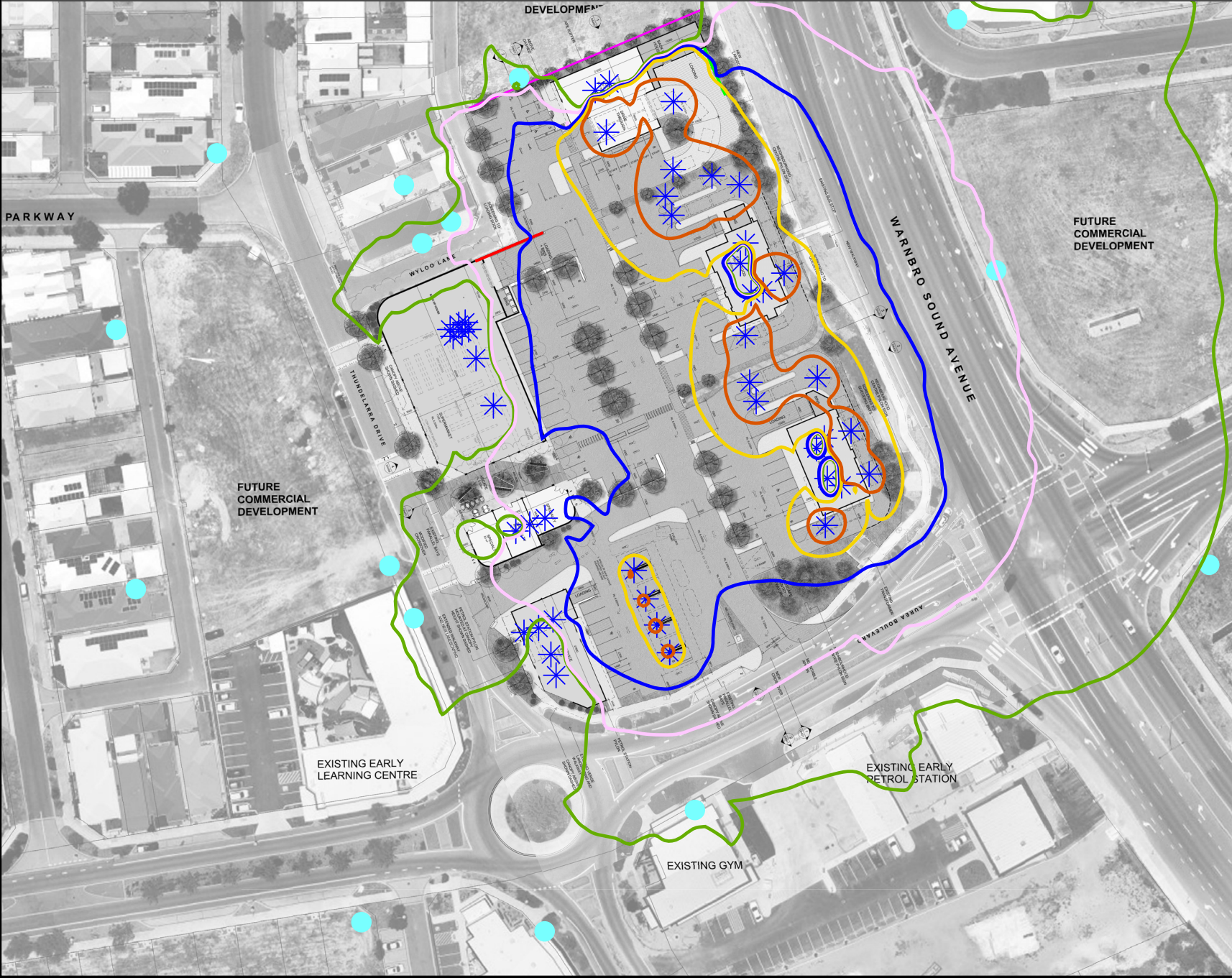
Receiver	Air Service Alarm*	Car Door Closing#	Maximum	Assigned Noise Level	Assessment
R1 6 Elvire Gr (west houses)	24	41	41	61	Complies
R1 24 Elvire Gr (west houses)	25	39	39	61	Complies
R1 97 Thundelarra Dr	27	29	29	61	Complies
R2 90-92 Thundelarra Dr	23	39	39	63	Complies
R2 Lot 9505 North	39	57	57	63	Complies
R3 12 Mallina Cr (Res NE)	45	43	45	62	Complies
R4 38 Winderie Rd (Future Res)	47	40	47	62	Complies
R5 Lot 265 South (Commercial)	59	50	59	80	Complies
R6 15 Aurea Bvd (CCC)	54	44	54	62	Complies
R6 17 Aurea Bvd (south housing)	50	41	50	61	Complies
R6 20 Aurea Bvd (Comm CCC)	32	48	48	63	Complies
R7 95 Thundelarra Dr (Vacant)	31	50	50	80	Complies
R8 Lot 9037 Future Comm	40	43	43	80	Complies

* Adjusted by + 5 dB for tonality

Adjusted by + 10 dB for impulsiveness

Noise levels are predicted to comply at all receivers, inclusive of the tonality or impulsiveness adjustment. As discussed in *Section 3.2*, it is noted that residences across Wyloo Lane have garages facing the new parking bays of the liquor store tenancy and therefore the facades are not considered highly noise sensitive.

Figure 4-1 Scenario 1 Noise Ground Floor, dB L_{A10}



Predicted Noise level

- = 36
- = 41
- = 46
- = 51
- = 56

Legend

- Receiver
- Car/Mech Source
- 1.8m fence
- 3.0m Noise Wall
- 1.6m fence



Scale 1:1300



Project No: 22117749
Consultant: MM
Date: 28/04/2023
Algorithm: ISO 9613
SoundPLAN Version: 8.2

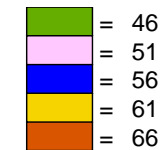


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Figure 4-2 Scenario 2 Noise Ground Floor, dB L_{A1}



Predicted Noise level

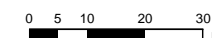


Legend

- Receiver
- ✱ Car/Mech Source
- 1.8m fence
- 3.0m Noise Wall
- 1.6m fence
- ▭ Delivery Truck



Scale 1:1300



Project No: 22117749

Consultant: MM

Date: 28/04/2023

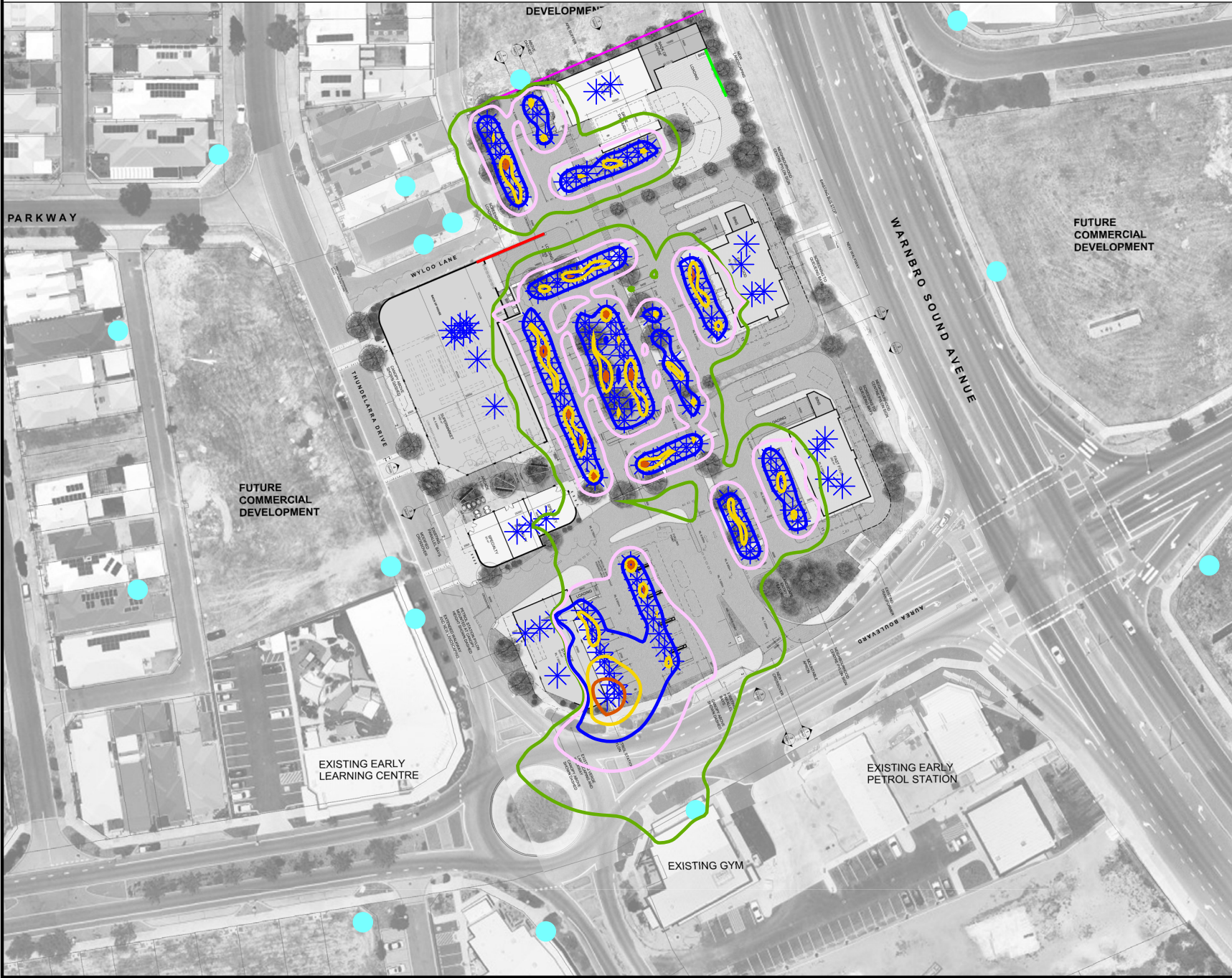
Algorithm: ISO 9613

SoundPLAN Version: 8.2



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Figure 4-3 Scenario 3 Noise Ground Floor, dB L_{Amax}



Predicted Noise level

	= 56
	= 61
	= 66
	= 71
	= 76

Legend

- Receiver
- Car/Mech Source
- 1.8m fence
- 3.0m Noise Wall
- 1.6m fence



Scale 1:1300



Project No: 22117749
Consultant: MM
Date: 28/04/2023
Algorithm: ISO 9613
SoundPLAN Version: 8.2



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5. RECOMMENDATIONS

The assessment has demonstrated that noise from the mixed commercial development can comply with the assigned levels determined in accordance with the *Environmental Protection (Noise) Regulations 1997* without the need for mitigation measures.

The 3.0m high screen wall to the loading bay is to extend the length of the loading bay as shown on DA plans, to be of solid construction (no gaps) and of a material with minimum surface mass 15 kg/m². The carport structure overhead should extend at least 4 metres across, be lined with an absorptive material such as anti-con insulation and no gaps should exist between overhead section and vertical screen wall.

To ensure compliance with the noise regulations, delivery vehicles are to have broadband type reversing alarms fitted rather than standard tonal alarms. This is also inline with the guidance provided by DWER and considered less likely to elicit complaints from the community.

An additional section of solid screening is to be constructed near the liquor store bin area, of minimum height 1.6m and of minimum surface mass 4 kg/m² and free of gaps.

While not required for compliance, noting that the development is at DA stage only, some best practice recommendations have been included below though – to be implemented in the design and operation where practicable:

- Any external music or the like shall be low level and inaudible at residences;
- Bin servicing shall occur between 7.00am and 7.00pm Mondays to Saturdays. The servicing of bins would fall under Regulation 14A and provided it is carried out within the stipulated hours and undertaken as quietly as reasonably practicable, the 'normal' assigned levels do not apply. Where possible, bins shall be located in areas away from and/or screened from residences. Where this activity also includes truck reversing alarm noise, this would be considered exempt under Regulation 14A within the stipulated hours.
- Access grates or similar to be plastic or metal with rubber gasket and secured to avoid excess banging.
- All refrigerated delivery drivers attending the site at night are to make all effort to deliver quietly, leave promptly, and not idle trucks on site for longer than necessary.
- Mechanical plant:
 - Once the mechanical plant has been designed and selected, the noise levels shall be reviewed prior to Building Permit;
 - All exhaust fans shall be located inside the ceiling void and shall be axial fan type, allowing the incorporation of an attenuator if required;
 - All fans shall be variable speed drive so that maximum speed is only occurring when necessary with demand;
 - Air-conditioning shall have a 'night' / 'quiet' mode option, in case required for prior to 7.00am operation, subject to final detailed analysis;
 - All plant shall be selected for quiet operation;
 - All plant is to be appropriately vibration isolated to 95% isolation efficiency.

Appendix A – Development Plans

Appendix B – Influencing Factor Calculation

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 :

% Type A₁₀₀ = the percentage of industrial land within
a 100m radius of the premises receiving the noise

% Type A₄₅₀ = the percentage of industrial land within
a 450m radius of the premises receiving the noise

% Type B₁₀₀ = the percentage of commercial land within
a 100m radius of the premises receiving the noise

% Type B₄₅₀ = 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 each major road (> 15,000 vpd) within 450m

= 6 for each major road within 100m

The nearest noise sensitive and commercial premises are identified as:

- R1 6 Elvire Gr (west houses)
- R1 24 Elvire Gr (west houses)
- R1 97 Thundelarra Dr
- R2 90-92 Thundelarra Dr
- R2 Lot 9505 North
- R3 12 Mallina Cr (Res NE)
- R4 38 Winderie Rd (Future Res)
- R5 Lot 265 South (Commercial)
- R6 15 Aurea Bvd (CCC)
- R6 17 Aurea Bvd (south housing)
- R6 20 Aurea Bvd (Comm CCC)
- R7 95 Thundelarra Dr (Vacant)
- R8 Lot 9037 Future Commercial

Table B-1 shows the percentage of industrial and commercial land within the inner (100 metre radius) and outer (450 metre radius) circles of the noise sensitive premises, with this also shown on Figure B-1 for Receiver R2.



Figure B-1: Land Types within 100m and 450m Radii of R2

Table B-1: Percentage of Land Types within 100m and 450m Radii

Receiver	Land Type	Within 100m	Within 450m
R1, R6	Type A - Industrial and Utility	0	0
	Type B – Commercial	26	5
R2	Type A - Industrial and Utility	0	0
	Type B – Commercial	43	5
R3, R4	Type A - Industrial and Utility	0	0
	Type B – Commercial	25	5

The Main Roads WA Traffic Map does provide current traffic counts in this area (Feb 2022 LM01072) with counts in the order of 10,000 vpd. However with knowledge of the planning framework since 2011, information has been obtained from Main Roads WA *Perth Metropolitan Functional Road Hierarchy 1997*, referring to Warnbro Sound Avenue as a Distributor A or Arterial road with intent to carry 15,000 to 35,000 vpd. The same document classifies Aurea Boulevard as a Local Distributor with a maximum 6,000 vpd. It is clear that the roads have been designed and planned for high vehicle use in this commercial and residential hub since 2011. Despite these classifications, the Noise Regulations require recent traffic counts to be used when classifying the road for purposes of determining a transport factor. *Table B-2* shows the relevant roads and their traffic estimates within the inner (100 metre radius) and outer (450 metre radius) circles.

Table B-2: Relevant Roads within 100m and 450m Radii

Receiver	Within 100m		Within 450m
	Major Road (+ 6 dB)	Secondary Road (+ 2 dB)	Major Road Not Within 100m (+ 2 dB)
R1, R6	-	Aurea Bvd Local Distributor (6K Vpd)	-
R2	-	Warnbro Sound Ave (10K Vpd)	-
R3, R4	-	Warnbro Sound Ave (10K Vpd)	-

Table B-3 combines the percentage land types and Transport Factor to calculate the influencing factor.

Table B-3: Influencing Factor Calculation, dB

Receiver	Industrial Land	Commercial Land	Transport Factor	Total
R1, R6	0.0	1.5	2	4
R2	0.0	2.3	2	4
R3, R4	0.0	1.4	2	3

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*.

Appendix C – Terminology

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.

- **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.

• 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.

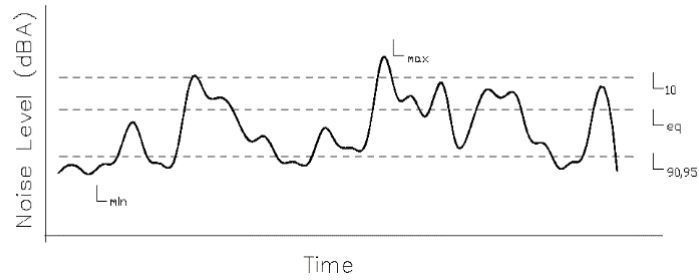
• Major Road

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.

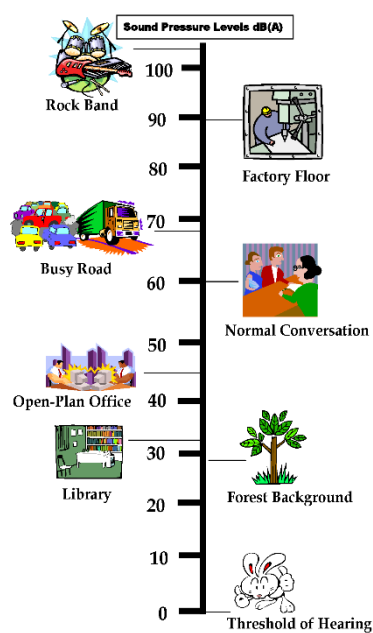
- Chart of Noise Level Descriptors



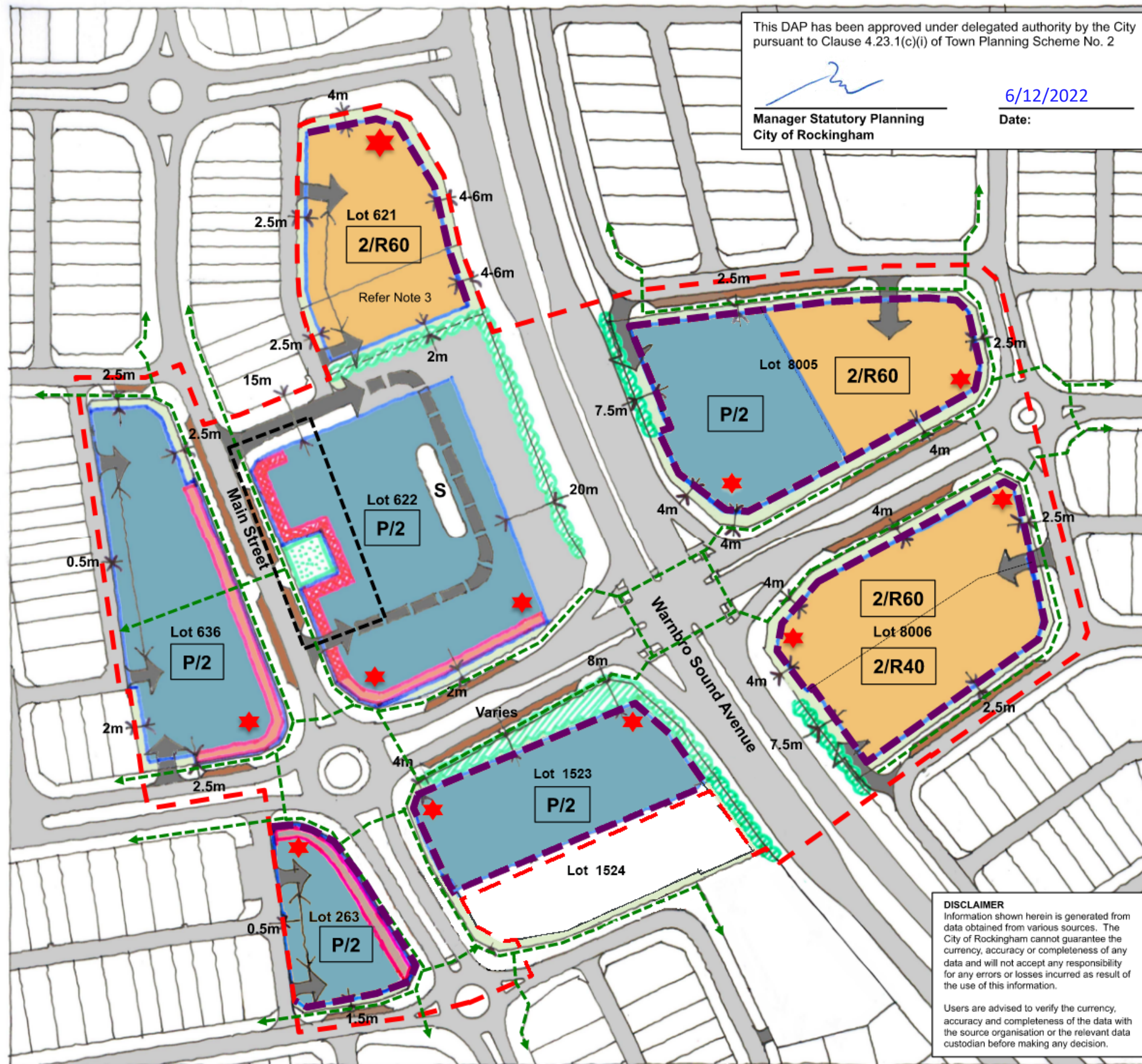
- Austroads Vehicle Class

VEHICLE CLASSIFICATION SYSTEM AUSTROADS	
CLASS	VEHICLES
LIGHT VEHICLES	
1	SICUT Cap. Van, Wagon, 4WD, 100% Bicycle, Motorcycle
2	SICUT - TOWING Tobac, Crossover, Boat
HEAVY VEHICLES	
3	TWO AXLE TRUCK OR BUS *2 axle
4	THREE AXLE TRUCK OR BUS *3 axle, 2 axle groups
5	FOUR (or FIVE) AXLE TRUCK *4 (or 5) axle, 2 axle groups
6	THREE AXLE ARTICULATED *3 axle, 3 axle groups
7	FOUR AXLE ARTICULATED *4 axle, 3 or 4 axle groups
8	FIVE AXLE ARTICULATED *5 axle, 3+ axle groups
9	SIX AXLE ARTICULATED *6 axle, 3+ axle groups or 7+ axle, 3 axle groups
LONG VEHICLES AND ROAD TRAINS	
10	DOUBLE or HEAVY TRUCK and TRAILER *7+ axle, 4 axle groups
11	DOUBLE ROAD TRAIN *7+ axle, 5 or 6 axle groups
12	TRIPLE ROAD TRAIN *7+ axle, 7+ axle groups

- Typical Noise Levels



Detailed Area Plan



Legend

- DAP boundary
- Indicative maximum building envelope
- #m Minimum setback (see note 1)
- Mandatory active street frontage/ 0m setback
- Mandatory active street frontage/ 0-2.5m setback
- Pedestrian footpath network
- Parallel parking required (subject to MRWA and/or City of Rockingham engineering approval)
- S Preferred service zone
- Vehicle connection required internal to site
- ➔ Preferred vehicle access point
- ★ Architectural response to corner required
- Special vegetation screens
- Community piazza space
- Residential envelope (see note 2)
- Commercial envelope with R60 residential permitted.
- 2/R## Minimum building height in storeys/density
- P Minimum parapet height of 5.5m
- Retail core
- Habitable frontage

Note 1: For setbacks: RC = as per R Codes. Where a range is provided, the setbacks shall be a minimum and a maximum.

Note 2: Some of the residential envelopes are coded 'Commercial' under the structure plan and, as such, single residential development is not permitted.

Note 3: A portion of the main commercial lot has been identified as residential. The common boundary may need to be adjusted once the ultimate land requirement for the commercial site has been confirmed.

PROVISIONS

The provisions of the City of Rockingham Town Planning Scheme TPS No. 2 (TPS2) and the Residential Codes of Western Australia (R-Codes) are varied as detailed in this Detailed Area Plan (DAP). All other requirements of TPS2 and the R-Codes shall be satisfied in all other matters.

1. Objectives

The objective of this DAP are to:

- a) Establish a 'Main Street' based Neighbourhood Activity Centre of a scale that is appropriate to its role as a focal point of a residential community and its role in the retail hierarchy of the region.
- b) Provide a context for higher-density residential development that capitalises on proximity to local services.

2. Standards

All development in the DAP area must be consistent with the DAP and the following standards:

a) Structure

- i. The road annotated as 'Main Street' must be the main street for the neighbourhood centre.

b) Street interface

- i. All buildings must provide passive surveillance of adjacent street reserves by means of active or habitable frontage.
- ii. Where active frontage is required and/or a 0m street setback has been provided, the frontage must incorporate a canopy(s) with continuous coverage to a minimum depth of 2.5m or to within 600mm of the back of the adjacent kerb where the verge is too narrow to accommodate a 2.5m deep canopy, and must extend across the entire street frontage of the building.
- iii. The street setback for multiple dwellings may be reduced to 0m in the case of mixed-use development, and also for residential building elements that provide architectural interest and where a reduction in the minimum setback (stated in the DAP) does not compromise the amenity of residents (for example, for vertical circulation elements, lobbies, and upper levels).
- iv. Delivery, loading and storage areas must be located and screened to minimise the visual impact on the public domain.
- v. Street elevations must be designed to create visual interest through building form, articulation of walls and openings, architectural features, texture and colour, with particular emphasis given to the ground floor level.
- vi. Non-active portions of walls must be articulated by means of form, colour and texture to provide visual interest.
- vii. Garage doors and supporting structures for residential development must not exceed 50% of the frontage at the front setback line from the Primary Street. This can be increased to 60% for two-storey dwellings in accordance with clause 5.2.2 of the R-Codes.

c) Landscape

- i. The landscape material used for the footpath must be continued across driveways and the entrances to Rights of Way to maintain visual continuity of the pedestrian network and aid pedestrian legibility.
- ii. Street trees must be provided at a minimum rate of 1 tree per 14m on both sides of the streets within the DAP area.
- iii. Shade trees must be provided to all publically accessible and open car parks not otherwise provided with shade structures at a minimum rate of 1 tree per 8 car bays.
- iv. The special vegetation screens' identified on the DAP must consist of trees and an under-storey of low-level shrubs, rather than mid-level shrubs, to maintain sightlines for pedestrians, and must be of a minimum of 3m in width.

d) Robustness

- i) The ground floor of all buildings in the Commercial area must be designed with a minimum floor-to-floor height of 3.2m to enable commercial uses even if used for interim residential use.
- ii) The ground level of all buildings in the Commercial area must be designed for disabled access regardless of the initial use.

e) Fencing

- i. Any fencing to the primary or secondary street(s) frontage must be restricted to residential uses only.
- ii. Where street frontage fencing is employed, it must be no more than 1.8m high and must be at least 50% visually permeable from 0.9m above the ground level of the adjacent street with solid portions of fencing consisting of masonry construction.
- iii. Colorbond fencing is not permitted within any street setback area.

f) On-street Parking

- i. For the purpose of calculating parking provision, any on-street parking bays adjacent to a lot on the same side of the road may be included in the calculation of visitor parking provision for that lot.

g) Open space

- i. Single and grouped dwellings must have a minimum open space requirement of 30% of the lot.
- ii. Single and grouped dwellings coded R60 must have a minimum uncovered outdoor living area of at least 16sqm with a minimum dimension of 4m, and 30% of the lot, and single and grouped dwellings coded R40 must have a minimum uncovered outdoor living area of at least 20sqm with a minimum dimension of 4m.

