



## Metro Outer Development Assessment Panel Agenda

**Meeting Date and Time:** Tuesday, 12 March 2024; 9:30am  
**Meeting Number:** MODAP/3  
**Meeting Venue:** 140 William Street, Perth  
**Public Observing:** via Electronic Means

To connect to the meeting, please click here: [MODAP/3 - 14 Mar 2024 - City of Rockingham](#)

*This DAP meeting will be live streamed open to the public rather than requiring attendance in person.*

*This document was updated on 7 March 2024 to include attachments to the RAR that were provided after the original publication of the agenda.*

### PART A – INTRODUCTION

1. Opening of Meeting, Welcome and Acknowledgement
2. Apologies
3. Members on Leave of Absence
4. Noting of Minutes

### PART B – CITY OF ROCKINGHAM

1. Declarations of Due Consideration
2. Disclosure of Interests
3. Form 1 DAP Applications
  - 3.1 Lot 193 and Lot 194 (No.4 and 6) Malibu Road, Safety Bay – Child Care Premises – DAP/23/02487
4. Form 2 DAP Applications
5. Section 31 SAT Reconsiderations
  - 5.1 Lot 622 (No.2) Aurea Boulevard, Golden Bay – Proposed mixed commercial development (Golden Bay Neighbourhood Centre) – DAP/23/02447

### PART C – OTHER BUSINESS

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

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



## **ATTENDANCE**

### **DAP Members**

Eugene Koltasz (Presiding Member)

Karen Hyde (Deputy Presiding Member)

John Syme (Specialist Member)

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

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

### **Minute Secretary**

Claire Ortlepp (DAP Secretariat)

### **Officers in Attendance**

Zoe Hendry (DAP Secretariat)





## **PART A – INTRODUCTION**

### **1. Opening of Meeting, Welcome and Acknowledgement**

The 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 recorded and livestreamed on the DAP website in accordance with regulation 40(2A) of the *Planning and Development (Development Assessment Panels) Regulations 2011*. Members are reminded to announce their name and title prior to speaking.

### **2. Apologies**

Nil.

### **3. Members on Leave of Absence**

Nil.

### **4. Noting of Minutes**

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



## **PART B – CITY OF ROCKINGHAM**

### **1. 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.

### **2. Disclosure of Interests**

### **3. Form 1 DAP Applications**

- 3.1 Lot 193 and Lot 194 (No.4 and 6) Malibu Road, Safety Bay – Child Care Premises – DAP/23/02487

### **4. Form 2 DAP Applications**

Nil.

### **5. Section 31 SAT Reconsiderations**

- 5.1 Lot 622 (No.2) Aurea Boulevard, Golden Bay – Proposed mixed commercial development (Golden Bay Neighbourhood Centre) – DAP/23/02447

## LOT 193 AND 194 (NO. 4 AND 6) MALIBU ROAD, SAFETY BAY – CHILD CARE PREMISES

### Form 1 – Responsible Authority Report (Regulation 12)

<b>DAP Name:</b>	Metro Outer JDAP	
<b>Local Government Area:</b>	City of Rockingham	
<b>Applicant:</b>	Sam Bowers/ Rowe Group	
<b>Owner:</b>	M Tsai, B Xiong, Zhang & Li Property Trust, Xiong & Tsai Property Trust	
<b>Value of Development:</b>	\$2 million <input type="checkbox"/> Mandatory (Regulation 5) <input checked="" type="checkbox"/> Opt In (Regulation 6)	
<b>Responsible Authority:</b>	City of Rockingham	
<b>Authorising Officer:</b>	Manager Statutory Planning	
<b>LG Reference:</b>	DD020.2023.00000102	
<b>DAP File No:</b>	DAP/23/02487	
<b>Application Received Date:</b>	Original Proposal - 18 May 2023; Revised proposal- 19 September 2023	
<b>Report Due Date:</b>	4 March 2024	
<b>Application Statutory Process Timeframe:</b>	90 Days	
<b>Attachment(s):</b>	1. Development Plans (Revised proposal) 2. Development Application and Supporting Technical reports 3. Referral Agency Comments 4. Schedule of Submissions 5. Applicant response to Submissions 6. SLR Technical Advice	
<b>Is the Responsible Authority Recommendation the same as the Officer Recommendation?</b>	<input checked="" type="checkbox"/> Yes	Complete Responsible Authority Recommendation section
	<input type="checkbox"/> N/A	
	<input type="checkbox"/> No	Complete Responsible Authority and Officer Recommendation sections
	<input type="checkbox"/> No	Complete Responsible Authority and Officer Recommendation sections

### Responsible Authority Recommendation

That the Metro Outer Development Assessment Panel resolves to:

**REFUSE** DAP Application reference DAP/23/02487 and amended plans and supporting information received on 20 September 2023, 29 November 2023, 6 December 2023 and 25 January 2024:

- SK000; Rev G – Survey and Location Plan;
- SK100; Rev H – Proposed Site Plan and Landscaping;

- SK200; Rev G – Floor Plan and Elevations;
- SK301; Rev G – 3D Views;
- Development Application Report (19 September 2023);
- Development Application – Response to Requested Information (29 November 2023);
- Updated Traffic Impact Statement (27 November 2023);
- Environmental Acoustic Assessment (Acoustic Report) (September 2023);
- Response to Requested Information – Emissions Advice (November 2023);
- Emissions Impact Assessment (EIA) (January 2024);
- Waste Management Plan (15 September 2023).

in accordance with Clause 68(2)(c) of the *Planning and Development (Local Planning Schemes) Regulations 2015* and the Metropolitan Region Scheme, for the following reasons:

1. The proposed development is an unplanned and unanticipated development within the Residential Zone and is likely to have an adverse impact on the residential amenity of the adjacent residents associated with the noise impacts from the facility, traffic impacts, change in built form and character, increased fencing height and the intensity of the land use associated with 60 child care places.
2. The proposed development as a sensitive land use, is not compatible in the locality, due to being in immediate proximity of an existing Service Station, where the proposal presents an unacceptable health risk and amenity impact to children from benzene exposure.

### Reasons for Responsible Authority Recommendation

Council at its meeting held 27 February 2024 resolved not to adopt the Officer's recommendation and refuse the DAP for approval due to many objections and concerns from nearby residents. The motion to support the application was lost.

### Details: outline of development application

Region Scheme	Metropolitan Regional Scheme
Region Scheme - Zone/Reserve	Urban
Local Planning Scheme	City of Rockingham Town Planning Scheme No.2
Local Planning Scheme - Zone/Reserve	Residential Zone
Structure Plan/Precinct Plan	N/A
Structure Plan/Precinct Plan - Land Use Designation	N/A
Use Class and permissibility:	Child care Premises - A
Lot Size:	1014m <sup>2</sup>
Existing Land Use:	Vacant land
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:

### Site and Context

The subject site is located within the established residential area in Safety Bay and is currently vacant. An existing BP Service Station operates to the south east of the site, on the opposite side of Malibu Road at the intersection with Safety Bay Road. Opposite the site is undeveloped land that previously contained the Waikiki Hotel. This site is currently subject to an application for Development Approval for a mixed use commercial development, inclusive of a CCP on the Malibu Road frontage. The Waikiki Hotel development site is depicted below in Image 2.



1. Aerial Location Plan





2. Waikiki Hotel Development Site

Proposed Land Use	Child Care Premises
Proposed Net Lettable Area	
Proposed No. Storeys	1
Proposed No. Dwellings	N/A

### Background:

In August 2023, Council resolved to adopt the Responsible Authority Report (RAR) which recommended that the MOJDAP refuse the Development Application for the following reasons:

- *The proposed development is not compatible as a sensitive land use in the locality, in immediate proximity to an existing Service Station, where the proposal presents an unacceptable health risk to children from benzene exposure.*
- *The Applicant's Environmental Acoustic Assessment has not demonstrated compliance with the Environmental Protection (Noise) Regulations 1997.*
- *The proposed development does not comply with State Planning Policy 7.3 – Residential Design Codes (SPP7.3 Volume 1) and presents an unacceptable amenity impact to adjoining properties with respect to the height of the rear boundary wall.*

At its meeting held 4 September 2023, the application was deferred by the MOJDAP until on or before 15 March 2024. The application was deferred by the MOJDAP for the following reasons:

- To enable the applicant to respond to the City's recommended grounds of refusal; and
- To allow for consideration of revised plans which address the City's concerns.

This Report assesses the revised Development Application received by the City in response to the MOJDAP deferral motion.

### Revised Development Application

The revised proposal simply 'flips' the design such that the CCP building is now proposed on the eastern portion of the site and the car park/crossover access is now located on the western portion. Minor changes to the setback of the building to the northern neighbour are also proposed, to comply with *State Planning Policy 3.1 – Residential Design Codes (R-Codes)*. An updated Environmental Acoustic Assessment and Emissions Impact Assessment report have been provided based on the revised proposal and to address the recommended grounds of refusal on the initial Development Application.

All other aspects of the proposal are consistent with the initial proposal, as follows:

- Single storey building;
- 60 place CCP with 11 staff,
- Foyer and Reception area;
- 19 on-site car parking bays are proposed;
- Three (3) x Group Rooms catering for age groups 0-5 years as follows:
  - Group Room 1: 0-24 months (9 spaces);
  - Group Room 3: 36 months and over (39 spaces).
- Outdoor Play Area orientated toward the eastern side boundary and the Malibu Road frontage; and
- External bin store to the north-west of the building.

Vehicle access and egress is proposed via a new crossover at a revised location to the southern portion of the site from Malibu Road. The existing crossover is to be removed. Pedestrian access to the site will be via the existing pedestrian paths, along Malibu Road. Waste collection will occur on-street from Malibu Road.

The proposed hours of operation have not changed from the initial proposal, and are proposed to be 6:30am to 6:30pm on weekdays. No weekend operation is proposed.

The following reports and supporting material accompany the revised application:

- Development Application Report dated 19 September 2023;
- Development Plans dated September 2023 and November 2023;
- Emissions Impact Assessment (EIA) dated 25 January 2024;

- Transport Impact Statement (TIS) dated 19 September 2023;
- Environmental Acoustic Assessment (EAA) dated 19 September 2023; and
- Waste Management Plan dated 15 September 2023.

## **Legislation and Policy:**

### Legislation

Planning and Development Act 2005  
City of Rockingham Town Planning Scheme No. 2 (TPS2)

### State Government Policies

State Planning Policy 2.6 – State Coastal Planning  
State Planning Policy 4.1 – Industrial Interface (SPP4.1)  
State Planning Policy 7.0 – Design of the Built Environment (SPP7.0)  
State Planning Policy 7.3 – Residential Design Codes (SPP7.3)

### Draft Position Statements

Child Care Premises – November 2022

### Structure Plans/Activity Centre Plans

Not Applicable

### Local Policies

Planning Policy 3.3.5 - Child Care Premises (PP3.3.5)  
Planning Policy 3.3.14 – Bicycle Parking and End of Trip Facilities (PP3.3.14)

## **Consultation:**

### Public Consultation

The revised application was advertised for public comment, for a period of 28 days between 28 September 2023 and 26 October 2023, in the following manner:

- Correspondence was sent to owners and occupiers within 200m of the subject site, being the same consult area as the initial Development Application;
- The application was made available for public inspection at the City's Administration Offices and published on the City's website; and
- A sign was displayed on the property at the street frontage, advertising the proposal.

A total of 11 submissions were received at the conclusion of the advertising period. All submissions were in objection to the revised proposal. Two (2) submissions in objection were received from outside of the 200m consultation area and six (6) of the submissioners were also submissioners on the initial proposal. Figure 3 shows the distribution of responses within the 200m consultation area for the revised proposal.





3. Consultation map

The following table is a summary of the main comments raised from the submissions received:

### 1. Traffic and Pedestrian Movement

Concern was raised with the impact of increased traffic on the function of the roundabout at the intersection of Malibu Road and Safety Bay Road, creating an aggregate increase in traffic movements on Malibu Road.

Concern was also raised regarding traffic conflicts with the existing crossover at the Service Station opposite the revised CCP crossover location.

Previously, increased traffic on Safety Bay Road led to the installation of pedestrian islands in multiple locations to manage increased traffic load and pedestrian safety. Concerns was raised that the CCP will significantly further increase traffic load impact on both pedestrians and road users of Safety Bay and Malibu roads.

#### Applicant's Response:

*"The conclusion outlined in the updated Traffic Impact Statement (TIS) states that the proposed child care premises will not be adversely impact the existing local road network. In making this conclusion, the TIS has considered the existing service station and the future development at Lot 100."*

*With regards to traffic generation, the development is estimated to generate 47 vehicle movements during the peak hour. According to Austroads guidelines, the theoretical capacity of an urban road with no kerbside parking is 900 vehicles per hour (vph) in each direction or 1,800vph for a two-lane, two-way road. 47vph is less than 3% of the theoretical mid-block capacity of the road."*

City's Comment:

The City accepts the TIS which confirms that the proposed CCP is unlikely to have an adverse impact on traffic and can be accommodated within the existing capacity of the road network.

The revised location of the CCP crossover is considered to be acceptable, as it has reduced the risks associated with vehicle movements on the opposite site (former Waikiki Hotel site - Lot 100 Safety Bay Road).

## **2. Carpark Use and Design**

Concern that the proposed bitumen carpark would generate noise and increased heat radiation and reflection in summer.

Concern that the car park will be used outside of CCP hours by trespassers, beach goers and people attending public events at the foreshore area, creating further disturbances and security concerns.

Concern that the car park will be used for overflow parking and to cater for a parking shortfall associated with the adjoining redevelopment at the Waikiki Hotel site (Lot 100) outside of CCP operations.

Any carpark and building lighting will add additional light pollution and light intrusion. No details regarding drainage for the carpark has been provided.

Applicant's Response:

*"There is no evidence that different materials in the carpark would generate additional noise.*

*CCTV will be installed as part of the proposed development. The locations of the CCTV infrastructure will be confirmed at detailed design stage.*

*A Stormwater Management Plan will be prepared by a suitable qualified consultant at detailed design stage."*

City's Comment:

The City accepts the Applicant's response. Where appropriate, conditions can be included requiring the installation of monitored CCTV. As a further security measure, a condition requiring installation of a secure mechanical/automatic gate across the entry of the car park would ensure that the access was only available to clientele and staff during operating hours.

Parking associated with the Waikiki Hotel redevelopment is to be assessed as part of that particular Development Application. The car parking allocation for the CCP complies with the requirements of TPS2.

Stormwater management and lighting intrusion can be addressed through conditions of Development Approval.

## **3. Emissions from Cars**

Concern that the emissions report has focussed solely on the impact emissions would be upon the CCP, and not from the CCP and its vehicles on neighbouring properties.

Concern was raised noting that the behaviour of clients to the CCP could be to leave vehicles running for a period of time whilst managing children into vehicles, increasing the car emissions and impact on surrounding residents.

Applicant's Response:

*"The NSW RTA (now RMS) Guide to Traffic Generating Developments indicates that the average length of stay for vehicles at all child care centre types is 6.8 minutes. On this basis, the vehicles visiting the proposed development will not be left running for an extended period of time, and therefore, will not adversely impact any neighbouring properties from an emissions perspective.*

*There is no evidence that vehicles visiting the proposed development will generate significant emissions to impact on the adjoining properties. No further assessment is required."*

City's Comment:

The City concurs with the Applicant. Furthermore, the EIA has assessed the impacts of the emission of the 'industrial activity' (the BP Service Station) on the sensitive land use receptor, being the proposed CCP. Assessment of vehicle exhaust emissions on neighbouring properties associated with car parking and vehicle movements for the CPP is not required. Vehicle movements and car parking numbers are compliant with the requirements for a CCP.

#### **4. Emissions from Service Station**

Concern was raised with the health impact of emissions from the Service Station located across the road and within the prescribed 50m buffer distance. There is no change with the revised proposal.

Applicant's Response:

*"The conclusions outlined in the updated Emissions Impact Assessment (EIA) state that the pollutant emissions predicted at the proposed child care premises are less than the exposure limits in ambient air. Therefore, the risk of exposure at this sensitive receptor location is low.*

City's Comment:

The City has assessed the revised EIA submitted in support of the revised proposal. Further detailed discussion is contained within this Report under 'Policy' (State Planning Policy State Planning Policy 4.1 - Industrial Interface).

#### **5. Noise**

Concern was raised regarding noise impacts to surrounding residential uses. Particularly:

- Children playing and screaming;
- Car door noise;
- Arrival of staff and clients prior to opening times;
- Cleaning staff accessing the site outside of operating hours; and
- Aggregate noise impacts from the adjoining CCP as part of the Waikiki Hotel site development.

Concern was raised regarding the effectiveness of proposed fencing as a noise mitigation measure.

Applicant's Response:

*"The conclusions outlined in the Environmental Acoustic Assessment (EAA) state that the proposed child care premises complies with all the relevant noise requirements. Therefore, the noise generated by the proposed development will not adversely impact the existing amenity of neighbouring properties.*

*The proposed is compliant with the relevant noise requirements at all times of the day, as outlined within the EAA. Therefore, the proposed development will not adversely impact the existing amenity of neighbouring properties.*

*The noise levels were assessed individually for the following reasons:*

- *Noise levels are logarithmic and given the resultant levels, one does not contribute to the other.*
- *One of the main noise sources being the outdoor play is not present during the night period, which is the critical period for the other noise sources.*
- *If you combined the car park noise with the noise generated from the car door, the noise from the car door closing would no longer be impulsive and complies with the assigned night period noise level.*

*Following a review of the Environmental Noise Assessment prepared by Lloyd George Acoustics for the proposed development at Lot 100, Herring Storer confirmed that the cumulative noise from both child care centres received at neighbouring residences would not result in an exceedance of the assigned noise levels. Therefore, both proposed child care centres are compliant with the requirements of the Environmental Protection (Noise) Regulations 1997(EPNR). Furthermore, the flipped design of the proposed development also results in an improved outcome from an acoustic perspective.*

*The proposed development is consistent with the hours of operation restrictions outlined in the City's Local Planning Policy 3.3.5 - Child Care Premises. The issue of cleaners attending the childcare centre after closing or right before close, is not generally considered material in the noise emissions reporting. This is because typically for a service of this size, it will be only 1 - 2 maximum cleaners attending after hours and all cleaning activity will be undertaken inside which will not adversely impact any of the surrounding residents."*

**City's Comment:**

The City accepts the submitted EAA and considers that, through conditions of Development Approval, the mitigation measures recommended within the EAA can effectively achieve compliance with the EPNR. This includes the installation of acoustic fencing, the requirement for an Operational Noise Management Plan to be implemented on the site for the daily management of car parking areas, restricting activity and outdoor play areas before 7am, mechanical plant operations and servicing/deliveries of the site as referred to in the EAA.

Noise associated with the Waikiki Hotel redevelopment is to be assessed as part of that particular Development Application. Compliance with EPNR is to be considered under the assessment process for that particular development, and not the assessment of this CCP proposal.

## **6. Waste Storage and Odour**

Concern that waste storage is in close proximity to residential areas, and the volume of waste will have the potential for odour and flies to affect adjoining residents.

A query was raised seeking clarification on how the waste volumes have been calculated.