3. Design principles for the retail core

In addition to the above standards, the design of the retail core must observe the following design principles:

- a) Tenancies must present their main entrance to the main street or the community piazza space if frontage to either is provided.
- b) Tenancies must present active and visually permeable frontages to the main street or the community piazza space and any connecting mall between the main car park and the street.
- c) Pedestrian movement from the main car park to the supermarket must be directed past the supporting tenancies to provide them with exposure and economic support.
- d) Any public door between the supermarket and the main car park must be an exit only, to enable convenient trolley access and avoid trolleys in the main street.
- e) Bin storage and other service areas must be discretely located to enable direct access (or via a service corridor) to a vehicle collection point.
- f) The community piazza area must be designed to provide for greenery, shade, and casual seating.

4. Minimum building heights:

Commercial zoning: Sites developed exclusively for residential uses must be a minimum of two storeys in height to achieve a village scale, and must comply with the minimum ground floor floor-to-floor heights pursuant to Provision 2(d).

Sites developed exclusively for commercial uses are permitted as single storey but with a minimum parapet height of 5.5m or a minimum eaves height of 4.5m where a pitched roof is utilised.

Residential zoning: Single-storey development is permitted subject to the building having a minimum parapet height of 5.5m or a minimum eaves height of 3m for 'permitted' or 'discretionary' commercial land uses (e.g.; child care or community facilities) pursuant to Table 1 (zoning table) of TPS 2.

5. Definitions

For the purpose of this DAP, the following definitions shall apply:

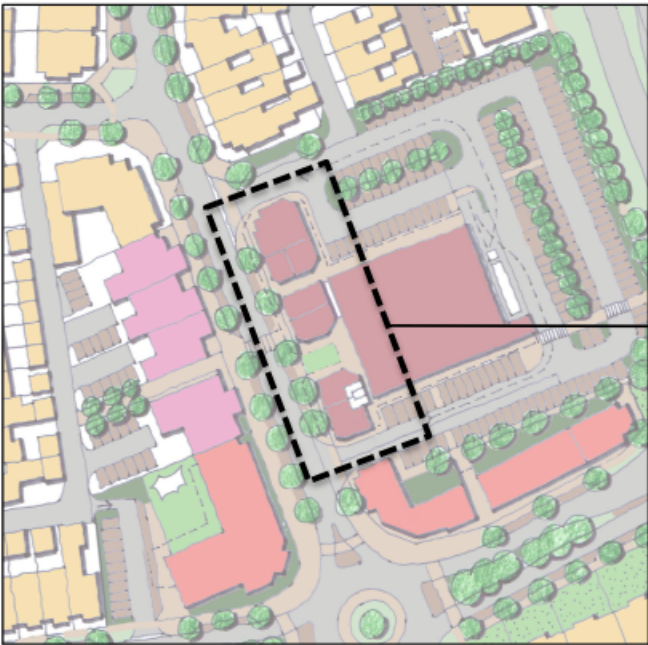
Active frontage: An active frontage must incorporate shopfronts (to retail, office or other commercial uses) with a minimum of 66% of the ground floor street frontage as transparent glazing that allows visual connectivity between the inside of the building and the adjacent public domain. Additionally, any tenancy with an active frontage to a street must address the primary pedestrian entrance to that street.

Habitable frontage: A habitable frontage must present at least one major opening to habitable rooms of residential development to the adjacent public domain that allows passive surveillance from inside of the building and the adjacent public domain.

Architectural response to a corner: An architectural response to a corner must consist of a prominent feature that provides visual emphasis. Examples include: a raised or projecting building element, a significant roof element, a differentiation of materials, a significant opening(s) or a balcony/veranda structure.

Retail core: The portion of the development that contains the majority of the retail tenancies, the community piazza space and, if provided, the supermarket. The DAP anticipates the retail core to be on the eastern side of the main street.

Indicative Development Plan (retail core)



Note: The Indicative Development Plan (Retail Core) provides a convenient indication of the built form that could arise from the retail core design principles contained with the Detailed Area Plan. The Indicative Development Plan (Retail Core) should not be considered as a definitive architectural design as the Detailed Area Plan and the retail core design principles enables the flexibility for a range of design outcomes.



Initiative detail of retail core

Legend

- 1. Community piazza space.
- 2. Supermarket.
- 3. Tenancies.
- 4. Supermarket entrance.
- 5. Customer exit only from supermarket (to suit taking of trolleys to car park).
- 6. Bin storage.
- 7. Service corridor.
- 8. Toilets.
- 9. 'Mall'.
- 10. Glazed and visually permeable shop frontage to adjacent streets, community piazza space and 'mall'.
- 11. Tenancy doors to address the main street or the village square where frontage is provided.
- 12. Canopy cover to adjacent footpaths.
- 13. Pedestrian movement from the main car park to activate tenancies.

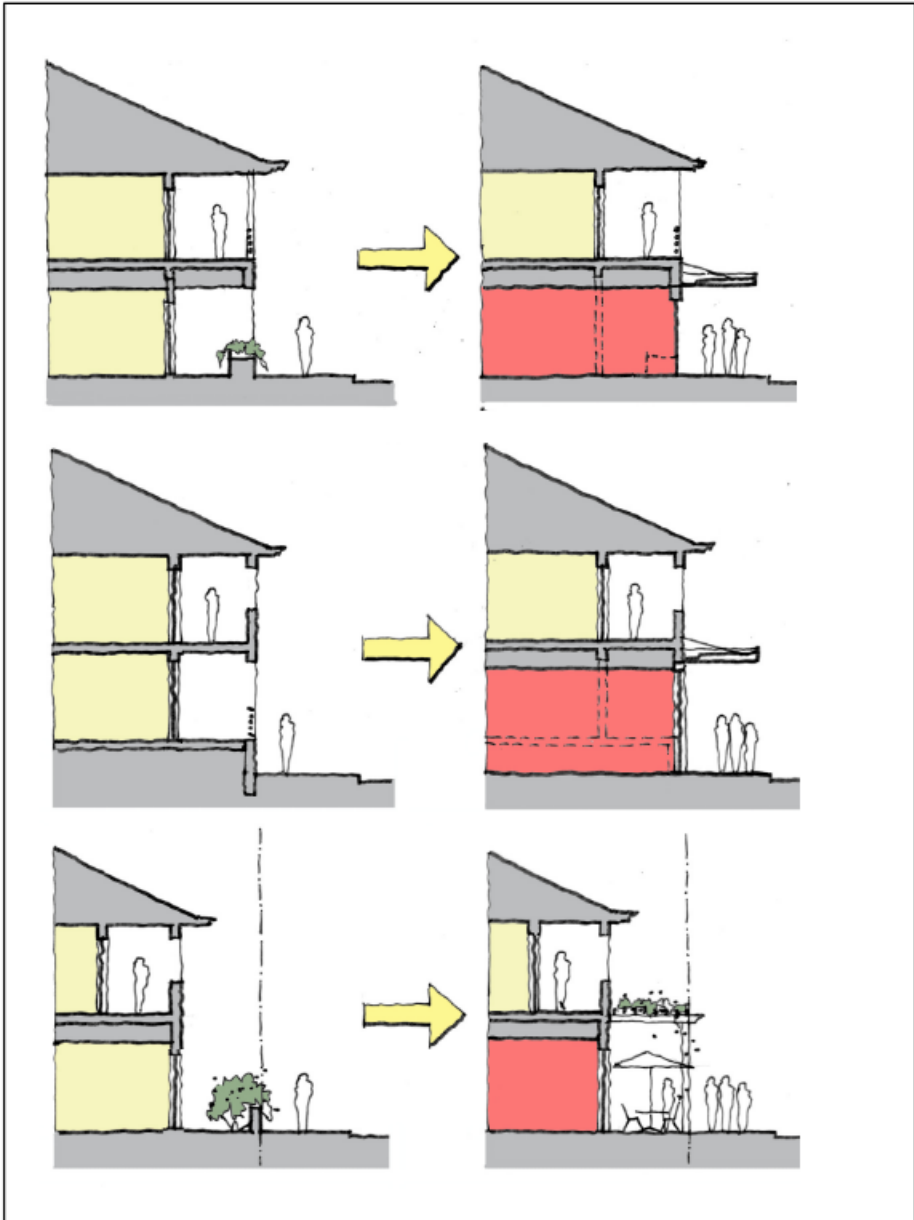
Indicative Development Plan (mixed-use - supporting information)



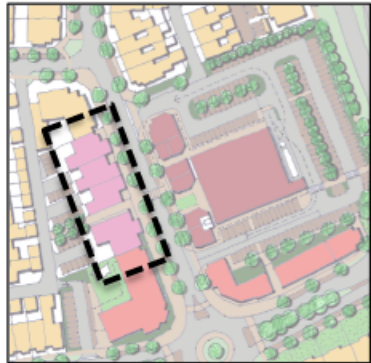
Example of a mixed-use building designed specifically for commercial use at ground floor.



Examples of 'convertible' buildings designed to convert from residential to mixed use with the addition of a canopy and other minor internal changes.



Methods of conversion



The mixed-use component requires the flexibility to be developed in a number of ways subject to the demand for commercial floorspace. Development approaches may include purpose-designed mixed use buildings or 'convertibles' that enable a transition from residential to commercial use, specifically at the ground floor level. Examples of how this can be achieved are indicated above.

Schedule Of Submissions
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PUBLIC SCHEDULE OF SUBMISSIONS		
Name	Address	Comment
1. Julie Daly	No Address Provided	<p>I am emailing to express my views on the above proposal. I am extremely against yet another development of this type in our local community. We are a beaching suburb with active, outdoor lifestyles & more bottle shops & fast food outlets only serve to erode this way of life & promote unhealthy & anti-social behaviours in our community.</p> <p>Surely the space could be used in a better way such as the provision of a public access multi-sport court, independent cafe or grocer, beach volleyball court, smoothie bar etc?</p> <p>I truly hope you take on these views that are expressed by many in our community. We do NOT want anymore fast food outlets or bottle shops.</p>
2. Mr Patrick Birch	27 Binthalya Street GOLDEN BAY WA 6174	Two service stations within 50m of each other seems excessive, even if the supermarket is the only thing that is really needed.
3. Mrs Renee Barnett	28 Treasure Road SINGLETON WA 6175	Petrol station not required. 7/11 and future singleton stations services the area perfectly. Space would be better used with something else that has less of a health risk on neighbouring houses.
4. Mr Timothy Trenfield	38 Tangadee Road GOLDEN BAY WA 6174	Golden bay does not need another service station, there are 3 in the area already. A multi bay car wash would be a better proposal.
5. Mrs Kirstee Birch	27 Binthalya Street GOLDEN BAY WA 6174	I support this development as it stands to be a great asset to our community when completed.
6. Ms Loren Angel	72 Miltona Drive SECRET HARBOUR WA 6173	<p>We already have enough mixed commercial centres in this city. What we would like to see is engagement at a higher level to develop more train stations and better public transport routes, more frequent buses etc. The only large commercial development we want to see is a revamp of the Rockingham shops, or potentially Lakelands, into a Westfield. This would benefit the area greatly. This proposed mixed commercial use development would be better off as a restaurant strip like up in the city, full of local businesses that we as a community can support. Not more fast food joints and tobacco shops. The kids around here don't need that. We need to build up our community, facilitate independently owned coffee shops, restaurants and businesses. Please don't allow yet another eye sore of a servo, chemist and token one cafe. We're sick of them. Help us improve our community</p>
7. Mr Michael Roberts	PO Box 7062 SECRET HARBOUR WA 6173	No no no what a waste.
8. Mrs Joanne Mill	27 Treasure Road SINGLETON WA 6175	The proposal for more fast food restaurants, bottle shop, supermarket and the ridiculous obsession of state and locals government have with fuel stations is absolutely NOT needed in Golden Bay. The site could be used for better community style businesses or even a car wash station.
9. Mr Saul Oswald	10 Erlistoun Street GOLDEN BAY WA 6174	Another petrol station and liquor outlet? 3 Petrol stations within 1km. 5 liquor outlets within 1km! Do something better for the community this is a waste and it wont be filled. A restaurant would be good. We have too many small cafes or taverns which have no parking for them.

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10. Mrs Shamimara B Shelbourn	8 Culvers Road SECRET HARBOUR WA 6173	A supermarket is essential but I don't agree with another petrol station or liquor store with so many nearby.
11. Mrs Jasmine E Francis	18 Yandal Way GOLDEN BAY WA 6174	We dont need another service station or bottle shop in the areea.
12. Mr Dylan Adams	1 Marlin Way GOLDEN BAY WA 6174	To have a supermarket similar to Bunbury Farmers Market with fresh produce. Instead of two fast food companies. Have just one for example Nando's or K.F.C For the other building have a nice family friendly restaurant with a beer garden (similar to the whistling kite) Small shops for local business owners Instead of a fuel station build a multi park car wash (similar to squirters in Baldivis) We do not need another fuel station as seven eleven is just down the road. No need for a liquor store as there is multiple in Golden Bay/ Secret Harbour
13. Ms Elisha M Blackie	3 Ettrick Way GOLDEN BAY WA 6174	As a resident of Golden bay already living closely to the 7/11 please rethink another petrol station and fast food. Pumping lore emissions in the air and it will be encouraging unhealthy eating habits of all our children around the area. The 7/11 is enough. Please rethink this it's too much in one small area.
14. Mr Bradley J Kershaw	45 Arrowwood Loop SECRET HARBOUR WA 6173	Everything is fine except for the Liquor store. As a community we have enough liquor stores. Dan Murphys, Celebrations, BWS, and golden bay liquor store. What are we promoting in our community. It'll end up a ghetto the alcohol consumption is already terrible. Quit the liquor store please.
15. Miss Lesley B Burch	71 Murdoch Drive SINGLETON WA 6175	Reject the proposal for yet another petrol station, alcohol and fast food outlet. Rubbish, antisocial behaviour and complete ugliness where there is no need for these kinds of "facilities".
16. Ms Kirsten Kinsella	No Address Provided	Laot if us locals are hoping for not another petrol station or bottle shop but some more necessary places such as a Healthy food take such as Nando's, Grill'd or something along those lines. Maybe a cafe, newsagency, a farmers market or bakery, things like that.
17. Ms Michelle Lovett	65 Kimberley Drive SECRET HARBOUR WA 6173	No we have enough supermarkets, alcohol shops and service stations in a small area. Don't need more. We need family friendly restaurants/ cafe. A bikes bike area? Where kids can learn road rules. Mini wildlife nature park like Bunbury has free to access. A fenced off park with shade. A place the food can/ coffee van can sell.
18. Mr Steven D Head	7 Grace Street MANNERING PARK NSW 2259	This is awesome and very much needed for the area and adjoining suburbs with up to date convenience available to the community.
19. Mrs Leanne B Seuren	8 Callawa Street GOLDEN BAY WA 6174	I agree that something needs to be done on this site. As there is a petrol station across the road do we in the area need another. Instead of fast food outlet wouldn't a more healthy option be a fruit and vegetable shop like the one at Lakelands.

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20. Mr Aaron L Reddall	4 Callawa Street GOLDEN BAY WA 6174	Whilst I'm happy to see a developer interested in the site I'm not happy about the proposal. In my opinion we do NOT need another Petrol station, Fast food outlet or Liquor Store. We already have surplus to our requirements for the area. We want to create community in our area, rather than a place of transaction. Green grocers, like Malibu Fresh and Gilberts, Cafes, a Tapas and wine bar, small businesses, specialty shops, garden centres and not just more franchises... You have an opportunity to create an amazing space for the Golden Bay and surrounding areas to meet, mingle and enjoy, please don't waste it with a quick and easy solution. Think long term for the area and wider community.
21. Mrs Zena J Lamb	69 Maroubra Parade SECRET HARBOUR WA 6173	The Secret Harbour/Golden Bay area does not need another petrol station, fast food outlets nor bottle shop. There are quite a few servos in the area, numerous fast food outlets and 6 shops that sell liquor. This development needs to be relooked at and amended to fit in with the growing area. With more thought, planning and consultation in what is needed in the area this development could be a huge asset to Golden Bay.
22. Mrs Amanda V Cliffe	8 Bidgemia Road GOLDEN BAY WA 6174	More shops needed i don't think another bottle shop or petrol shop is needed already having that in the area. Very pleased to see more shops going in.
23. Mrs Sharon A Hansen	30 Eristoun Street GOLDEN BAY WA 6174	For goodness sake! Just STOP! Enough with all the petrol stations. This is ridiculous! There are 3 already within 3 kms of each other! This new proposal is basically across the road from the new one! How about looking outside the square for once and possibly ask residents what they would benefit from!
24. Miss Jaye Beeren	44 Aurea Boulevard GOLDEN BAY WA 6174	We don't need more service stations, bottle shops or fast food. May I suggest sending out a poll or ask the residence of Golden bay what WE would like and use? I feel this would be better for the business's and for the people living here to get the most out of this development.
25. Ms Meg L Powson	4 Brussels Circuit PORT KENNEDY WA 6172	This area needs to be rezoned to allow for more community & family friendly infrastructure. The Rockingham Council and State government must listen to the community and act on the opinions of its constituents before the proposed development is built and it's too late. There is already an excess of shopping centres, liquor stores, fast food outlets and fuel stations around it is ridiculous. It is the first observation we made when we moved into the area years ago, we were bewildered at how there's one of these excessive services every 2min down the road. This does not exist around the rest of the country. What we also noticed was the lack of community areas in the LGA (Aside from playgrounds). How about a library, sports centre, community hall, police station, nice restaurants or cafes instead? The options are limitless and yet I suspect despite over whelming push back from community on this proposal, it is likely nothing will be done to change the rezoning. It will remain as is, and in 10 years time when crime is through the roof because there's nothing in the local community to keep kids active and engaged, the councillors will carry the guilt as they had an opportunity to do something positive for the community but they let it slide. Golden Bay is a beautiful part of Australia, don't let it be ruined by the proposed development. Do something better with this land Rockingham Council.
26. Ms Joanne Moffat	52 Winderie Road GOLDEN BAY WA 6174	I think this will be good for the local community and will assist with growth.

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27. Mr Daniel Chidley	23 Talisker Bend GOLDEN BAY WA 6174	Preliminary interest in one of the 3 specialty shops
28. Mrs Rebecca Hughes	74 Allatoona Avenue GOLDEN BAY WA 6174	With three bottle shops already in Secret Harbour, two fuel stations in close proximity and numerous fast food options in the area, I feel that this development proposal doesn't offer anything significantly new in terms of amenity for the local area. The existing shopping centre in Secret Harbour is under-utilised, with smaller businesses already struggling for customers, so feel that this area could be better developed.
29. Mr Matthew L Dance	46 Yanrey Street GOLDEN BAY WA 6174	I would like to oppose this application for the development of another service station, bottle shop and fast food outlets in golden bay, I think the local community does not need this. We already have more than enough of these in the area. I believe that a supermarket with a fresh food market would be ideal along with more restaurants and small retail businesses.
30. Ms Philippa J Edwards-Davis	97 San Javier Circle SECRET HARBOUR WA 6173	I do not agree with having another service station so close to childcare centres and the primary school and due to ongoing alcohol related social issues do not support another bottleshop.
31. Ms Kelly S Grant	22 Minderoo Crescent GOLDEN BAY WA 6174	I'm all for using this space finally. But the idea of another service station and more takeaway options is so out of touch for golden bay and what the people want/ need. 7/11 ACROSS THE ROAD has proven to provide nothing to the area except for more crime and ridiculously cheap coffees and snacks, undermining local businesses owned by LOCALS for the locals. We have a bottle shop, we have a service station and we have takeaways. All providing enough toxins, noise pollution, crime and trash to last us a lifetime. Find something different. What a waste of space.
32. Mr Ross A Favell	22 Bundarra Way GOLDEN BAY WA 6174	I do not want another petrol station, fast food outlets or liquor store in my neighbourhood in Golden Bay. I welcome healthy independent food outlets including a fruit and vege shop, butcher shop, continental deli, bakery, pasticeria, coffee shop, ice cream gelato shop. That will generate community retail and more personal service.
33. Mrs Carmen Simpson	75 Adelong Avenue GOLDEN BAY WA 6174	I've been living in golden bay for the past 6 years after building our dream home. We already have a petrol station in that area why do we seriously need another, I also feel another liquor store within the vicinity would bring crime within the area resulting in the stores closing down look at Alice Springs for example, not forgetting we have enough already. This would be at the bottom of our street and I'm absolutely gutted there is nothing useful going there ie, lazer car wash nearest is Baldivis, dog park, lovely cafe/ coffee shop, indoor play area for the younger generation, brand new swimming baths with outside pool, Dance school community hall, anything but that same as we've got already, there is nothing here in golden bay regards this.
34. Mr Andrew T Kemp	96 Kingscliff Drive GOLDEN BAY WA 6174	Very happy about the development, about time the eyesore is developed. Although do we really need another petrol station - other than that very happy.
35. Mrs Sophie J Wycherley	23 Karunjie Road GOLDEN BAY WA 6174	It is my opinion that a second service station is not required in Golden Bay. The new 7/11 establishment that has recently been opened has made for a congregation spot of the undesirables. I agree with the IGA, with opening hours of 7 - 7, 7 days a week. But open any later it just makes for another place for the delinquents to hang around.

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36. Mrs Leanne A Andrews	13 Shivery Fairway SECRET HARBOUR WA 6173	We do not need more fast food, another petrol station, another supermarket, another liquor store - these are already in abundance in Secret Harbour (which is a 2 minute drive away). These types of facilities attract crime and school children in abundance, and we have already seen a drastic rise in crime and anti-social behaviour, in Secret Harbour. Why not place restaurants, a cafe strip, a play centre, or a sports venue for kids (to get them moving instead of eating junk food and littering)? We have a petrol station in Secret Harbour, and 2 in Golden Bay already. This is desperately unnecessary. Fast food - unhealthy, creates disgusting fumes/smells around the area, attracts anti-social behaviour and increased littering. Not to mention the poor families who have built their houses close by. Please rethink the use for this land.
37. Ms Linda K Nichols	15 Narloo Way GOLDEN BAY WA 6174	We don't need another service station or fast food outlet or bottle shop here. All are here already.
38. Ms Lisa Critchley	23 Kalli Street GOLDEN BAY WA 6174	My name is Lisa Critchley. I am an owner/occupier in Golden Bay. I am writing to express my sincere concerns about the proposal for mixed commercial development. I must first state that I have no objection to the area being developed. My concern is the nature of the businesses that are proposed. I am taken aback by the proposal for yet another petrol station (we just had one built). I am also concerned about incorporating more fast food outlets and a bottle shop. I live on Kalli Street, near the petrol station and dominos pizza. Daily, I see the accumulation of litter from customers buying slushy drinks and pizza. The roads, verges, and waterways are littered with drink containers (slushies) and pizza boxes (dominoes). I am also concerned about the people's health in the neighbourhood - we do not need more fast food or alcohol. I suggest consulting the community about what they want to see in this area rather than imposing these awful franchises.
39. Mrs S Bradley	Cubana Parkway MANDURAH WA 6210	Everything except the petrol station. There is already one on each end of Warnbro sound avenue. The area does not need another.
40. Mrs Sue S Yuill	6 Porto Santo Green SECRET HARBOUR WA 6173	This area does not need another device station secret harbour has one golden bay on Mandurah roan has one solder bay recently opened a 7/11 3 in Port Kennedy drive area it's absolutely not necessary
41. Ms Rachel Trehwitt (Ms Rachel Jahn)	13 Tangadee Road GOLDEN BAY WA 6174	I am emailing you in relation to the proposed mixed commercial development on Aurea Blvd Golden Bay. I am expressing my interest in purchasing one of the speciality stores there myself and wish to make contact with the developer please. May you please provide contact details of the developer so I can approach them with interest to purchasing one of the specialty stores and my expression of interest in the type of store development. Any other information that you feel I will need to know in purchasing one of the speciality stores May you please provide myself with the relevant contact name/a and contact numbers. I appreciate your time and I await to receive a reply. Thank you for reading this and replying.
42. Mr Alex R Breen	108 Thundelarra Drive GOLDEN BAY WA 6174	There's already a fuel station 10 meters away, 2 more within a couple hundred meters and multiple fast food outlets within walking distance. Just being excessive and money hungry, let alone the 2 childcare centres on the other side of the street.

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43. Ms Gemma Hardiman	24 Mallina Crescent GOLDEN BAY WA 6174	After more than 5 years of a mothballed project on Lot 622, it is nice to observe progress. The supermarket and 3 specialty tenancies are a plus to assist with the families and elder people of the community. Another service station within this mix does not make any sense when there is one across the road operating 24/7! Golden Bay does not need two service stations opposite each other. I am concerned about the environmental impacts from this because of the smell of the petrochemicals and rubbish that is left behind. The service station area on Lot 622 could be better used as a mini children's playground or a meeting place within the flora environment? I am not sure about the liquor store because there is already one down the road at Secret Harbour Shopping Center. If the hours were heavily regulated, it might work. Is this proposal to replace the current Golden Bay Village Shopping Center that is located at the end of Dampier Drive?
44. Mr Stanley G Sutherland	1 Wandina Way GOLDEN BAY WA 6174	<p>I am writing in response to your letter, dated 9th March, outlining the Proposed Mixed Commercial Development (as above).</p> <p>I am shocked and extremely surprised that Rockingham Council would even entertain the idea of putting yet another liquor store in this area, as we already have DAN MURPHY'S, BWS and LIQUORLAND in the nearby SECRET HARBOUR SHOPPING CENTRE.</p> <p>Especially when this is at a time when the State Government is trying to discourage the sale of alcohol in the north of this state. To seek to establish yet another liquor store in this area seems rather superfluous and not in keeping with the residential area of this part of Golden Bay.</p> <p>Also, the idea that there would be yet another service station, in addition to the recently-opened petrol station on the ocean side of Warnbro Sound Avenue at Aurea Boulevard, as well as the AMPOL service station at the SECRET HARBOUR SHOPPING CENTRE, not to mention the petrol stations at PORT KENNEDY and the two at the WARNBRO SHOPPING CENTRE smacks somewhat of "overkill".</p> <p>This is particularly surprising considering that Australia (like most of the world) is moving away from fossil fuels and moving towards electric vehicles (which would render petrol stations largely redundant).</p> <p>This begs the question of whom (or what) do Rockingham City Council choose to represent - the rate-payers (and voters) or "big business"?</p> <p>As a linguist (with two diplomas), I have an excellent memory and will exercise my right, under the Representation of the Peoples legislation, at the next council election.</p>
45. Ms Helen L Paterson	9 Bandy Lane GOLDEN BAY WA 6174	Concern about amount of traffic on Thundellara Drive & Wyloo Lane. Delivery trucks accessing this area. Impact of noise, traffic, rubbish to neighbouring properties.
46. Mrs Bianca Sibbald	9 Piarri Grove GOLDEN BAY WA 6174	Has a library been considered for Golden Bay? The poor residents from singleton/golden bay have to drive all the way to Warnbro or wait until the pop up library once a month.
47. Mr Aaron L Reddall	4 Callawa Street GOLDEN BAY WA 6174	I have serious concerns about the following areas; - traffic, the proposed mixed commercial business and service station will bring an increased amount of traffic to an already busy area. Add on top of that delivery trucks, refueling trucks and couriers servicing the business would increase the risk of accidents to both vehicles and pedestrians in a confined space. - fumes and pollution, the service station and fast food outlets are very close to residential properties not to mention two child care centres. The dangerous cancer causing petrol fumes expelling into the air are of serious concern to the residents both within 200m and beyond.