Applicant's Response:

*"As outlined in the Waste Management Plan (WMP), the anticipated volume of refuse and recyclables is based on the floor area (m<sup>2</sup>) of the Activity Rooms, Cot Room, Kitchen, Reception and Staff Room at the Childcare Centre – 273m<sup>2</sup> (the portion of the building which generates waste). The entire building area is approximately 418m<sup>2</sup>*

*The waste generated by the proposed development will be managed in accordance with the WMP. The bin storage area will be maintained and cleaned as needed to ensure there are no odours or pests.*

*Further to the above, waste generation in childcare centres is a common aspect across all types of operations that are adjoining or nearby households. The WMP ensures that waste is handled responsibly and disposed of in a way that considers the expected generation of waste. There is a commitment by the developer and operator to adopt appropriate management strategies to help minimize any noise, odours and disturbances associated with this activity."*

City's Comment:

The City accepts the Applicant's response. The WMP has been reviewed and is acceptable. Conditions can be included in a Development Approval to ensure the WMP is implemented.

**7. Location Suitability**

The proposed development is entirely within an area zoned residential, and is not consistent with, and does not improve the amenity of the area.

A proposal for another CCP on the opposite side of the site on Malibu Road on a Commercial zoned lot is further away from the Service Station and residential homes.

Applicant's Response:

*"A 'child care premises' is a discretionary use in the 'Residential' Zone under the provisions of the City's Local Planning Scheme No. 2 (LPS 2). The proposed development does not adversely impact the existing residential amenity of the locality.*

*The proposed development is consistent with Policy Statement 4.1 'Location' outlined in the City's Local Planning Policy 3.3.5 - Child Care Premises because it is appropriately located to provide additional child care places/services required in the Safety Bay/Shoalwater catchment area."*

City's Comment:

A CCP is an 'A' land use within the 'Residential' Zone under TPS2, meaning that the land use is not permitted unless the local government has exercised its discretion by granting Development Approval after advertising the proposal. Whilst the local planning framework allows for the proposal to be considered, the proposal must demonstrate compliance with the relevant TPS2 and Policy provisions. The proposal has demonstrated that through the revised design the amenity impacts have been addressed appropriately and through the imposition of conditions, any impacts can be effectively managed.

**8. Local Need**

Concern that the cumulative impacts of this proposal and the proposed development of the adjoining Waikiki Hotel Site (Lot 100 Safety by Road) will impact the same residential areas.

The two proposals should not be considered independently or without consideration of the combined effect. To consider each in isolation would be negligent of Council and the DAP.

Concern that the demand expressed in the application is overstated, and does not take into account the known future competing developments, and increased number of CCP places available.

Applicant's Response:

*"The proposed development is consistent with Policy Statement 4.1 'Location' outlined in the City's Local Planning Policy 3.3.5 - Child Care Premises because it is appropriately located to provide additional child care places/services required in the Safety Bay/Shoalwater catchment area. Refer page 4 in our submission lodged with the City on 29 November 2023 for further information.*

*In addition to the points raised in our submission with the City, we recognise the recent productivity commission report undertaken by the Federal Government which highlights accessibility issues nationwide to child care services. The report encourages further places to be created to allow children aged 0-5 at least 30 hours of care a week to allow parents to go back into the workforce. In this regard, there is continued demand for new child care centres in this locality."*

City's Comment:

The City accepts the Applicant's response, and notes that the commercial viability of the development rests with the owner. Further detailed discussion is contained within this Report under 'Policy' (*Planning Policy No.3.3.5 - Child Care Premises*).

## **9. Residential Design Codes**

The proposed zero setback line and the location of the carpark and play areas are imposing on adjoining residential living areas and bedrooms.

Applicant's Response:

*"The proposed child care premises directly abuts the north western boundary of the subject site for a length of only 11.85m. This is compliant with the Residential Design Codes (R-Codes) as the entire length of this boundary is 40.02m. A single house could be constructed at the subject site in the same manner and not require Development Approval.*

*The proposed development is a single storey building and is compliant with the relevant setback and solar access requirements of the R-Codes. Therefore, the proposed development will not prohibit solar access onto the neighbouring properties."*

City's Comment:

The revised design complies with the requirements for setbacks in TPS2 and the design principles of the R-Codes. The revised design has addressed the reasons of refusal including the lot boundary setback and height of wall to the adjoining residential property. Further detailed discussion is contained within this Report under 'Policy' (*State Planning Policy State Planning Policy 7.3- Residential Design Codes*).

## **10. Property Values and Amenity**

Concern that the proposal, introducing a commercial use into a residential area, will negatively affect property prices.

Concern that the garrison fence along Malibu Road is an industrial fence and not in keeping with the residential streetscape amenity.

Applicant's Response:

*"There is no evidence that the proposed child care premises will devalue the existing residential area. Further, there is no evidence to suggest that the proposed child care premises will adversely impact the 'social and health' outcomes of residents in the locality. Child care is considered an essential community service and encourages young families to consider this area for purchasing a home, which will then add to the social fabric by bringing a more diverse range of families and households to the locality.*

*The proposed design of the child care premises is consistent and harmonious with the surrounding residential development."*

City's Comment:

The impact of the proposed CCP development on property values are not a relevant planning consideration.

The fencing design is appropriate to provide a safety barrier to the premises for young children, whilst providing an open and transparent frontage. Landscaping within the verge and frontage will improve the streetscape.

Referrals/consultation with Government/Service Agencies

The following Agencies were consulted on the application:

- Department of Health (DoH); and
- Department of Water and Environmental Regulation (DWER).

The revised development application was not referred to DPIRD as their comments on the initial proposal were of no impact to the assessment or determination.

Comments received from these Agencies are detailed as follows:

1. Department of Health (DoH)
<p>The DoH initial response stated the following:</p> <p><i>"The boundary of the proposed CCP is &gt;50m from the nearest emission source (fuel bowser) of the service station located to the southeast of the proposed development. Separation distances are based on boundary-to-boundary distances to allow an emission source to be moved within the industrial site (service station). Should the CCP be approved, any future plans to move the fuel bowzers within the service station lot will need to consider the proximity to the CCP to achieve an appropriate separation distance"</i></p> <p>A further response was provided to the City clarifying the advice above. DoH advised the following:</p> <p><i>"DoH do not accept the emissions report and it was not considered in our response. Our advice is for the 50m separation distance but we're providing room for a decision to be made on what was an acceptable starting point. This could be source to boundary if the source is not going to move. If you can't guarantee the source won't move then boundary to boundary is the safest option."</i></p>
<u>Applicant's Response:</u>

*"The DoH has applied a boundary-to-boundary approach for the measured separation distance from the service station to the Site, the correct method (urban) is the distance from the boundary of the industrial activity, which is the closest refuelling bowser, to that of the boundary of the sensitive receptor, which in this case is the Site.*

*The Applicant acknowledges and respects the DoH's role in public health. The DoH have previously stated in other applications where service stations were within the vicinity of an application activity, that they have no expertise in relation to service station emissions and subsequent dispersion modelling emissions assessments."*

**City's Comment:**

The City queried the initial advice received from DoH, seeking clarity on the setback distance measurement. The City queried where the setback distance measured by DoH had been taken from and was this the closest emission point, being the vapour vent located closest to the Malibu Road frontage. The DoH could not confirm this or their advice.

The City cannot confirm or predict if the Service Station will expand or move emission sources on the site. The separation distance, as outlined in the *Environment Protection Authority (EPA) 'Guidance Statement 3 Separation Distances between Industrial and Sensitive Land Uses (2005) (GS3)*, is not achieved, however, the City accepts the methodology used in the applicant's updated EIA, on advice of the City's engaged emissions specialist SLR. Further detailed discussion is contained within this Report under Policy (*State Planning Policy State Planning Policy 4.1 - Industrial Interface*) in the 'Implications to Consider' Section.

## **2. Department of Water and Environmental Regulation (DWER)**

### **Stormwater Management**

*"DWER recommends the proposed CCP car park stormwater drainage system be designed, constructed and managed in accordance with the Stormwater Management Manual for Western Australia (DWER, 2022) and Decision Process for Stormwater Management in Western Australia (DWER, 2017). Stormwater runoff should be fully contained onsite for small and minor storm events (first 15mm and 20% AEP respectively) and runoff from the carpark and hardstand areas should undergo water quality treatment via biofiltration through rain gardens or tree pits".*

### **Emissions Impact Report**

*"The report EIA contained in the development application, does not contain the necessary modelling information. Emission impact assessment reports should be accompanied by supporting modelling of raw data. This enables the reviewer to identify any errors in the input data which can lead to air quality estimates that are not representative and which can compromise the integrity of the assessment. Providing the modelling raw data also allows the reviewer to check and reproduce the model results.*

*As the report does not contain the required modelling raw data DWER cannot assess the conclusions reached in the report. In addition, the use of technical studies, such as modelling and monitoring of air pollutants, can inform possible incompatibility between land uses but should not be used as the only input for planning decision-making as there can be significant uncertainty in the accuracy of such studies, and they cannot determine if impacts may or may not occur.*

*Notwithstanding the scientific studies undertaken, the residual risk associated with uncertainties in emission management and the lack of any regulatory controls or*



*contingency management actions that could be effectively employed in the event of impacts, should be considered within the planning decision”.*

#### Industry Buffers

*“The Environmental Protection Authority’s (EPA) Guidance for the Assessment of Environmental Factors, Separation Distances between Industrial and Sensitive Land Uses (EPA, June 2005) (GS3) provides advice on the use of generic separation distances (buffers) between industrial and sensitive land uses. The intent is to avoid conflicts between incompatible land uses and assist in the determination of suitable distances between industry and sensitive land uses where industry may have the potential to affect the amenity of a sensitive land use. Child Care Centres are considered a sensitive land use within the document.*

*The GS3 notes three different descriptions of industry with varying operating hours for service station premises (being Monday-Saturday from 7am to 7pm, 24-hour operations and Freeway 24-hour operations) with varying recommended buffer distances. For fuel stations, the GS 3 recommends a default buffer distance of 50m for daytime operating hours. As detailed above, the City should determine the suitable buffer distance is achieved in any planning decision.”*

#### Applicant’s Response:

##### Stormwater Management

*“A Stormwater Management Plan will be prepared by a suitably qualified consultant and implemented by our Client as part of the detailed design phase of the proposed CCP. We request that the City recommend that an appropriately worded condition is prepared to require a Stormwater Management Plan to be submitted with the City for approval, prior to the issue of a building permit.*

##### Emissions Impact Report and Industry Buffers

*“The modelling files have been provided and are available to review by DWER. However, DWER has contemporaneously reviewed these types of modelling projects for similar applications and has to date provided no response to the dispersion modelling setup and outcomes other than to say:*

*“In addition, the use of technical studies, such as modelling and monitoring of air pollutants, can inform possible incompatibility between land uses but should not be used as the only input for planning decision making as there can be significant uncertainty in the accuracy of such studies, and they cannot determine if impacts may or may not occur.*

*Notwithstanding the scientific studies undertaken, the residual risk associated with uncertainties in emission management and the lack of any regulatory controls or contingency management actions that could be effectively employed in the event of impacts, should be considered within the planning decision”.*

*For the purposes of proper and orderly planning, the use of dispersion modelling as a tool for planning is a widely accepted practice, and in many national and international jurisdictions is the first tool advised and accepted by those regulatory review bodies. In the absence of all other methods of assessment a dispersion model should be used to inform the risk where applicable. Notwithstanding, the contention with the Application lies in majority on the presence of service station vapours from the adjacent service station which may impact the proposed Site.*

*The outcomes of the dispersion modelling have demonstrated that the hours of activity for which the Site will operate, compared to those of the worst-case vapour emissions from the service station, are outside of those daily hours where emissions would pose the highest risk.*

*Moreover, the modelling demonstrated that exposure guidelines, consistent with other Australian Jurisdictions, and adhering to the Australian Federal exposure guidelines do not pose a risk of exceedance at the Site. The Amendments to the Application have been provided to the City and have demonstrated compliance with regard to the risk of emissions from the adjacent service station.*

*Finally, the DWER has stated that they have no objection to the Site being developed in its proposed location and in consideration of its proximity to the existing service station.”*

City’s Comment:

Stormwater Management

The City agrees that the Stormwater Management Plan can be resolved through the inclusion of a suitably worded condition, should an approval be recommended.

Emissions Impact Report and Industry Buffers

Further detailed discussion is contained within this Report under Policy (*State Planning Policy State Planning Policy 4.1 - Industrial Interface*).

Other Advice

Peer Review

As part of its consideration of the deferred application, the City engaged SLR Consulting (SLR) to undertake a Peer Review of the updated EIA. The peer review considered the appropriateness of the assessment methodology in the context of WA legislation and guidelines, and whether the EIA indicates that that National Environment Protection Measure (NEPM) air quality criteria are likely to be met at the proposal CCP as a result of the existing BP Service Station.

The Peer Review concluded that the assessment was found to be appropriate for the intended purpose, however, would benefit from:

- More context provided regarding existing WA legislation and guidelines, and existing conditions;
- The surface characteristics (roughness) of the modelling be re-visited;
- The EIA be updated to assess maximum 1 hour and 24 hour benzene concentrations to be able to confirm the criteria to be used at the CCP for assessment; and
- The fuel bowser and filling emissions calculation be checked to confirm the appropriate percentage control is used and is consistent to that stated in the EIA.

In response to the Peer Review conclusions, the applicant provide an updated EIA dated 25 January 2024 addressing and incorporating relevant changes as recommend by SLR.

From the Peer Review comments it was concluded that the EIA modelling outcomes could be relied upon for its intended purpose.

The City's concern was that no air monitoring had been undertaken to validate or verify the previous modelling assumptions for the currently operating BP Service Station, rather the report was based on the outcomes of assumptions only.

It has been concluded that there were no significant corrections to model outputs following the above considerations recommended by SLR, and the updated EIA reasonably demonstrates that emission of Volatile Organic Compounds (VOCs), gases in this case, are unlikely to pose an unacceptable risk to the proposed CCP. This is further discussed with this Report under the 'Policy' Section (State Planning Policy State Planning Policy 4.1 - Industrial Interface).

### **Planning Assessment:**

Assessment of the revised proposal has been limited to areas where discretion is sought to vary a Policy Requirement.

### **State Government Policies**

The proposal is generally consistent with the following relevant State Planning Policies as discussed in the Officer Report to the August 2023 Council meeting:

- State Planning Policy No.4.1 – Industrial Interface (SPP4.1)
- State Planning Policy 7.0 – Design of the Built Environment (SPP7.0)
- Draft Position Statement: Child Care Premises

### **State Planning Policy 7.3 - Residential Design Codes (SPP7.3 Volume 1)**

The purpose of SPP7.3 is to provide a comprehensive basis for the control of residential development. The objectives of SPP7.3 seek to provide for residential development of an appropriate design, context of place in keeping with TPS2 objectives.

Whilst the proposed development is not for residential purposes, the site is zoned 'Residential' (R20). Assessment against the SPP7.3 is considered appropriate to ensure the development complies with acceptable development standards.

Under clause 5.1.3 of SPP7.3, boundary walls may be built in areas coded R20, where they are not higher than 3.5m and up to a maximum length of the greater of 9m or one-third the length of the balance of the site boundary behind the front setback, up to two site boundaries. The initial proposal did not comply with this requirement and was recommended for refusal on this basis.

The revised proposal includes a solid wall on the rear boundary for a length of 11.85m, varying in height from 1.8m to 3.34m.

Whilst the total length of wall on the combined lot boundary (11.85m) complies with the one-third of the boundary provisions, the initial proposal presented a portion of the wall and rear building façade at a height of 4.5m, for a length of 8.3m, exceeding the 3.5m height limit and did not comply. The revised proposal has addressed this element and now complies with the requirements.

Clause 5.24 of SPP7.3 requires front fencing within the primary street setback to be visually permeable above a height of 1.2m, with consideration to the need for privacy and noise screening. A 2.1m high fence to the side boundary (north east) is

recommended as a noise screening measure for the extent of the boundary. Whilst this exceeds the height limits expressed, as the fence is required for the purposes of noise screening, it meets the intent of the stated design principle for privacy and noise screening.

Along the Malibu Road street frontage, garrison fencing at a height of 1.8m is proposed to enclose the CCP play area. Whilst the height of the fencing exceeds 1.2m, being of an open style, it is visually permeable and is required for child safety.

The revised development has addressed the grounds of refusal recommended on the original development proposal and meets the requirements of SPP7.3.

### Environmental Protection Authority (EPA) Guidance Statement No.3 (GS3)

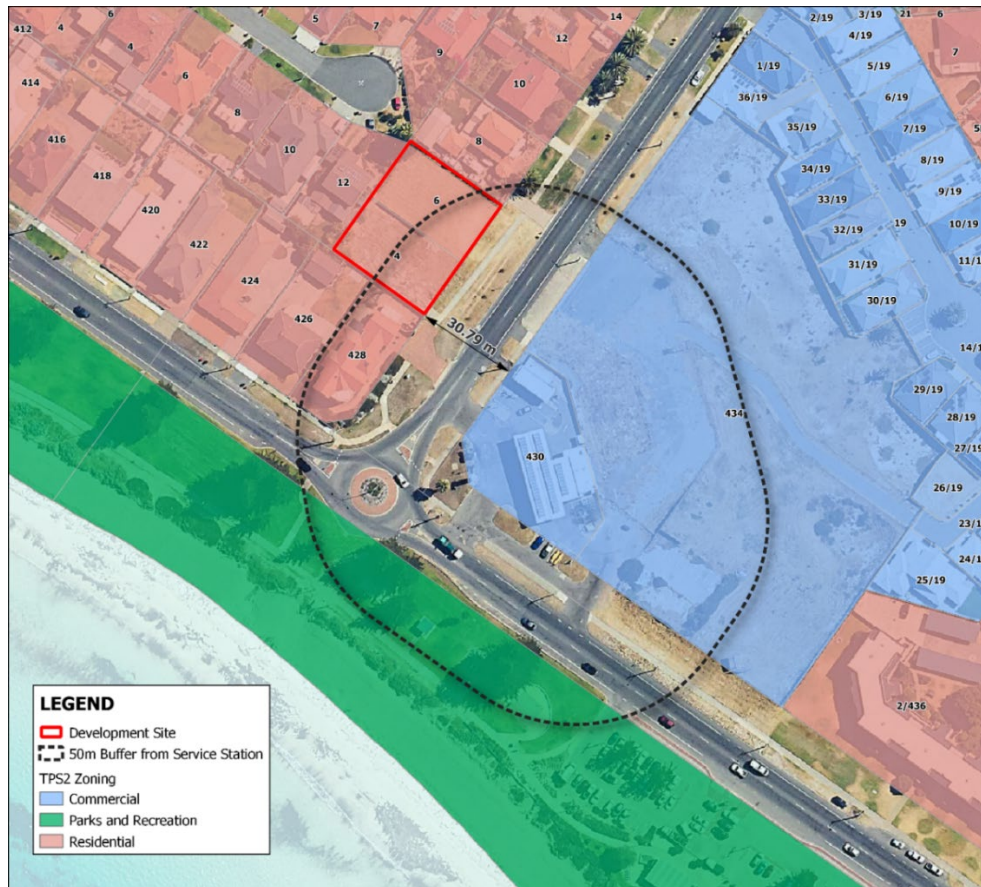
The EPA's GS3 provides advice on the use of generic separation distances between industrial and sensitive land uses to avoid conflicts (gaseous, noise and odour) between incompatible land uses. GS3 applies to the subject application, as the Service Station adjacent the subject site is an 'industrial land use' and the proposed use, CCP, is a 'sensitive land use'.

As established in the assessment of the initial proposal, the existing Service Station best fits the description 'operating Monday to Saturday 7am to 7pm'. In this case, the GS3 recommends a generic separation distance between the existing Service Station site boundary and the proposed CCP site boundary of 50 metres. Where proposals vary from this generic separation distance, site specific technical analysis is required to justify a lesser distance.

The definition of separation distance in the GS3 reads as follows:

*"shortest distance between the boundary of the area that may potentially be used by an industrial land use, and the boundary of the area that may be used by a sensitive land use"*

Based on discussion with DWER and DoH, this definition is interpreted to be the distance measured from the site/lot boundary of the activity to the site/lot boundary of the sensitive land use as the starting point. A map showing the 50m separation distance measured from boundary to boundary based on the State's interpretation of GS3 for the subject site is provided below in Figure 4. The proposal is within the defined 50m generic separation distance, at approximately 30m.



#### 4. EPA Guidance Statement No.3 - Separation Distance

Noting the above, however, there is conjecture in how the separation distance should be measured to qualify the updated EIA report. The applicant has measured the separation distance based on 'best industry practice' using methods applied in Victoria and South Australia, being that the boundary of the 'activity area' applies to where the relevant industrial emissions can/do occur, as opposed to the boundary of the lot/site. In this case, the 'activity area' would be measured from the tank vents as the closest emissions activity to the CCP site. Based on expert advice from the City's Air Quality Consultant SLR, and noting that the GS3 definition does not mention the industrial land use "property boundary", *"it would be unreasonable to suggest that the tank vents did not constitute 'the activity' of the service station from an emissions to air perspective, and so these should be included in the activity boundary"*.

The distance to the CCP would therefore be less than the 50m separation distance measured from the closest vent emissions point to the nearest point of the building or outdoor play area, whichever is closest. Figure 5 depicts the Activity Areas measurement methodology.





### 5. Activity Area Separation Distance

Clause 4.4.1 of GS3 recommends that where the separation distance is less than the generic separation distance, a scientific study based on site and industry specific information must be submitted 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. As such, the City engaged SLR Consulting to undertake a Peer Review of the revised EIA. The review considered the appropriateness of the assessment methodology in the context of WA legislation and guidelines, and whether the EIA indicates that that National Environment Protection Measure (NEPM) air quality criteria are likely to be met at the proposal CCP as a result of the existing BP Service Station.

The Peer Review concluded that the EIA assessment was appropriate for the intended purpose, however, would benefit from the matters outlined in the 'Details' Section of the Report being addressed.

In response to the Peer Review conclusions, the applicant provided an updated EIA addressing and incorporating relevant changes as recommend by SLR.

From the Peer Review comments it was concluded that the EIA modelling outcomes can be relied upon by the City.

The City notes, however, that no air monitoring has been undertaken to validate or verify the previous modelling assumptions for the currently operating BP Service Station (that the City did not support), rather the EIA report was based on the outcomes of the modelling assumptions only.

It was concluded that there were no significant corrections to model outputs following the above considerations recommended by SLR, and the updated EIA reasonably demonstrates that emission of Volatile Organic Compounds (VOCs), fuel vapours in this case, are unlikely to pose an unacceptable health risk and are within the NEPM.

The technical reporting therefore substantiates the reduced generic separation distance and is acceptable.

## Local Government Policies

### Planning Policy No.3.3.5 - Child Care Premises (PP3.3.5)

PP3.3.5 recommends that CCP's be located and designed consistent with the scale and character of the immediate area, and facilities are provided to accommodate the needs of the children and their carers within a safe environment.

The revised CCP proposal has been assessed against the requirements of PP3.3.5. Where the variation to the policy requirements is required, these are noted in the table below:

Requirement	Proposal	Officer Assessment
Location		
CCP are to be appropriately located to meet the needs of children and their families. It is also important in limiting the impact a CCP may have on surrounding activities and vice versa. This may be achieved by locating Child Care Premises on sites that are: (c) Located in areas where adjoining uses are compatible with a CCP (includes considering all permissible uses under the zoning of adjoining properties).	The subject site is located within an established residential area, and adjacent to an existing service station. An updated TIS has been provided to address the revised crossover location in conjunction with adjacent crossover locations at the Service Station. To address the Service Station activities impact on the CCP, being a sensitive land use, the applicant has provided a revised EIA. A revised EAA has been provided to address noise impacts on surrounding and adjacent residential locations.	<u>Adjoining Uses</u> The CCP use is considered compatible with surrounding existing uses and the adjoining commercial zoning of the Waikiki Hotel site opposite. The revised CCP design has addressed the recommend grounds of refusal on the initial proposal, and through conditions of approval, amenity impacts can be effectively managed.

<p>(e) Considered suitable from a traffic engineering/safety point of view; CCP generally would not be suitable where:</p> <ul style="list-style-type: none"> <li>• The service provided by the CCP will have a demonstrable adverse impact on the existing or planned level of CCPs enjoyed by the local community;</li> <li>• Access is from a major road or in close proximity to a major intersection where there may be safety concerns;</li> </ul> <p>The current use or any permissible use under the zoning of the adjoining premises produces unacceptable levels of noise, fumes, or emissions or poses a potential hazard by reason of activities or materials stored on-site.</p>		<p><u>Traffic</u> The updated TIS has been assessed and it has been determined that the revised location of crossover is appropriate. The revised location of the crossover is suitable and does not increase safety concerns. The TIS is accepted and has demonstrated the function of the road and nearby roundabout intersection will not impact by the proposed CCP.</p> <p><u>Noise</u> Please refer to detailed commentary in next section of this table.</p> <p><u>Emissions</u> The City accepts the revised EIA submitted in support of the revised proposal. The technical reporting has demonstrated that the air quality impacts are within national air quality criteria (NEPM) and the emissions are likely to have negligible impacts on human health. Further detailed discussion within this Report under 'Policy' (<i>State Planning Policy State Planning Policy 4.1 - Industrial Interface</i>). For these reasons, the location of the proposal has been demonstrated to be appropriate.</p>
Noise		
<p>A Noise Impact Assessment may be required for the development of a CCP. The objectives should be to limit the noise impact of the CCP on adjacent properties, and also limit any noise impact from extern sources on the CCP. This may be achieved either by physical separation, design and layout of the premises or by implementing noise-mitigation</p>	<p>The proposed operational hours for the CCP are 6.30am to 6.30pm and consistent with PP3.3.5. A revised Environmental Acoustic Assessment (EAA) has been provided to address the previously recommend ground of refusal in respect of noise.</p>	<p>The revised EAA has indicated that the proposed CCP would comply with the <i>Environmental Protection (Noise) Regulations 1997</i> (EPNR) with the inclusion of the following measures:</p> <ol style="list-style-type: none"> <li>1. The outdoor play area not be used until after 7am;</li> <li>2. The babies outdoor area is to be located to the</li> </ol>



<p>measures, such as acoustic treatments to buildings.</p>		<p>north- eastern aspect of the site.</p> <ol style="list-style-type: none"> <li>3. Fencing along the north eastern boundary at a height of 2.1m;</li> <li>4. Colourbond fencing to be installed along the north and west boundary;</li> <li>5. Air conditioning units be installed with “low noise” night period modes and the kitchen exhaust fan either be screened from the neighbouring residence to the north west of the discharge be located toward the centre of the building.</li> <li>6. An assessment of the mechanical services design be undertaken to ensure compliance with EPNR;</li> <li>7. Car parking restrictions through imposition of a Parking Management Plan; and</li> <li>8. Deliveries to be limited to the day period.</li> </ol> <p>The City is satisfied that the revised EAA is acceptable, and through the imposition of conditions that reflect the recommendations within the revised EAA, any noise impacts can be mitigated.</p>
Need for Child Care Premises		
<p>Where, in the opinion of the Manager, Statutory Planning, a proposed CCP may have an adverse impact on the level of service to the community by similar existing or approved facilities, the Applicant will be required to provide further information in regard to the level existing services in the locality, proximity to other CCP, population catchments for the proposed CCP and the number of</p>	<p>Since assessment of the initial development application and prior to the revised development application being received, a Development Application has been lodged, inclusive of a CCP, on the site opposite the subject site. The CCP is to be located north east of the subject site on Malibu Road.</p>	<p>Given the undetermined Development Application for a proposed CPP opposite the subject site (Waikiki Hotel site), the concerns about ‘need’ and having due regard to LPP3.3.5, the City requested additional information from the Applicant to address the potential impact that the proposed CCP may have on</p>

<p>primary schools and kindergartens in the locality, in relation to the development of the proposed new facility.</p>		<p>the planned level of service of CCP's in the vicinity. Whilst a Needs Assessment quantifying the level of service has not been provided, this is not fatal to the Council's consideration of the application as the proposal complies with all other relevant TPS and Policy requirements.</p> <p>The City has previously reviewed State Administrative Tribunal (SAT) cases and not found any examples of the level of service impacting SAT's decision.</p> <p>The Applicant's response has demonstrated to the City that the 'planned level of service', given the local demographic profile, is supported.</p>
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#### Planning Policy 3.3.14 - Bicycle Parking and End of Trip Facilities (PP3.3.14)

PP3.3.14 facilitates the appropriate provision of bicycle parking and end-of-trip facilities to encourage the use of bicycles as a means of transport and access to and within the City.

Whilst a public bus service route runs along Malibu Road with a bus stop within 120m of the site, the use of sustainable transport and the need to provide supportive environments including bicycle parking and end-of-trip facilities in new developments should be encouraged, premised by the PP3.3.14.

The initial and revised development does not include the provision of any bicycle parking facilities, on the applicant's justification that the size of the centre does not require provision of such facilities.

The City does not support the applicant's justification. Provision of long-term bicycle parking spaces at a rate of 0.3 per student and staff, consistent with the rate applicable "*all other uses*" should be applied. End-of-Trip facilities will also be required consistent with PP3.3.14.

#### **Conclusion:**

The Council's previous position on the proximity of the proposed CCP to the existing Service Station raised concerns from a public health perspective. This position considered that the potential health impacts from fuel vapour, especially benzene, creates a low but unacceptable risk to the 'sensitive use'.

Having regard, however, to:

- The modelling and recent monitoring outcomes detailed in the revised EIA which demonstrate the proposal's compliance with both NEPM and APAC (these providing a contemporary and common standard to best protect human health and wellbeing from the adverse impacts of air pollution, based on epidemiological studies);
- The conservative assumptions applied through the modelling and monitoring analyses, which have been clarified through the revised proposal in the revised EIA;
- The expert advice provided by the City's emissions expert (SLR) that:
  - the proposal complies with the National NEPM standards for benzene (and Toluene and Xylenes)
  - based on contemporary accepted Victorian APAC standards, the proposal's worst-case cumulative concentrations of Benzene at the Child Care Centre or nearby residences are equivalent to less than 10% of the maximum standards criterion;
- The use of VR1 vapour recovery system at the Service Station; and
- The conclusion by SLR that the emissions from the Service Station are unlikely to pose an unacceptable risk to human health at the CCP.

*Note: VR1 captures displaced vapours from storage tanks and associated infrastructure when a tanker delivers petrol to a service station.*

The proposed CCP is considered compatible with the existing surrounding context of the locality. The revised siting of the building on the land, proposed acoustic fencing treatments and reconsideration of the location of outdoor play areas has mitigated potential noise impacts on adjoining residential properties.

Having due regard to the relevant planning considerations, the City is satisfied that any potential impacts of the proposed CCP have been adequately addressed and/or will be regulated through proposed conditions of Development Approval.

As such, it is recommended that the application be conditionally approved.

### **Officer Recommendation**

That the Metro outer Joint Development Assessment Panel resolves to:

1. **Approve** DAP Application reference DAP/23/02487 and accompanying plans and supporting information received on 20 September 2023, 29 November 2023, 6 December 2023 and 25 January 2024:
  - SK000; Rev G - Survey and Location Plan;
  - SK100; Rev H - Proposed Site Plan and Landscaping;
  - SK200; Rev G - Floor Plan and Elevations;
  - SK301; Rev G - 3D Views;
  - Development Application Report (19 September 2023);
  - Development Application - Response to Requested Information (29 November 2023);
  - Updated Traffic Impact Statement (27 November 2023);
  - Environmental Acoustic Assessment (Acoustic Report) (September 2023);

- Response to Requested Information - Emissions Advice (November 2023);
- Emissions Impact Assessment (EIA) (January 2024);
- Waste Management Plan (15 September 2023).

in accordance with Clause 68 of Schedule 2 (Deemed Provisions) of the *Planning and Development (Local Planning Schemes) Regulations 2015*, and the provisions of Clause 68(2)(c) of the City of Rockingham Town Planning Scheme No. 2, subject to the following 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 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. No more than 60 children are to be accommodated by the Child Care Premises.
4. No more than 11 staff are permitted at the Child Care Premises at any time.
5. The Child Care Premises must only operate between the hours of 6:30am to 6:30pm, Monday to Friday, with children not permitted in the open space play areas before 7:00am.
6. Prior to applying for a Building Permit, a Stormwater Management Plan must be prepared by a suitably qualified engineering showing how stormwater will be contained on-site and those plans must be submitted to the City of Rockingham for its 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.
7. Prior to the commencement of works a Construction Management Plan must be submitted and approved by the City of Rockingham. The Construction Management Plan shall include, but not be limited to, the following:
  - (i) A Dust, Noise and Vibration Management Plan;
  - (ii) Detail how access roads to and all trafficable areas on the site/s will be treated and maintained to prevent or minimise the generation of airborne dust;
  - (iii) How any stockpiles on site/s are to be managed;
  - (iv) Construction waste disposal strategy and location of waste disposal bins;
  - (v) How materials and equipment will be delivered and removed from the site/s; and
  - (vi) A Traffic Management Strategy for the duration of the project, including the locations of all car parking and loading areas to be used, the duration and frequency of use of these areas and any exemption requests.

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

8. Prior to occupation of the development, the existing crossover must be removed and the verge, footpath, kerbing and landscaping must be reinstated to the satisfaction of the City of Rockingham.
9. Prior to applying for a Building Permit, detailed Engineering Drawings and specifications are to be submitted to the City of Rockingham for approval for all works within the road reserve, including crossover approach, carparks, footpaths, kerbing, drainage and landscape works. All works are to be installed and maintained at the Applicant's cost to the satisfaction of the City of Rockingham for the duration of the development.
10. The vehicle crossover shall be designed and constructed in accordance with the City of Rockingham Commercial Crossover Specifications.
11. The carpark must:
  - (i) provide a minimum of 19 car parking spaces;
  - (ii) be designed, constructed, sealed, kerbed, drained and marked in accordance with User Class 3 of Australian/New Zealand Standard AS/NZS 2890.1:2004, Parking facilities, Part 1: Off-street car parking prior to applying for a Building Permit;
  - (iii) provide one (1) of these car parking spaces as a space 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 clearly marked prior to the development being occupied and maintained thereafter;
  - (v) have lighting installed, prior to the occupation of the development, to the satisfaction of the City of Rockingham; and
  - (vi) confine all illumination to the land in accordance with the requirements of Australian Standard AS 4282-2019, Control of the obtrusive effects of outdoor lighting, at all times.
12. Car parking shall be managed for the duration of the development in accordance with the Parking Restriction Plan contained within the Environmental Acoustic Assessment, prepared by Herring Storer Acoustics (Job No. 23085-02) and dated September 2023.
13. In accordance with City of Rockingham Planning Policy 3.3.14 - *Bicycle parking and End of Trip Facilities*, four (4) 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 must be approved by the City of Rockingham prior to applying for a Building Permit and constructed prior to occupancy of the development. The bicycle parking spaces must be retained and maintained in good and safe condition for the duration of the development.

14. All works must be carried out in accordance with the Waste Management Plan, prepared by Talis Consultants (Project Number WMP23025), and dated 15 September 2023, and maintained at all times, for the duration of development.
15. Prior to applying for a Building Permit, a bin storage area must be designed with a size suitable to service the development and screened from view of the street to the satisfaction of the City of Rockingham. The bin storage area must be constructed prior to the occupation of the development and must be retained and maintained in good condition for the duration of the development.
16. The Building Permit application must be accompanied by written confirmation from a suitably qualified Acoustic Consultant that the plans have been reviewed and confirmed they incorporate the requirements of the Acoustic Report prepared by Herring Storer Acoustics (Job Reference 23085-02) and dated September 2023.
17. Prior to the occupation of the development, written confirmation from a suitably qualified Acoustic Consultant must be provided that demonstrates that all requirements indicated in the Acoustic Report prepared by Herring Storer Acoustics (Job Reference 23085-02) and dated September 2023 have been implemented within the development. The acoustic requirements must thereafter be implemented to the satisfaction of the City of Rockingham for the duration of the development.
18. Prior to occupation of the development, an Operational Noise Management Plan (ONMP) is to be prepared to the satisfaction of the City of Rockingham, demonstrating how noise will be managed at the premises, including the management of car parking areas, activity and outdoor play areas, mechanical plant operations and servicing/deliveries of the site as referred to in the Acoustic Report prepared by Herring Storer Acoustics (Job Reference 23085-02) and dated September 2023 to ensure the development complies with the Environmental Protection (Noise) Regulations 1997.

The development must operate in accordance with the approved ONMP for the duration of the development.

19. Prior to applying for a Building Permit, a Landscaping Plan to the satisfaction of the City of Rockingham must be prepared and include the following detail:
  - (i) The location, number and type of existing and proposed trees and shrubs, 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) Shade trees at a rate of one (1) per four (4) car parking bays;
  - (vi) Street trees must be in accordance with the City's standard for street tree planting and to the Utility's Providers Code of Practice for Western Australia, 1 June 2015.

The landscaping (including all verge 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.

20. Fencing heights, types and alignments to be consistent with the recommendations of the Environmental Acoustic Assessment, prepared by Herring Storer Acoustic (Job Reference 23085-02) and dated September 2023, to the satisfaction of the city for the duration of the development.
21. Prior to the occupation of the development, a final 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 4282—2019, Control of the obtrusive effects of outdoor lighting*.
22. The owner shall install CCTV security cameras to provide passive surveillance to the Child Care Premises and surrounding public areas, capturing at a minimum the entry/exit areas of the premises. The camera/s should be registered on the Western Australian Police Cam-Map WA register at full cost to the owner.
23. The applicant shall install an automated gate across the vehicle access entry on the lot boundary to be in a style and material consistent to the garrison style fencing along the Malibu Road frontage. The gate shall remain open during operating hours at all times.
24. Prior to applying for a Building Permit, a Signage 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.
25. A notification, pursuant to Section 165 of the *Planning and Development Act 2005* is to be placed on the certificate(s) of title of the proposed lot(s). Notice of this notification is to be included on the diagram or plan of survey (Deposited Plan). The notification is to state as follows:

*“This lot is located in an area likely to be subject to coastal erosion and/or inundation over the next 100 years from the date this notification is registered.”*

#### Advice

1. This Approval relates to the details provided in the application; to undertake the development in a different manner to that stated in the application a fresh application for Development Approval must be submitted to the City.
2. A Certified Building Permit must be obtained prior to construction and thereafter an Occupancy Permit must be obtained; the applicant and owner should liaise with the City's Building Services in this regard.
3. 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.
4. A Sign Permit must be obtained for any advertising associated with the development, including signage painted on the building; the applicant and owner should liaise with the City's Building Services in this regard.
5. With respect to Condition 19, the applicant and owner should liaise with the City's Land Infrastructure and Development Services to confirm requirements for landscaping plans.