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<p>48. Ms Kate Williams</p>	<p>36 Aurea Boulevard GOLDEN BAY WA 6174</p>	<p>Please see attached letter.</p> <p>Lot 622 (No.2) Aurea Boulevard, Golden Bay</p> <p>I oppose aspects of this development application.</p> <p>This development proposal does not make sense from the perspective of residents in the area – placing a second petrol station in the heart of homes and schools and child care centres is not acceptable. Residents want appropriate development and amenity – shops and cafes are fine – not a service station.</p> <p>An unforeseen consequence of the 7-11 petrol station that was approved despite strong community objections is the amount of litter that has been generated by the sale of take away coffee and cold drinks. It is a constant battle to deal with the empty slurpee and coffee cups that are discarded along Aurea Blvd and especially at the entrance to the Daniel Kelly Skate Park skating area. I am a Heart Foundation Walk Organise and my group commence our weekly walk on a Saturday morning from the Skate Park. I find that each Saturday I now need to spend time picking up somebody else's rubbish.</p> <p>Having a second service station is only going to increase the amount of rubbish discarded by customers. These customers unfortunately are often local residents, including teenagers and school aged children who walk to the 7-11, buy their drink, drink half of it and then ditch the whole thing into the bushes and onto the footpaths.</p> <p>I also oppose this development with specific reference to the proposed fast-food outlets. We already have a McDonalds further up Warnbro Sound Ave in Secret Harbour Shopping centre. We don't need any additional outlets which will also add to the litter issue.</p> <p>Other concerns include:</p> <ul style="list-style-type: none"> a) noise (a higher level of 24-hour traffic). I believe that the increased volume of traffic will also increase the noise level in the area from hotted up vehicles. We already have an issue with hoon drivers speeding down Aurea Blvd to and from the beach area and having the additional fast food outlets will only encourage hoon drivers to the area. b) additional traffic in a residential location. This includes the proposed entry points into the facility – I don't think that an entrance (cross over) from Thunerlara Drive will be adequately safe. c) the development is too close to the primary school and two child care centres, once again creating a risk related to pedestrian safety due to increased traffic flow from facility users and delivery trucks. This especially relates to the Thunerlara crossover. d) I don't believe Wyloo Lane as an access point is adequate – it is a lane – not a road and not a street – I suggest this will be too narrow and therefore dangerous. e) I also believe that the fast-food outlets will contribute to environmental pollution via unacceptable food odours and the discarding of food wrappers and containers. f) I don't believe that a further liquor outlet is also warranted as we already have Dan Murphy's, BWS and Liquorland in Secret Harbour Shopping Centre. There is no required need to an additional liquor outlet. g) General community safety – I believe a further 24 hour service station and a late night liquor outlet is only going to add to a higher level of anti-social behaviour and crime. We are already dealing with a large number of thefts from motor vehicles parked on the street to construction materials being stolen. We don't need to attract any additional would-be criminals to the area. <p>I accept the supermarket as that is actually providing a required amenity as well as the speciality outlets and this would be an</p>
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		<p>improvement on the current derelict steel infrastructure already in existence.</p> <p>Contrary to the proposals submitted by Jarra Dev Pty Ltd, I do not believe that the development proposal as it stands now will create a significant community benefit.</p>
49. Ms Isabelle Ravennes	107 Aurea Boulevard GOLDEN BAY WA 6174	<p>I want to give feedback regarding the Mixed commercial Development - golden Bay currently being pushed through for consultation.</p> <p>I think we need to STOP with more petrol stations, fast foods and liquor shops and obviously bring more healthy, sustainable and durable options.</p> <p>It seems obvious, yet the council is agreeing to go ahead with these kind of DA's and programs.</p> <p>Town planers, Politicians, Developers - We are in 2023, it's time to wake up and think of new ways to build our children's tomorrow.</p> <p>This is turning the area into an absolute massive skip bins on top of that.</p> <p>We have a massive problem with Obesity, Trashes management and not even mentioning alcohol consumption. Could we welcome some new business? Could we implement better ways to plan for our towns?</p> <p>Can we stop for two seconds and think how can we all profit (\$) without absolutely ruining the area?</p> <p>No one is benefiting from this.</p> <p>I do think this needs to be absolutely Rejected.</p>
50. Mr Craig T Clitheroe	71 Dampier Drive GOLDEN BAY WA 6174	<p>As a resident of Golden Bay, I wanted to express my concerns with the new development of Lot 622.</p> <p>I understand there are a number of proposed businesses to be included in the development and I am against the following:</p> <ul style="list-style-type: none"> • a service station (with convenience store) on the corner of Thundelarra Drive/Aurea Boulevard • two fast food outlets • a liquor store fronting Warnbro Sound Avenue and <p>As Golden Bay is a small community, I find the number of fast food, petrol stations and another liquor store to be excessive.</p> <p>We already have a liquor store in Golden Bay and the new development has already built a 7/11 service station on the same Lot. Fast food is already available in Secret Harbour, which is only a 2min drive away and quite frankly is worse for the community and brings a problem of loitering and littering. Since the 7/11 has been installed at Golden Bay, there has been an increase of rubbish and littering with the products from</p> <p>7/11 scattered all the way down on the beaches. I would go as far to say, these ventures even encourage this consuming culture, and don't add to the community like small businesses do. So on the behalf of the Golden Bay residents, we don't need more fast food, petrol stations and liquor stores in the area. What we want are small businesses that build the community. I am all for an IGA and specialty small businesses; more privately owned businesses such as fresh produce stores like Malibu Fresh, hairdressers or arts and crafts. Things that actually are owned by the people who live here.</p> <p>Let's not destroy decades of community by letting greedy, quick buck businesses that couldn't care less if the residents became sick or if their waste polluted the area beyond repair. Instead, we need ventures that care.</p> <p>I am opposed to this developments plans.</p>

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51. Ms Stacey L Dalton	6 Ginrock Way GOLDEN BAY WA 6174	<p>I am opposed to another service station and more fast food outlets in my suburb. I brought my house because it was clean quiet and no fast food outlets or poison petrol stations here.</p> <p>The most concerning thing is the proposal of where these will be situated there are two day cares a primary and high school so close. Like we need more fast food obesity is a huge issue and kids do not need to be eating that crap.</p> <p>How about have businesses in the area that promote health and well being? Don't you are the council want to support our community.</p> <p>Since the area has started to be built up there has been an increase in traffic especially in the evenings when teens p platers are driving fast dangerously and their passengers are hanging out the car. We do not need or want anymore development that will disrupt the peaceful lifestyle we have here!</p> <p>I really hope the Rockingham council listen to the community this time. We pay our rates and you are meant to represent us not big business!!! Think about that!!</p>
52. Ms Cherie Dignam	110 Thundelarra Drive GOLDEN BAY WA 6174	<p>I object to the proposed following development proposal based on the following:</p> <p>A Supermarket</p> <p>Where will the delivery access points for this supermarket be?</p> <p>What are the operating hours?</p> <p>How much additional speeding traffic will it bring to Thundelarra Drive?</p> <p>Thundelarra Drive is already used as an alternative rat run for residents as people don't want to use the lights at Aurea Bvd that were installed a few years ago. The existing traffic calming measures and half-hearted existing speed humps on Thundelarra Drive are no match for the hoons and reckless speeding drivers we get all the time.</p> <p>The current half-finished shopping centre structure has been an eyesore in the area for more than 5+ years, the council have always indicated (incorrectly) that it belonged to the IGA group (this is not the case) and the reason it was not finished is that the building permit had expired and that there was nothing that could be done by the council to tidy up the rubbish that was being dumped on and around the site because it was private property.</p> <p>Whilst any chance of improving this creaking ugly temporary dumping ground on the corner would be welcomed, I have serious concerns about the delivery noise, light pollution etc. we already have refrigerated trucks idling for long periods whilst making deliveries at 4 am on multiple days across the road at Dominoes, what restrictions will be in place to make sure residents are not disturbed 24/7?</p> <p>3 speciality shops?</p> <p>More details, please.....</p> <p>Service Station</p> <p>We already have a brand-new service station built on Aurea Boulevard, the 3rd service station in a 3km stretch, just in case we run out of petrol! Where is a copy of the current the Risk/Emergency Management plan/evaluation for the current service station on Aurea Boulevard? It's a residential area, and placing another service station (4 in a 3km stretch), opposite the current 7/11 and two childcare centres does not make any sense and increases the risks for all residents.</p> <p>There are also these factors for concern:</p> <ul style="list-style-type: none"> - Light/general pollution - Delivery/Forecourt noise - Increased traffic <p>Two fast food outlets</p>

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Why two, is this the standard building development template being used by councils from Rockingham to Mandurah? Why are there always the same commercial fast-food industries popping up every couple of kilometres?

- Light pollution
- Delivery noise
- Increased traffic
- Attract more late-night anti-social behaviour
- Attract even more Hoons

A liquor store

Excellent idea, given the local housing allocation, there is already a lively anti-social nightlife in the area, we don't need to compound the social issues. Golden Bay has a liquor store at the Golden bay shopping precinct, and we have 3 more just 1.2km away at the nearby Secret Harbour shopping centre.

Crossovers from Thundelarra Drive and Aurea Bvd

Inadequate given the number of speeding vehicles we have daily, not to mention the Hoons and the daily speeding construction traffic.

It is disappointing but not surprising to see the developers (PEET) win two awards for Golden Bay at the Urban Development Institute of Australia (WA) 2022 Awards for Excellence, taking home the Excellence in Social and Community Infrastructure Award and the highly coveted Russel Perry Award for Urban Development Excellence and yet less than 100 metres from their main sales office we have this proposed dismal commercial offering for the local community.

I bought my property in 2018, and the brochure for the area and future development certainly looked a lot more optimistic than this carnage.

What my brochure said would be built in 2018.....



The reality in 2023.... certainly not winning any awards!



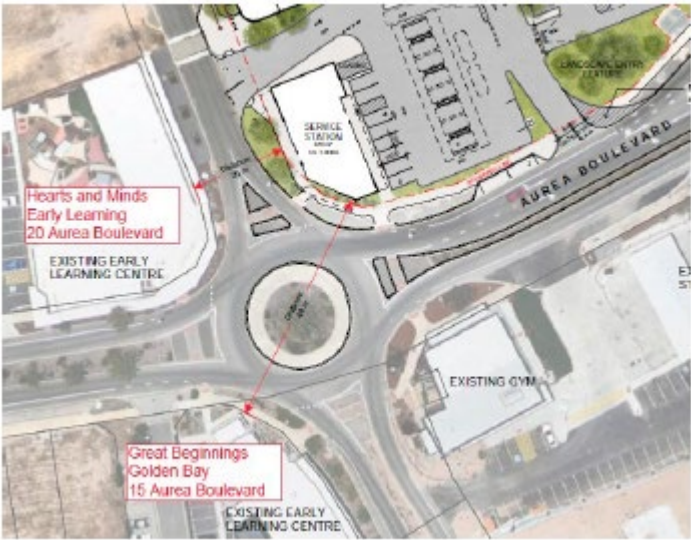
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I think the local council and other planning/development authorities will ensure that this proposal will go ahead, we had two (yes, two), childcare centres built during the lockdown, and then a service station shortly afterwards, the construction noise was endless, and it has been in the area for more than 5+ years, so what are another few years of disturbance for pg. 4 all the residents especially when the subcontractors regularly break the noise/operating guidelines. Let's not forget we already have more shops and all those over 55's apartments planned for 95 Thundelarra Drive so even more building noise for residents to deal with.



Please also note that with the increasing number of rentals in this street the response to any planning proposal will probably be less (if any) than anticipated.

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<p>53. Mr Hugh Thomson</p> <p>Heart and Minds Early Learning Golden Bay No.53 Cont...</p>	<p>20 Aurea Boulevard GOLDEN BAY WA 6174</p>	<p>I am writing to the City of Rockingham to lodge an objection to the development application for Mixed Commercial Development at Lot 622 Aurea Boulevard, as the owner and operator of Hearts and Minds Early Learning Golden Bay, a 92-place childcare centre located on the adjacent property at 20 Aurea Boulevard Golden Bay.</p> <p>1. Site Context</p> <p>The proposed mixed commercial development includes a service station with convenience store that is located on the corner of Thundelarra Drive and Aurea Boulevard. This proposed use is located at a distance of 20m from a 92-place childcare centre (Hearts and Minds Early Learning Golden Bay) and 48m from a 102-place childcare centre (Great Beginnings Golden Bay) as identified in the site plan below.</p>  <p>2. Applicant's Emissions Impact Statement</p> <p>The proposed development submission includes Appendix 8 - Emissions Impact Assessment of Proposed 24hr Fuel Station by EAQ Consulting dated 16 December 2022.</p>
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The Emissions Impact Assessment section 1.1.1 'Legislative Context' identifies that the assessment has been developed in reference to the *Western Australia (WA) Environmental Protection Authority (EPA) 2005 Guidance for the Assessment of Environmental Factors*, which recommends separation distances between Industrial and Sensitive Land Uses to avoid conflict between land uses, with a minimum separation distance of 200m from Sensitive Uses for Service Stations in operation for 24 hours daily.

Section 2.3 of the *EPA 2005 Guidance for the Assessment of Environmental Factors* lists types of sensitive land uses, with childcare facilities included as identified as below.

2.3 Types of sensitive land uses

Land uses considered to be potentially sensitive to emissions from industry and infrastructure include residential developments², hospitals, hotels, motels, hostels, caravan parks, schools, nursing homes, child care facilities, shopping centres, playgrounds, and some public buildings. Some commercial, institutional and industrial land uses which require high levels of amenity or are sensitive to particular emissions may also be considered "sensitive land uses". Examples include some retail outlets, offices and training centres, and some types of storage and manufacturing facilities.

Noting childcare facilities are identified as a sensitive land use, the proposed Service Station is therefore 20m and 48m from two 'sensitive receivers' as identified in the site plan above.

Given that the proposed development has not achieved the guideline minimum separation distance of 200m, the applicant has undertaken an assessment of emissions "to support the application and thus inform the risk of health and amenity impacts at the nearest receptor".

However, EAQ Consulting Emissions Impact Assessment Figure 1-1 incorrectly identifies the 4 nearest houses as being the nearest sensitive receivers for the purposes of Dispersion Modelling contained within report Section 3 – Aeromod Dispersion Modelling Methods, as identified in the extract of Figure 1-1 below.

Emissions Impact Assessment – Figure 1-1: Proposed 24-hr Golden Bay Service Station (p. 11):



Based upon the flawed evaluation that the nearest sensitive receivers to the development site are 4 houses as identified in the Emissions Impact Assessment Figure 1-1, the following assumptions are made throughout the development application:

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		<p>Emissions Impact Assessment – 3.2 Sensitive Receptors (p. 20):</p> <p>Discrete receptors (houses) were placed at locations closest and surrounding the Site (refer Figure 1-1). These receptors were analysed for their ground level impact concentrations of vapour emissions and compared against regulatory guidelines.</p> <p>Incorrect – the childcare centres located at 15 and 20 Aurea Boulevard are the closest sensitive receivers.</p> <p>Emissions Impact Assessment – 4. Assessment Results & Discussion (p. 21):</p> <p>The Assessment of the Proposed Aurea Boulevard Fuel Service Station, and accounting for cumulative emissions' impacts from the Adjacent service station site, has projected ground level concentrations (GLCs) at the nearest sensitive receptors (refer Figure 1-1) for assessed pollutants of BTEX (Benzene, Toluene, Ethyl benzene, Xylenes), Cyclohexane, n-Hexane and Styrene that are below the guideline exposure standards when employing both VR 1 and VR 2.</p> <p>Incorrect – the closest sensitive receivers have not been assessed.</p> <p>Based on the predicted ground level concentrations using VR1 and VR2, vapours from the Site, and cumulative vapours from the Site and Adjacent site, will not negatively impact the health of the nearest sensitive receptor or sensitive land use within the Locality.</p> <p>Incorrect – this cannot be determined when the closest sensitive receivers have not been assessed.</p> <p>DA Report Golden Bay – Table 5: response to EPA separation guidelines (p. 30):</p> <table><tr><th>Table 5: response to EPA separation guidelines</th></tr><tr><th>Gaseous/Odour</th></tr><tr><td>An emissions impact assessment was prepared to consider airborne pollutants associated with the proposed 24 hour service station against established standards. The assessment is provided at Appendix 8.</td></tr><tr><td>The assessment conservatively considers potential emissions from the service station, including potential cumulative impacts due to the existence of a service station on the opposite side of Aurea Boulevard.</td></tr><tr><td>The assessment demonstrates that the relevant airborne pollutants all fall below guideline exposure standards, subject to the proposed service station employing both Stage 1 and Stage 2 vapour recovery systems.</td></tr><tr><td>In addition to the above, the dangerous goods licensing process addresses impacts associated with vapour. The fuel bowsters are required to achieve prescribed setbacks under the Dangerous Goods licensing requirements and a site-specific assessment is undertaken under that process to ensure the facility's design and layout meets regulatory requirements before fuel can be stored and sold from the site. The following considerations are assessed as part of the dangerous goods licensing process:</td></tr><tr><td><ul style="list-style-type: none">• Spill and leak containment• Segregation of dangerous goods• Control of ignition sources in hazardous areas• Control of hazardous substances that includes any gas, vapour, mist, fume or dust• Design, construction, maintenance and location of storage or handling systems, including location and separation distances so that as far as reasonably practicable they can be operated with minimal risk to people, property and the environment• Underground storage or handling systems for petroleum products designed, installed, operated and maintained so they don't leak</td></tr></table> <p>Incorrect – as identified above the assumptions of Appendix 8 - Emissions Impact Assessment are invalid as the relevant nearest sensitive receivers have not been identified for the purposes of the assessment and hence it is not demonstrated that relevant airborne pollutants fall below guideline exposure standards.</p> <p>3. Conclusion</p> <p>Based upon the information above, the proposed development at Lot 622 Aurea Boulevard Golden Bay has not demonstrated that the predicted Ground Level Concentrations of relevant pollutants at the nearest sensitive receivers will be below the guideline exposure standards, and hence we submit that the development approval should be refused.</p>	Table 5: response to EPA separation guidelines	Gaseous/Odour	An emissions impact assessment was prepared to consider airborne pollutants associated with the proposed 24 hour service station against established standards. The assessment is provided at Appendix 8.	The assessment conservatively considers potential emissions from the service station, including potential cumulative impacts due to the existence of a service station on the opposite side of Aurea Boulevard.	The assessment demonstrates that the relevant airborne pollutants all fall below guideline exposure standards, subject to the proposed service station employing both Stage 1 and Stage 2 vapour recovery systems.	In addition to the above, the dangerous goods licensing process addresses impacts associated with vapour. The fuel bowsters are required to achieve prescribed setbacks under the Dangerous Goods licensing requirements and a site-specific assessment is undertaken under that process to ensure the facility's design and layout meets regulatory requirements before fuel can be stored and sold from the site. The following considerations are assessed as part of the dangerous goods licensing process:	<ul style="list-style-type: none">• Spill and leak containment• Segregation of dangerous goods• Control of ignition sources in hazardous areas• Control of hazardous substances that includes any gas, vapour, mist, fume or dust• Design, construction, maintenance and location of storage or handling systems, including location and separation distances so that as far as reasonably practicable they can be operated with minimal risk to people, property and the environment• Underground storage or handling systems for petroleum products designed, installed, operated and maintained so they don't leak
Table 5: response to EPA separation guidelines									
Gaseous/Odour									
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54. Ms Nikki Bombak		<p>I would like to send it my opinions in relation to the notice to build a service station in Golden Bay as a City of Rockingham ratepayer living in close proximity to the proposed service station. My greatest concern is the high risk and link to cancer and living in closer proximity to service stations. From my research it is widely known that benzene in petrol is a known carcinogen and people who live in close proximity to service stations are at a greater risk of having a cancer diagnosis. My concern is further compounded knowing that directly across the road from the service station is two child care centres, a primary school and a high school. I hold great fear for the health and wellbeing of the children growing up in Golden Bay and attending these service for their lifetime and the exposure they will have to a known carcinogen.</p> <p>Having reviewed the proposal and supporting documents for Lot 662, I hold the concern that this application does not sufficiently address the Environmental Protection Authority (EPA) Separation Distances as identified in Part 5 of the Development Application Report by Planning Solutions, specifically in relation to the planned Service Station use. The department of health should be consulted and their recommendations in relation to health effects adhered to.</p> <p>The applicant has noted that 'EPA Guidance Statement No. 3' recommends a generic buffer zone of 200m between a Service Station operating 24 hours and any sensitive land uses. The definition of 'sensitive land uses' as identified in the EPA Guidance Statement No. 3 includes the use of premises for childcare.</p> <p>Whilst I acknowledge that the 'EPA Guidance Statement No. 3' is a guide only, I believe that the two childcare centres must be identified and addressed by a suitably qualified professional in the applicants submission, with evidence of any impacts or mitigation strategies provided. If the applicant is unable to demonstrate that the proposed development would not impact on the amenity of these two childcare facilities, I submit that this application should be refused and rejected.</p> <p>Please ensure that that city officers make arrangements for their own air analysis to be conducted which factors in the current petrol station and the effectiveness of the VR systems. The report sent in by the proponent does not factor in the child care centres as sensitive land uses and therefore it should be deemed misleading and inaccurate.</p> <p>Lastly, I pose that parking is not sufficient for the amenities provided.</p>
55. Mrs Anna-Marie Jackson	9 Yaringa Street GOLDEN BAY WA 6174	<p>I am against the construction of yet another petrol station at this site for the following reasons:</p> <ol style="list-style-type: none"> 1. Its very close proximity to the two neighbouring daycare centres and a primary school. 2. There already exists a 7-11 petrol station, so adding another one would double the vapour emissions and double the chances of spillages. <p>Vapour recovery devices do not recover all fumes. Our children's health must be taken into consideration.</p> <p>I am against the addition of the fast food, liquor store and petrol station combination which attracts disruptive behaviours.</p> <p>Our community needs something to be proud of that brings people together as a community such as cafe/tavern with small playground, community hub/square. There are already problems with the 7-11 and pizza business over the road. These problems include excessive litter, shoplifting etc.</p> <p>Other than the small supermarket, there is nothing about this development that this community can be proud. It is the usual profit mongering enterprises and resulting antisocial behaviours over the good of the community.</p>

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56. Ms Kristy L Nelson	7 Cottesloe Crescent SECRET HARBOUR WA 6173	I am emailing my objection to the proposed service station at lot 622 Aurea Blvd Golden Bay on the basis of; <ul style="list-style-type: none"> - adverse health effects to residents and children in attendance at the two child care centres and one family day care within the buffer zone - there being far too much cammed onto the site - lack of Parking for the amenities onsite - traffic impacts backing up to the lights on Warnbro sound Ave - Smells from fast food I implore the city to reject this proposal.
57. Mrs Candice Nelson	Address Not Provided	I am emailing my objection to the proposed service station at lot 622 Aurea Blvd Golden Bay on the basis of; <ul style="list-style-type: none"> - adverse health effects to residents and children in attendance at the two child care centres and one family day care within the buffer zone - there being far too much cammed onto the site - lack of Parking for the amenities onsite - traffic impacts backing up to the lights on Warnbro sound Ave - Smells from fast food I implore the city to reject this proposal.
58. Mrs Nikki Lee	Address Not Provided	I am emailing my objection to the proposed service station at lot 622 Aurea Blvd Golden Bay on the basis of; <ul style="list-style-type: none"> - adverse health effects to residents and children in attendance at the two child care centres and one family day care within the buffer zone - there being far too much cammed onto the site - lack of Parking for the amenities onsite - traffic impacts backing up to the lights on Warnbro sound Ave - Smells from fast food I implore the city to reject this proposal.
59. Mrs Kelly Monaghan	Address Not Provided	I am emailing my objection to the proposed service station at lot 622 Aurea Blvd Golden Bay on the basis of; <ul style="list-style-type: none"> - adverse health effects to residents and children in attendance at the two child care centres and one family day care within the buffer zone - there being far too much cammed onto the site - lack of Parking for the amenities onsite - traffic impacts backing up to the lights on Warnbro sound Ave - Smells from fast food I implore the city to reject this proposal.
60. Mrs Debbie Dunne	40 Claiborne Road SECRET HARBOUR WA 6173	I am emailing my objection to the proposed service station at lot 622 Aurea Blvd Golden Bay on the basis of; <ul style="list-style-type: none"> - adverse health effects to residents and children in attendance at the two child care centres and one family day care within the buffer zone - there being far too much cammed onto the site - lack of Parking for the amenities onsite - traffic impacts backing up to the lights on Warnbro sound Ave - Smells from fast food I implore the city to reject this proposal.