6. All works in the road reserve, including construction of a crossover or footpath, installation of on-street car parking spaces, planting of street trees, bicycle parking devices, street furniture and other streetscape works and works to the road carriageway must be to the specifications of the City; the applicant and owner should liaise with the City's Land Infrastructure and Development Services in this regard.
7. The applicant is responsible for protecting any existing City streetscape assets along Malibu Road during the course of the project. This includes any existing streetscape lighting, grated gully pits, side entry pits, kerbing, footpaths, trees, turf etc. If any damage is caused to the existing assets (identified to be retained), they must be rectified to the satisfaction of the Manager Land and Development Infrastructure. It is recommended that a photographic dilapidation report is undertaken by the applicant, to record the current condition of these assets.
8. Existing street trees adjacent to the development site must be protected throughout the course of the project in accordance with Australian Standard AS 4970-2009 protection of trees on Development Sites.
9. The applicant is advised that in respect of Condition 6, a Stormwater Management Plan will require compliance with *Planning Policy 3.4.3 - Urban Water Management*. The applicant is encouraged to discuss the specific policy requirements with the City prior to the submission of the plan.
10. In regard to Condition 22, the owner should be aware of the following documents and their responsibilities associated with the management of a CCTV system:

#### Standards

Australian Standard AS 4806.1 – 2006 Closed Circuit Television Management and Operations, Part 1, Section 2. Principles and Management of the CCTV System is the most relevant to the City's CCTV System. The objective of which is that a CCTV System should be documented in writing, clearly indicating intended uses.

#### Legislation

Freedom of Information Act 1992 - request/s for access to CCTV information are covered in Part III Access to Documents, e.g. a record.

Privacy Act 1988, Schedule 3 - general provisions for the protection of the privacy of individuals relating to CCTV.

Surveillance Devices Act 1998, Section 6 - regulation of use, installation and maintenance of optical surveillance devices, and Section 27 - use of optical surveillance devices in public interest.

#### Guidelines

The Australia New Zealand Policing Advisory Agency (ANZPAA) has published the ANZPAA Recommendations for CCTV Systems ('the ANZPAA Recommendations'). This document was prepared by a national committee of police experts in forensic imaging, and covers many aspects of CCTV operation. The document is supported by WA Police and has also been adopted by the State CCTV Strategy as the minimum level for the use and installation of CCTV systems in Western Australia.



## Reasons for Officer Recommendation

In response to the two reasons in the Alternate Motion recommending that the application be refused by Council, the following comments are provided:

1. The suggestion that the proposal is 'unplanned and unanticipated' does not account for the fact a 'Child Care Premises' (CCP) is a discretionary use in the 'Residential' zone that the Council has the ability to approve following a process of advertising (community consultation) under Town Planning Scheme No. 2. The use is permissible within the 'Residential' zone.

The City agrees with the applicant's Traffic Impact Statement, based on 47vph during peak times, which is well within the design capacity of Malibu Road and the roundabout to Safety Bay Road. The City has also accepted the applicant's Environmental Noise Assessment for the proposed development which concludes that the proposal is likely to comply with the assigned noise levels of the *Environmental Protection (Noise) Regulations 1997* subject to the various controls that will be enforced through conditions of Planning Approval. The small scale of the proposed 'Child Care Premises' (60 child care places) reduces its potential noise, traffic and parking impacts on residential amenity.

The proposed development is also considered to be compatible with scale and character of the Safety Bay locality, being single storey and of a built-form which lends itself to domestic (residential) architecture, as required under *Planning Policy No.3.3.5 – Child Care Premises*.

2. The revised proposal has been the subject of a thorough assessment against the requirements which apply to Benzene emissions.

Given that the recommended generic (buffer) distance between the 'industrial uses' (i.e. Service Station premises) and the 'sensitive premises' proposed CCP is not achieved, the applicant prepared an updated Emissions Impact Statement (EIA) to demonstrate that the lesser distance will not result in unacceptable impacts. This avenue is available to justify a reduced buffer under the applicable Environmental Protection Authority policy (GS3).

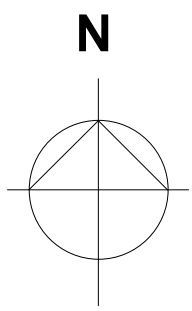
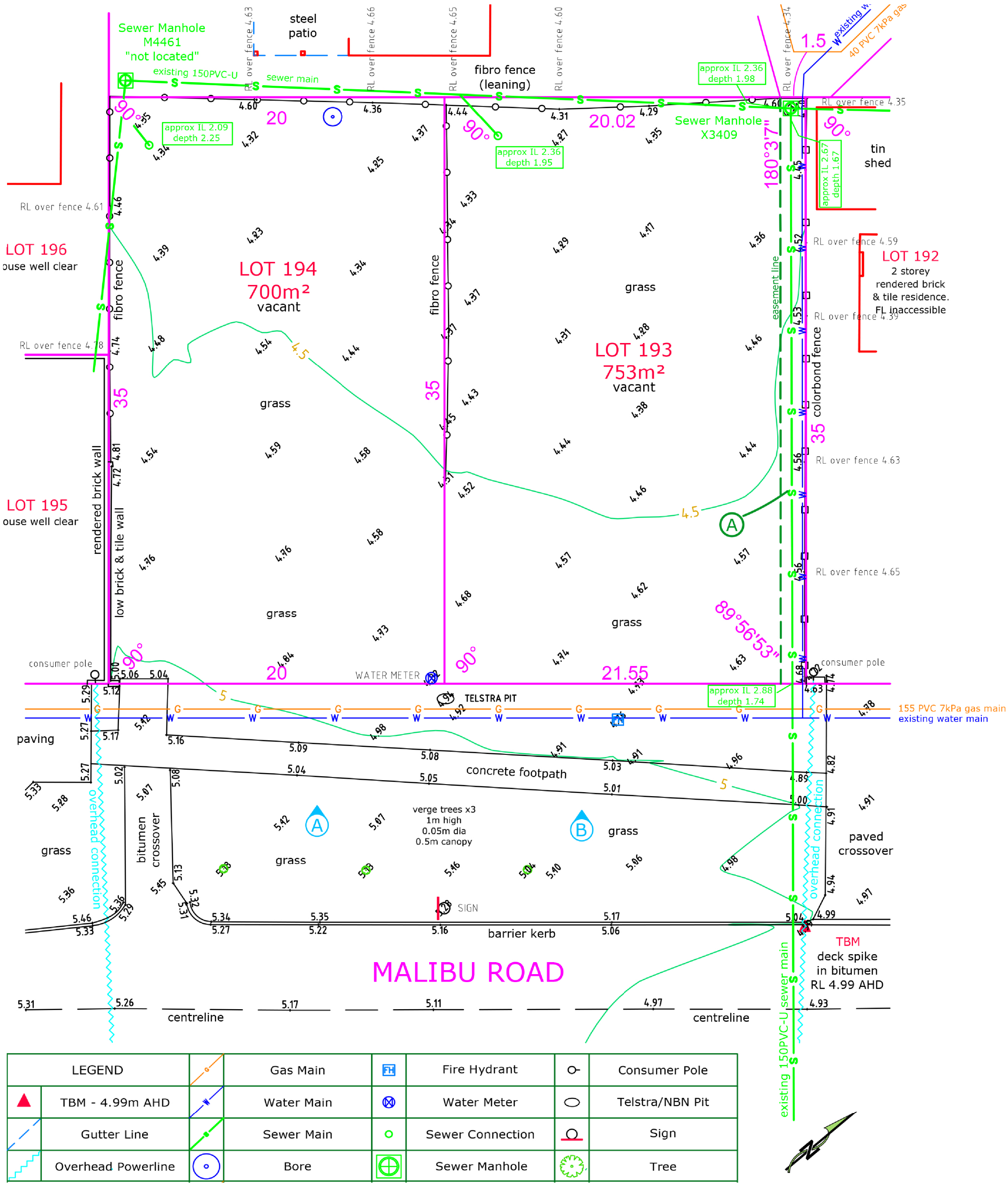
The submitted EIA was assessed by an independent air quality expert (SLR) which agreed with the conclusions that the proposed CCP meets the *National Environmental Protection Measure (NEPM)* long-term air quality criterion for benzene emissions and other short-term air quality criterion applied by other States, such as Victoria. The conclusion by SLR is that the emissions from the existing Service Station is unlikely to pose an unacceptable risk to human health to the proposed CCP. The NEPM air quality standards are based on protecting human health and well-being from the adverse effects of air pollution and are based on epidemiological studies.

The proposed CCP is considered compatible with the existing surrounding context of the locality. The revised siting of the building on the land, proposed acoustic fencing treatments and reconsideration of the location of outdoor play areas has mitigated potential noise impacts on adjoining residential properties.

Having due regard to the relevant planning considerations, the City is satisfied that any potential impacts of the proposed CCP have been adequately addressed and/or will be regulated through proposed conditions of Development Approval.

As such, it is recommended the application be conditionally approved.

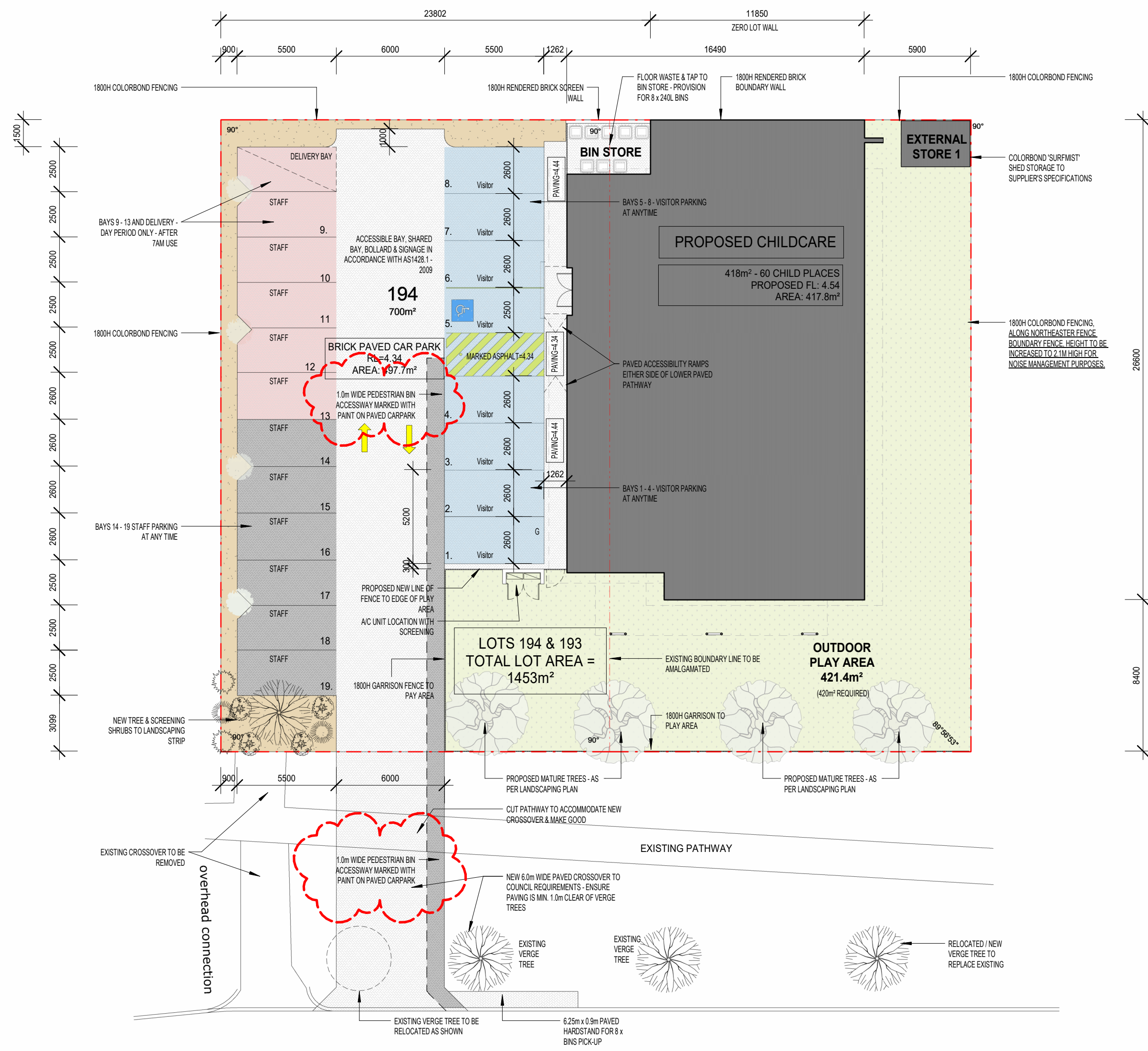




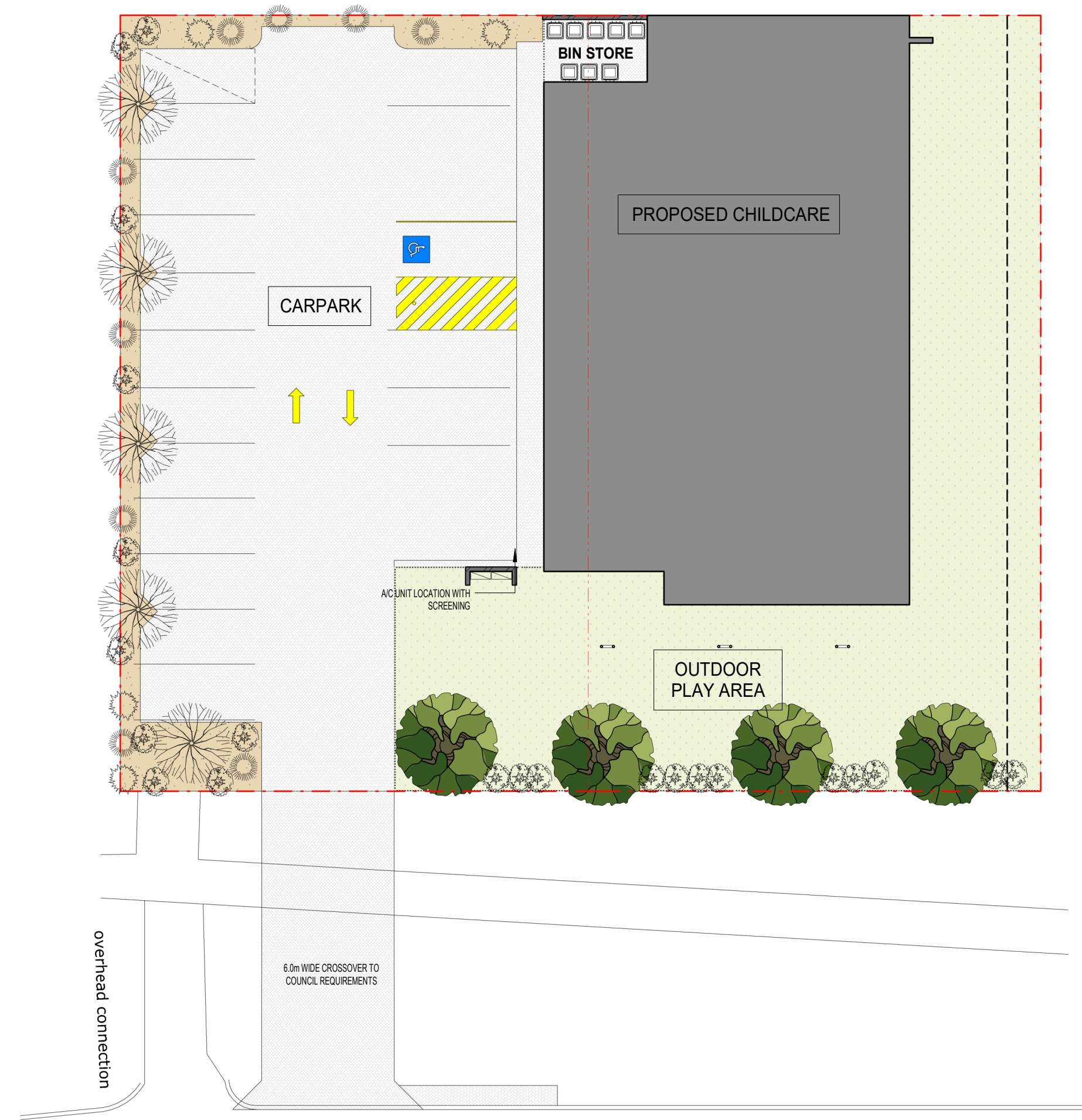
2 LOCATION PLAN  
SCALE 1: 500

1 EXISTING SURVEY PLAN  
SCALE 1: 200





2 PROPOSED SITE PLAN  
SCALE 1 : 200



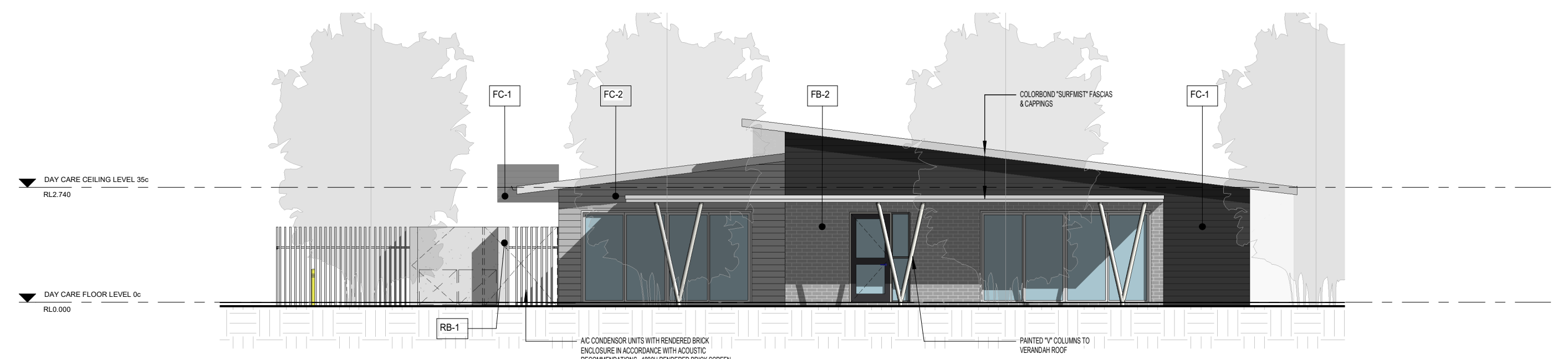
1 LANDSCAPING PLAN  
SCALE 1 : 200

LANDSCAPING LEGEND	
	SELECTED CONCRETE PAVING - REFER TO SPECIFICATIONS
	LANDSCAPING AND PLAY EQUIPMENT BY SPECIALIST CONTRACTOR TO FUTURE DESIGN
	MULCHED GARDEN AREA
	CARPARKING - BITUMEN TO CIVIL ENGINEERS DESIGN
	TREE x 1 TREE 1 (UP TO 12m HIGH, 6m CANOPY) CORYMBIA CALOPHYLLA WA MARRI
	TREE x 8 TREE 2 (UP TO 2m HIGH, 1.5m CANOPY) LAMIAEAE, WESTRINGIA (NATIVE ROSEMARY) FRUTICOSA JERVIS GEM
	SHRUB x 13 SHRUB (40cm HIGH, 40cm WIDE) ADENANTHOS SERICEUS ALBANY WOOLY BUSH
	GROUND COVER x 7 LOW SHRUB (50cm HIGH, 1.5m WIDE) SCAEVOLA AEMULA CULTIVARS FAIRY FAN FLOWER
	MEDIUM - LARGE TREES MATURE TREES ALONG FRONT FENCE LINE - SPECIES AND QUANTITY TO BE CONFIRMED
NOTE: FINAL LAYOUT OF OUTDOOR PLAY SPACES TO BE DESIGNED IN CONJUNCTION WITH OPERATORS PREFERRED PLAY SPACE DESIGN CONSULTANT.	