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61. Mr Robert J Ganfield	29 Indiana Parade SINGLETON WA 6175	I would like to register my objections to the fast food outlets and another petrol station on the Aurea Blvd site in Golden Bay. There is already a petrol station emitting dangerous fumes in close proximity to schools and daycares and there are already so many petrol stations close by. Fast food outlets will give off undesirable smells that will impact the residents. Again there are already so many fast food outlets with more planned in singleton. Both of these proposals will have a negative impact, include on parking and traffic in the area.
62. Ms Sally Rightson	Address Not Provided	This is my objection to the service station on Aurea Blvd Golden Bay due to the health risk to residents and people in attendance at the two child care centres.
63. Mr Timothy J Trenfield	42 Alora Drive PORT KENNEDY WA 6172	I am writing to you to voice my objection to a second service station in golden bay. We have had a recent service station put in and with such close proximity to child care centres as well as an increase in traffic levels a second service station is a terrible idea. Please decline a second service station in golden bay, it will be detrimental to the community and not what we require or want.
64. Mrs Jennifer C Whincup	7 Emerald Court SINGLETON WA 6175	I would like to voice my objections to the new proposed service station for Golden Bay/Secret Harbour. We already have 3 service stations in close proximity why would we jeopardize other businesses in this struggling economy! Also there is proven documentation that service stations are associated with a high cancer risk! It would be pure negligence to build a service station so close to a childcare center and i would expect lawsuits arising from this in the future when the risks were very well known. Dont turn our once pristine coastal area into just another suburb full of takeaway fast food and congestion. Give the businesses already established a chance to thrive!
65. Mrs Candice Mullins	50 San Sebastian Boulevard PORT KENNEDY WA 6172	I am emailing my objection to the proposed service station at lot 622 Aurea Blvd Golden Bay on the basis of; <ul style="list-style-type: none"> - adverse health effects to residents and children in attendance at the two child care centres and one family day care within the buffer zone - there being far too much cammed onto the site - lack of Parking for the amenities onsite - traffic impacts backing up to the lights on Warnbro sound Ave - Smells from fast food I implore the city to reject this proposal.
66. Mrs Victoria J Ganfield	29 Indiana Parade SINGLETON WA 6175	I would like to register my objections to the fast food outlets and another petrol station on the Aurea Blvd site in Golden Bay. There is already a petrol station emitting dangerous fumes in close proximity to schools and daycares. Fast food outlets give off undesirable smells that will impact the residents.

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67. Cancer Council WA	Level 1, 420 Bagot Road SUBIACO WA 6008	<p>Cancer Council WA would like the opportunity to comment on a proposed Mixed Commercial Development in the City of Rockingham.</p> <p>The proposal item is a Mixed Commercial Development (Neighbourhood Centre) located at Lot 622 (No.2) Aurea Blvd, Golden Bay.</p> <p>Please see the attached letter.</p> <p>Cancer Council Western Australia (Cancer Council WA) takes the opportunity to comment on the above proposal and urges the City of Rockingham to refuse the land use for two drive-through fast-food outlets.</p> <p>Cancer Council WA is a non-government, not-for-profit cancer organisation that has no religious or political affiliations. Cancer Council WA has been involved in the governance and distribution of peer-reviewed cancer research funding, patient support, cancer prevention, and advocacy in Western Australia (WA) for 60 years. Cancer Council WA is a leading and active member of the cancer community, which comprises people affected by cancer, whether through a personal diagnosis or as family members, carers, or health professionals.</p> <p>Our interest in the application</p> <p>Cancer Council WA objects to the land use for drive-through fast-food outlets in circumstances where they pose significant risk to community and public health. This is in areas where there would be significant impact to the quality of the existing food environment such as worsening of existing high density fast-food neighbourhoods and where proposed developments are in close proximity to homes, schools and children's community infrastructure.</p> <p>The mixed commercial development for a Golden Bay Neighbourhood Centre will have a detrimental impact on the health and wellbeing of community by including land-use for two drive-through fast-food outlets, due to its proximity to schools and residential homes. It consequently will diminish the potential for a vibrant, sustainable neighbourhood centre that will complement the amenity of Golden Bay if such land-uses were omitted.</p> <p>Evidence to support our submission.</p> <p>Living with overweight and obesity and poor diets are second and third only to tobacco use contributing the most burden of preventable total death and disease in Australia (i) and there is a clear link to poor diets and having higher body weight with increased risk of heart disease, stroke, type 2 diabetes and 13 types of cancers (ii). Recent research commissioned by Cancer Council Australia and published in the International Journal of Cancer modelled that over the 25 years (2017-2037), 190,500 cancer cases could be avoided if all Australian adults achieved and maintained a healthy weight (iii).</p> <p>Overweight and obesity is the leading risk factor attributed to national health system spending at \$4.3 billion, and \$1.2 billion can be attributed to combined dietary risk factors (iv). In WA, the cost of illness from overweight and obesity to WA hospitals is predicted to rise by 80 per cent to \$610.1 million in 2026 if increases to overweight and obesity continue (v).</p>
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<p>68. Mr Jeremy Shaw</p> <p>Premix King Golden Bay Liquor Store</p>	<p>Unit 1, 19 Dampier Drive GOLDEN BAY WA 6174</p>	<p>My name is Jeremy Shaw and I am the manager of the Premix King bottle shop in Golden Bay.</p> <p>I am writing you this email on behalf of the Premix King store and its customers that are apart of the Golden Bay Community.</p> <p>There have been concerns by both staff and customers regarding the proposed commercial development Lot 622 (No.2) Auerea Boulevard, Golden Bay.</p> <p>Some of these concerns mentioned have been;</p> <ul style="list-style-type: none"> > Potential for antisocial behaviour > Food and waste pollution > reduction of trade for existing business leading to a loss income for business and their staff > Adversely affecting current local businesses that include liquor and food sales > Vicinity of the proposed location being close to schools and childcare centres. > The closeness of current liquor stores, fast food establishments and service stations > Interruption of local traffic and parking issues
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<p>69. Niche Planning Studio</p> <p>on behalf of LP WA No2 Pty Ltd</p>	<p>54 Flagstaff Crest SECRET HARBOUR WA 6173</p>	<p>Please find attached, on behalf of the adjacent landowners, a submission regarding the proposed Development Application at Lot 622 (No. 2) Aurea Boulevard, Golden Bay.</p> <p>Niche Planning Studio act on behalf of LP WA No2 Pty Ltd in submitting this response to the proposed development at Lot 622 Aurea Boulevard, Golden Bay.</p> <p>This proposed development comprises:</p> <ul style="list-style-type: none"> • A supermarket (1,162m2); • Three speciality shops located on Thundelarra Drive; • A service station (with convenience store) with 24 hour operation on the corner of Thundelarra Drive/Aurea Boulevard; • Two fast food outlets with 24 hour operation; • A small liquor store, with a drive-through component fronting Warnbro Sound Avenue; and • The development will be accessed by crossovers from Thundelarra Drive and Aurea Boulevard. <p>The latest version of the Detailed Area Plan (DAP) for the Golden Bay Neighbourhood Centre encompassing this site was approved on 06/12/2022.</p> <p>The objectives for this DAP are to:</p> <ul style="list-style-type: none"> • Establish a 'Main Street' based Neighbourhood Activity Centre of a scale that is appropriate to its role as a focal point of a residential community and its role in the retail hierarchy of the region. • Provide a context for higher-density residential development that capitalises on proximity to local services. <p>On reviewing available plans and information, we do not support the proposed development and our concerns primarily fall into environmental and urban design categories:</p> <ol style="list-style-type: none"> 1. Distance between sensitive land uses and a proposed 24 hour service station. 2. Shortfall in carparking requirements. There is a total shortfall of 25 carparking bays in the proposal. The shortfall in car parking could result in potentially illegal parking on nearby streets or even nearby residential visitor parking could be compromised. a. Additionally, the proposed development is approximately 80% carparking space or hard surfaced, which will amplify the urban heat island effect. 3. Lack of soft landscaping onsite. A total of 8.5% of the site area is proposed to be landscaped, versus the recommended 10% of landscaping for developments within a Commercial Zone. The amount of landscaping should be compliant with the statutory requirement in this regard. 4. Setback of the proposed liquor store on the northern boundary of the site does not comply with the requirements of the R-Codes. 5. The proposed active frontages do not fully comply with the requirements for primary pedestrian entrances in the DAP. 6. The corners of the proposed development facing: <ol style="list-style-type: none"> a. Aurea Boulevard and Thundelarra Drive, and b. Aurea Boulevard and Warnbro Sound Ave, which have not been addressed with regard to the architectural response required to a corner as outlined in the DAP. 7. Acoustic Treatments, an acoustic wall was required between the development and the adjoining future residential property, it is not clear if this has been required with respect to this development application. 8. In addition, due to the traffic volumes and the traffic lights at Aurea Boulevard, there is no deceleration lane into the left in-left out for Aurea that was required for the development to the south of Aurea, especially given the proposed left in-left out is within the left turn lane for the traffic lights. <p>Further commentary has been provided on several of the above</p>
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70. Mrs Jane E Anderson	26 Marillana Drive GOLDEN BAY WA 6174	I believe the additional of a further service station for fuel is an unnecessary duplication of existing services. I believe the stie would better service professional services such as GP surgery or mixed health practice to service the local community. Given the vast numbers of service stations in the area, it does not add to the amenity of the area and reduces the environmental and social neighbourhood feel that is being attempted.
71. Ms Regina B Bochat	71 Dampier Drive GOLDEN BAY WA 6174	A supermarket would be great. I do not agree with a petrol station or fast food. The 7 Eleven has caused increased littering with Slurpee cups dumped everywhere. Fast food stores will do the same- just as Secret Harbour McDonald's has done. A petrol station so close to homes and childcare centers are a health risk. The environment and traffic noise and congestion will also be negatively affected. Our community would thrive so much more if the businesses accompanying the supermarket were not part of large chains serving unhealthy food and drink, or releasing toxins into the air and waterways. We can do better, and deserve better.
72. Mr Kaushal Patel	Address Not Provided	i am kaushal from Premixing golden bay liquor store. we have got to know today. some one did application for building up new liquor store in golden bay. we have objection for that because it will affect it to my business. we reduce customer due to more availability of liquor store in town. we are still struggling because of bigger company such as Dan murphy and Liquor land. we are kindly request you to cancel the application for new liquor store. Please let me know if you need any further documents from my side. i am happy to provide.
73. Mr Nicholas Van Rheede Vvan Oudtshoorn	28 Bentley Street SINGLETON WA 6175	It would be disappointing to have yet another liquor store in the area. There are already 5 liquor stores within 2 minutes of the proposed new one.
74. Mr Raj Patel	Unit 1, 19-23 Dampier Drive GOLDEN BAY WA 6174	Already have many bottleshop why council giving more permissions. I am opposing bottleshop/liquor shop permission.
75. Ms Michelle Vanderweide	Address Not Provided	I have been a local resident in golden bay for 6 years i am active in the communityand have enjoyed my time in this beach suburb.. My children attend the local school and day care In the area. I am emailing my objection to the proposed service station at lot 622 Aurea Blvd Golden Bay on the basis of; <ul style="list-style-type: none"> - adverse health effects to residents and children in attendance at the two child care centres and one family day care within the buffer zone and the local schools. - there being far too much crammed onto the site - lack of Parking for the amenities onsite - traffic impacts backing up to the lights on Warnbro sound Ave - Smells from fast food, also the amount of rubbish that comes from the people using these services. The rubbish is ridiculous already from the 7/11 slurpees. I implore the city to reject this proposal. Please take the time to read this, as I have taken the time to write it. This is my community and I feel very strongly on my choice for me and for the community. Please feel free to email me back if you have any questions for me.
76. Mrs Casey K O'Brien	11 Compass Place WAIKIKI WA 6169	I am emailing my objection to the proposed service station at lot 622 Aurea Blvd Golden Bay on the basis of; <ul style="list-style-type: none"> - adverse health effects to residents and children in attendance at the two child care centres and one family day care within the buffer zone and the local schools. - there being far too much crammed onto the site

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		<ul style="list-style-type: none"> - lack of Parking for the amenities onsite - traffic impacts backing up to the lights on Warnbro sound Ave - Smells from fast food, also the amount of rubbish that comes from the people using these services. <p>I implore the city to reject this proposal.</p>
77. Golden Bay Liquor Store	1/19 Dampier Drive GOLDEN BAY WA 6174	<p>i am Jeremy from Premixing golden bay liquor store. we have got to know today. some one did application for building up new liquor store in golden bay. we have objection for that because it will affect it to my business. we reduce customer due to more availability of liquor store in town. we are still struggling because of bigger company such as Dan murphy and Liquor land. we are kindly request you to cancel the application for new liquor store.</p> <p>Please let me know if you need any further documents from my side. i am happy to provide.</p>

Schedule Of Submissions
Proposed Mixed Commercial Development (Neighbourhood Centre)
Lot 622 (No.2) Aurea Boulevard, Golden Bay
(20.2023.35.1)

SERVICINIG AUTHORITY SCHEDULE OF SUBMISSIONS		
Name	Address	Comment
1. Simon Luscombe Principal Planning Officer Strategy and Engagement Department of Planning, Lands and Heritage	140 William Street PERTH WA 6000	<p>Further to your correspondence dated 9 March 2023, in accordance with the Western Australian Planning Commission's (WAPC) Notice of Delegation dated 18 January 2022, the following comments are provided. This proposal seeks approval for a neighbourhood shopping centre comprising 2,495m² of gross leasable area.</p> <p>Land Requirements</p> <p>The subject land abuts Warnbro Sound Avenue which is reserved as an Other Regional Road (ORR) in the Metropolitan Region Scheme and Category 1 per Plan No. SP 694/5. The site is not affected by the ORR reservation.</p> <p>Access</p> <p>No access is proposed to Warnbro Sound Avenue. This is in accordance with the Commission's Regional Roads (Vehicular Access) Policy D.C. 5.1 which seeks to minimise the number of new crossovers onto regional roads.</p> <p>Transport Impact Assessment (TIA)</p> <p>The above report by Transcore, dated February 2023, states that the development is anticipated to generate 123 AM peak hour trips and 213 PM peak hour trips with a 25% cross trade discount applied. Trip generation methodology is based on RTA NSW and ITE Trip Generation Manual (11th Edition). SIDRA analysis for the Warnbro Sound Avenue / Aurea Boulevard signalised intersection shows satisfactory performance for the majority of turning movements to 2033.</p> <p>Recommendation</p> <p>The Department of Planning, Lands and Heritage has no objection to the proposal on ORR planning grounds and provides the following recommendations:</p> <ul style="list-style-type: none"> • It is unclear if the presence of on-street parked vehicles on Aurea Boulevard near the proposed LILLO driveway will allow adequate sight lines for exiting vehicles. It is also unclear if a turning treatment is required in this location; • It is recommended that the City verify the acceptability of submitted swept path movement drawings at Appendix C: 'Turn Path Analysis'; • • ITE Trip Generation Manual (11th Edition) indicates that just over 500 PM peak hour trips would be generated by the proposal (before cross trade discount applied) which is higher than methodology provided within the TIA. • • Fast food outlets with drive through window, 525m² = 186 PM trips • • Liquor store, 230m² = 41 PM trips • • Supermarket, 1,165m² = 112 PM trips • • Specialty shops, 255m² = 17 PM trips • • Service station with 8 filling points = 147 PM trips <p style="text-align: right;">Total: 503 PM peak hour trips</p>
2. Aaron Pittard (he/him) Advisor – Infill Development Development Services	PO Box 100 LEEDERVILLE WA 6902	<p>Thank you for sending through development application proposal for - Proposed Mixed Commercial Development (Neighbourhood Centre) - Lot 622 (No.2) Aurea Boulevard, Golden Bay</p> <p>Please be advised that the subject lot is currently provided with water and wastewater services. Existing water and wastewater infrastructure has been designed and delivered to accommodate demand in accordance with long term scheme planning consistent with the proposed mixed commercial development.</p>

Schedule Of Submissions
Proposed Mixed Commercial Development (Neighbourhood Centre)
Lot 622 (No.2) Aurea Boulevard, Golden Bay
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		I trust this information is helpful. Please don't hesitate to contact me on the details below should you have any queries.
3. Dr Michael Lindsay Executive Director Environmental Health Directorate Department of Health	PO Box 8172 PERTH BC 6849	<p>Thank you for your letter of 9 March 2023, requesting comments from the Department of Health (DoH) on the above proposal. The DoH provides the following comment:</p> <p>1. Water Supply and Wastewater Disposal</p> <p>The development is required to connect to scheme water and reticulated sewerage and be in accordance with the <i>Government Sewerage Policy 2019</i>.</p> <p>2. Public Health Impacts</p> <p>The DoH is concerned about the short distance between the proposed service station and two existing child-care centres (<50m for both). The DoH comments the proponent for preparing an emissions report, however, the DoH does not have the technical expertise to assess the rigour of the report. Previous advice from the Department of Water and Environmental Regulation (DWER) to DoH (and the City of Rockingham) on emissions modelling is that,</p> <p><i>'In general, air quality dispersion modelling has a number of areas of uncertainty. The Department is generally not able to verify the assumptions made in these modelling studies. Given these uncertainties, the use of dispersion modelling to make precise judgements on separation distances is impossible. For this reason, the recommended approach is the application of separation distances within Guidance Statement 3 Separation Distances between Industrial and Sensitive Land Uses (GS 3) (EPA, 2005).'</i></p> <p>The DOH is concerned there is an existing service station, although this was considered in the emission modelling and questions why the proposed service station must be placed directly across the road from the child-care premises rather than elsewhere on the site.</p> <p>3. Food Act Requirements</p> <p>All food related areas (kitchen, preparation areas, etc.) to comply with the provisions of the Food Act 2008 and related code, regulations and guidelines. Details available for download from: Starting a food business in WA (health.wa.gov.au)</p> <p>4. Medical Entomology</p> <p>The City of Rockingham should adequately resource effective mosquito management into the future and ensure water management infrastructure does not create or contribute to mosquito breeding. The subject land is in a location that regularly experiences issues with nuisance and disease-carrying mosquitoes. Future workers and other onsite visitors are likely to be exposed to Ross River virus (RRV) and Barmah Forest virus (BFV) vector mosquitoes which breed in nearby wetlands. These known vector mosquitoes can disperse several kilometres from breeding sites at nearby wetlands. Mosquito monitoring close to the locality by the DoH confirms the seasonal occurrence of the disease vector mosquito <i>Aedes camptorhynchus</i>. Human cases of RRV and BFV diseases occur annually in this area. It is the recommendation that:</p> <ul style="list-style-type: none"> • The extent of risk from mosquitoes and mosquito-borne disease relevant to the subject land be determined • A mosquito management plan (MMP) be considered for the area or adapt an existing plan. For further information on development a MMP please visit: Mosquito management (health.wa.gov.au) • Adequately resources effective mosquito management in the area. This involved ensuring sufficient resources and funding

Schedule Of Submissions
Proposed Mixed Commercial Development (Neighbourhood Centre)
Lot 622 (No.2) Aurea Boulevard, Golden Bay
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		<p>mechanisms are available for ongoing mosquito management in surrounding wetlands</p> <ul style="list-style-type: none">• Workers be warned of the risk of mosquito-borne disease and the potential for nuisance and disease carrying mosquitoes via information campaigns such as Fight the Bite• Ensure proposed infrastructure and site works do not create additional onsite mosquito breeding habitat
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Schedule Of Submissions
Proposed Mixed Commercial Development (Neighbourhood Centre)
Lot 622 (No.2) Aurea Boulevard, Golden Bay
(20.2023.35.1)

<p>4. Jane Sturgess Planning Advice - Kwinana Peel Region Department of Water and Environmental Regulation</p>	<p>PO Box 332 MANDURAH WA 6210</p>	<p>Thank you for providing the development application received with correspondence dated 9 March 2023 for the Department of Water and Environmental Regulation (Department) to consider.</p> <p>The Department has identified that the proposed mixed commercial development has the potential for impact on environment and water resource values and/or management. In principle the Department does not object to the proposal however key issues, recommendations and advice are provided below and these matters should be addressed.</p> <p>Issue Noise Management Plan</p> <p>Advice Please see Attachment 1 – Technical (Review) Report – Advice on acoustic assessment for the proposed Golden Bay Neighbourhood Centre, Lot 622 Aurea Boulevard, Golden Bay.</p> <p>Issue Drainage</p> <p>Recommendation A stormwater management plan is to be prepared for the site in accordance with the Stormwater Management Manual for Western Australia (DWER, 2004-2007) and Decision process for the stormwater management in Western Australia (DWER, 2017) that demonstrates the appropriate management of small, minor and major rainfall events.</p> <p>Issue Water quality protection measures</p> <p>Recommendation In accordance with Water Quality Protection Note 49: Service Stations (WQPN 49) (DWER, 2013) the following is required with regards to the service station:</p> <ul style="list-style-type: none"> • As described above, a Stormwater Management Plan is to be completed to the satisfaction of the City of Rockingham. • A layout plan showing all key infrastructure including underground fuel storage and associated pipe-work; paved forecourts and fuel dispenser areas; tank fill point sites; car parks; wash down areas; unpaved areas; vehicle wash facilities; any waste treatment facilities; structural measures to protect the environment and any stormwater management systems. • Detailed description pertaining to infrastructure design including fuel tanks, pipe work, and any additional infrastructure ie service bays or wash facilities; details of any storage and or disposal of waste; and contingency plans for spills. • Further details in relation to design capacity requirements of the petrol and oil separators. <p>In the event there are modifications to the proposal that may have implications on aspects of environment and/or water management, the Department should be notified to enable the implications to be assessed.</p>
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Schedule Of Submissions
Proposed Mixed Commercial Development (Neighbourhood Centre)
Lot 622 (No.2) Aurea Boulevard, Golden Bay
(20.2023.35.1)

5. Jon Palfreyman Department of Mines Industry Regulation and Safety	Level 2, 1 Adelaide Terrace EAST PERTH WA 6004	(The proposed Service Station will require licensing)
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Schedule Of Submissions
Proposed Mixed Commercial Development (Neighbourhood Centre)
Lot 622 (No.2) Aurea Boulevard, Golden Bay
(20.2023.35.1)

<p>6. Sharnie Stuart Senior Consultant – Land Planning Asset Planning and Services Department of Education</p>	<p>151 Royal Street EAST PERTH WA 6004</p>	<p>Thank you for your email dated 28 April 2023 concerning the above proposed Joint Development Assessment Panel (JDAP) development application (DA) and providing the Department of Education (the Department) with the opportunity to comment.</p> <p>The Department understands that the subject site has been designated as Commercial zone – Neighbourhood Centre Precinct within the approved Golden Bay Structure Plan (Structure Plan). Golden Bay Primary School (Primary School) is located approximately 210m south from the subject site. Given that the proposal is in close proximity to the Primary School, the Department is to have due regard to the Western Australian Planning Commission's Operational Policy – Planning for School Sites (OP 2.4).</p> <p>Incompatible land uses Schools are deemed sensitive land uses and one of the requirements of OP 2.4 is to ensure careful consideration is given to the compatibility of land uses to facilitate safety, good health and well-being outcomes of students. However, there are several incompatible land uses proposed on the subject site which are in close proximity to the Primary School such as a service station, 2 x fast food outlets and a liquor shop.</p> <p>Fast-food Outlets The Department identifies that there are 2 x fast food outlets proposed on the eastern side of the subject site 270m and 380m from the Primary School site. The Department does not support fast food outlets operating near public school sites as these food outlets may cause unhealthy diets and obesity which are the leading risk factors for death, disease and disability in Western Australia. Refer to Attachment 1 – an 'Evidence brief: food, built environments and obesity, page 1 of 8' published by the Department of Health. The WA Government's Sustainable Health Review, April 2019 has recognised these issues and has recommended prioritising 'changes to planning laws to limit unhealthy food outlets and to support access to healthy food options, including near schools'.</p> <p>Service Station The proposed service station is located approximately 210m from the Primary School site. As per the provisions of the Environmental Protection Authority's (EPA) 'Separation Distances between Industrial and Sensitive Land Uses, June 2005' (EPA Guidelines), 24/7 service station land use operations should be a minimum distance of 200m. Service stations by their operational nature may generate a range of emissions of pollutants and safety risks, which if not carefully managed, may adversely impact the health, amenity and wellbeing of occupants of schools. However, the Department notes the proposed location is beyond the 200m setback distance recommended by the EPA Guidelines.</p> <p>Liquor shop The liquor shop is proposed to be located on the north-eastern corner of the subject site a substantial distance from the Primary School and is unlikely to adversely impact the occupants of the Primary School site in this instance.</p> <p>The Department wishes to reinforce that it does not support incompatible land uses in close proximity to school sites, particularly fast food outlets in this instance, as detrimental impacts to the health and well-being of students may result. Notwithstanding this, the Department recognises the subject site is designated as Commercial under the Structure Plan.</p>
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Schedule Of Submissions
Proposed Mixed Commercial Development (Neighbourhood Centre)
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(20.2023.35.1)

7. Michelle Doherty Planning Assessment Officer Office of Managing Director Main Roads WA	Level 2, 2 Victoria Avenue PERTH WA 6000	Preliminary Response – In response to correspondence received on 27 April 2023 please be advised Main Roads has no objections to the above development application. It is noted for the City's consideration that the proposed Left In-Left Out crossover to Aurea Boulevard is located within the functional area of the adjacent Warnbro Sound Avenue/Aurea Boulevard signalised intersection, and immediately adjacent to the start of a left-turn slip lane. The movement of vehicles turning in/out of a crossover in this location may introduce the risk of rear-end, side-swipe and right-angle type crashes. Main Roads encourages local government in liaising with applicants to promote and capitalise on our pre-lodgement consultation service, prior to lodgement of planning proposals, especially where development plans involve land adjacent to or have the potential to impact on the State road network.
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17 March 2023

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City of Rockingham
Civic Boulevard
Rockingham WA

Attention: Sally Birkhead

Dear Sally

**Proposed Service Station
Air Quality Impact Assessment
Peer Review**

SLR was engaged by City of Rockingham to conduct a peer review of an emissions impact assessment report for a proposed fuel service station. In particular, the peer review was required to consider the appropriateness of the assessment methodology (in the context of relevant WA legislation and guidelines) and whether the impact assessment indicates that Air NEPM criteria are likely to be met at the childcare centres and other nearby adjacent residential properties.

SLR has reviewed EAQ Consulting Pty Ltd "*Emissions Impact Assessment of Proposed 24Hr Fuel Service Station*", reference number EAQ-22031 (the Assessment), which presents an impact assessment for a fuel service station (the Service Station) proposed for Lot 622, (2) Aurea Boulevard, Golder Bay, WA. The Assessment includes:

- consideration of relevant legislation and guidelines
- identification of relevant air quality indicators and corresponding appropriate air quality criteria
- identification of nearby sensitive receptors with the potential to be adversely impacted by emissions to air from the proposed service station
- estimation of emissions to air of volatile organic compounds (VOCs) based on operational data (incorporating emissions controls) and published emission factors
- quantitative plume dispersion modelling to predict VOCs ground level concentrations (GLCs) resulting from the operations at the proposed service station and a nearby existing service station
- assessment of GLCs against criteria and conclusion as to whether the proposed service station will impacts on the health of existing sensitive receptors or sensitive land uses.

These elements of the Assessment are reviewed and discussed below.

Consideration of Relevant Legislation and Guidelines

The Assessment identifies the WA EPA generic separation distance for 24-hour service stations of 200 m and because the Service Station is proposed to be less than this distance to the nearest sensitive receptor, appropriately identifies that a site-specific assessment is warranted. The Assessment does not reference any other WA legislation or guidelines. The Department of Water and Environmental Regulation (DWER) document *"Guideline: Air Emissions"* (DWER, 2019) is potentially relevant, however, this document has been in draft status for several months/years and on review, does not appear to prescribe any guidance from which the Assessment deviates significantly.

Air quality Indicators and Criteria

The Assessment appropriately identifies typical pollutant emissions (volatile organic compounds; VOCs) to air from service station operations and nominates appropriate sources of air quality criteria, including from the *"National Environment Protection (Air Toxics) Measure"* (NEPM Air Toxics) (NEPC, 2011), with which to assess concentrations against.

The NEPM Air Toxics only lists an annual average criterion for benzene, which due to its relative carcinogenic potential, typically has the most stringent ambient air quality criteria of VOCs. The Assessment appropriately sources an additional short term (1-hour average) criterion from the *"Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales"* (NSW EPA, 2016). This document has recently been updated (NSW EPA, 2022), however the benzene criterion is unchanged.

SLR notes that NSW EPA (2016) sources this 1-hour average benzene criterion from the now rescinded Victorian *"State Environment Protection Policy (Air Quality Management)"* (Victorian Government, 2001). The criterion originates from the US Agency for Toxic Substance and Disease Registry (ATSDR) acute minimal risk level (MRL) of 0.009 ppm which was derived for acute-duration inhalation exposure periods of less than or equal to 14 days (ATSDR, 2007). EPA Victoria now assign this criterion less conservatively to a 24-hour averaging period (EPAV, 2022), more in keeping with the intent of the MRL exposure period, and adopt a 1-hour average criterion from the Texas Commission on Environmental Quality (TCEQ) Air Monitoring Comparison Values (ACMV) of 180 ppb (TCEQ, 2022). It is perhaps worth noting that the ACMVs are based on health effects and *"If predicted or measured airborne levels of a constituent do not exceed the comparison level, adverse health or welfare effects would not be expected to result. If ambient levels of constituents in air exceed the comparison levels, it does not necessarily indicate a problem, but rather, triggers a more in-depth review."*

The Assessment adopts a criterion 20 times lower than that now adopted by EPA Victoria and in doing so can be considered to present a highly conservative element of the assessment of predicted short-term impacts of benzene.

Existing Conditions and Sensitive Receptors

Existing conditions that may affect air quality, including nearby industry, meteorological conditions and topography are not presented. SLR would expect this information to be included an air quality impact assessment of this nature. A wind rose indicating prevailing winds, for example, is typically presented in assessments of this nature.

Existing background concentrations of the pollutants are not discussed or included in the assessment, however, SLR would consider it appropriate to assume that these concentrations are likely to be insignificant relative to the potential impacts from the existing service station.

The Assessment appropriately identifies the nearest existing and proposed sensitive receptors as several residences and two child care centres.

Emissions Estimation

The Assessment estimates emissions of VOCs from various fuel related activities including filling of underground storage tanks (USTs) and vehicle refuelling.

SLR considers the methodology for estimating diurnal emissions for vehicle refuelling based on typical refuelling characteristics for metropolitan service stations to be appropriate.

Predicted contributions to GLCs of emissions from bulk deliveries to the UST, which may occur anytime between 7:00 am and 10:00 pm are handled by incrementally changing the hour at which a delivery occurs day by day. SLR notes that the resulting number of meteorological conditions under which this emission is modelled will be significantly less than the $15h \times 365d \times 2y = 10,950$ possible combinations (approximately $2.3h \times 365 \times 2y = 1,679$ combinations). Table 2-7 of The Assessment indicates that the peak emission rate from the UST vent stack is approximately 20% of total emissions and therefore not insignificant. While the predicted annual average GLCs are likely conservative, the maximum 1-hour average GLCs may be under represented.

SLR recommends that a separate model run is assessed, assuming that the UST is filled every hour between 7:00 am and 10:00 pm. As a steady-state dispersion model is used (see below), each hour is predicted independently of the predictions from the previous hour so there will be no unwanted cumulative effect.

The Assessment assumes vapour recovery levels VR 1 and VR 2 are implemented on the UST and bowser refuelling points, imposing a control of 90% reduction in vapour (VOC) emissions.

Modelling Methodology

The Assessment uses the American Meteorological Society (AMS)/USEPA Regulatory Model, AERMOD steady-state plume modelling system with which to predict maximum cumulative pollutant ground level concentrations (GLCs) resulting from the proposed and existing service station emissions to air. AERMOD is widely used in Australia and internationally, for the prediction of the GLCs of air pollutants emitted from industrial sources and SLR considers it appropriate in this case.

SLR considers the use of TAPM appropriate to generate a 2-year meteorological dataset for use with AERMOD. It is not clear whether the Assessment assimilates Bureau of Meteorology automatic weather station data from Mandurah in TAPM, or uses it another way. Regardless, given the proximity of the source and receptors and the use of two years of meteorological data (generating over 17,000 predictions for each receptor), SLR does not envisage any potential issues in this regard.

The Assessment does not present the surface characteristics (albedo, Bowen ratio and surface roughness) used in the model and therefore SLR was unable to examine these. The choice of surface roughness especially can affect the degree of dispersion and resulting predicted GLCs and is therefore considered an important consideration.

Assessment and Conclusions

Maximum 1-hour, 24-hour and annual average concentrations are provided for each pollutant according to their assessment criteria averaging periods. Results are conveniently presented for the *proposed service station* as well as for the *proposed plus existing service station*. As expected, the only pollutant and averaging period to approach its criterion, given it has the most stringent criteria, is the 1-hour average concentrations of benzene.

The maximum (100th percentile) predicted 1-hour average benzene concentration at child care centre CC2 is predicted to be 93% of the criterion, which while not representing an exceedance of the criterion, is close. SLR considers there to be sufficient conservatism built into the Assessment such that this may not be an issue, including:

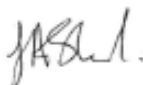
- assuming all fuel dispensed is unleaded petrol (greater VOCs)
- use of potentially conservative benzene emissions factors.

However, it is noted that the reduced number of hours (1,679 out of a possible 10,950) in which UST tank filling emissions are included (refer Emissions Estimation above), may mean maximum predicted 1-hour concentrations may be greater than presented in the Assessment.

SLR Conclusions and Recommendations for Consideration

- SLR generally finds the Assessment to be appropriate for the intended purpose. It would however benefit from more context regarding existing (or absence of) relevant and appropriate WA legislation and guidelines as well as presenting existing conditions (absent as noted above), both of which would provide relevant context.
- SLR recommends that a separate model run is assessed, which assumes that the UST is filled every hour between 7:00 am and 10:00 pm, to predict the true possible maximum 1-hour average benzene GLCs.
- SLR also recommends that the selections of surface characteristics are presented for inspection, especially the surface roughness as this can have significant influence on the GLCs predicted by AERMOD.
- SLR suggest it may be useful to provide a bar graph of the 100 highest predicted GLCs at receptor CC2 which may demonstrate that although the criterion is approached, the likelihood of that approach can be considered unlikely.

Yours sincerely



JASON SHEPHERD
Principal, Air Quality

Checked/ Authorised by: GS

Planning and Development Services Statutory Planning Services



Reference No & Subject:	PD-026/23 Joint Development Assessment Panel Application - Proposed Mixed Commercial Development (Golden Bay Neighbourhood Centre)
File No:	DD020.2023.00000035
Applicant:	Apex Planning
Owner:	Golden Bay Village Pty Ltd, under contract to Jarra Dev Pty Ltd
Author:	Ms Sally Birkhead, Strategic Planning Consultant
Other Contributors:	Mr David Waller, Coordinator Statutory Planning Mr Mike Ross, Manager Statutory Planning
Date of Committee Meeting:	19 June 2023
Previously before Council:	
Disclosure of Interest:	
Nature of Council's Role in this Matter:	Responsible Authority
Site:	Lot 622 (No.2) Aurea Boulevard, Golden Bay
Lot Area:	1.24ha
LA Zoning:	Commercial
MRS Zoning:	Urban
Attachments:	<ol style="list-style-type: none"> 1. Responsible Authority Report 2. Schedule of Submissions
Maps/Diagrams:	<ol style="list-style-type: none"> 1. Location Plan 2. Aerial Plan 3. Golden Bay Structure Plan (2021) 4. Previous Development Approval (June 2016) 5. Golden Bay Neighbourhood Centre LDP (2022) 6. Photographs Showing Site Context 7. Proposed Site Plan 8. Elevation Plans 9-10. Perspectives 11. Landscape Concept 12. Mall Concept 13. Submission Response Map 14. Location of Acoustic Wall along Wyloo Lane 15. EPA Guidance Statement No.3 - Separation Distance

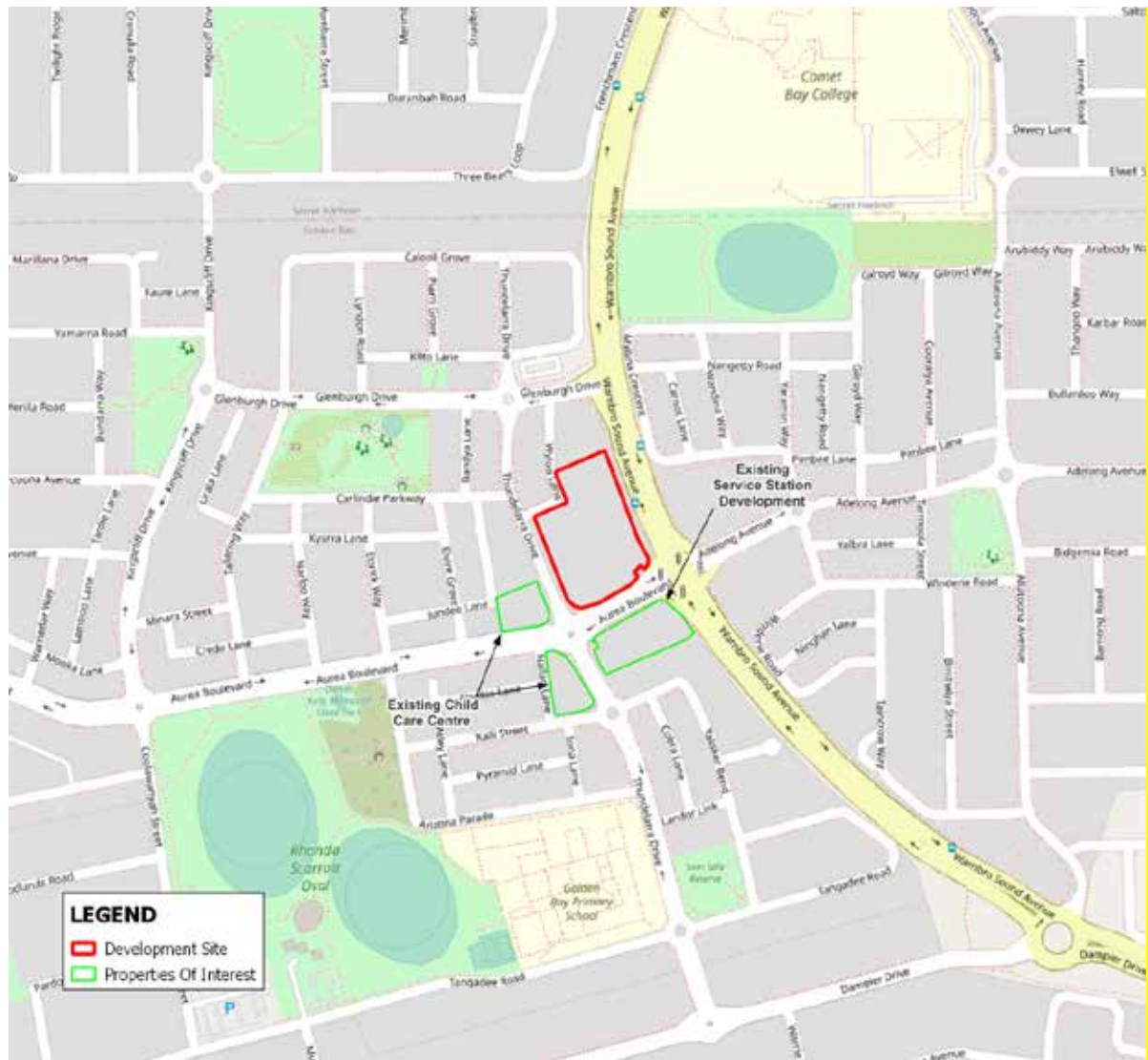
Maps/Diagrams:

16. Golden Bay Neighbourhood Centre LDP (Extract)
17. Mall Design (Extract)
18. Proposed Aurea Boulevard Access (Extract)

Purpose of Report

To provide a recommendation to the Metro Outer Joint Development Assessment Panel (MOJDAP) for a proposed Mixed Commercial Development within the Golden Bay Neighbourhood Centre on Lot 622 (No.2) Aurea Boulevard, Golden Bay ('subject site').

The location of the proposed development is shown in Figures 1 and 2.



1. Location Plan



2. Aerial Plan

Background

Historical Context

The following points summarise the history of the site and its immediate surrounds, providing context for the current proposal:

- In March 2021, the Western Australian Planning Commission (WAPC) approved the latest amendment to the Golden Bay Structure Plan ('the Structure Plan') to guide the future development of the undeveloped portions of Golden Bay. The Structure Plan provides for a 2.6ha Neighbourhood Centre, zoned 'Commercial', located mainly on the western side of Warnbro Sound Avenue, at the intersection of Aurea Boulevard and Thundelarra Drive, of which the subject site forms part (refer Figure 3).
- In June 2016, the City of Rockingham (City), under delegated authority, approved a proposal for a Shopping Centre on the subject site (refer Figure 4). The application comprised a supermarket, five (5) Restaurants, a Liquor Store, five (5) Shops, three (3) Commercial tenancies, a Medical Centre, 'public piazza' and parking.

The application comprised a total retail floorspace of 3,240m² Net Lettable Area (NLA), with Restaurants, Specialty Shops and an internal plaza fronting Thundelarra Drive, sleeving a Supermarket behind, with parking located to the rear of the buildings fronting Warnbro Sound Avenue. A retail building was approved on the corner of Aurea Boulevard and Thundelarra Drive, and the Medical Centre fronted Aurea Boulevard. Vehicle access was approved to Thundelarra Drive and Wyloo Lane, with no access proposed to Aurea Boulevard or Warnbro Sound Avenue.

Whilst the building commenced construction, with a slab and steel frame still remaining on site, it is understood that the then Proponent decided not to proceed after losing its anchor tenant, and the site has remained vacant since. The approval period for the Development Application has now lapsed, and the site is now under contract to purchase by another party.

- Current development within the broader Neighbourhood Centre includes two (2) operating Child Care Centres at the intersection of Aurea Boulevard and Thundelarra Drive (Lots 716 and 263) (refer Figures 1 and 2). A Multiple Dwelling development to the immediate west of the subject site on Lot 636 Thundelarra Drive was approved by MOJDAP in November 2019, however, has not proceeded.
- A Mixed Commercial Development (including a Service Station) on Lot 1523 Aurea Boulevard, to the immediate south of the subject site, was approved by JDAP in September 2021. This Mixed Commercial Development proceeded and is operational.

The following information regarding the Lot 1523 Commercial Development is of relevance to the current proposal.

The Council did not support the Mixed Commercial Development (particularly the Service Station component) on Lot 1523 due to concerns over human health, traffic and safety, signage and vegetation removal. In particular, the Council was concerned about the proximity of the proposed Service Station to the approved Child Care Centres located on Lots 716 and 263 Thundelarra Drive. At the time, one of the Child Care Centres was under construction (Lot 716) and the other was approved, with construction yet to commence.

Consistent with the Council's position, the MOJDAP originally resolved in May 2021, to refuse the application on the following (relevant) grounds:

- “1. *Sensitive Land Uses, including two approved Child Care Centres are located within the 200m generic separation distance recommended by Environmental Protection Authority Guidance Statement No.3 (Separation Distance between Industrial and Sensitive Land Uses 2005). The Applicant has not submitted a scientific study based on site and industry-specific information which demonstrates that a lesser distance will not result in unacceptable health impacts.*
2. *The potential traffic volume and movements resultant from the proposed development, based on the Left-in/Left-out access via Aurea Boulevard and Left-in/Left-out access via Thundelarra Drive, is likely to have an adverse impact on traffic flow associated with vehicles queuing during peak hours of operation within the development site and is likely to overflow into the adjacent road network including the traffic intersection of Warnbro Sound Avenue and Aurea Boulevard and Thundelarra Drive and Aurea Boulevard intersection.”*

In May 2021, the Applicant lodged an application for review (Appeal) with the State Administrative Tribunal (SAT) over the refusal of the application by MOJDAP. Following the receipt of additional information, Orders were issued requiring the Respondent (MOJDAP) to reconsider its decision. Following further consideration by Council in August 2021, where it reaffirmed its position to not support the proposal, the MOJDAP resolved to approve the application.

Included in the additional information submitted by the Applicant, was an Emissions Impact Assessment (EIA) addressing modelling for fuel vapour emissions from the proposed Service Station, which was independently peer reviewed.

The EIA concluded that predicted concentrations of benzene at sensitive land use receptors in proximity to the Service Station (being future housing and Child Care Centres) would not present unacceptable risk. Benzene levels were identified as being significantly below the prescribed acceptable national air quality level, providing VR1 and VR2 fuel vapour recovery systems were installed. VR1 captures displaced vapours from storage tanks and associated infrastructure when a tanker delivers petrol to a service station, and VR2 captures displaced vapours at the bowser while a motorist refuels.

The Council's position at the time was based on Department of Health (DoH) and Department of Water Environment and Regulation (DWER) advice which recommended applying a 200m separation distance between the Service Station and adjacent sensitive development (ie. Child Care Centres) in accordance with *Environmental Protection Authority Guidance Statement No.3 – Separation Distances between Industrial and Sensitive Uses (GS3)*.

The potential for land use conflict is discussed further in the Policy section of this Report.

- In December 2022, the City approved the latest version of a Detailed Area Plan (DAP), now referred to as a Local Development Plan (LDP), for the Golden Bay Neighbourhood Centre. The LDP was based around a 'Main Street' centre along Thundelarra Drive. The LDP sets out the key design parameters for development within the centre (refer Figure 5), which are addressed later in this Report.



3. Golden Bay Structure Plan (2021)



4. Previous Development Approval (June 2016)



5. Golden Bay Neighbourhood Centre Local Development Plan (2022)

Details

Site Context

The site context is characterised by the following:

- The Golden Bay Neighbourhood Centre is located approximately 1km south of the Secret Harbour District Centre and 1.2km west of Ennis Avenue.
- The subject site is located centrally to the Golden Bay Structure Plan area, and to the Neighbourhood Centre itself, and is bounded by Warnbro Sound Avenue to the east, Thundelarra Drive to the west (as the 'Main Street' for the Centre), and Aurea Boulevard to the south.
- The northern boundary of the site abuts an (undeveloped) R60 residential lot, and to the north-west, a number of laneway style residential dwellings have been constructed along Wyloo Lane.
- Two operating Child Care Centres are located to the west and south-west of the subject site, across Thundelarra Drive.
- Vacant land zoned Commercial (and previously approved for a mixed residential/commercial development) is located to the west, across Thundelarra Drive.
- A Service Station, with other commercial uses, is operating to the south, across Aurea Boulevard.
- Vacant land to the east of Warnbro Sound Avenue also forms part of the Neighbourhood Centre.
- A Primary School is located approximately 200m to the south-west of the site.
- Land surrounding the Neighbourhood Centre has largely been developed for residential purposes.

The following photos illustrate the site context:



View south along Thundelarra Drive showing Child Cares Centre opposite subject site



View north along Thundelarra Drive from Aurea Boulevard



View west along Aurea Boulevard showing Child Care Centres, and Service Station site to right side of photo



View east showing existing Commercial development with Service Station located south of subject site



View of Wyloo Lane from Thundelarra Drive

6. Photographs Showing Site Context

Development Proposal

The application proposes the following:

- 1,165m² Supermarket fronting Thundelarra Drive.
- 3 x 'specialty retail' Shops with total 263m² floorspace fronting a 'mall', which links Thundelarra Drive and the carpark behind the Supermarket.
- 2 x freestanding Fast Food Outlets (260m² and 265m²), with drive-through facilities adjacent to Warnbro Sound Avenue.
- 230m² freestanding Liquor Store, with back-of-house and drive-through fronting Warnbro Sound Avenue.
- 305m² Service Station with Convenience Store on the corner of Thundelarra Drive and Aurea Boulevard.
- Access via crossovers to Thundelarra Drive, Aurea Boulevard and Wyloo Lane. No access/egress is proposed to Warnbro Sound Avenue.
- Signage as follows:
 - 2 x 6m high pylon signs on Warnbro Sound Avenue.
 - 2 x 6m high pylon sign on Aurea Boulevard, with one of the signs advertising the Service Station.
 - Other signage integrated into the Supermarket building on Thundelarra Drive, and directional signage on site.
 - Additional price-board sign and Service Station related signage.

Specific signage for the Fast Food Outlets and Liquor Store is not yet proposed.

A total of 148 car parking bays with the following breakdown:

- 96 bays in the main carpark (including 7 disabled parking bays).
- 16 Service Station bays (8 bays at bowzers, 8 customer bays).
- 32 queuing bays within the Fast Food and Liquor Store drive-throughs (included as parking bays for the proposed development).
- 4 on-street bays (located on Thundelarra Drive).
- 15 bicycle parking spaces.

Operating hours for the proposed development will be as follows:

- Supermarket - standard supermarket operating hours.
- Specialty Shops - over the course of the day and evening (depending on tenant requirements).
- Liquor Store - between 10am-10pm.
- Service Station and Fast Food uses - 24 hours.

Landscaping is proposed throughout the subject site and within the Thundelarra Drive verge, with existing landscaping within the Warnbro Sound Avenue and Aurea Boulevard verges being retained.

Pedestrian access is existing around the site via footpaths within the road reserves. Access is also proposed in north-south and east-west directions through the carpark, to connect the various land uses.

The Development Plans are provided in Figures 7-12 below.

The application is accompanied by the following technical reports and plans:

- Development Application report.
- Development Plans.
- Landscape Concept.
- 10 Principles Assessment (prepared in accordance with State Planning Policy No.7.0 - Design of the Built Environment).
- Traffic Impact Assessment (TIA).
- Environmental Noise Assessment (Acoustic Report).
- Emissions Impact Assessment (EIA).

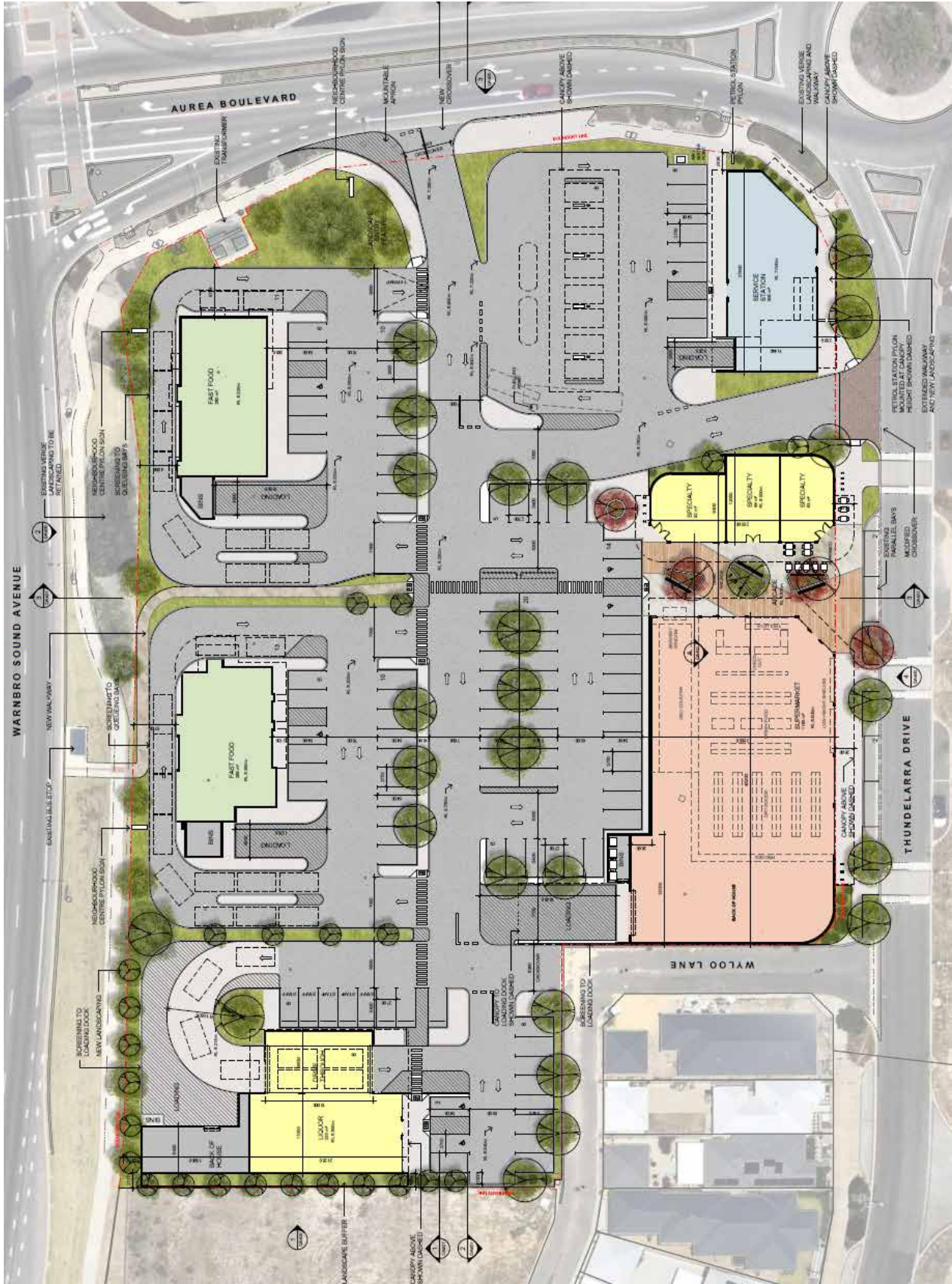
Pre and Post Lodgement Engagement with Applicant:

The application was subject to pre-lodgement discussions with the Applicant, during which time a number of design and operational considerations were raised by the City, to be addressed in the Development Application.

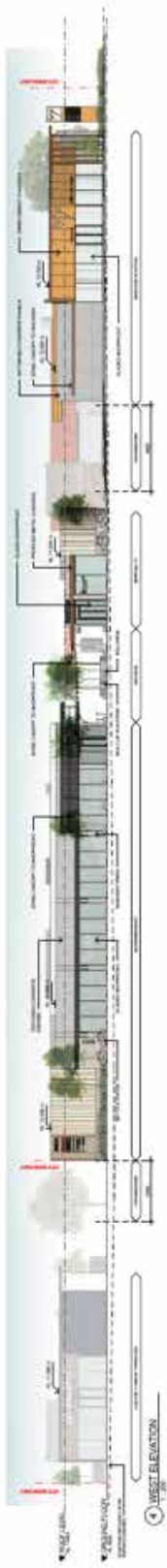
Key issues of relevance to this Report are listed as follows:

- Consider providing a wider mall (originally proposed at 7.6m), and cross section, to facilitate greater level of use and activity, light penetration and landscaping.
- Provide an internal layout for the Supermarket and notation on plans to ensure windows remain unscreened by advertising, shutters or the like, to maintain an interactive frontage.
- Provide an updated Acoustic Report addressing a range of matters and inconsistencies raised by the City's Environmental Health Officers and WA Department of Health.
- Respond to a range of traffic engineering concerns.
- Note the City's concern about the proximity of the proposed Service Station to the two adjacent Child Care Centres, and the potential impact of emissions on public health.