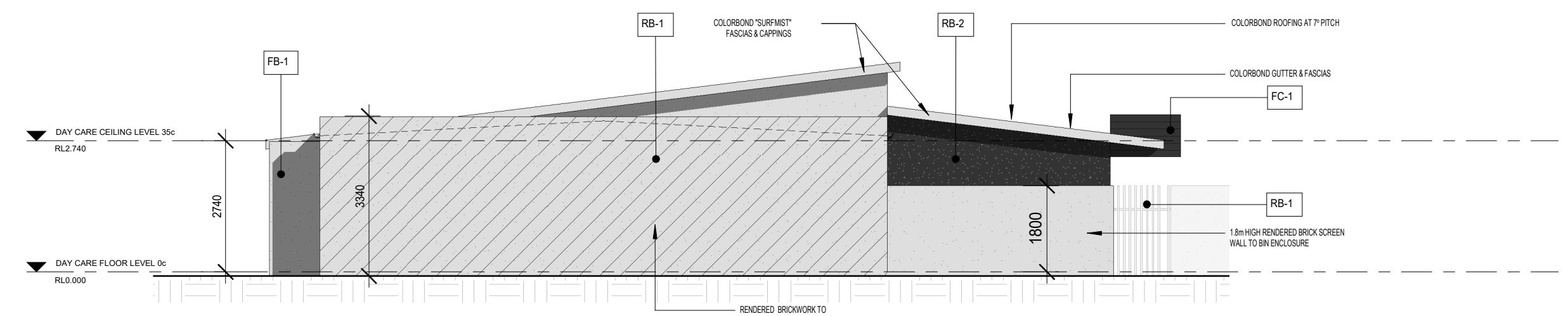
5 FLOOR PLAN GA  
- SCALE 1 : 100



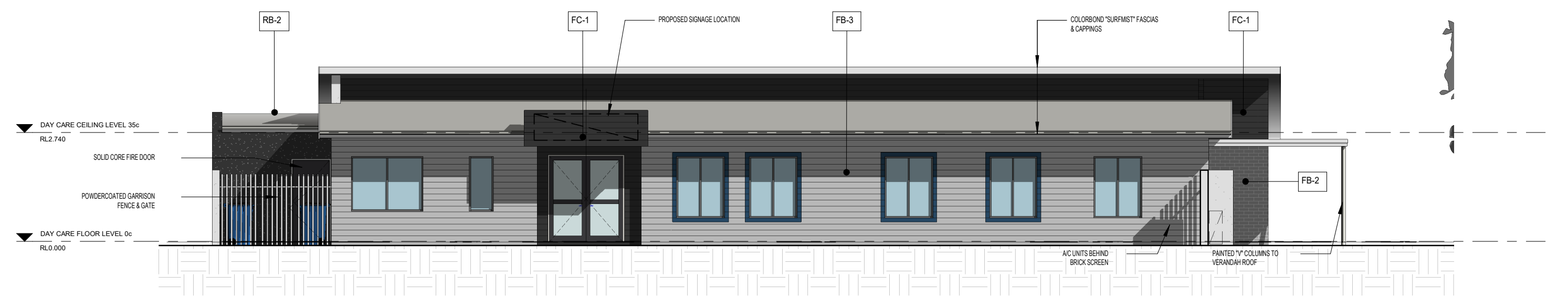
1 ELEVATION SOUTH-EAST  
- SCALE 1 : 100




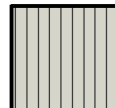




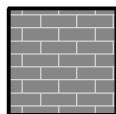
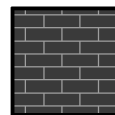
2 ELEVATION SOUTH-WEST  
- SCALE 1 : 100

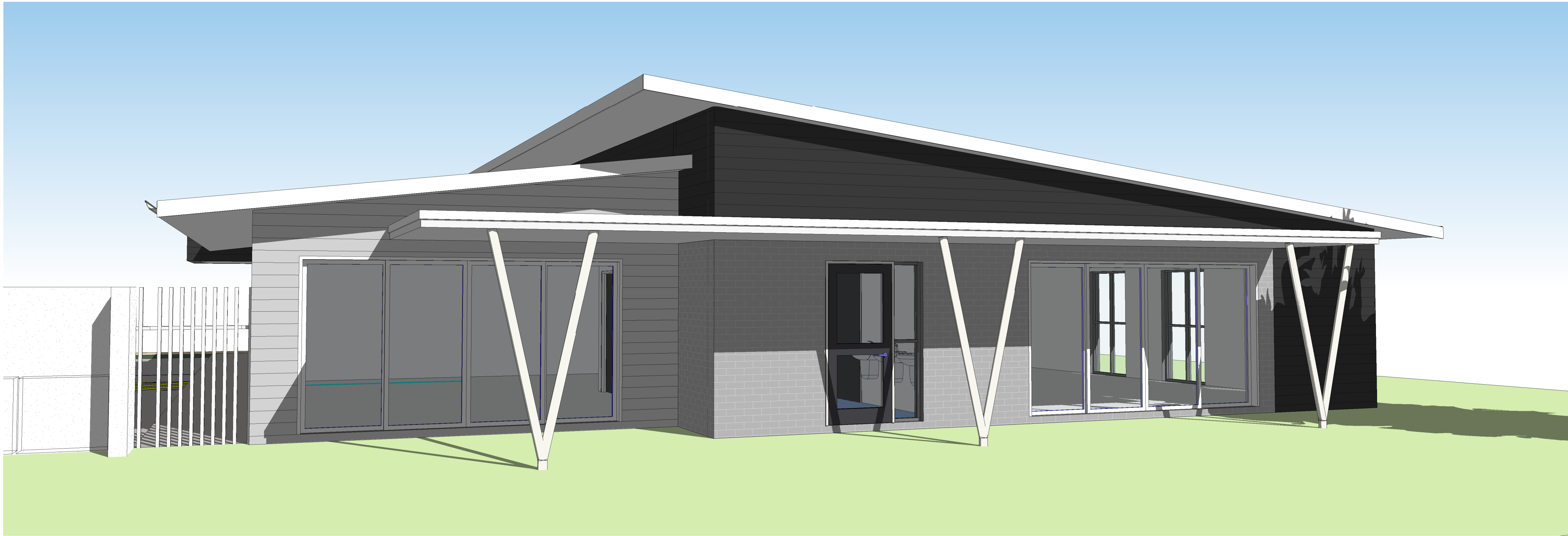


3 ELEVATION NORTH-WEST  
- SCALE 1 : 100



4 ELEVATION NORTH-EAST  
- SCALE 1 : 100

EXTERNAL FINISHES LEGEND					
SAMPLE	TAG	DESCRIPTION	SAMPLE	TAG	DESCRIPTION
	FC-1	JAMES HARDIE SCYON STRIA CLADDING 325mm - "MONUMENT" COLOUR		CR-1	COLORBOND CUSTOM ORB ROOF SHEETING COLOUR: COLORBOND "SURFMIST"
	FC-2	JAMES HARDIE SCYON STRIA CLADDING 325mm - "SURFMIST" COLOUR		RB-1	RENDERED BRICK VENEER COLOUR "SURFMIST"
	FB-1	"RESTORATION RED" - TUMBLED" FACE BRICKWORK - 230mm x 110mm x 76mm		RB-2	RENDERED BRICK VENEER COLOUR "MONUMENT"
	FB-2	PAINTED FACE BRICKWORK "SHALE GREY" - 230mm x 110mm x 76mm		FB-3	PAINTED FACE BRICKWORK "MONUMENT" - 230mm x 110mm x 76mm



1 3D - CHILDCARE PERSPECTIVE  
- SCALE



2 3D - CHILDCARE PERSPECTIVE 2  
- SCALE



**ROWE**  
GROUP

# DEVELOPMENT APPLICATION

CHILD CARE CENTRE

LOT 193 (NO. 6) AND LOT 194 (NO. 4) MALIBU ROAD, SAFETY  
BAY

## DOCUMENT CONTROL

Printed 19 September 2023

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VERSION	FILE NAME	PREPARED BY	APPROVED BY	DATE
1	9736_20230309_R_Rockingham_DAv3_SB	Sam Bowers	Nathan Stewart	19/09/2023

This report has been authorised by;



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1. CERTIFICATES OF TITLE
2. DEVELOPMENT PLANS
3. TRANSPORT IMPACT STATEMENT
4. ACOUSTIC ASSESSMENT
5. EMISSIONS IMPACT ASSESSMENT
6. WASTE MANAGEMENT PLAN

# 1. INTRODUCTION

Rowe Group acts on behalf of Greener4 Pty Ltd (**Greener4**), the landowner of Lot 193 (No. 6) and Lot 194 (No. 4) Malibu Road, Safety Bay (**the subject site** or **Lot 193** and **Lot 194**). This Report has been prepared in support of a Development Application (**the Application**) to obtain Development Approval from the City of Rockingham (**the City**) for a child care centre at the subject site.

This Report includes a description of the following matters:

- ▲ The location of the subject site;
- ▲ A description of the existing site characteristics;
- ▲ A detailed explanation of the proposed development;
- ▲ An overview of the relevant planning issues; and
- ▲ Justification for the proposed development.

This Application has been prepared with detailed technical input from a consultant team comprising:

- ▲ MODUS Design – Architect;
- ▲ Rowe Group – Town Planning and Urban Design;
- ▲ Shawmac – Traffic, Parking and Access;
- ▲ Herring Storer – Acoustics;
- ▲ Environmental and Air Quality Consulting – Environment and Emissions; and
- ▲ Talis – Waste Management.

## 2. DESCRIPTION OF SITE

### 2.1 LOCATION

The subject site is located in the municipality of the City of Rockingham and in the suburb of Safety Bay. The subject site is situated approximately 41 kilometres south of the Perth Central Area and 2.5 kilometres south west of the Rockingham Shopping Centre. The subject site is located within an established residential area and is situated immediately west to a large vacant property on the other side of Malibu Road, located at Lot 100 on Plan 74131.

Refer **Figure 1 – Regional Location** and **Figure 2 – Local Context**.

### 2.2 CADASTRAL INFORMATION

The subject site comprises two (2) land parcels, legally described as:

- ▲ Lot 193 on Plan 11828 Certificate of Title Volume 1457 Folio 432; and
- ▲ Lot 194 on Plan 11828 Certificate of Title Volume 1457 Folio 433.

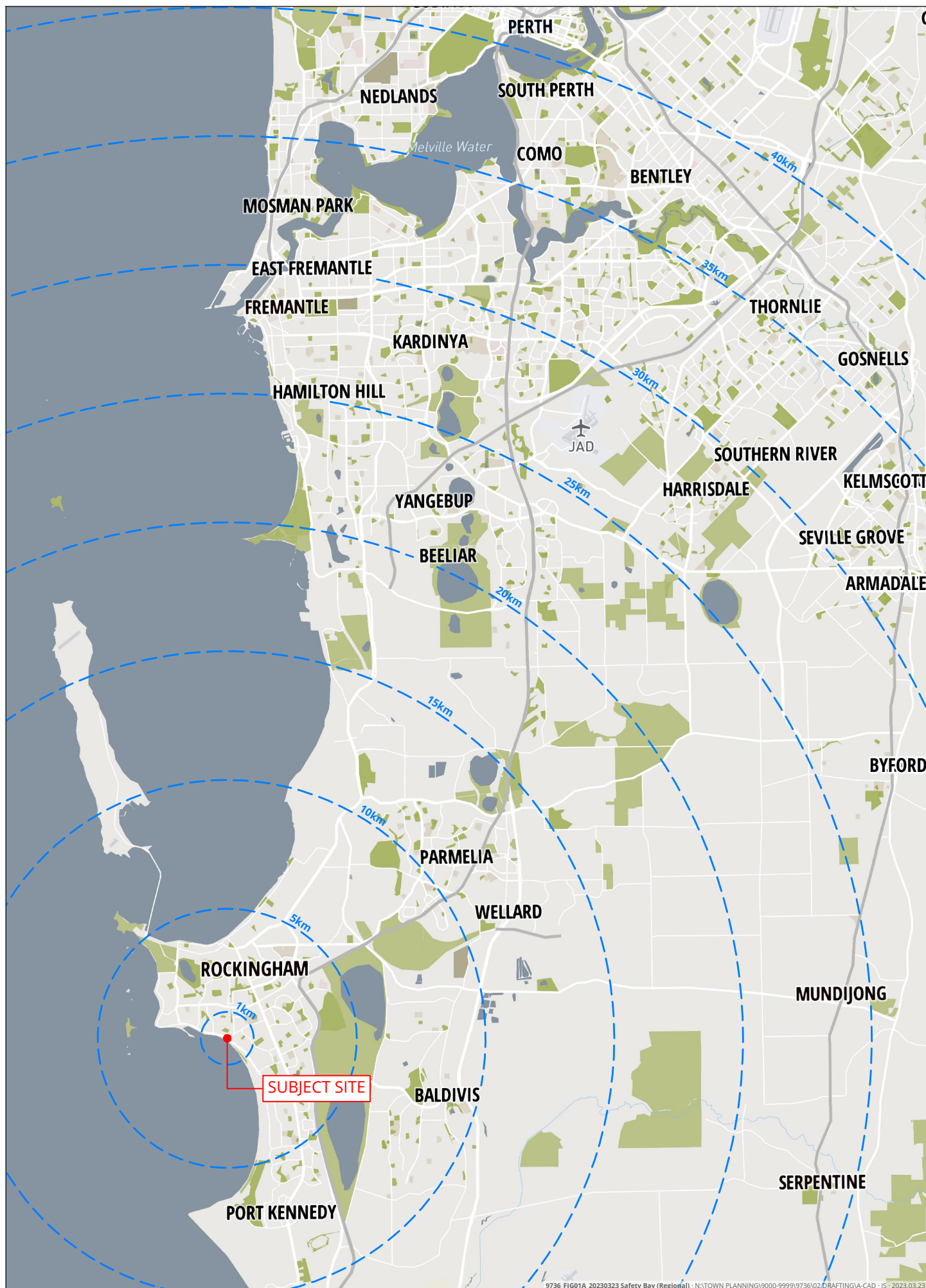
Refer **Attachment 1 - Certificates of Title**.

The subject site has a total land area of 1,454m<sup>2</sup>, with a frontage to Malibu Road of approximately 41.5m.

### 2.3 EXISTING IMPROVEMENTS

The subject site is currently vacant and has been vacant for a number of years. All that exists at the subject site is grass, low-lying vegetation and a dividing fence which is located along the boundary of both lots.

Refer **Figure 3 – Site Plan**.



0 4500 m  
SCALE @ A4: 1:200,000



FIGURE 1  
REGIONAL LOCATION





0 220 m  
SCALE @ A4: 1:110,000



FIGURE 2  
LOCAL CONTEXT





0 12.5 m  
SCALE @ A4: 1:500



**FIGURE 3**  
**SITE PLAN**



### 3. PROPOSED DEVELOPMENT

This Application seeks to obtain Development Approval from the City for a child care centre at the subject site.

The proposed development comprises the following components:

- ▲ A 418m<sup>2</sup> child care centre building located in the northern portion of the subject site (mostly within Lot 193);
- ▲ A 421.4m<sup>2</sup> grassed outdoor play area which wraps around the child care centre building;
- ▲ One (1) bin store area located in the rear portion of the child care centre building along the north western lot boundary. The bin store area can accommodate up to eight (8) 240L bins;
- ▲ One (1) external colorbond storage shed located in the most northern corner of the subject site;
- ▲ A 497.7m<sup>2</sup> brick paved car parking area located in the southern portion of the subject site (entirely within Lot 194). The car parking area includes 19 car parking bays (inclusive of one (1) disabled access bay) and one (1) delivery bay.
- ▲ The existing crossover located in the southern portion of the subject site is to be removed. One (1) new double crossover will be located in the southern portion of the subject site to facilitate vehicle access from Malibu Road to the car parking area; and
- ▲ A mulched garden area which surrounds the bitumen car parking area.

Refer **Attachment 2 – Development Plans**.

#### 3.1 OPERATIONAL DETAILS

The proposed development will operate as follows:

- ▲ Hours of operation are between 6:30am and 6:30pm, Monday to Friday. The child care centre is closed Saturday, Sunday and Public Holidays.
- ▲ Accommodate a maximum of 60 children on-site at any one time (i.e. 9 children between the ages of 0 and 2, 12 children between the ages 2 and 3 and 39 children that are older than the age of 3).
- ▲ Accommodate a maximum of 11 staff members on-site at any one time.



## 4. TOWN PLANNING CONSIDERATIONS

### 4.1 ZONING

#### 4.1.1 METROPOLITAN REGION SCHEME

Under the provisions of the Metropolitan Region Scheme (**MRS**), the subject site is zoned 'Urban'. The proposed development at the subject site is consistent with the intent of the 'Urban' Zone.

Refer **Figure 4 – Metropolitan Region Scheme Zoning Plan.**

#### 4.1.2 CITY OF ROCKINGHAM LOCAL PLANNING SCHEME NO. 2

Under the provisions of the City of Rockingham Local Planning Scheme No. 2 (**LPS 2**), the subject site is zoned 'Residential'.

As outlined in Clause 4.1 'Residential Zone' of LPS 2, the objective of the 'Residential' Zone is as follows (underlining for emphasis):

*to promote a high-quality residential environment by maintaining and enhancing the quality of existing residential areas and providing for a range of residential densities and housing types throughout the Scheme Area.*

With respect to the above, the proposed development is consistent with the objective of the 'Residential' Zone and should be supported by the City for the following reasons:

- ▲ The proposed development is residential in character and designed to a high architectural quality which enhances the existing amenity of the locality.
- ▲ The proposed development is compatible with the surrounding built form and improves the existing amenity of the residential streetscape.