The Applicant submitted Amended Plans and other documentation on 3 May 2023, which addressed the majority of the matters raised by the City, including increasing the width of the mall from 7.6m - 10m to improve functionality. Matters which were not addressed are discussed later in this Report.



7. Proposed Site Plan



West Elevation - Thundelarra Drive 'Main Street'



North Elevation - from Wyloo Lane and undeveloped residential site



East Elevation - Warnbro Sound Avenue



South Elevation - Aurea Boulevard



Internal elevation to Supermarket looking west

8. Elevation Plans



9. Perspectives



5 - VIEW OF LIQUOR STORE AND ENTRY TO DRIVE THROUGH



6 - VIEW OF SCREENING TO DRIVE THROUGH



7 - VIEW OF CORNER OF WARNBRO SOUND AVENUE AND AUREA BOULEVARD

10. Perspectives



11. Landscape Concept



Implications to Consider

a. Consultation with the Community

The application was advertised for public comment, for a period of 21 days between 9 March 2023 and 3 April 2023, in the following manner:

- Correspondence was sent to owners and occupiers within 200m of the subject site.
- The application was made available for public inspection at the City's Administration Offices and published on the City's website.
- 3 signs were displayed on the property on each street frontage, advertising the proposal.

A total of 76 submissions were received from at the conclusion of the advertising period comprising the following:

- 71 submissions objecting to the proposal.
- 3 submissions supporting the proposal.
- 2 neutral comments.

Figure 13 shows the distribution of responses in proximity to the subject site - 11 of the 71 objections were received from those within 200m of the subject site, along with 1 neutral submission. The majority of other submissions were received from other residents of Golden Bay.



13. Submission Response Map

Summary of Submissions

The submissions raised a number of key concerns which are set out in the following table, along with responses from the Applicant and the City.

Proliferation of Uses/Need
<p><u>Submission:</u></p> <p>Concerns were raised that the proposal would result in a proliferation of Fast Food, Service Station and Liquor Store land uses in the locality; and that that these uses are not required on this site as they are provided elsewhere in the locality to service the community.</p>
<p><u>Applicant's Response:</u></p> <p><i>"The perceived oversupply of a land use is not a relevant planning consideration. The development site is zoned Commercial under the City of Rockingham Local Planning Scheme No.2 and all of the uses proposed are contemplated within the Commercial zone (noting they are commercial in nature)."</i></p>
<p><u>City's Response:</u></p> <p>The uses proposed are all those which are able to be considered under the City of Rockingham Town Planning Scheme No.2 (TPS2) within the 'Commercial' Zone, and are uses that are commonly provided within Neighbourhood Centres.</p> <p>The number of outlets (Fast Food, Service Station, Liquor Store) already existing in the local area, and the need or commercial demand for more, is not a matter in this case which is appropriate to consider for this proposal.</p>
Health Impact
<p><u>Submission:</u></p> <p>Concerns were raised about a range of potential adverse health impacts arising from the proposed Fast Food, Service Station and Liquor Store uses, in particular:</p> <ul style="list-style-type: none">• Concerns about odour and benzene emissions from Service Station, particularly in close proximity to two (2) Child Care Centres and the potential health impacts on children.• Concerns about odour from the Fast Food Outlets.• Concerns about the potential health impacts resulting from two Fast Food Outlets in close proximity to a School and Child Care Centres.• Concerns about the number of liquor outlets in the area.
<p><u>Applicant's Response:</u></p> <p><i>"As noted in the first response, the proposal seeks approval for commercial land uses on land which is allocated Commercial zoning under the City's LPS2. The development site fronts Warnbro Sound Avenue, an 'Other Regional Roads' reserve which currently carried just under 10,000vpd.</i></p> <p><i>The application is supported by an emissions assessment for the Service Station, which demonstrates potential airborne pollutants are all within compliant/acceptable levels with the inclusion of vapour recovery systems.</i></p> <p><i>Odours from the Fast Food Outlets can be addressed at detailed design stage as part of an odour management plan and the installation of the appropriate equipment, as per standard practice.</i></p> <p><i>Perceived issues associated with 'health impacts' resulting from the establishment of Fast Food Outlets is not addressed by the statutory planning framework and should not be given weight in the decision-making process. Fast Food Outlets are a commercial land use and are appropriate for the Commercial zone.</i></p> <p><i>The perceived oversupply of liquor outlets is not a relevant planning consideration. The use is capable of approval in the Commercial zone. It is noted that a liquor outlet was proposed and approved on the site as part of a previous approval in 2016."</i></p>

Health Impact (cont...)

City's Response:

The Policy section of this Report addresses potential health impacts from the Service Station, given the proximity of the proposed Service Station to the two (2) existing Child Care Centres and concerns regarding benzene exposure.

There are no buffer or setback distances contained in either the State or local planning framework which specify a minimum distance between Child Care Centres and Fast Food Outlets, and therefore this is not a matter which can be taken into account when considering a planning application. A condition requiring an Odour Management Plan will be requested in the event the application is approved.

The Liquor Store use is a discretionary use which can be considered under TPS2 in the 'Commercial' Zone. As noted in 'Proliferation of Uses/Need' above, the number of outlets in an area is not a matter which can be taken into account by the City when considering a development proposal. It is, however, a factor which can be considered by the Department of Local Government, Sport and Cultural Industries (DGSCI) when determining the liquor licence application.

Scale and Impact

Submission:

Concerns were raised about the scale of development proposed on the site, and that it would result in traffic, parking and amenity impacts on the surrounding locality.

Applicant's Response:

"The level of development proposed on the site is appropriate and viable. The issues of traffic and parking are comprehensively addressed as part of the traffic impact assessment materials produced by Transcore, suitably qualified and experienced traffic engineers. Amenity impacts are comprehensively addressed as part of the supporting application materials, demonstrating the development is of a high quality and will contribute positively to the local area."

City's Response:

The subject site is identified in the approved Structure Plan and LDP as a Neighbourhood Centre. The retail floorspace proposed is less than that previously approved on the site (2499m² NLA as opposed to 3240m² NLA previously). The uses proposed, and the general form of development, is consistent with the intended development outcome for the site.

Parking and traffic considerations are discussed in the Policy section of this Report.

Access and Local Road Network

Submission:

Concerns were raised about the Warnbro Sound Avenue/Aurea Boulevard intersection and impacts on the local road network.

Further concern was raised that Wyloo Lane, located to the immediate north of the subject site, is too narrow, dangerous and inappropriate to provide access to the development, and particularly for service vehicles.

Applicant's Response:

"The supporting TIA comprehensively addresses the operation of the Warnbro Sound Avenue/Aurea Boulevard intersection, demonstrating it will operate at an acceptable level of service with moderate queues and delays, both in the post-development and 10 year scenario. It is also relevant to note the Department of Planning, Lands and Heritage (the authority with planning control over Warnbro Sound Avenue under the MRS) has reviewed the proposal and has no objection."

Access and Local Road Network (cont...)

Wyloo Lane was planned to service this site, both for patrons and service vehicles, under the Local Development Plan. The Development Proposal is consistent with the LDP in this regard. It is also noted that the use of Wyloo Lane for the same purpose was supported and approved by the City in 2016."

City's Response:

The TIA submitted with the application addresses the operation of the intersection(s) and impact on the local road network. The Policy section of this Report addresses traffic considerations following review by the City, Department of Planning Lands and Heritage (DPLH) and Main Roads WA (MRWA).

The access to the site via Wyloo Lane is consistent with the approved LDP, and formed part of the previous approval for the site. A condition of approval should be requested to limit the times of delivery vehicles via Wyloo Lane, should the application be approved.

The Acoustic Report assessed the impact of noise from the development on nearby residential dwellings and recommends the installation of an acoustic wall and roof, over the delivery area for the Supermarket. These recommendations, along with others identified in the Acoustic Report, are considered to appropriately manage noise impact on adjoining residential properties, and should be imposed as conditions, should the application be approved.

Supermarket Servicing

Submission:

Concerns were raised about how the Supermarket would be serviced and where bin stores would be located.

Applicant's Response:

"The Supermarket will be serviced from the loading area shown on the plans. The bin stores are depicted on the drawings."

City's Response:

The Supermarket will be serviced via Wyloo Lane. The Applicant's TIA addresses servicing vehicle access. A condition limiting bin servicing via Wyloo Lane to between 7am and 6pm Mondays to Fridays and 9am to 5pm on Saturdays, with no servicing on Sundays, is recommended, should the application be approved.

The plans show the location of bin stores for all tenancies other than the Service Station. For this use, the bin store is typically located within the loading area. It is recommended that this be subject to the preparation of a Waste Management Plan, should the application be approved.

Design and Inconsistency with LDP

Submission:

Concern was raised on the proposal's inconsistency with the approved LDP; and associated design concerns including Main Street treatment, landscaping shortfall, setback of the Liquor Store to the northern boundary, corner treatments, and street interfaces.

Applicant's Response:

"These matters are all comprehensively discussed and addressed in the supporting application materials. The layout, configuration, design response, and landscaping arrangements of this development are appropriate/responsive to the contextual characteristics of the site/were formulated by highly experienced architectural experts, and will create positive outcomes for the locality."

Design and Inconsistency with LDP (cont...)
<p><u>City's Response:</u></p> <p>The Policy section of this Report addresses compliance with the LDP and other design and development criteria. The Amended Plans are considered to satisfy the intended design outcomes of the LDP.</p>
Insufficient Parking
<p><u>Submission:</u></p> <p>Concern was raised that there is insufficient parking provided on site to service the development, which will lead to overflow parking occurring in surrounding residential streets.</p>
<p><u>Applicant's Response:</u></p> <p><i>"The application materials contain a thorough parking assessment, including a parking demand assessment during peak periods, which demonstrates the on-site provision of bays will sufficiently cater for the needs of each land use."</i></p>
<p><u>City's Response:</u></p> <p>The Policy section of this Report provides an assessment of parking provision. The proposal involves a parking shortfall of 28 bays which is considered acceptable given an assessment of parking against a range of criteria.</p>
Rubbish Generation and Disposal
<p><u>Submission:</u></p> <p>Concerns were raised about increased levels of rubbish generated by the Fast Food and Service Station uses.</p>
<p><u>Applicant's Response:</u></p> <p><i>"This is a natural effect of any land use proposed in a commercial zone. Bin Stores of a suitable size and layout are shown on the plans. A waste management plan will be produced at detailed design stage."</i></p>
<p><u>City's Response:</u></p> <p>A Waste Management Plan, including a requirement for adequate bins and rubbish collection patrols, can be requested as a condition should the application be approved.</p>
Anti-social Behaviour
<p><u>Submission:</u></p> <p>Concerns were raised that the Fast Food and Liquor Store uses on site would result in anti-social behaviour in the surrounding area.</p>
<p><u>Applicant's Response:</u></p> <p><i>"The submitter(s) has not provided any testable evidence that Fast Food and/or liquor Shops result in increased anti-social behaviour. This is not a matter addressed by the statutory planning framework and should not be given weight in the decision making process."</i></p>
<p><u>City's Response:</u></p> <p>There is no tangible link between anti-social behaviour and the proposed development. Whilst the management of anti-social behaviour is a policing, rather than planning matter, the proposal has been designed to allow for movement by vehicles and pedestrians through the site at all times. In most cases windows, tenancy entries and accessways will enable passive surveillance.</p>

Anti-social Behaviour (cont...)
The '10 Principles Assessment' provided with the application indicates CCTV will be installed, and 24 hour uses will provide passive surveillance, which will assist in managing behaviour on-site.
Light-spill
<u>Submission:</u> Concern was raised about light spill, and operational and customer noise impacting on the amenity of nearby residents as a result of the proposal.
<u>Applicant's Response:</u> <i>"External lighting will be required to comply with AS 4282 Control of the obtrusive effects of outdoor lighting. An environmental noise assessment was prepared, demonstrating compliance with the Environmental Protection (Noise) Regulations 1997."</i>
<u>City's Response:</u> A condition requiring lighting design to reduce light-spill can be recommended in the event the application is approved. The Acoustic Report addresses noise impact on nearby residents and recommends a number of mechanisms to reduce noise on site to acceptable levels which can be applied as conditions should the application be approved.
Community Benefit
<u>Submission:</u> Concern was raised that the proposal does not result in an overall community benefit.
<u>Applicant's Response:</u> <i>"The development site is zoned Commercial under the City of Rockingham Local Planning Scheme No.2 and all of the uses proposed are contemplated within the Commercial zone (noting they are commercial in nature). The layout, configuration, design response, and landscaping arrangements of this development are appropriate/responsive to the contextual characteristics of the site/were formulated by highly experienced architectural experts, and will create positive outcomes for the locality."</i>
<u>City's Response:</u> Although questionable as to whether it is a relevant planning consideration, the application is considered to provide an overall community benefit by the provision of food and specialty retail uses not currently provided in the immediate locality; the provision of a mall which will provide a meeting place to the local community; and the opportunity for alfresco dining. The design offers a quality outcome to the Thundelarra Drive frontage consistent with the intent of the LDP.
Alternative Land Uses
<u>Submission:</u> Preferred alternative landuses/tenancies for the site were suggested, which included medical, juice bar, icecream shop, fresh food market, hairdresser, café, library, community/recreation uses and the like.
<u>Applicant's Response:</u> <i>"Noted. It is not a relevant planning consideration to consider what would be a "better proposal". However, it is also relevant to note that the Supermarket could contain a fresh food component, and the Specialty tenancies could contain local operators provided food/café/hairdresser/etc etc."</i>

Alternative Land Uses (cont...)

City's Response:

The Application must be considered on its planning merit based on what has been submitted, rather than those land uses submissioners consider should have been included.

b. Consultation with other Agencies

The following Agencies were consulted on the application:

- Department of Planning Lands and Heritage (DPLH);
- Main Roads WA (MRWA);
- Department of Education (EDWA);
- Department of Health (DoH);
- Water Corporation (Water Corp);
- Department of Water and Environmental Regulation (DWER); and
- Department of Mines Industry Regulation and Safety (DMIRS).

Comments received from these Agencies are summarised as follows:

Department of Planning Lands and Heritage (DPLH)

Submission:

- The land is not affected by the Other Regional Roads (ORR) reservation.
- No access is proposed to Warnbro Sound Avenue, which is consistent with Western Australian Planning Commission (WAPC) Development Control Policy No.5.1 (DC5.1).
- The Transport Impact Assessment (TIA) shows satisfactory performance for the majority of turning movements to 2033.
- It is unclear if the presence of on-street parked vehicles on Aurea Boulevard near the proposed left-in, left-out (LILO) driveway will allow adequate sight lines for exiting vehicles. It is also unclear if a turning treatment is required in this location.
- It is recommended that the City verify the acceptability of submitted swept path movement drawings at Appendix C: 'Turn Path Analysis'.
- Trip Generation modelling indicates that just over 500PM peak hour trips would be generated by the proposal (before cross trade discount applied), which is higher than the methodology provided in the TIA.

Applicant's Response:

"A revised TIA has been submitted which addresses City and DPLH comments."

City's Response:

Refer to the Policy section below, which addresses the City's comments on the TIA.

The two (2) parking bays on Aurea Boulevard have been removed in the Amended Plans due to issues with sight lines.

Main Roads WA (MRWA)

Submission:

"Main Roads has no objections to the development application."

It is noted for the City's consideration that the proposed Left In-Left Out crossover to Aurea Boulevard is located within the functional area of the adjacent Warnbro Sound Avenue/Aurea Boulevard signalised intersection, and immediately adjacent to the start of a left-turn slip lane. The movement of vehicles turning in/out of a crossover in this location may introduce the risk of rear-end, side-swipe and right-angle type crashes."

Main Roads WA (MRWA) (cont...)
<p><u>Applicant's Response:</u></p> <p>Nil</p>
<p><u>City's Response:</u></p> <p>Given the concerns raised regarding the proposed Aurea Boulevard crossover by MRWA, along with concerns raised by the City about the crossover, traffic design issues on-site, and remaining disparity regarding traffic modelling assumptions and outcomes, it is the City's view that the revised TIA does not adequately address the concerns raised.</p>
Department of Education (EDWA)
<p><u>Submission:</u></p> <ul style="list-style-type: none">• There are several incompatible land uses proposed on the subject site which are in close proximity to the Primary School including Service Station, 2 x Fast Food Outlets and a Liquor Store.• There are 2 Fast Food Outlets 270m and 380m from the School site. EDWA does not support Fast Food Outlets operating near Primary School sites as these food outlets may cause unhealthy diets and obesity.• The proposed Service Station is located 210m from the Primary School. GS3 recommends 24/7 Service Station land use operations should be minimum distance of 200m. EDWA notes location is beyond the 200m setback distance noted by EPA Guidelines (GS3).• The Liquor Store is unlikely to adversely impact the occupants of the School site.• EDWA does not support incompatible land uses in close proximity to School sites, particularly Fast Food Outlets in this instance, as detrimental impacts to the health and wellbeing of students may result. Notwithstanding, the Department recognises the subject site is designated as Commercial under the Structure Plan.
<p><u>Applicant's Response:</u></p> <p>Nil</p>
<p><u>City's Response:</u></p> <p>The subject site is a Neighbourhood Centre zoned 'Commercial' where the proposed uses are permissible under TPS2, and commonly provided within Centres of this nature.</p> <p>The EDWA comments on health concerns generated by the proximity of Fast Food Outlets to Schools were also reflected in a submission on the proposal by the Heart Foundation and other submitters during the advertising period. There is, however, no guidance or provisions within the State or Local Planning Framework which identify or specify separation distances between Schools and Fast Food Outlets.</p> <p>As noted by DoE, the School site is outside the 200m generic buffer identified in GS3.</p>
Department of Health (DoH)
<p><u>Submission:</u></p> <ul style="list-style-type: none">• The development is required to be connected to Scheme water and reticulated sewerage.• Concerned about short distance between the proposed Service Station and two existing child-care centres (<50m for both). DoH does not have the technical expertise to assess the rigour of the Emissions report. Previous advice from DWER to DoH (and City of Rockingham) on emissions modelling is that:

Department of Health (DoH) (cont...)

"In general, air quality dispersion modelling has a number of areas of uncertainty. The Department is generally not able to verify the assumptions made in these modelling studies. Given these uncertainties, the use of dispersion modelling to make precise judgements on separation distances is impossible. For this reason, the recommended approach is the application of separation distances within Guidance Statement 3 Separation Distances between Industrial and Sensitive Land Uses (GS 3) (EPA, 2005)."

- DoH is concerned there is an existing Service Station, although considered in emission modelling, and questions why the proposed Service Station must be placed directly across the road from the child-care premises rather than elsewhere on the site.
- All food related areas to comply with the Food Act (2008).
- The area is subject to mosquito impact and a Mosquito Management Plan should be prepared, and the proposal not create additional on-site mosquito breeding habitat.

Applicant's Response:

"DoH confirmed they do not have the expertise to assess the rigour of the emissions report, and provided the standard advice in respect of water / sewer and food related areas."

City's Response:

The site is connected to reticulated water and sewer. A Mosquito Management Plan is not considered necessary given there are no water features or retention of water proposed on the site. The Stormwater Management Plan, which will be required should the proposal be approved, will require drainage to be infiltrated within 96 hours to minimise any mosquito breeding.

The Policy section of this Report addresses the proximity of the proposed Service Station to the two (2) existing Child Care Centres and the associated health considerations, in relation to benzene.

In its discussions with the Applicant on the proposal, City Officers suggested that the uses on-site be rearranged to relocate the Service Station away from the Child Care Centres.

The Applicant verbally advised that vehicle manoeuvrability (tanker and customer vehicles) would be less optimal, and concentrate more traffic on Thundelarra Drive, and declined to make any change to the arrangement of uses on the site.

Water Corporation (Water Corp)

Submission:

The subject land is provided with water and wastewater services to accommodate the proposed development.

Applicants Response:

Noted.

City's Response:

Noted.

Department of Mines Industry Regulation and Safety (DMIRS)

Submission:

The Service Station will require licensing by DMIRS.

Department of Mines Industry Regulation and Safety (DMIRS) (cont...)

Applicant's Response:

No comment.

City's Response:

An Advice Note relating to licensing by DMIRS will be recommended in the event that the application is approved.

Department of Water and Environmental Regulation (DWER)

Submission:

No objection.

Advice was provided regarding modifications to the Acoustic Report, and recommending preparation of a Stormwater Management Plan which includes specific requirements in relation to the Service Station.

In respect to the Acoustic Report, the 3m high wall to the loading bay associated with the future Supermarket is required to be of solid construction, and minimum acoustic requirements applied.

DWER also raised concern about the parking bays to the west of the Liquor Store and noise impact on residences on Wyloo Lane from car doors closing; and recommended the Acoustic Report address noise impacts resulting from delivery trucks reversing into the loading bays.

Applicant's Response:

"DWER did not comment on the emissions assessment but noted no objections with recommendations to address noise, drainage and water quality.

The comments related to drainage and water quality can be addressed as part of a stormwater management plan which would be provided at detailed design stage, in accordance with standard practice.

The acoustic assessment was revised in accordance with the noise comments of DWER, which included a reduction of the influencing factor (creating a more conservative assessment) as well as revised recommendations which have been incorporated into the proposal.

These include:

- A covered roof over the Supermarket loading area.*
- A low 1.6m screen along a portion of the Liquor Store loading area.*
- Service vehicles to utilise a broadband beeper when reversing, as per DWER best practice requirements."*

City's Response:

The Applicant has submitted an amended Acoustic Report to address comments raised by DWER which is acceptable to the City. This includes the requirement for a 3m high acoustic wall along the Supermarket loading area (refer Figure 14), which will be roofed, insulated and contain no gaps to minimise noise impact on adjacent residents. In addition, limitations on delivery times and bin servicing are recommended.

Department of Water and Environmental Regulation (DWER)



14. Location of Acoustic wall along Wyloo Lane, adjacent to Supermarket Loading Area (extract from site plan)

The City notes that DWER did not object, or provide any guidance, in respect to the proximity of the Service Station to sensitive uses.

A condition requiring a Stormwater Management Plan is recommended in the event the application is approved.

b. **Strategic**

Community Plan

This item addresses the Community's Vision for the future, and specifically the following Aspiration and Strategic Objective contained in the Strategic Community Plan 2019-2029:

Aspiration 3: *Plan for Future Generations.*

Strategic Objective: *Responsive planning and control of land use – Plan and control the use of land to meet the needs of a growing population, with consideration of future generations.*

c. **Policy**

State Government Policies

State Planning Policy 4.1 - Industrial Interface (SPP4.1)

SPP4.1 seeks to prevent conflict and encroachment between industrial development and sensitive land uses. The Policy guides development and interface outcomes for particular buffer and separation requirements for development, and how potential risks can be mitigated.

The Service Station is considered an industrial land use, and is subject to *EPA Guidance Statement No.3: 'Separation Distances between Industrial and Sensitive Land Uses'* (GS3), addressed below.

An EIA has been submitted by the Applicant for the proposed Service Station. Discussion is provided below in relation to the adequacy of the EIA, the proposal's compliance with SPP4.1, and GS3, along with relevant comments received during the referral process.

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

SPP4.2 addresses the planning and development of new activity centres, and the redevelopment and expansion of existing centres. It is primarily concerned with the distribution, function, broad land use and urban design criteria of activity centres, together with coordinating land use and infrastructure planning.

Clause 5.1 - Activity Centre Hierarchy

Golden Bay is a Neighbourhood Centre within the hierarchy of activity centres, as outlined in the City's Local Commercial and Activity Centres Strategy (LCACS).

The proposal is consistent with the planned hierarchy, given the function of a Neighbourhood Activity Centre is to provide for daily and weekly household shopping and community needs.

Clause 5.2 - Activity

A range of land uses are proposed that cater for household convenience, shopping needs, local employment, and land uses that generate activity outside of normal business hours.

Clause 5.3 - Movement

Activity centres should be designed to be accessible by a variety of transport modes. The proposed development is designed to be accessed by car, servicing vehicles, bus, bicycle and pedestrians.

SPP4.2 requires that parking facilities are located, scaled, designed and landscaped to avoid visual domination of street and public space frontages, and to avoid discontinuity of the urban form and pedestrian amenity. The design response to the approved LDP is discussed below.

Clause 5.4 - Urban Form

The buildings are designed to address the 'Main Street' of Thundelarra Drive, with an active frontage; with the mall intended to provide a meeting place for the community in a location that will connect the core retail area of the centre. Car based uses, being the Fast Food and Liquor Store, are located to the rear of the site adjacent to Warnbro Sound Avenue, although are oriented internally to the site. Other design considerations are addressed in the LDP section below.

The application is considered to be generally consistent with SPP4.2 in relation to hierarchy and function, and how the proposal addresses the Main Street. The proposal's design response to the planning framework is addressed below.

Draft State Planning Policy No.4.2 - Activity Centres in Perth and Peel (SPP4.2)

The WAPC is currently reviewing SPP4.2, and has released a Draft revised Policy which has been advertised and is therefore a 'seriously entertained document' which must be given due regard.

The application is generally consistent with draft SPP4.2. An 'Impact Test' is not required given retail floorspace is under 5,000m² NLA.

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

SPP7.0 provides an extensive framework for the design of the built environment and includes assessment of LDP's and Development Applications for Activity Centres. The '10 Principles Assessment' provided with the application has been considered in the context of SPP7.0 and the approved LDP and considered to be acceptable.

Draft Position Statement: Child Care Premises

In November 2022, WAPC released a 'Draft Position Statement on Child Care Premises' to provide location and design guidance to decision makers, proponents and the community for a consistent policy approach to planning Child Care Centres within Western Australia.

In relation to Service Stations, the Position Statement provides as follows:

“The decision-maker should consult and obtain advice from the DoH regarding any external emission sources likely to have an adverse and unacceptable impact on the child care premises. For example, gaseous emissions from Service Stations and high volumes of passing traffic may be unacceptable in terms of noise and emissions.”

As previously noted, the proposed development is located opposite two (2) Child Care Centres (and to the immediate north of an existing Service Station). DoH comments are detailed above; and discussion on emissions and potential health risk is addressed below.