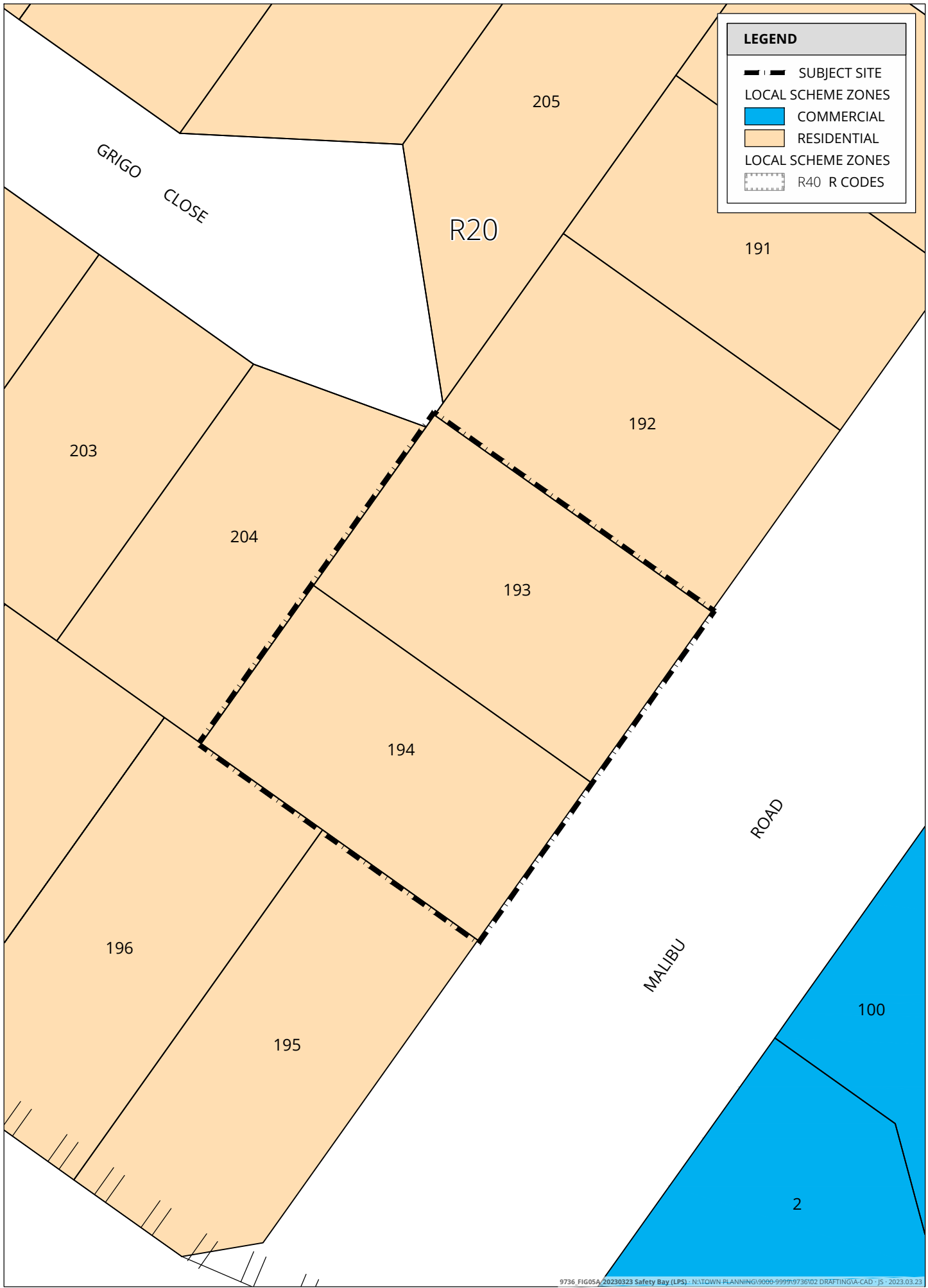
Refer **Figure 5 – City of Rockingham Local Planning Scheme No. 2 Zoning Plan.**



0 12.5 m  
SCALE @ A4: 1:500



FIGURE 4  
METROPOLITAN REGION SCHEME ZONING



9736\_FIG05A/20230323 Safety Bay (LPS) : N:\TOWN PLANNING\9000-9999\9736\02 DRAFTING\A-CAD - JS - 2023.03.23



0 12.5 m  
SCALE @ A4: 1:500



FIGURE 5  
CITY OF ROCKINGHAM TOWN PLANNING SCHEME No.2 ZONING

## 4.2 LAND USE PERMISSIBILITY

The proposed development is consistent with the land use definition of 'Child Care Premises', which is defined in LPS 2 as follows:

*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.*

Under the provisions of LPS 2, Table No.1 'Zoning Table' stipulates that a 'Child Care Premises' is classified as an 'A' (discretionary) use within the 'Residential' Zone. An 'A' use is defined in LPS 2 as follows:

*means that the use is not permitted unless the local government has exercised its discretion by granting development approval after giving special notice in accordance with Clause 64 of the deemed provisions.*

On the basis of the above, the proposed development at the subject site is capable of being approved by the City.

## 4.3 STRATEGIC CONTEXT

### 4.3.1 STATE PLANNING POLICY NO. 7.0 – DESIGN OF THE BUILT ENVIRONMENT

State Planning Policy 7.0 – Design of the Built Environment (**SPP 7**) provides the broad framework for the design of the built environment across Western Australia. The design has considered and responded to the ten (10) design principles.

#### 1. Context and Character

The proposed development is compatible with its context as the design is consistent with the existing built form and character of the locality. Importantly, the proposed development responds to adjoining lot boundary and street setbacks which will allow the existing, surrounding residential development to not be adversely impacted.

#### 2. Landscape Quality

The proposed development includes high quality landscaping within the front setback area and around the boundaries of the subject site (within the outdoor play area and surrounding the car park).

#### 3. Built Form and Scale

Given the existing residential character of the surrounding area, the overall built form and massing of the proposed development is considered appropriate to respond to the

development pattern within the established area, and is of an appropriate scale so as to not negatively impact the surrounding locality.

4. *Functionality and Build Quality*

The proposed development has been architecturally designed and responds to the requirements of the child care operator. The proposed development will be constructed of high-quality and durable materials to ensure a high-quality streetscape outcome is provided.

5. *Sustainability*

The orientation of the proposed development enables appropriate passive sun access and natural ventilation, particularly for the outdoor play spaces. This also balances the need for appropriate shade to be afforded to children in these play spaces.

6. *Amenity*

The internal amenity provided for staff and children is considered to be of a high standard and commensurate with expectations placed on child care facilities. This includes passive and active play spaces or opportunities for children, and staff amenities inclusive of a staff room and meeting and office spaces.

7. *Legibility*

The building entrance has been designed to improve legibility. Further, signage proposed appropriately directs visitors to the building entrance.

8. *Safety*

The proposed development includes strong passive surveillance to the street and the internal areas of the site. The building is oriented towards the street to ensure visual sightlines are provided at all times, with the car park ensuring activity adjacent to the street is enhanced from what exists and what occurs on adjoining properties.

9. *Community*

The proposed development will provide a high-quality and essential service and offering to the wider community.

10. *Aesthetics*

The overall aesthetic and appearance of the proposed development is of a high-quality that balances the need to provide a 'playful' design for the benefit of children through materials and colours, while responding to surrounding residential character with massing, scale and form.

#### 4.3.2 PLANNING BULLETIN 72/2009 – CHILD CARE CENTRES

Planning Bulletin 72/2009 Child Care Centres (**Planning Bulletin**) outlines child care centre guidelines and a consistent policy approach to planning for the location and development of these facilities. The Planning Bulletin identifies 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. This is discussed further below within section 4.3.2 of this report.

The proposed development is consistent with the objectives of the Planning Bulletin for the following reasons:

- ▲ The subject site is located within walking distance of the Malibu Road shopping centre, which includes; supermarkets, community facilities, medical offices etc;
- ▲ The subject site is located opposite to an existing non-residential land use;
- ▲ The subject site is serviced by public transport;
- ▲ The subject site is of a sufficient size to accommodate the proposed development while including appropriate setbacks and provision of car parking;
- ▲ There is a demonstrated need for the proposed development due to the lack of child care centres in the locality. When considering this, along with the other locational requirements of the Planning Bulletin, it is considered that the subject site is an appropriate location. Further information is provided in Section 4.4.5 of this Report;
- ▲ Parking is proposed to the south west of the proposed building to ensure it is partially visible for ease of access, but also largely screened at the rear of the subject site; and
- ▲ A Transport Impact Statement and Acoustic Assessment have been supplied and is discussed further within the remainder of this report.

#### 4.3.3 DRAFT POSITION STATEMENT – CHILD CARE PREMISES

The Draft Position Statement: Child Care Premises (**Position Statement**) was prepared by the Department of Planning, Lands and Heritage (**DPLH**) and was advertised for public comment between 11 November 2022 and 10 February 2023. The Draft Position Statement will replace the existing Planning Bulletin 72/2009 – Child Care Centres.

The Position Statement is designed to provide a more consistent policy approach to the planning for child care premises in Western Australia, in order to deliver key improvements to the location and operation of child care operations.

The proposed development is consistent with the objectives of the Position Statement for the following reasons:

- ▲ The proposed development is complementary to the existing residential development adjoining the subject site and the desired future land use character of the area. Due to its location at the subject site and how it has been designed, the proposed development will not have any adverse impacts on the surrounding residential properties or the existing road network.
- ▲ Operational management aspects such as acoustic, waste, landscaping and traffic matters have been considered as part of this Application and will be discussed in the following sections of this Report.
- ▲ The surrounding land uses are residential in nature and the vacant subject site is a suitable location for a commercial use which will be of great community benefit. The surrounding land uses will not be detrimental to the Application.

- ▲ The design of the proposed development is considered high quality and will ensure the safety of all children.

## 4.4 DEVELOPMENT STANDARDS

The following section contains an assessment of the proposed development against the City's relevant development standards.

### 4.4.1 SITE CHARACTERISTICS

The City of Rockingham's Local Planning Policy No. 3.3.5 (**LPP 3.3.5**) sets out the policy provisions which the City shall have due regard to in its assessment and determination of applications for Development Approval for the establishment of child care premises.

Clause 4.2 'Site Characteristics' in LPP 3.3.5 outlines the following (underlining for emphasis):

*Sites selected for Child Care Premises should be of sufficient size and suitable shape to accommodate the development, including all buildings and structure, parking for staff and parents, outdoor play areas and landscaping, as determined by the City.*

*As a general rule, sites in a residential area should be of regular shape and greater than 1000m<sup>2</sup> in size. A maximum site coverage of 50% will apply to any proposal to prevent the over-development of any lot.*

*The topography of the site should be considered, as steep slopes may affect access to the facility, noise transfer and methods of noise mitigation.*

With respect to the above, the proposed development is consistent with Clause 4.2 in LPP 3.3.5 and should be supported by the City for the following reasons:

- ▲ The subject site is of sufficient size and suitable shape to accommodate the proposed development and all the necessary features/services (i.e. parking area, outdoor play areas, landscaping areas etc.).
- ▲ The subject site is of a regular rectangular shape and is approximately 1,454m<sup>2</sup> in site area. Furthermore, the proposed development is approximately 418m<sup>2</sup> in area, meaning that it only covers 28.7% of the total site area.
- ▲ The topography of the subject site is flat. Therefore, the proposed development is not affected by any steep slopes.

### 4.4.2 CAR PARKING

The proposed development will be serviced by a total of 19 car parking bays (inclusive of one (1) disabled access bay) and one (1) delivery bay, which are all located in the southern portion of the subject site, entirely on Lot 194.

In accordance with Table No. 2 'Car Parking Table' in LPS 2, the minimum car parking provision for a 'Child Care Premises' land use is as follows:

*1 bay per employee and 1 bay per eight children.*



On the basis of the above, given the proposed development will accommodate 11 staff and a maximum of 60 children, the minimum parking provision required at the subject site is 19 bays. Since the proposed development will be serviced by a total of 19 carparking bays (inclusive of one (1) disabled access bay), the proposal is compliant with the minimum car parking provision stipulated in LPS 2.

Furthermore, LPP 3.3.5 outlines the following with regard to car parking:

*Parking areas should be located in front of the building. If this is not possible, parking areas should be clearly visibly and easily accessible from the entry to the site.*

*In addition, landscaping may be required on-site to screen car parking areas from the street and the Child Care Premises from adjoining residences in order to maintain the amenity of the locality.*

With respect to the above, the proposed development is consistent with the car parking requirements under LPP 3.3.5 for the following reasons:

- ▲ The parking area is clearly visible from the entry to the site at Malibu Road.
- ▲ The parking area can be easily accessed via the new double crossover facilitating direct access at Malibu Road.
- ▲ A suitable level of landscaping (particularly on the eastern side of car bay No. 19) will screen the parking area from Malibu Road and adjoining residential properties so that the existing residential amenity is not affected.

#### 4.4.3 DESIGN CONSIDERATIONS

Clause 4.6 'Design Considerations' in LPP 3.3.5 outlines the following:

*The appearance of a Child Care Premises must be consistent with the scale and character of the locality. In this regard, where the development is located in a residential area, the built-form should lend itself to domestic (residential) architecture.*

*Setbacks to side and rear boundaries and the orientation of openings to indoor play areas should minimise any impact on adjoining properties.*

*Outdoor play areas are to be located so as to limit their impact on the amenity of adjoining properties, whilst taking advantage of a passive solar orientation wherever possible. Measures should be taken to ensure that play areas are large enough and of such dimensions to be useful as play areas, and side setback and leftover building areas are not desirable for the purpose.*

*Where a play area is located in the front setback area, fencing of the area should be of predominantly open construction to provide a safe playing area without closing the site in, casting shadows on the play area, or adversely affecting the residential streetscape.*

*Landscaping will be required along the frontage of the development to a standard equal to that required or provided for on adjacent properties. Landscaping should not include potentially hazardous heights and potentially toxic plants.*

With respect to the above, the proposed development is consistent with Clause 4.6 in LPP 3.3.5 and should be supported by the City for the following reasons:

- ▲ The design and appearance of the proposed development is in keeping with, and does not adversely impact upon the established, surrounding residential built form.
- ▲ The setbacks and orientation of the proposed development do not result in neighbouring residential properties being negatively impacted upon. The design of the proposed development in terms of its bulk, scale, and overall impact on the amenity of neighbouring/nearby residential properties is taken into serious consideration.
- ▲ The outdoor play space of the proposed development is located and designed in a manner that minimises impact on the surrounding residential amenity. The outdoor play space has been designed so that it receives a suitable level of sunlight and is away from habitable rooms of adjoining residential properties.
- ▲ The portion of the outdoor play space located within the front setback area of the subject site is concealed by a visually permeable fence that allows for passive surveillance, does not cast considerable shadows, and does not adversely impact the existing residential streetscape.
- ▲ A suitable level of landscaping is located along the frontage of the proposed development (particularly on the eastern side of car bay No. 19) to ensure that the child care centre is consistent with the established residential streetscape, and does not adversely impact upon the existing amenity of the locality.

Given the subject site and adjoining residential properties are zoned R20, the City has confirmed that the rear boundary wall of the proposed development will be assessed against the deemed-to-comply requirements under clause 5.1.3 'Lot boundary setback' in State Planning Policy 7.3 - Residential Design Codes Volume 1 (**R-Codes**).

Part two (2) of deemed-to-comply requirement C3.2 under clause 5.1.3 'Lot boundary setback' in the R-Codes is as follows:

*C3.2 Boundary walls may be built behind the street setback (specified in Table 1 and in accordance with clauses 5.1.2 and 5.2.1), within the following limits and subject to the overshadowing provisions of clause 5.4.2 and Figure Series 11:*

- ii. in areas coded R20 and R25, walls not higher than 3.5m, up to a maximum length of the greater of 9m or one-third the length of the balance of the site boundary behind the front setback, up to two site boundaries.*

With respect to the above, the total length of the rear boundary of the subject site is 41.5m. Therefore, given one-third of 41.5m is 13.7m the rear boundary wall of the proposed development can be no higher than 3.5m for the maximum length of 13.7m.

On the basis of the above, given the rear boundary wall of the proposed development is only 3.34m high for a length of 11.85m, this Application is consistent with the deemed-to-comply requirements under clause 5.1.3 'Lot boundary setback' in the R-Codes.

#### 4.4.4 SIGNAGE

There is only one (1) sign included within the proposed development (i.e. the child care centre sign (2.63m x 0.66m) located above the main entrance on the north eastern elevation of the building).

The sign is consistent with the provisions outlined in Local Planning Policy No. 3.3.1 (**LPP 3.3.1**) and should be supported by the City for the following reasons:

- ▲ The sign is appropriate for its location at the proposed development.
- ▲ The sign does not adversely impact on traffic circulation and management, or pedestrian safety.
- ▲ The sign helps to direct and notify users of the proposed development.
- ▲ The sign is constructed of quality materials.
- ▲ The sign does not adversely impact on the existing residential amenity of the area as they cannot be seen from the streetscape.

### 4.5 NEEDS AND NECESSITY ASSESSMENT

Clause 4.9 'Need for Child Care Premises' in LPP 3.3.5 outlines the following:

*Where, in the opinion of the Manager, Statutory Planning, a proposed Child Care Premises may have an adverse impact on the level of service to the community by similar existing or approved facilities, the proponent will be required to provide further information in regard to the level existing services in the locality, proximity to other Child Care Premises, population catchments for the proposed Child Care Premises and the number of primary schools and kindergartens in the locality, in relation to the development of the proposed new facility.*

With respect to the above, further analysis and information has been provided in the following section of this report which highlights the need for the proposed development at the subject site.

The local catchment area in which the subject site is contained only includes a total of two (2) existing, competing child care centres, both offering a total 118 children places. The two (2) child care centres are located at Lot 247 (No. 1) Waimea Road, Safety Bay (approximately 2.2km north west of the subject site), and Lot 337 (No. 141) Safety Bay Road, Shoalwater (approximately 2.6km north west of the subject site).

As mentioned previously in this report, the subject site is located near the Malibu Road shopping centre (No. 110 Malibu Road, Safety Bay) and the Safety Bay Senior High School Malibu School (No. 80 Malibu Road, Safety Bay). There are no existing child care centres situated in the immediate locality of the subject site. The existing child care centres located in this catchment area are both clustered in the Shoalwater locality.

With a population of 590 children between the ages 0 and 4 (ABS 2021), the current ratio of children per existing place in the catchment is 6:1. This ratio represents one licensed place that is demanded by more than six (6) children living in the catchment area. Please note, this is considered above the WA demand average ratio of children per existing place, and therefore, signifies a shortfall of places.

With the two (2) competing centres located in the catchment area also being more than 10 years old, and reporting high occupancies, this represents unmet demand at the local level and poses the possibility of having service insufficiency or accessibility shortcomings in the catchment area, particularly with regard to the Safety Bay locality.

Lastly, given the forecast population growth of 720 children between the ages of 0 and 4 during the 2021-2026 period (ABS 2021), this represents continual pressure on the existing unmet demand of child care centres in the Safety Bay locality. In this regard, the proposed development at the subject site is needed to serve this growing demand.



## 5. TRAFFIC CONSIDERATIONS

A Transport Impact Statement (TIS) has been prepared by Shawmac Civil and Traffic Engineering Consultants in support of the proposed development at the subject site. The TIS has been prepared in accordance with the Western Australian Planning Commission (WAPC) *Transport Impact Assessment Guidelines Volume 4 – Individual Developments*.

Refer **Attachment 3 – Transport Impact Statement**.

The following is a summary of the conclusions contained in the TIS:

- *The proposed development is predicted to generate approximately 254 vehicle trips per day including 48 trips during the morning peak hour and 49 during the afternoon peak hour. This volume of traffic is low to moderate and can be accommodated within the existing capacity of the road network with no modifications required.*
- *The minimum sight distance requirement of AS2890.1 is achieved from proposed crossovers in both directions.*
- *The provision of 19 car parking bays satisfies the minimum requirements of the City's Town Planning Scheme.*
- *The demand for bicycle parking is expected to be low and limited to staff only. Child care centres are typically well secured sites and so staff could potentially park within the site where there is room to do so.*
- *The parking layout mostly complies with the AS2890.1. It is recommended that at least 8 of the 2.6m wide bays are allocated for pick-up / drop-off use.*
- *As the parking layout comprises a blind aisle longer than the width of 6 bays, provision to turn around is required in the event that the car park is full. This could be achieved by converting the delivery bay into a turnaround bay. Deliveries are likely to occur outside of the pick-up / drop-off periods and so delivery vehicles would be able to use the visitor bays.*
- *The existing path network is considered to be adequate for the movement of pedestrians and cyclists to and from the development.*
- *The crash history of the adjacent road network did not indicate any safety issue on the adjacent road network and there is no indication that the development would increase the risk of crashes unacceptably.*
- *The demand for public transport is likely to be relatively low based on the proposed uses and so the existing public transport services are considered to be adequate to meet the likely demand.*

On the basis of the above, the TIS demonstrates that the proposed development will not have any adverse impacts on the surrounding road network.

## 6. ACOUSTIC CONSIDERATIONS

An Acoustic Assessment has been prepared by Herring Storer Acoustics in support of the proposed development at the subject site.

Refer **Attachment 4 – Acoustic Assessment**.

The following is a summary of the conclusions contained in the Acoustic Assessment:

*Noise received at the neighbouring residences from the outdoor play area would comply with day period assigned noise level for the day period, with the babies outdoor play area is to be located as shown on Figure 5.1 in Section 5 – Modelling and the north eastern boundary fence being 2.1 metres high, as shown in Figure 5.2 in Section 5 – Modelling.*

*With the air conditioning condensing units located as shown of the drawings attached in Appendix A and screened from the neighbours, noise received at the neighbouring residences from the air conditioning condensing units have also been assessed to comply with the requirements of the Environmental Protection (Noise) Regulations 1997 at all times. Even so, it is recommended that the air conditioning units be installed with “low noise” night period modes and the kitchen exhaust fan either be screened from the neighbouring residence to the north west of the discharge be located toward the centre of the building.*

*It is noted that noise associated with cars movements and cars starting are exempt from complying with the Regulations. However, noise emissions from car doors are not strictly exempt from the Regulations. Noise received at the neighbouring premises would also comply with the Regulatory requirements, at all times with the inclusion of the parking restrictions, as shown on Figure 5.3 in Section 5 – Modelling.*

*Thus, noise emissions from the proposed development, would be deemed to comply with the requirements of the Environmental Protection (Noise) Regulations 1997 for the proposed hours of operation, with the inclusion of the following:*

- *Although, the proposed facility would open before 7 am (ie during the night period), the outdoor play area would not be used until after 7am. Thus, noise received at the neighbouring existing residences from the outdoor play area needs to comply with the assigned day period noise level. Additionally, the babies outdoor area is to be located as shown on Figure 5.1 in Section 5 – Modelling.*
- *Fencing along the north eastern boundary to be as shown in Figure 5.2 in Section 5 – Modelling/ Other fencing to be as shown on the drawings at attached in Appendix A. It is noted that for a child care centre, colourbond is an acceptable fencing material.*
- *Although not required for compliance, it is recommended that the air conditioning units be installed with “low noise” night period modes and the kitchen exhaust fan either be screened from the neighbouring residence to the north west of the discharge be located toward the centre of the building. Additionally, it is recommended that an assessment of the mechanical services design be undertaken to ensure compliance with the Regulations.*
- *For noise associated with cars within the car park to comply with the Regulations,*

*parking restrictions, as shown in Figure 5.3 in Section 5 - Modelling.*

- *Deliveries to be limited to the day period.*

On the basis of the above, the Acoustic Assessment demonstrates that the proposed development will not result in any adverse noise impacts on the surrounding existing residential land uses.



## 7. ENVIRONMENTAL CONSIDERATIONS

An Emissions Impact Assessment (**EIA**) has been prepared by Environmental and Air Quality Consulting in support of the proposed development at the subject site.

Refer **Attachment 5 – Emissions Impact Assessment**.

The following is a summary of the conclusions contained in the EIA:

*The site-specific scientific study addressed the health risks associated with vapour emissions from the BP Site for the purposes of determining the risk of emissions' impacts at an adjacently proposed Child Care Centre.*

*The proposed Child Care Centre will satisfy the guideline separation distance of 50 metres from the nearest refuelling location at the BP Site, however; for the purposes of proper and orderly planning, the Assessment has been undertaken to demonstrate the low risk of vapour emissions exposure on human receptors at the Child Care Centre.*

*The BP Site is within an urban developed area with residential properties surrounding, and operates under limited hours daily i.e., not a 24-hour operation.*

*Importantly, the Child Care Centre proposed hours of operation were assessed for predicted emissions impacts, rather than the total hours of operation for the BP Site, given that the timeframes for exposure of human receptors at the Child Care Centre rely wholly on the Child Care Centre's hours of operations.*

*The Assessment utilised accepted standards for estimating pollutant emission rates of primary airborne pollutants from fuel storage and refuelling activities at the 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.*

*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 Western Australian Department of Water and Environmental Regulation and that of the National Environment Protection (Air Toxics) Measure.*

The predicted concentrations of these primary pollutants demonstrated that the service station emissions are unlikely to have an unreasonable impact on the future health of those attending the Child Care Centre. On the basis of the above, the EIA demonstrates that users of the proposed development are not at risk of being adversely impacted by pollutant emissions from land uses in the locality.

## 8. WASTE CONSIDERATIONS

A Waste Management Plan (**WMP**) has been prepared by Talis Consultants in support of the proposed development at the subject site.

Refer **Attachment 6 – Waste Management Plan**.

The following is a summary of the conclusions contained in the WMP:

*The proposed development provides a sufficiently sized Bin Storage Area for storage of refuse and recyclables, based on the estimated waste generation volumes and suitable configuration of bins. This indicates that an adequately designed Bin Storage Area has been provided, and collection of refuse and recyclables can be facilitated by the proposed development.*

- *Four 240L refuse bins, collected once each week; and*
- *Four 240L recycling bins, collected once each week.*

*The City will service the bins from the Bin Presentation Area on the Malibu Road verge at the front of the subject site utilising its kerbside collection service.*

*A caretaker/suitably qualified staff will oversee the relevant aspects of waste management.*

On the basis of the above, the WMP demonstrates that the proposed development can adequately and appropriately store the waste generated from the child care centre. Furthermore, the WMP outlines that the generated waste can be suitably managed and transported from the subject site.

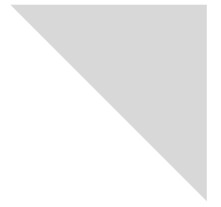
## 9. CONCLUSION

This Development Application (**Application**) seeks to obtain Development Approval from the City of Rockingham (**the City**) for a child care centre at Lot 193 (No. 6) and Lot 194 (No. 4) Malibu Road, Safety Bay (**subject site**).

This Application should be approved by the City for the following reasons:

- ▲ The proposed development is consistent with the intent of the 'Urban' Zone under the provisions of the Metropolitan Region Scheme (**MRS**);
- ▲ The proposed development is consistent with the objective of the 'Residential' Zone under the provisions of the City's Local Planning Scheme No. 2 (**LPS 2**);
- ▲ The proposed development is residential in character, designed to a high architectural quality, compatible with the surrounding built form and improves the existing amenity of the residential streetscape;
- ▲ The proposed development is consistent with the development standards contained in the City's LPS 2, the relevant Local Planning Policies and the R-Codes;
- ▲ There is a demonstrated need for the proposed development due to the lack of child care centres in the locality. When considering this, along with the other locational requirements of the Planning Bulletin, it is considered that the subject site is an appropriate location;
- ▲ The proposed development does not result in any adverse traffic impacts on the surrounding road network;
- ▲ The proposed development is compliant with the *Environmental Protection (Noise) Regulations 1997*;
- ▲ Users of the proposed development are not at risk of being adversely impacted by pollutant emissions from land uses in the locality; and
- ▲ The proposed development provides a sufficiently sized Bin Storage Area for storage of refuse and recyclables, based on the estimated waste generation volumes and suitable configuration of bins.

The proposed development is consistent with the principles of orderly and proper planning and will improve the existing residential amenity of the locality. On this basis, the proposed development should be approved by the Town.



# ATTACHMENT 1

CERTIFICATES OF TITLE



**ROWE**  
GROUP

WESTERN



AUSTRALIA

REGISTER NUMBER

**193/P11828**DUPLICATE  
EDITION**1**

DATE DUPLICATE ISSUED

**22/6/2007**VOLUME  
**1457**FOLIO  
**432**

# 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 193 ON PLAN 11828

### REGISTERED PROPRIETOR: (FIRST SCHEDULE)

YIWEI ZHANG OF 12 MAQUIRE WAY BULL CREEK WA 6149  
IN 291/431 SHARE

BO XIONG OF 83 DEVENISH STREET EAST VICTORIA PARK WA 6101  
IN 140/431 SHARE  
AS TENANTS IN COMMON

(T O971653 ) REGISTERED 9/12/2021

### LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

1. \*F604151 EASEMENT TO WATER AUTHORITY OF WESTERN AUSTRALIA. SEE SKETCH ON DEPOSITED PLAN 190769. REGISTERED 5/7/1994.

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: 1457-432 (193/P11828)  
PREVIOUS TITLE: 1457-402  
PROPERTY STREET ADDRESS: 6 MALIBU RD, SAFETY BAY.  
LOCAL GOVERNMENT AUTHORITY: CITY OF ROCKINGHAM

NOTE 1: K217858 INCLUDES CROWN LAND LAND ACT 1933  
NOTE 2: DUPLICATE CERTIFICATE OF TITLE NOT ISSUED AS REQUESTED BY DEALING O971653

WESTERN



AUSTRALIA

REGISTER NUMBER

**194/P11828**DUPLICATE  
EDITION**N/A**

DATE DUPLICATE ISSUED

**N/A**

# RECORD OF CERTIFICATE OF TITLE

## UNDER THE TRANSFER OF LAND ACT 1893

VOLUME  
**1457**FOLIO  
**433**

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 194 ON PLAN 11828

**REGISTERED PROPRIETOR:**  
 (FIRST SCHEDULE)

MING-HUAN TSAI  
BO XIONG  
BOTH OF 26 GIRRAWHEEN DRIVE, GOOSEBERRY HILL  
AS JOINT TENANTS

(T M498428 ) REGISTERED 18/12/2013

**LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:**  
 (SECOND SCHEDULE)

1. \*M498429 MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA REGISTERED 18/12/2013.

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.

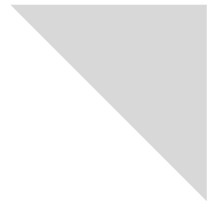
-----END OF CERTIFICATE OF TITLE-----

**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: 1457-433 (194/P11828)  
PREVIOUS TITLE: 1457-402  
PROPERTY STREET ADDRESS: 4 MALIBU RD, SAFETY BAY.  
LOCAL GOVERNMENT AUTHORITY: CITY OF ROCKINGHAM

NOTE 1: DUPLICATE CERTIFICATE OF TITLE NOT ISSUED AS REQUESTED BY DEALING  
M498429



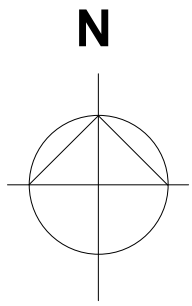
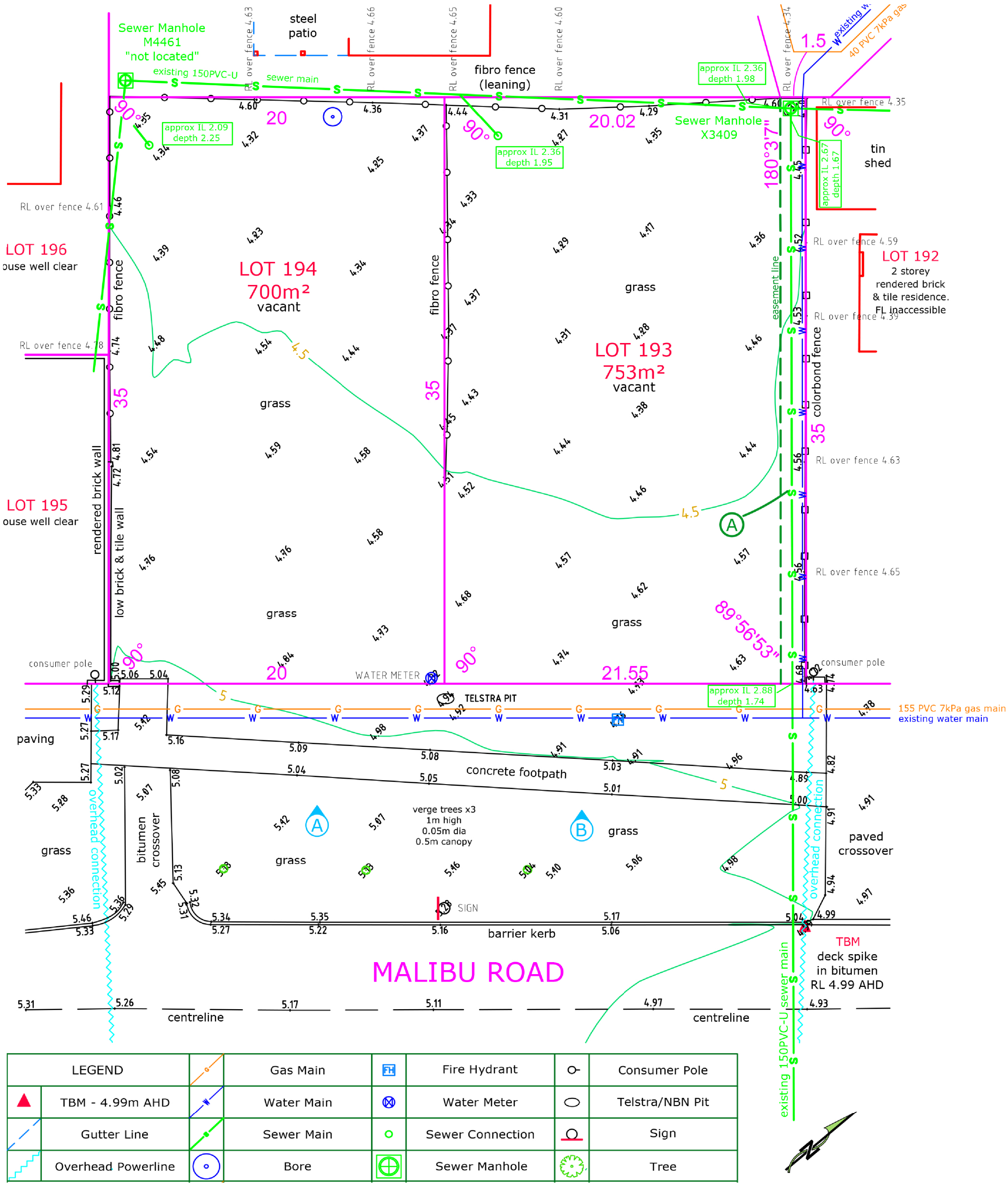
# ATTACHMENT 2