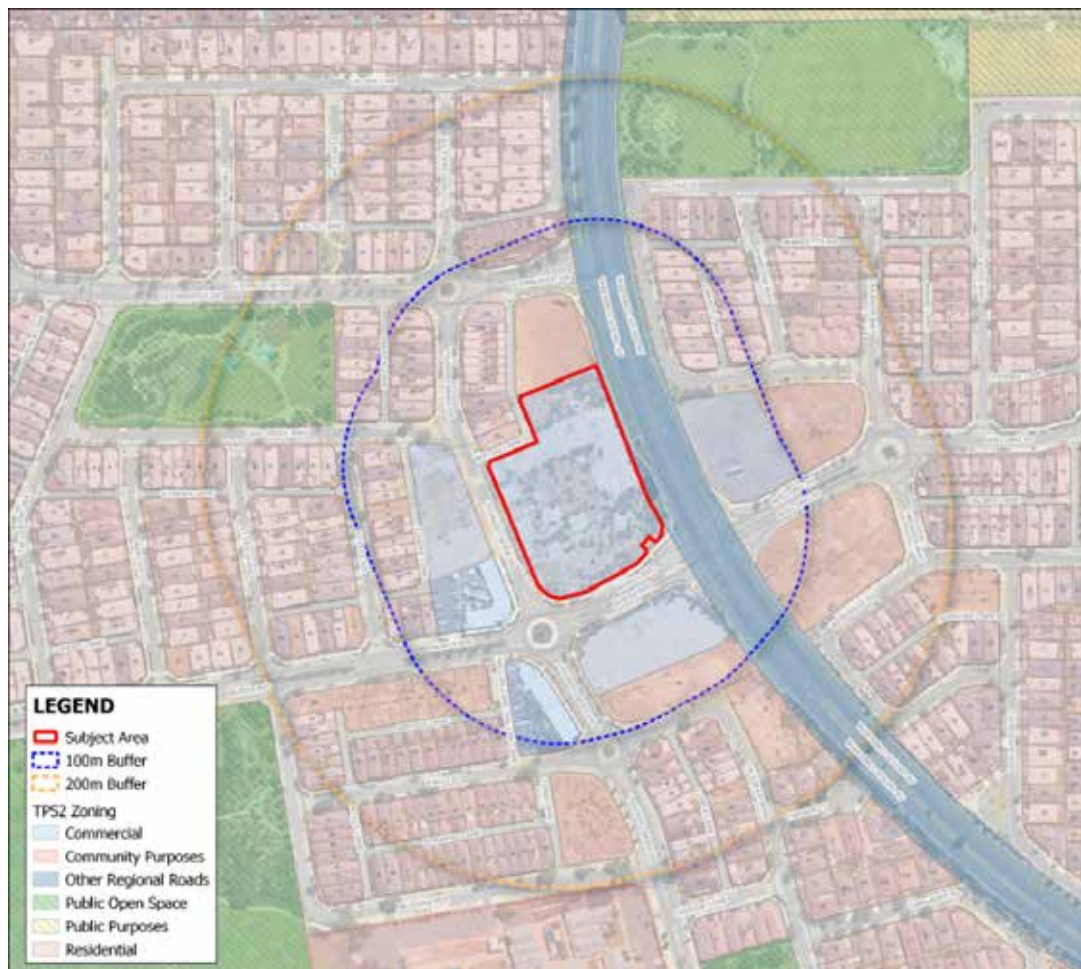
Environmental Protection Authority (EPA) Guidance Statement No.3 (GS3)

GS3 provides advice on the use of generic separation distances between industrial and sensitive land uses to avoid conflicts (gaseous, noise and odour) between incompatible land uses. GS3 applies to the subject application as industrial uses include Service Stations and sensitive uses include Child Care Centres and residential dwellings.

The separation distance required between the Service Station (24 hour operation) and Child Care Centres under GS3 is 200m. Where proposals vary from this separation distance, site specific technical analysis is required.

A map showing the 200m separation distance for the subject site is shown in Figure 15. It includes all land within the Neighbourhood Centre including the Child Care Centres to the west, located approximately 21m and 47m from the proposed Service Station, and residential lots located to the east and west of Warnbro Sound Avenue.

The separation distance intersects with the northern boundary of the Golden Bay Primary School, however, the School is not located within the 200m.



15. EPA Guidance Statement No.3 - Separation Distance

Concerns have been raised by the WA Department of Health, the City's Health Services and a number of submitters about the proximity of the proposed Service Station to the Child Care Centres. The concern is primarily in relation to the health impacts on young children from benzene gas emissions. Benzene is a known human carcinogen which is emitted during bulk fuel deliveries by fuel tankers filling underground tanks, vehicles filling tanks at bowsters, fuel spills and opening fuel caps on vehicles.

An EIA has been lodged with the application to determine compliance of modelled emissions against standards, utilising industry standard modelling methods. It considers emissions from the Service Station, including the cumulative impacts of the existing Service Station located to the immediate south of the subject site.

The EIA concluded as follows:

- The primary pollutants were predicted to have ground level concentrations lower than acceptable exposure limits when using both Vapour Recovery Phase 1 (required) and Vapour Recovery Phase 2 (recommended) (referred to as VR1 and VR2).
- Utilising VR1 and VR2, the proposed Service Station emissions will not have an unreasonable impact on the health of existing sensitive receptors or sensitive landuses, and the cumulative emissions are predicted to be below the exposure criteria at key sensitive receptor locations.

The City engaged SLR Consulting to undertake a Peer Review of the EIA. This review considered the appropriateness of the assessment methodology in the context of WA legislation and guidelines, and whether the impact assessment indicated that National Environment Protection Measure (NEPM) criteria is likely to be met at the Child Care Centres and other nearby adjacent residential properties.

The City's Peer Review concluded as follows:

- The assessment was found to be appropriate for the intended purpose.
- A separate model could be run assuming regular hourly filling of underground storage tanks to predict the maximum benzene levels.
- The report could provide additional context around legislation, additional graphs to illustrate outcomes, and provide additional detail on surface roughness.

The information submitted with the application indicates two (2) – three (3) bulk fuel deliveries per week will occur, and therefore additional modelling was not requested. The comments contained in Point 3 were not considered to materially change the outcomes of the modelling.

From the Peer Review comments it can be concluded that the EIA modelling outcomes can be relied upon for its intended purpose.

The City's concern is that no air monitoring has been undertaken to validate or verify the previous modelling assumptions for the currently operating Service Station (that the City did not support), rather the report has just used the previously reported modelling data.

Clause 4.4.1 of GS3 recommends that where the separation distance is less than the generic distance, a scientific study based on site and industry specific information must be presented to demonstrate that a lesser distance will not result in unacceptable impacts. There is a lack of guidance at State level to determine the nature of scientific study required to demonstrate impact, or to specify a monitoring programme over modelling results.

Notwithstanding, WA Department of Health advised it was concerned about the proximity of the Service Station to the Child Care Centres (and in the context of the existing Service Station to the south), but that it did not have the technical expertise to assess the EIA. It referred the City to previous DWER advice on other, proposal(s) that in general, air quality dispersion modelling contains uncertainty. It therefore recommended GS3 be applied.

The City's Health Services has advised that the DWER Air Quality Unit and the DoH do not support air modelling emissions reports as a means of justifying a lesser buffer distance to sensitive land uses, given there can be significant uncertainty in the accuracy of these studies, and recommend applying the standard separation distances outlined in GS3.

The City does not recommend support for the proposed Service Station for the following reasons:

- The City does not support air modelling emissions reports as a means of justifying a lesser buffer distance to sensitive land uses, as it considers the results cannot be relied upon.
- The Council has taken a consistent approach to applying GS3 separation distances between service stations and sensitive uses, including the existing service station to the south of the subject site that the Council did not support (but was ultimately approved by MOJDAP following SAT review).
- Given the City's concerns about the unreliability of modelling results, the precautionary principle, which urges caution in decision making where scientific evidence about a health hazard is uncertain and the stakes are high, is recommended.
- The City maintains its position that GS3 separation distances be applied, requiring 200m separation between Service Stations and Child Care Centres.

Local Government Policies

Planning Policy No.3.1.2 - Local Commercial and Activity Centres Strategy (LCACS) (PP3.1.2)

PP3.1.2 provides for a Neighbourhood Centre at Golden Bay, and reflects the previously approved retail NLA of 3,240m². The NLA of the proposed development is lower at 2,488m².

The proposed development is consistent with the role and function of a Neighbourhood Centre in providing for daily to weekly household Shopping needs and a small range of other convenience services. Consistent with the Policy, the Centre will provide a Supermarket, and is expected to provide a (limited) range of Specialty Shops and personal services.

Planning Policy No.3.3.1 - Control of Advertisements (PP3.3.1)

PP3.3.1 sets out requirements for various types of signage in the City. Four (4) pylon signs are proposed in this application, with 2 (two) along Warnbro Sound Avenue, and two (2) on Aurea Boulevard (one (1) advertising the Neighbourhood Centre, and one (1) for the Service Station). No signage is currently proposed for the Fast Food Outlets and Liquor Store.

Whilst the Policy specifies a maximum of one (1) pylon sign per street frontage, two (2) signs along Warnbro Sound Avenue is considered appropriate given the length of this frontage is approximately 128m, and as Warnbro Sound Avenue provides primary commercial exposure to the development.

Two pylon signs are proposed for the Aurea Boulevard frontage which is considered excessive given the relatively short length of this road. It is recommended that only one (1) pylon sign be located along this road, consistent with PP3.3.1.

Signage panels integrated into the facades of the Supermarket and other tenancies, and directional signage, are considered to be consistent with the buildings on which they are located and the locations where they are proposed.

Signage for the Fast Food Outlets will need to be considered as part of a signage strategy approved by the City if the development is approved.

Planning Policy No.3.3.9 - Fast Food Outlets (PP3.3.9)

PP3.3.9 provides guidance for the development of Fast Food Outlets within the City. The application proposes two (2) Fast Food Outlets (with operators yet to be confirmed) adjacent to Warnbro Sound Avenue. The outlets are not positioned on the Main Street, and are located away from residential dwellings to minimise adverse amenity impact, consistent with PP3.3.9. Whilst the drive-through facilities are located on the Warnbro Sound Avenue frontage, these will be screened and the frontage landscaped, providing an acceptable design outcome.

In excess of ten cars can be accommodated within the drive-through facilities. Whilst the Policy provides for 50% of these bays to be included in parking calculations, it is considered reasonable for 100% to be applied, given these cars are not accommodating other bays within the parking area.

Planning Policy No.3.3.14 - Bicycle Parking and End-of-Trip Facilities (PP3.3.14)

PP3.3.14 provides for secure, well defined and effective on-site bicycle parking and end-of-trip (EOT) facilities, to encourage the use of bicycles as a means of transport and access within the City.

Bicycle Parking Requirement

Land Use	Required				Required
	Minimum Short Term		Minimum Long Term		
	Rate	Number	Rate	Number	
Shop – Neighbourhood Centre (2,488m²)	0.30 spaces per 100m² NLA	7.5	0.12 spaces per 100m² NLA	3	10.5
Provided					15

An oversupply of 4.5 bicycle spaces is provided.

A condition will be provided for the bike parking to be provided in accordance with the relevant Australian Standard (AS).

End of Trip Facilities (EoT)

As less than five (5) long term bicycle parking spaces are required, no end-of-trip facilities are required.

Planning Policy No.3.3.19 - Licenced Premises (PP3.3.19)

PP3.3.19 provides guidance for the assessment and determination of applications for licenced premises. The application proposes a Liquor Store which is subject to this Policy. The Policy requires consideration be given to impact on amenity, character, and social impact, as set out in the *Planning and Development (Local Planning Schemes) Regulations 2015*.

The location of the Liquor Store fronting Warnbro Sound Avenue and with an average 2m setback to the undeveloped residential lot to the north is considered to be acceptable as the northern wall and 1.8m boundary fence will provide a suitable interface between the uses. No additional noise attenuation is required by the Acoustic Report.

At this stage, the Applicant has not provided sufficient detail to support a liquor licensing application.

Planning Policy No.P3.3.25 - Percent for Public Art – Developer Contributions (PP3.3.25)

In accordance with PP3.3.25, where a proposed development has an estimated construction cost exceeding \$5M, there is a requirement to provide Public Art to a value of not less than 1% of the building works, being \$110,000 for this application, given the value of the proposed development at \$11 million.

The public art is proposed to be delivered on-site or as a cash-in-lieu contribution, and will be recommended as a condition should the application be approved.

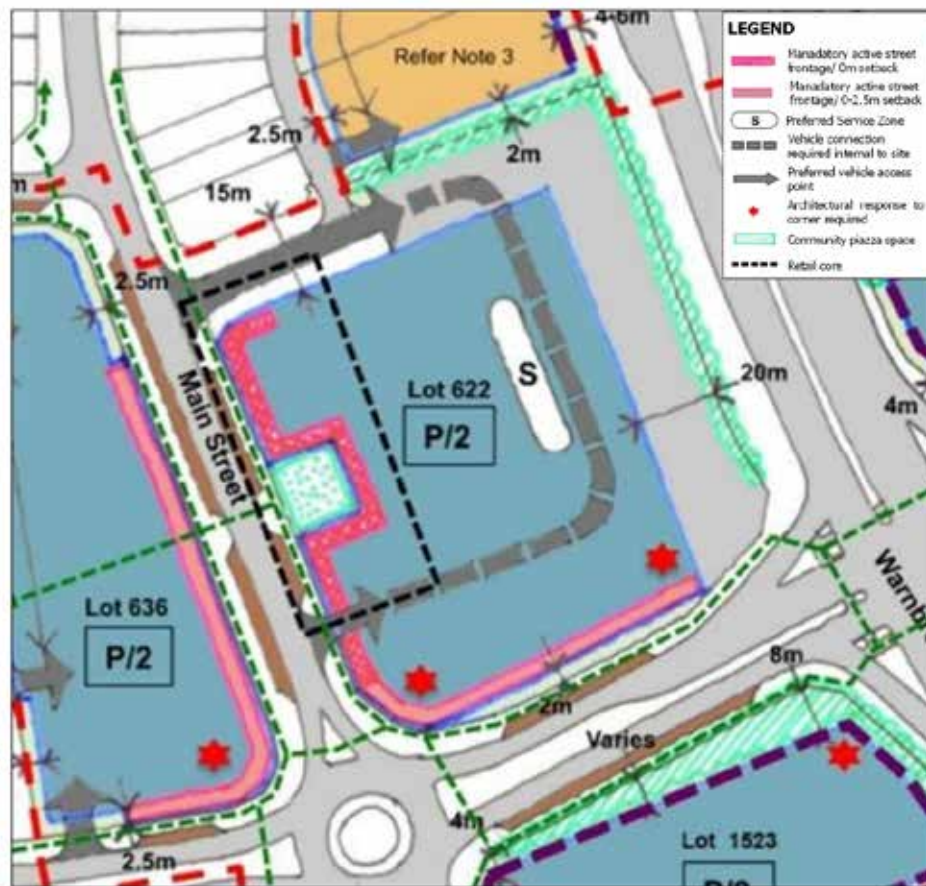
d. Financial

Nil

e. Legal and Statutory

Local Development Plan (2022)

As a requirement of the Structure Plan, a LDP was prepared by the (then) Proponent, with the latest version approved by the City on 6 December 2022. An extract of the approved LDP is provided in Figure 16.

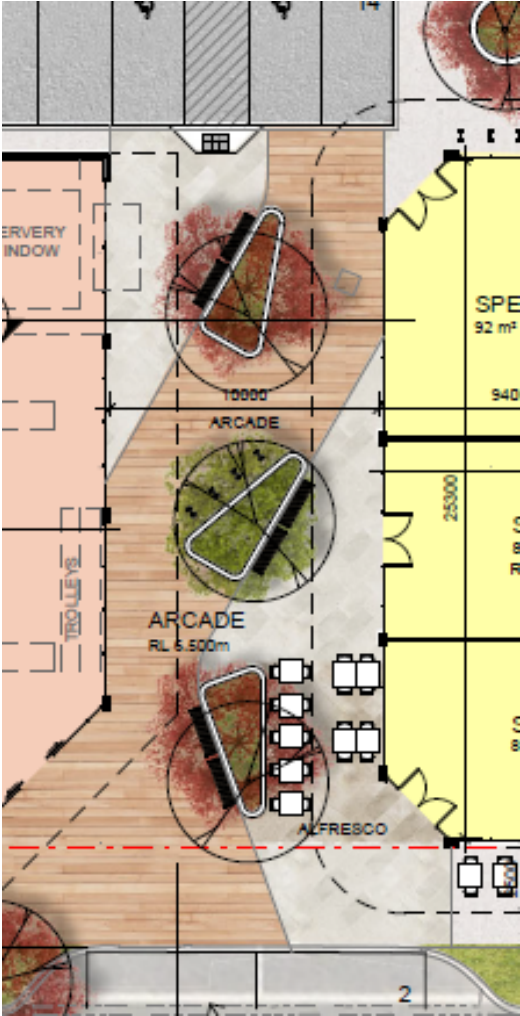


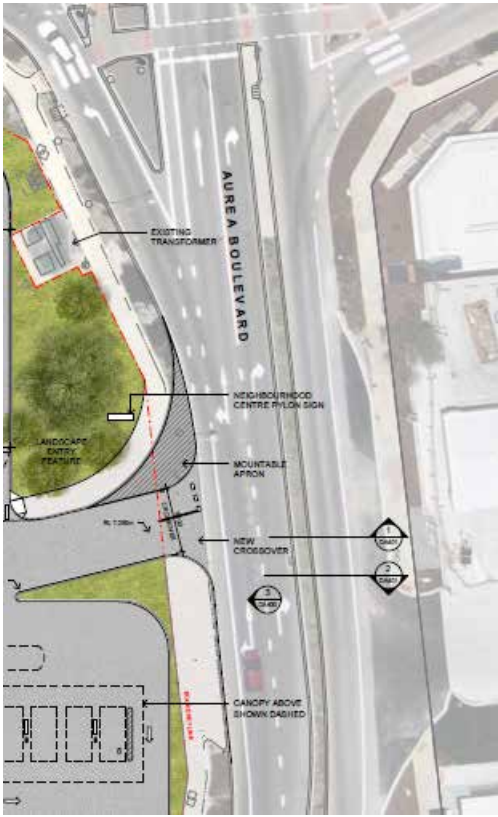
16. Golden Bay Neighbourhood Centre LDP (Extract)

The following Table sets out only those aspects of the proposal which are inconsistent with the elements of the LDP:

Element	City Comment
<p>(a) Tenancies must present their main entrance to the main street or the community piazza space if frontage to either is provided.</p> <p>Parking is provided to the rear of the site fronting Warnbro Sound Avenue.</p>	<p>The Supermarket fronts the Main Street (where business and activity is focussed) of Thundelarra Drive with the entry to the tenancy being at the corner of the building and mall, adjacent to the Specialty Shops.</p> <p>Best practise urban design would generally locate Specialty Shops on the Main Street and sleeve the Supermarket behind, however, this proposal involves reduced floorspace from the original approval which makes that configuration challenging.</p> <p>The design relocates the Specialty Shops from the Main Street to a mall, which will be used for alfresco dining, a meeting place and a movement corridor for those accessing the Supermarket entry from the rear parking area. Customers will pass the Specialty Shops on the way to and from the Supermarket. The orientation of the mall means that it will be sheltered from both the prevailing breeze and the afternoon sun creating a comfortable place for alfresco dining.</p> <p>Windows to the Supermarket, located along the Main Street, will provide for interaction between the business and the street.</p>

Element	City Comment
	<p>In addition, the floorplan shows aisles and low shelving along the windows, allowing a clear view from the street to the inside of the tenancy.</p> <p>Trolley parking is provided within the car parking area to the rear of the Supermarket, and within the tenancy near the checkouts so as to not be viewed from the Main Street. Suitable conditions will be required to achieve these outcomes, in the event the application is approved.</p> <p>Locating the Fast Food Outlets and Liquor Store to the rear of the site fronting Warnbro Sound Avenue is a reasonable approach which locates these uses away from residences and other sensitive uses.</p> <p>The design outcome as shown on the amended plans is considered to be an acceptable solution and is supported, subject to appropriate conditions regarding the interface of the buildings with public areas.</p>
(b) Mandatory active street frontage along Aurea Boulevard.	<p>An active frontage is not shown along Aurea Boulevard given the proposed crossover and the Fast Food/ Service Station uses. The proposed interface mirrors the development which has occurred the southern side of Aurea Boulevard.</p> <p>The design provides, however, a suitable response to the corner of Thundelarra Drive and Aurea Boulevard which is a key objective of the LDP.</p> <p>Whilst active uses along Aurea Boulevard consistent with the LDP would be a preferred outcome, it is more important that the Thundelarra Drive frontage be given design priority, which it is considered to do in this case.</p> <p>Given the development to the south and the traffic volumes and carriageway width along Aurea Boulevard, the design response is considered acceptable.</p>
(c) A canopy with continuous frontage extending across the entire street frontage of the building.	<p>The Supermarket canopy along Thundelarra Drive finishes approximately 5 metres short of Wyloo Lane. The corner truncation to Wyloo Lane creates some difficulty in extending the awning all the way along this frontage. The shorter awning, in favour of the architectural response proposed (ie. facade design, signage positioning and landscaping) is supported. The awning in front of the Specialty Shops on Thundelarra Drive will need to be extended approximately 3.5m south to provide cover to the bicycle parking.</p>
(d) Community piazza space fronting Thundelarra Drive and designed to provide for greenery, shade and casual seating.	<p>Whilst not in the position or configuration shown in the LDP, being located centrally on Thundelarra Drive as shown in Figure 17, the 'community piazza' space is provided by the 10m wide mall located between the Supermarket and Specialty Shops (refer extract from site plan below). The location and function of this reoriented space is supported in that it will provide protection from the prevailing wind and afternoon sun, encourage the area to be used as a community meeting place, and support food and beverage outlets and alfresco dining.</p>

Element	City Comment
	 <p>17. Mall Design (extract from site plan)</p>
<p>(e) Two preferred vehicle access points from Thundelarra Drive – one adjacent to the roundabout, and the other via Wyloo Lane north of the site with internal vehicle connections central to the site.</p>	<p>The proposal includes access to Aurea Boulevard, in addition to access from Thundelarra Drive and Wyloo Lane (refer Figure 18).</p> <p>The LDP does not include an access point to Aurea Drive as proposed. The proposed access facilitates servicing (fuel tanker) and customer vehicle movement around the site rather than concentrating access/egress for the Service Station along Thundelarra Drive.</p> <p>The two (2) carparking bays on Aurea Boulevard have been removed due to concerns about sight lines.</p>

Element	City Comment
	 <p>18. Proposed Aurea Boulevard Access (extract from site plan)</p> <p>The TIA has been assessed by the City on two occasions in response to the initial report, and the revised TIA submitted with the Amended Application. Following detailed assessment, the following concerns with the TIA remain:</p> <ul style="list-style-type: none"> • The proposed left-in, left-out crossover off Aurea Boulevard and its proximity to the Warnbro Sound Avenue intersection which may result in queuing along Aurea Boulevard ahead of the signalised intersection, impacting the Aurea Boulevard crossover and access/egress from the site; • Inadequate vehicle queuing within the site, and line marking for the Service Station which may result in vehicles overflowing to Aurea Boulevard and impacting the surrounding road network; • Swept path analysis has identified concerns in a number of locations throughout the development; • Design of blind aisles and inadequate turnaround in the vicinity of the Liquor Store has been identified; • The need for a pedestrian refuge within the Thundelarra Drive crossover given its 9m width; and • General concerns about the accuracy of the modelling and associated assumptions, resulting in the TIA outcomes being considered unreliable. <p>Given the above concerns, the TIA is not supported.</p>

Element	City Comment
(f) Landscape material to continue across driveways and entrances to maintain visual continuity of the pedestrian network.	The plans currently do not show footpaths extending across crossovers. A condition will be recommended, in the event the application is approved, ensuring footpath treatment is extended over crossovers in accordance with the LDP to assist legibility; and that a pedestrian refuge is provided within the Thundelarra Drive crossover to assist pedestrian safety.
(g) Special vegetation screens to consist of trees and understorey of low level shrubs to maintain sightlines for pedestrians and be of a minimum width of 3m.	The proposal includes a landscape strip ranging from 1.5-2.5m along Warnbro Sound Avenue which is a variation to the 3m landscaping strip indicated in the LDP. Given the extent of landscaping shown on the Landscaping Plan and the additional tree planting proposed within the parking area, along with the retention of landscaping within the Warnbro Sound Avenue and Aurea Boulevard verges, this variation is considered acceptable.

City of Rockingham Town Planning Scheme No.2 (TPS2)

The subject land is zoned 'Commercial' in TPS2.

The objective of the 'Commercial' Zone is:

'... to provide for the development of District, Neighbourhood and Local Shopping facilities to cater for the present and future residents of the Local Government consistent with the Local Government's Local Commercial Strategy and supported by any other Plan or Policy that the Local Government from time to time may adopt as a guide for the future development within the zone.'

The proposal is consistent with this Objective.

The application proposes the following land uses:

Land Use	Commercial Zone Permissibility
Shop	Permitted ('P')
Fast Food Outlet	Discretionary ('D')
Liquor Store (Small)($<300\text{m}^2$)	Discretionary ('D')
Service Station	Discretionary ('D')

In accordance with clause 3.2.2 of TPS 2:

"P" use "means that the use is permitted by the Scheme providing the use complies with the relevant development standards and the requirements of the Scheme.

'D' use "means that the use is not permitted unless the local government has exercised its discretion by granting development approval."

All uses proposed are able to be considered within the 'Commercial' Zone under TPS2. The uses are commonly provided within a Neighbourhood Centre and are considered acceptable.

Clause 4.6.4 Setbacks

Notwithstanding that TPS2 requires R-Code setbacks where development is proposed on a lot having a common boundary with a Residential zoned lot, the LDP provides for a 2m setback in this location. The proposed setback ranges from 1.88-2.1m from the northern boundary, averaging 2m. The design of the northern wall of the Liquor Store, landscaping and boundary fence will soften the appearance of the wall and the setback proposed is considered to be acceptable.

Clause 4.6.5 Landscaping

A minimum provision of 10% landscaping is required for development within the 'Commercial' Zone, excluding those areas identified for pedestrian movement.

Landscaping within verge areas may be included in the site landscaping requirement. Where this provision is not possible, an equivalent contribution towards streetscape works in public streets adjoining the property may be required.

In this case, 8.5% landscaping is provided, with additional tree planting on-site within the carparking area, landscaping within the verge along Thundelarra Drive and retention of the existing verge landscaping around the site. A reduction in landscaping to 8.5% is therefore considered acceptable.

Clause 4.6.3 - Parking

On-site car parking is required to be provided in accordance with Table No.4 of TPS2.

The provision of car parking is summarised as follows:

Land Use	Proposed NLA	Required Parking TPS2	Bays Required
Shop (Supermarket, specialties, liquor)	1658m ²	6/100m ² NLA	99.48 bays
Fast Food	525m ²	1/11m ² NLA	47.7 bays
Service Station	305m ² + 8 service bays and 2 employees	6/100m ² NLA 1/service bay 1/employee	28.3 bays
Total Proposed NLA	2,488m ²		
Total Required			175.48 bays
Provided			148 bays
Parking balance			-27.48 bays (shortfall)

Clause 4.20 of TPS2 provides the Council with discretion to vary carparking requirements.

The application proposes 148 bays on site, where 176 bays are required, resulting in an overall parking shortfall of 28 bays. The number of bays provided includes all bays within the drive-through facilities and four (4) embayment parking bays on Thundelarra Drive.

The previous approval for the site included a parking shortfall of 18 bays.

To assist in considering the parking shortfall, it is relevant to note other parking standards which may be applied.

Clause 5.3.2(4) - Traffic and Parking of (SPP4.2 provides a recommendation for parking to be provided at a rate of 4-5 bays/100m² NLA which equates to 99.52 - 124.4 bays for the subject application, reflecting a significant oversupply in parking provided in this proposal.

Further, DPLH is currently advertising its 'Draft Interim Guidance for Non-Residential Car Parking Requirements' ('Draft Guidance') which aims to provide consistent car parking requirements for non-residential land uses across Metropolitan and Peel local governments. Parking requirements for the subject Application would vary from a minimum of 50 bays to a maximum of 124.4 bays if the proposal were to be assessed under the Draft Guidance, also reflecting a significant oversupply.

Clause 4.20 of TPS2 provides the Council discretion to vary any standard or requirement of the Scheme where Council is satisfied, amongst other matters, that the proposal is consistent with orderly and proper planning and will not have any adverse effects on occupiers or users of the development.

The parking provided on site is considered to be adequate for the uses proposed, and the parking shortfall of 28 bays is therefore supported on the following basis:

- A number of the uses on site are car based (Fast Food Outlet, Liquor Store, Service Station), where customers will likely remain in their vehicles to visit one or more of the businesses during a single trip.

- The likely extended trading hours of the Supermarket, and the other 24 hour uses proposed, will extend trade and minimise peaks.
- The TIA indicates a maximum demand of 134 parking bays, and the proposed 148 bays will therefore exceed maximum demand.
- When considering SPP4.2, an oversupply of parking bays is calculated and therefore the 148 bays proposed is considered to be sufficient.

Environmental Protection (Noise) Regulations 1997

The *Environmental Protection (Noise) Regulations 1997* ('the Regulations') provide protection to people and sensitive uses from unnecessary noise disturbance.

The Applicant has submitted an Environmental Noise Assessment (Acoustic Report) which demonstrates that noise generated by the proposal can be appropriately managed to comply with the Regulations, with the implementation of the following measures:

- A 3.0m screen wall to the loading bay to extend the length of the loading bay, to be of solid construction and of a material with a minimum surface mass of 15kg/m². The roofed structure overhead should extend at least 4m across, be lined with an absorptive material, with no gaps between the overhead section and vertical screen wall.
- Delivery vehicles are to have broadband type reversing alarms fitted rather than standard tonal alarms.
- A section of solid screening is to be constructed near the Liquor Store bin store area, of minimum height and of minimum surface mass 4kg/m² and free of gaps.

The following measures are also recommended by the Acoustic Report to minimise noise impact:

- Any external music or the like shall be low level and inaudible at residences;
- Bin servicing shall occur between 7am and 7pm Mondays to Saturdays. Where possible, bins shall be located in areas away from and/or screened from residences.
- Various recommendations relating to the design and operation of mechanical plant.

The City accepts the recommendations of the Acoustic Report and also recommends that deliveries via Wyloo Lane, to the immediate north of the subject site, be limited to 6am – 6pm Mondays to Fridays and 9am to 5pm Saturdays to minimise noise disturbance to the adjoining residential property.

Bin servicing via Wyloo Lane should also be limited to 7am to 6pm Monday to Saturday to minimise noise impact to residents.

The above measures are considered reasonable to ensure compliance with the Regulations, and will be recommended as conditions should the application be approved.

g. Risk

All Council decisions are subject to risk assessment according to the City's Risk Framework.

Implications and comment will only be provided for the following assessed risks.

Customer Service / Project management / Environment : High and Extreme Risks

Finance / Personal Health and Safety : Medium, High and Extreme Risks

Nil

Comments

The proposed application for the Golden Bay Neighbourhood Centre has been the subject of thorough assessment in accordance with TPS2, the approved LDP and the State and Local Policy Framework, having regard to the comments received from the community and external State Government agencies along with the City's internal Teams during the consultation process.

Variations to the LDP and other standards such as land use, general distribution of uses around the site (other than the Service Station), design of the Thundelarra Drive Main Street and mall, and the parking shortfall proposed, are considered to be acceptable.

There are, however, two significant areas of concern:

Health Concerns (Benzene)

The proximity of the proposed Service Station to the two existing, operating, Child Care Centres is of concern from a public health perspective.

Whilst the City notes the Applicant's EIA proposing VR1 and VR2 emissions reduction, the City considers that the potential health impacts from fuel vapour, especially benzene, creates unacceptable risk to the local community, especially children, and out-weighs the planning merit of approving the Service Station in this location. Any risk, even a low risk, is considered to be unacceptable in this regard.

Air quality modelling has a number of areas of uncertainty, and consistent with its position on other Service Stations in proximity to Child Care Centres, and in the absence of modelling outcomes, the City considers a precautionary approach should be applied to avoid the risk of benzene exposure to children.

The proposed development is therefore considered to be incompatible with the nearby sensitive development in this locality and is not supported.

Traffic and Safety

The proposed access from Aurea Boulevard, and its potential implications for unacceptable queuing from the Warnbro Sound Avenue controlled intersection; along with a number of associated issues relating to traffic design and modelling concerns impacting the operation of the site (including swept path, blind aisles and Service Station stacking distances) will likely result in unacceptable impacts to vehicle movement, and to traffic and road networks in the locality.

The proposed development is also not supported on this basis.

Conclusion

It is therefore recommended that the Council adopt the Responsible Authority Report for the proposed Mixed Commercial Development which recommends that the MOJDAP refuse the application.

Voting Requirements

Simple Majority

Officer Recommendation

That Council **ADOPTS** the Responsible Authority Report for the proposed Mixed Commercial Development (Golden Bay Neighbourhood Centre) at Lot 622 (No.2) Aura Boulevard, Golden Bay, contained as Attachment 1 of the report required to be submitted to the Presiding Member of the Metro Outer Joint Development Assessment Panel (MOJDAP) pursuant to *Regulation 12 of the Planning and Development (Development Assessment Panels) Regulations 2011*, which recommends:

That the Metro Outer Joint Development Assessment Panel resolve to **REFUSE** Development Application reference DAP/23/02447 and the amended plans and supporting information received on 3 May 2023:

- Y DA001-DA003 - Perspective
- Y DA100 - Location and Survey Plan
- Y DA101 - Site Plan
- Y DA102 - Demolition Plan
- Y DA200 - Proposed Ground Floor Plan
- Y DA400 - Proposed Elevations - Streetside
- Y DA401 - Proposed Elevations - Internal
- Y DA900 - Proposed Signage Schedule
- Y DA901 - DA902 -Material Schedule
- Y DA905 - Pedestrian Movement Diagram
- Y Landscape Concept Plan
- Y Landscape Piazza Concept Plan
- Y Development Application Report
- Y Traffic Impact Assessment (May 2023)

- Y Environmental Noise Assessment (Acoustic Report) (28 April 2023)
- Y Emissions Impact Assessment (EIA) (March 2023)

in accordance with the Metropolitan Region Scheme and Clause 68 of the amended Planning and Development (Local Planning Schemes) Regulations 2015 and the provisions of clause 68(2)(c) of the Deemed Provisions of the City of Rockingham Town Planning Scheme No.2, for the following reasons:

1. The proposed development is not considered compatible with sensitive land uses in the locality, in particular, to the two Child Care Centres located in immediate proximity to the proposed Service Station, where the proposal presents an unacceptable health risk to children from benzene exposure.
2. The proposed Aurea Boulevard crossover is inconsistent with the approved Local Development Plan for the Golden Bay Neighbourhood Centre, and will likely result in an unacceptable risk of traffic accidents given the proximity of the crossover to the Warnbro Sound Avenue/Aurea Boulevard signalised intersection; and the proposed crossover being immediately adjacent to the start of the left turn slip lane.
3. The amended Transport Impact Assessment does not adequately address on-site design issues including swept path, blind aisles and Service Station stacking distances.

Committee Recommendation

That Council **ADOPTS** the Responsible Authority Report for the proposed Mixed Commercial Development (Golden Bay Neighbourhood Centre) at Lot 622 (No.2) Aura Boulevard, Golden Bay, contained as Attachment 1 of the report required to be submitted to the Presiding Member of the Metro Outer Joint Development Assessment Panel (MOJDAP) pursuant to *Regulation 12 of the Planning and Development (Development Assessment Panels) Regulations 2011*, which recommends:

That the Metro Outer Joint Development Assessment Panel resolve to **REFUSE** Development Application reference DAP/23/02447 and the amended plans and supporting information received on 3 May 2023:

- Y DA001-DA003 - Perspective
- Y DA100 - Location and Survey Plan
- Y DA101 - Site Plan
- Y DA102 - Demolition Plan
- Y DA200 - Proposed Ground Floor Plan
- Y DA400 - Proposed Elevations - Streetside
- Y DA401 - Proposed Elevations - Internal
- Y DA900 - Proposed Signage Schedule
- Y DA901 - DA902 -Material Schedule
- Y DA905 - Pedestrian Movement Diagram
- Y Landscape Concept Plan
- Y Landscape Piazza Concept Plan
- Y Development Application Report
- Y Traffic Impact Assessment (May 2023)
- Y Environmental Noise Assessment (Acoustic Report) (28 April 2023)
- Y Emissions Impact Assessment (EIA) (March 2023)

in accordance with the Metropolitan Region Scheme and Clause 68 of the amended Planning and Development (Local Planning Schemes) Regulations 2015 and the provisions of clause 68(2)(c) of the Deemed Provisions of the City of Rockingham Town Planning Scheme No.2, for the following reasons:

1. The proposed development is not considered compatible with sensitive land uses in the locality, in particular, to the two Child Care Centres located in immediate proximity to the proposed Service Station, where the proposal presents an unacceptable health risk to children from benzene exposure.
2. The proposed Aurea Boulevard crossover is inconsistent with the approved Local Development Plan for the Golden Bay Neighbourhood Centre, and will likely result in an unacceptable risk of traffic accidents given the proximity of the crossover to the Warnbro

Sound Avenue/Aurea Boulevard signalised intersection; and the proposed crossover being immediately adjacent to the start of the left turn slip lane.

3. The amended Transport Impact Assessment does not adequately address on-site design issues including swept path, blind aisles and Service Station stacking distances.

Committee Voting (Carried) - 6/0

The Committee's Reason for Varying the Officer's Recommendation

Not Applicable

Implications of the Changes to the Officer's Recommendation

Not Applicable

Recommended Conditions if the MOJDAP decides to grant Development Approval

JOINT DEVELOPMENT ASSESSMENT PANEL APPLICATION – PROPOSED MIXED COMMERCIAL DEVELOPMENT (GOLDEN BAY NEIGHBOURHOOD CENTRE) – LOT 622 (No.2) AUREA BOULEVARD, GOLDEN BAY

The following conditions of Development Approval are provided by the City 'without prejudice' to the Council's refusal recommendation provided in the RAR, should the Metro Outer Joint Development Assessment Panel (MOJDAP) decide to grant Development Approval. For clarity, both the Council and City recommendation is to refuse the Development Application for the reasons outlined in the RAR.

The recommended conditions are provided below:

That the Metro Outer Joint Development Assessment Panel resolves to:

Approve DAP Application reference DAP/23/02447 accompanying plans and the amended plans and supporting information received on 3 May 2023:

- DA001-DA003 – Perspective
- DA100 – Location and Survey Plan
- DA101 – Site Plan
- DA102 – Demolition Plan
- DA200 – Proposed Ground Floor Plan
- DA400 – Proposed Elevations – Streetside
- DA401 – Proposed Elevations – Internal
- DA900 Proposed Signage Schedule
- DA901 – DA902 – Material Schedule
- DA905 – Pedestrian Movement Diagram
- Landscape Concept Plan
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- Development Application Report
- Traffic Impact Assessment (May 2023)
- Environmental Noise Assessment (Acoustic Report) (28 April 2023)
- Emissions Impact Assessment (EIA) (March 2023)

in accordance with Clause 68 of the Planning and Development (Local Planning Schemes) Regulations 2015, subject to the following conditions:

Conditions

1. This decision constitutes planning approval only, and is valid for a period of 4 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.
2. Prior to applying for a Building Permit, a Construction Management Plan (CMP) is to be submitted to and approved by the City of Rockingham addressing but not limited to:
 - (i) Hours of construction;
 - (ii) Temporary fencing;
 - (iii) Traffic management including a Traffic Management Plan addressing site access, egress and parking arrangement for staff and contractors;
 - (iv) Management of vibration and dust; and
 - (v) Management of construction noise and other site generated noise.

3. Prior to applying for a Building Permit, a Stormwater Management Plan must be prepared by a suitably qualified engineering consultant showing how stormwater will be contained on-site, including with specific provision for the Service Station. Those plans must be submitted to the City of Rockingham and DWER for approval. All stormwater generated by the development must be managed in accordance with Planning Policy 3.4.3 - Urban Water Management to the satisfaction of the City of Rockingham. The approved plans must be implemented and all works must be maintained for the duration of the development.
4. Prior to applying for a Building Permit, the Applicant must submit fully detailed civil engineering drawings showing the various footpaths, crossovers and car parking embayments to be adopted across the entire development site and adjoining road reserves, for review and approval by the City of Rockingham. Construction works in accordance with approved civil drawings are to be completed prior to occupation of the development, at the landowner's cost to the satisfaction of the City of Rockingham.
5. Prior to applying for a Building Permit, a Landscaping Plan must be prepared and include the following detail to the satisfaction of the City of Rockingham:
 - (i) The location, number and type of existing and proposed trees and shrubs (including street trees, shade trees within the car parking areas, and planting within verge areas), including calculations for the landscaping area;
 - (ii) Any lawns to be established and areas to be mulched;
 - (iii) Those areas to be reticulated or irrigated;
 - (iv) Proposed upgrading to landscaping, paving and reticulation of the street setback area and all verge areas;
 - (v) Protection and enhancement of existing vegetation within the verge areas of Warnbro Sound Avenue and Aurea Boulevard;
 - (vi) Detailed landscape, irrigation, lighting and street furniture plans; and
 - (vii) The paving material used for the footpaths shall be carried across driveways in order to maintain the visual continuity of the pedestrian network and aid pedestrian legibility.

The landscaping, paving and reticulation must be completed prior to the occupation of the development, and must be maintained at all times to the satisfaction of the City of Rockingham for the duration of the development.
6. Prior to occupation of the development, car parking areas must:
 - (i) provide a minimum of 148 car parking spaces, including 4 parking spaces within the Thundelarra Drive road reserve adjoining the development;
 - (ii) be designed, constructed, sealed, kerbed, drained and marked in accordance with User Class 3A of Australian/New Zealand Standard AS/NZS 2890.1:2004, Parking facilities, Part 1: Off-street car parking;
 - (iii) provide 7 car parking space(s) dedicated to people with disabilities, which are designed, constructed, sealed, kerbed, drained and marked in accordance with Australian/New Zealand Standard AS/NZS 2890.6:2009, Parking facilities, Part 6: Off-street parking for people with disabilities and which are linked to the main entrance of the development by a continuous accessible path of travel designed and constructed in accordance with Australian Standard AS 1428.1—2009, Design for access and mobility, Part 1: General Requirements for access—New building work;
 - (iv) be constructed, sealed, kerbed, drained and marked prior to the development being occupied and maintained thereafter; and
 - (v) comply with the above requirements for the duration of the development.
7. The Environmental Noise Assessment prepared by Lloyd George Acoustics dated 28 April 2023 (ref: 22117749-01A), shall be implemented in the design, construction and ongoing

operation of the development at all times to the satisfaction of the City of Rockingham, including but not limited to the following requirements:

- (i) The Supermarket loading bay to be screened as follows:
 - (a) A 3.0m acoustic screen wall to be constructed on the northern side of the Supermarket loading bay, and extended the length of the loading bay, of solid construction (no gaps) and of material with a minimum surface mass of 15kg/m².
 - (b) The design and finish of the screen wall to be designed, coloured and articulated to provide an attractive appearance to Wyloo Lane, to the satisfaction of the City of Rockingham.
 - (c) The loading bay overhead (roof) structure to extend at least 4m across the loading bay and be lined with an absorptive material such as anticon insulation. No gaps shall exist between the overhead section and the vertical acoustic screen wall.
 - (ii) A solid screen wall to be constructed in the vicinity of the Liquor Store bin area fronting Warnbro Sound Avenue, of minimum height 1.6m and of minimum surface mass of 4kg/m², and be free of gaps, as shown on the approved plans. The screening to be of a masonry construction and of a suitable design complementing the overall development, as illustrated in the Material Schedule, to ensure an attractive appearance to Warnbro Sound Avenue and internal to the site.
 - (iii) the to the satisfaction of the City of Rockingham, having regard to the high level of visibility of the screen wall to Warnbro Sound Avenue.
 - (iv) Acoustic screening around the northern and western edges of the Supermarket to airconditioning and refrigeration equipment in order to protect existing and future residential development from noise, in accordance with the *Environmental Protection (Noise) Regulations 1997*.
 - (v) Use of broadband type reversing alarms for delivery vehicles rather than standard tonal alerts.
 - (vi) Delivery vehicles are not allowed to idle within the loading bays, and are required to be switched off during loading and unloading periods.
 - (vii) Bin servicing via Wyloo Lane shall occur only between 7am and 6pm Mondays to Fridays and 9am to 5pm on Saturdays; and 7am to 7pm Mondays to Saturdays otherwise. No bin servicing shall occur on a Sunday.
 - (viii) Any external music or the like shall be low level and inaudible at residences;
 - (ix) Section 5 recommendations in the Environmental Noise Assessment for mechanical plant shall be implemented.
8. Deliveries via Wyloo Lane shall only occur between 6am to 6pm Monday to Friday, and 9am to 5pm on Saturdays. No deliveries are permitted on Sundays. Signage shall be positioned at the entry to the site from Wyloo Lane specifying delivery times, to minimise adverse impacts on the amenity of the adjacent residence(s);
9. Prior to the occupation of the development, a Final Acoustic Assessment must be prepared and provided to the City of Rockingham which demonstrates to City's satisfaction, that the completed development complies with the *Environmental Protection (Noise) Regulations 1997*.

The Final Acoustic Assessment must include the following information:

- (i) Noise sources compared with the assigned noise levels as stated in the *Environmental Protection (Noise) Regulations 1997*, when the noise is received at the nearest "noise sensitive premises" and surrounding residential area;
- (ii) Tonality, modulation and impulsiveness of noise sources; and
- (iii) Confirmation of the implementation of noise attenuation measures.

Any further works must be carried out in accordance with the Acoustic Report and implemented as such for the duration of the development.

10. Prior to applying for a Building Permit, a Waste Management Plan must be prepared and include the following detail:
 - (i) For the Supermarket and specialty shops, include waste generation quantities, number, volume and type of bins, proposed collection frequency and cleaning and maintenance of the bin store. With at least one food business likely within the specialty shops, any liquid waste storage (eg. used oil) to also be addressed;
 - (ii) For all premises within the development:
 - (a) the location of bin storage areas and bin collection areas;
 - (b) the number, volume and type of bins, and the type of waste to be placed in the bins;
 - (c) management of the bins and the bin storage areas, including cleaning, rotation and moving bins to and from the bin collection areas;
 - (d) frequency of bin collections;
 - (e) regular rubbish collection patrols; and
 - (f) demonstration of compliance with the Acoustic Report prepared by Lloyd George Acoustics.

All works must be carried out in accordance with the Waste Management Plan and maintained at all times, for the duration of development.

11. Prior to occupation of the development, public rubbish bin facilities must be provided adjacent to the entry of the Supermarket premises so as to be convenient to pedestrians, but positioned so as not to obstruct pedestrian movements, to the satisfaction of the City of Rockingham. Public rubbish bin facilities must be emptied daily, continuously maintained in good condition and the surrounding area kept free of litter thereafter for the duration of the development.
12. Prior to the occupation of the development, any damage to existing City infrastructure within the road reservation including kerb, road pavement, turf, irrigation, bollards and footpaths is to be repaired to the satisfaction of the City of Rockingham, at the cost of the Applicant.
13. A pedestrian refuge being installed within the Thundelarra Drive crossover to assist pedestrian safety given the extended width required for this crossover to service the development.
14. Prior to the occupation of the development, an illumination report must be prepared which demonstrates to the satisfaction of the City of Rockingham, that the completed development complies with the requirements of Australian Standard AS/NZS 4282:2019 - *Control of the obtrusive effects of outdoor lighting*, and manages light spill to existing and future adjoining/nearby residential lots to the north, west and north-west of the site.
15. Prior to occupation of the development, fifteen (15) short-term bicycle parking spaces must be provided for the development. The bicycle parking spaces must be designed in accordance with AS2890.3—1993, *Parking facilities, Part 3: Bicycle parking facilities* and located within the development to the satisfaction of the City of Rockingham.
16. Prior to the occupation of the development, In accordance with Planning Policy 3.3.25 Percent for Public Art – Private Developer Contribution, the developer shall make a contribution to the City of Rockingham equal to 1% of the total construction value for the provision of public art, being \$110,000 in value.
17. Earthworks over the site associated with the development must be stabilised to prevent sand or dust blowing off the site, and appropriate measures must be implemented within the time and in the manner directed by the City of Rockingham in the event that sand or dust is blown from the site.
18. Bulk fuel deliveries to be limited to 7am – 7pm Monday to Saturday.

19. All plant and roof equipment and other external fixtures must be designed to be located away from public view/or screened for the life of the development, to the satisfaction of the City of Rockingham.
20. The mall area located between the Supermarket and specialty shops shall be maintained in a clean, tidy and sanitary condition with routine and monthly high pressure water cleaning to prevent any accumulations of litter, grime or oily deposits, to the satisfaction of the City of Rockingham.
21. Prior to applying for a Building Permit, the applicant must demonstrate to the satisfaction of the City of Rockingham that ground floor glazing of the Supermarket fronting Thundelarra Drive, along with the Specialty Shops facing Thundelarra Drive and all windows facing the mall, have a minimum visible light transmission rate of at least 79% and a maximum visible reflectivity rate of 9% in order ensure that a commercial, interactive frontage is available to the development from Thundelarra Drive and the mall. The glazing must be thereafter be installed and maintained to the satisfaction of the City of Rockingham for the duration of the development.
22. Entries and window frontages of the Supermarket and specialty shop tenancies facing Thundelarra Drive and the mall must contain clear, transparent glass, and not be covered, closed or screened off (including by means of dark or other tinting, shutters, curtains, blinds, posters, paint, roller doors or similar), to ensure that visibility and a commercial, interactive frontage is available between the development and Thundelarra Drive at all times.
23. The internal layout of the Supermarket shall ensure Supermarket aisles do not extend to the windows fronting Thundelarra Drive, and shelving and storage be located to ensure no obstruction of windows occurs, in order to maintain the view between Thundelarra Drive and the Supermarket tenancy.
24. Trolley storage shall occur within the Supermarket tenancy or within designated trolley parking bays within the carparking area, and not within the mall or along the Thundelarra Drive frontage.
25. The awning in front of the specialty shops on Thundelarra Drive shall be extended south by 3.5m to provide weather protection for the bike parking area.
26. Bollards must be installed at both ends of the mall to ensure no vehicle access along the mall. All other parking bays to contain wheel stops to prevent vegetation damage, and prevent encroachment to the pedestrian movement network.
27. The proposed Service Station must incorporate Stage 1 and Stage 2 (VR1 and VR2) Vapour Recovery Systems (as agreed by the Applicant) which are to be installed and operated from the commencement of operation of the Service Station, and for the duration of its operation. These systems are to be operated at all times, and under a regular program of inspection and maintenance for the life of the development.
28. Following commencement of the use, the applicant must validate modelling in consultation with Department of Health criteria, through a period of 12 months monitoring to demonstrate compliance with National Environmental Protection Measure (NEPM) at or below criteria for benzene. This report must be submitted to the satisfaction of the City of Rockingham.
29. The existing, redundant steel frame and slab on site being removed prior to issue of a Building Permit.
30. An Odour Management Plan for the Fast Food Outlets shall be prepared for the approval of the City's Environmental Health Services prior to issue of a Building Permit, demonstrating management of odour impact on surrounding existing and future residential properties.
31. Prior to applying for a Building Permit, a Sign Strategy must be prepared which must include the information required by Planning Policy 3.3.1: Control of Advertisements, to the satisfaction of the City of Rockingham, and it must thereafter be implemented for the duration of the development.

Advice Notes

1. The disposal of wastewater into the Water Corporation's sewerage system must be with the approval of the Water Corporation; the applicant and owner should liaise with the Water Corporation in this regard.
2. The development must comply with the *Food Act 2008*, the *Food Safety Standards* and Chapter 3 of the *Australian New Zealand Food Standards Code (Australia Only)*; the applicant and owner should liaise with the City's Health Services in this regard.
3. A Building Permit must be obtained for the proposed works prior to commencement of site works. The applicant and owner should liaise with the City's Building Services in this regard.
4. The development must comply with the *Environmental Protection (Noise) Regulations 1997*; contact the City's Health Services for information on confirming requirements.
5. All works in the road reserve, including construction of a crossover, planting of street trees, and other streetscape works and works to the road carriageway must be to the specifications of the City of Rockingham; the applicant should liaise with the City of Rockingham's Engineering Services in this regard.
6. In regards to Condition 2(iv), Dust Management is to be in accordance with the *Department of Environment and Conservation Guideline: A guideline for managing the impacts of dust and associated contaminants from land development sites, contaminated sites remediation and other related activities*.
7. The Liquor Store is to comply with the Liquor Control Act 1988, all relevant approvals and licenses are to be sought prior to the occupation of the development in conjunction with the Department of Local Government, Sport and Cultural Industries (DLGSCI).
8. A site cannot store or sell fuel without first obtaining a licence from the Department of Mines Industry Regulation and Safety (DMIRS), which requires strict criteria to be met and assessed as part of the process regulated under the *Dangerous Goods Safety Act 2005*.
9. A separate Development Approval may be required for the occupation of any tenancy not specified in this approval, prior to the occupation of the tenancy. The City's Planning Services should be contacted to determine whether development approval is required.
10. Where a Development Approval has so lapsed, no development shall be carried out without further approval having first been sought and obtained, unless the Applicant has applied and obtained Development Assessment Panel approval to extend the approval term under regulation 17(1)(a) of the *Planning and Development (Development Assessment Panels) Regulations 2011*.