DEVELOPMENT PLANS



**ROWE**  
GROUP





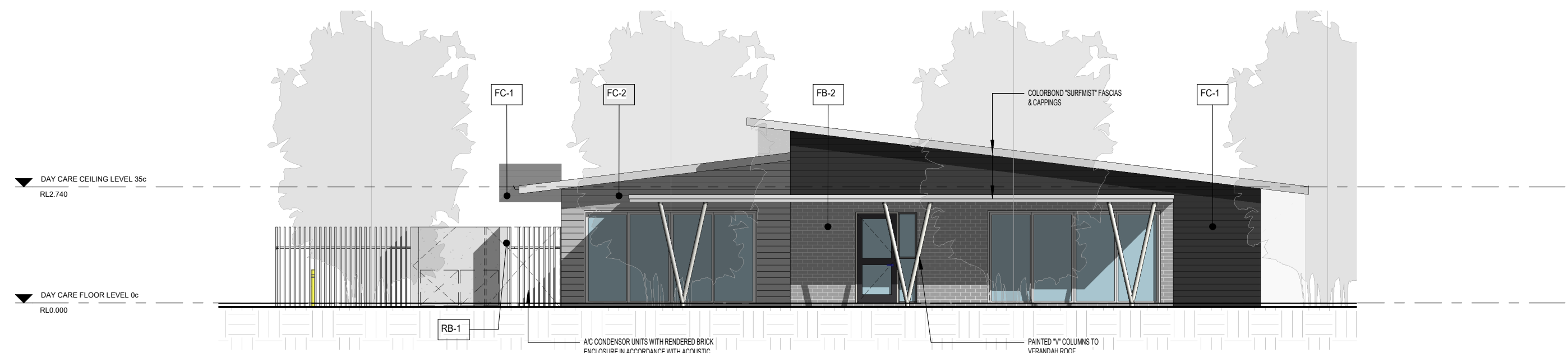
2 LOCATION PLAN  
SCALE 1: 500

1 EXISTING SURVEY PLAN  
SCALE 1: 200

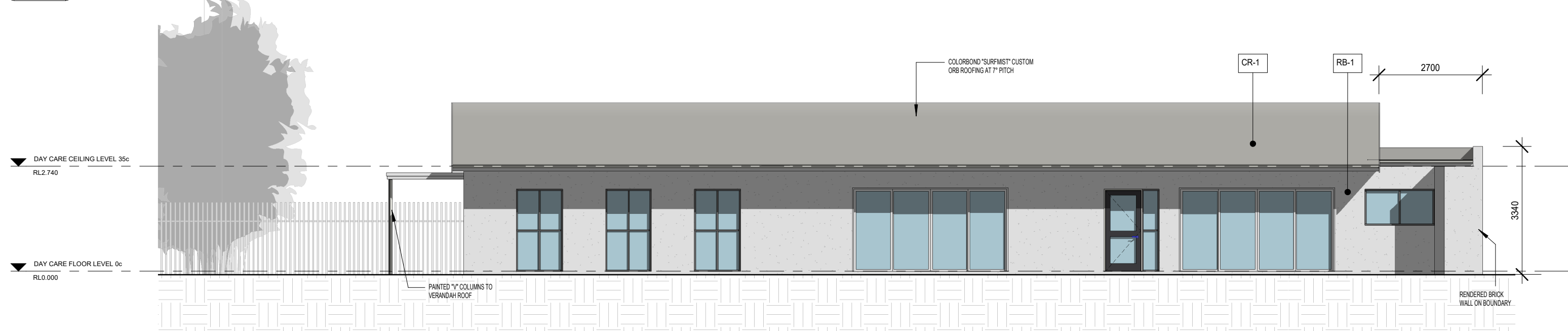




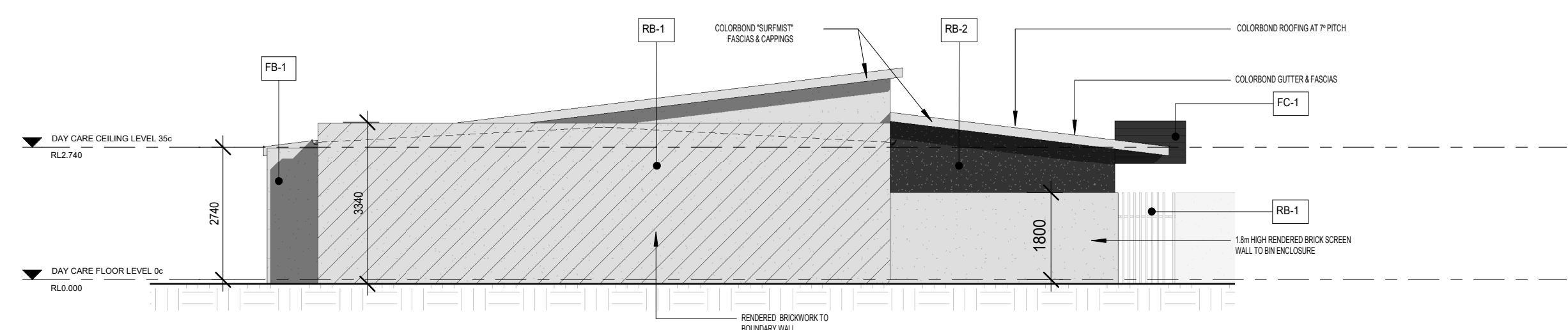




1 ELEVATION SOUTH-EAST  
SCALE 1 : 100



2 ELEVATION SOUTH-WEST  
SCALE 1 : 100



3 ELEVATION NORTH-WEST  
SCALE 1 : 100

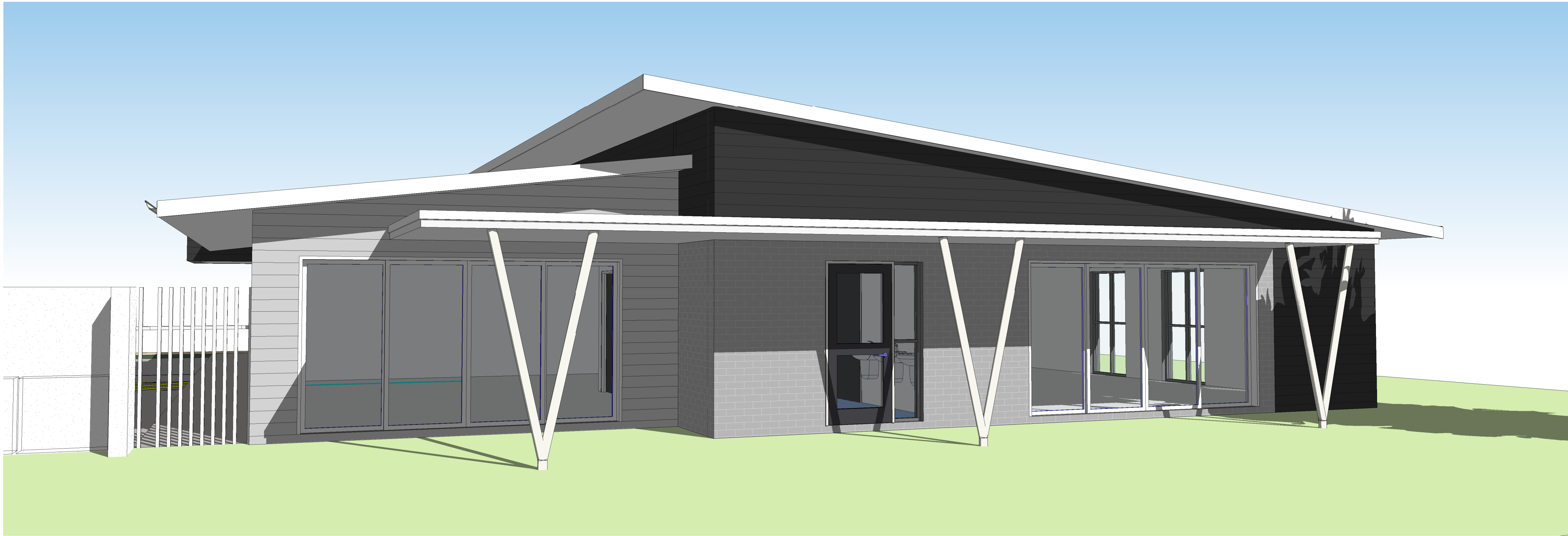


4 ELEVATION NORTH-EAST  
SCALE 1 : 100

EXTERNAL FINISHES LEGEND					
SAMPLE	TAG	DESCRIPTION	SAMPLE	TAG	DESCRIPTION
	FC-1	JAMES HARDIE SCYON STRIA CLADDING 325mm - "MONUMENT" COLOUR		CR-1	COLORBOND CUSTOM ORB ROOF SHEETING COLOUR "SURFMIST"
	FC-2	JAMES HARDIE SCYON STRIA CLADDING 325mm - "SURFMIST" COLOUR		RB-1	RENDERED BRICK VENEER COLOUR "SURFMIST"
	FB-1	"RESTORATION RED - TUMBLED" FACE BRICKWORK - 230mm x 110mm x 76mm		RB-2	RENDERED BRICK VENEER COLOUR "MONUMENT"
	FB-2	PAINTED FACE BRICKWORK "SHALE GREY" - 230mm x 110mm x 76mm		FB-3	PAINTED FACE BRICKWORK "MONUMENT" - 230mm x 110mm x 76mm



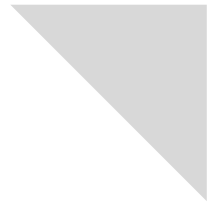
5 FLOOR PLAN GA  
SCALE 1 : 100



1 3D - CHILDCARE PERSPECTIVE  
SCALE



2 3D - CHILDCARE PERSPECTIVE 2  
SCALE



# ATTACHMENT 3

TRANSPORT IMPACT STATEMENT



**ROWE**  
GROUP





# Transport Impact Statement

Project:	Proposed Child Care Centre 4-6 Malibu Road, Safety Bay
Client:	Greener4 Pty Ltd c/- Rowe Group
Author:	N. Baby / P. Nguyen
Date:	19 <sup>th</sup> September 2023
Shawmac Document #:	2303013-TIS-001

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## Document Status: Client Review

Version	Prepared By	Reviewed By	Approved By	Date
A	N. Baby	P. Nguyen	P. Nguyen	08/05/2023
B	N. Baby / P. Nguyen	-	P. Nguyen	18/09/2023
B	N. Baby / P. Nguyen	-	P. Nguyen	19/09/2023

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File Reference: Y:\Jobs Active 2023\T&T - Traffic & Parking\Rowe Group\_4-6 Malibu Rd, Safety Bay\_TIS\_2303013\3. Documents\3.2 Reports\Rowe Group\_4-6 Malibu Rd, Safety Bay\_TIS\_Rev C.docx



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# 1 Introduction

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## 1.1 Proponent

Shawmac has been engaged by Rowe Group to prepare a Transport Impact Statement (TIS) for a proposed child care centre in Safety Bay.

This TIS has been prepared in accordance with the Western Australian Planning Commission (WAPC) *Transport Impact Assessment Guidelines Volume 4 – Individual Developments*. The assessment considers the following key matters:

- Details of the proposed development.
- Vehicle access and parking.
- Provision for service vehicles.
- Daily traffic volumes and vehicle types.
- Traffic management on frontage streets.
- Public transport access.
- Pedestrian access.
- Cycle access
- Site specific and safety issues.

## 1.2 Site Location

The site address is 4-6 Malibu Road, Safety Bay. The local authority is the City of Rockingham.

The general site location is shown in **Figure 1**. An aerial view of the existing site is shown in **Figure 2**.

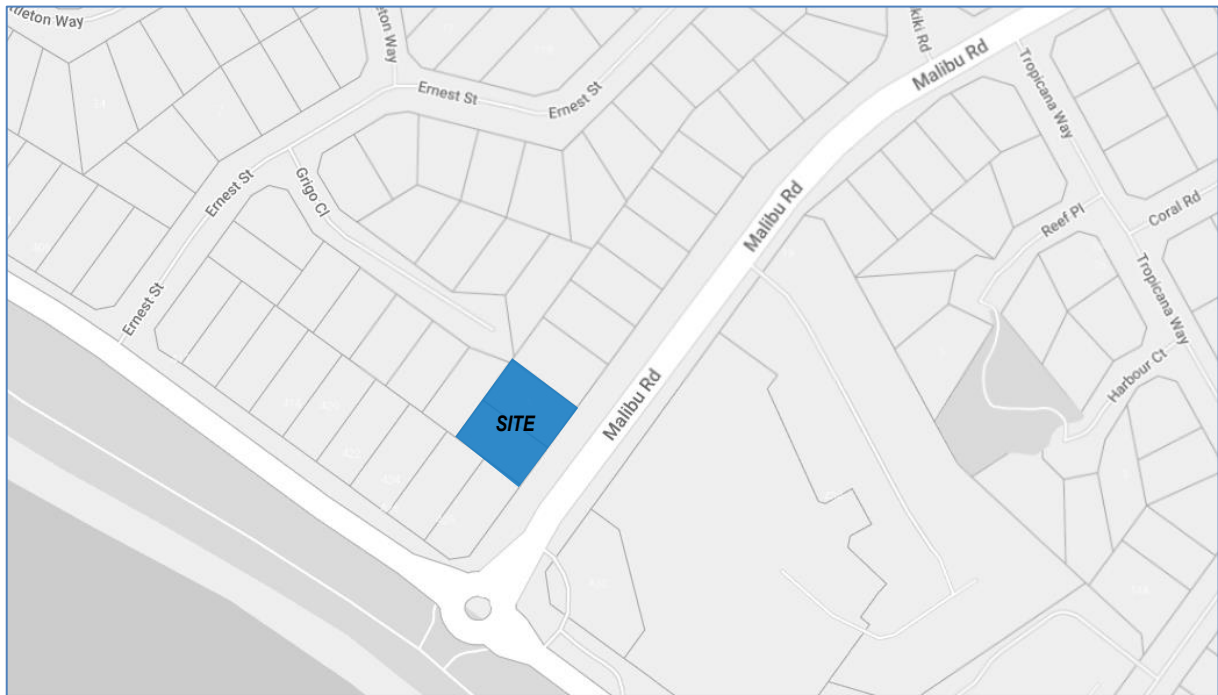


Figure 1: Site Location



Figure 2: Aerial View (August 2023)

## 2 Proposed Development

### 2.1 Land Use

The proposed development is a child care centre accommodating up to 60 children and 11 staff. 19 car parking spaces are proposed which includes 1 ACROD car bay.

The proposed site plan is shown in **Figure 3**.

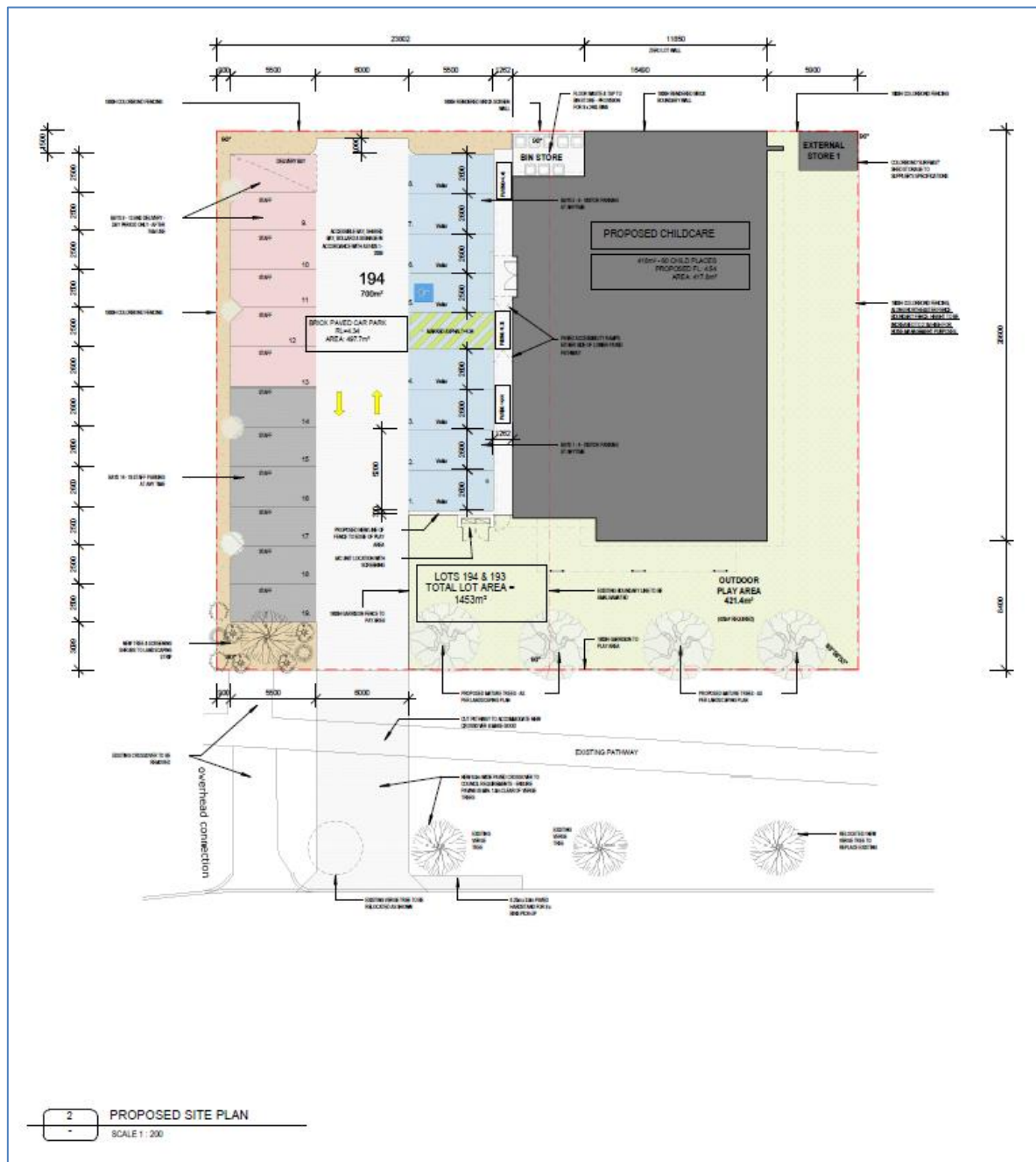


Figure 3: Site Plan

### 3 Traffic Management on Frontage Streets

#### 3.1 Road Network Layout and Hierarchy

The layout and hierarchy of the existing local road network according to the Main Roads WA *Road Information Mapping System* is shown in **Figure 4**.

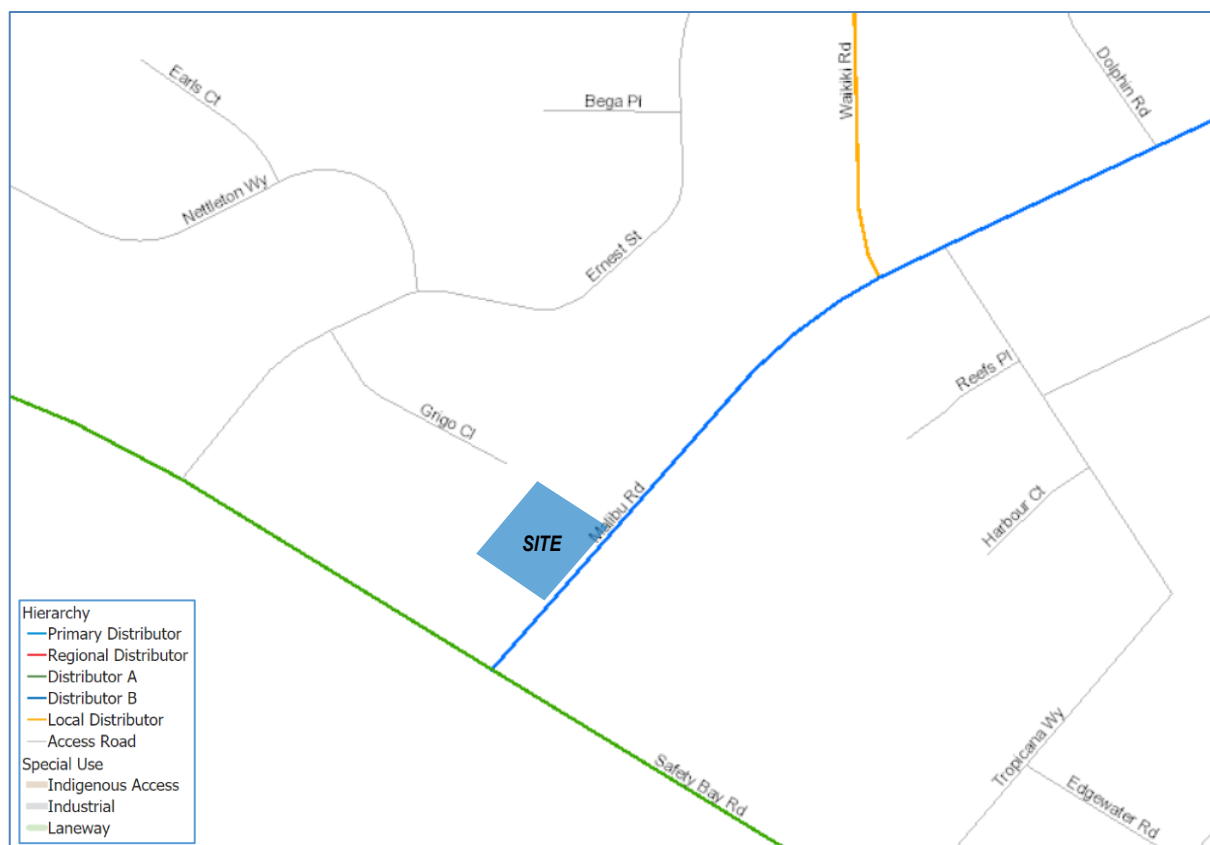


Figure 4: Existing Road Network Hierarchy

### 3.2 Speed Limits

The speed limit along the existing local road network according to the Main Roads WA *Road Information Mapping System* is shown in **Figure 5**.



**Figure 5: Speed Limits**



## 4 Vehicle Access and Parking

### 4.1 Access

Vehicle access is proposed via new crossover on Malibu Road in **Figure 6**.

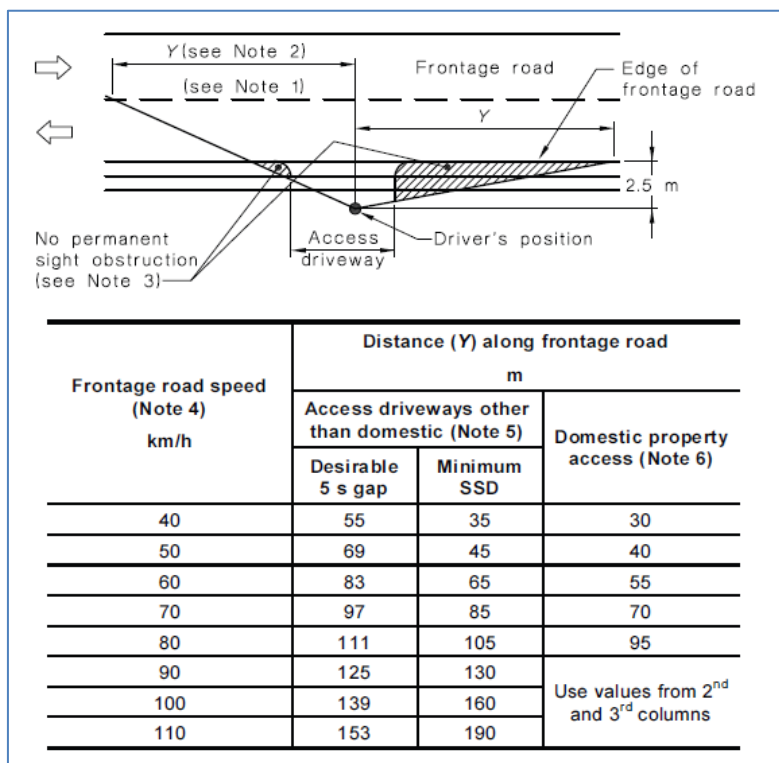


**Figure 6: Vehicle Access Arrangement**

According to the City of Rockingham's *Specification for the Construction of Commercial / Industrial Crossovers*, crossovers are to be between 4m and 10m wide at the property boundary and between 7m and 13m wide at the kerb line. The proposed crossover is 6m wide at the property boundary and 8.6m at the kerb line. The crossover width is therefore compliant.

## 4.2 Sight Distance

Sight distance requirements from vehicle exit points are defined in Figure 3.2 of Australian Standard AS2890.1-2004 *Parking facilities Part 1: Off street car parking* (AS2890.1) which is shown in **Figure 7**.



**Figure 7: AS2890.1 Sight Distance Requirements**

Based on the 60km/h speed limit along Malibu Road, the minimum required sight distance is 65m.

As shown in **Figure 8**, the minimum required sight distance is achieved in both directions from the new crossover. It is noted that vehicles approaching from the south-west will be travelling well below 60km/h as they will have just turned from Safety Bay Road.



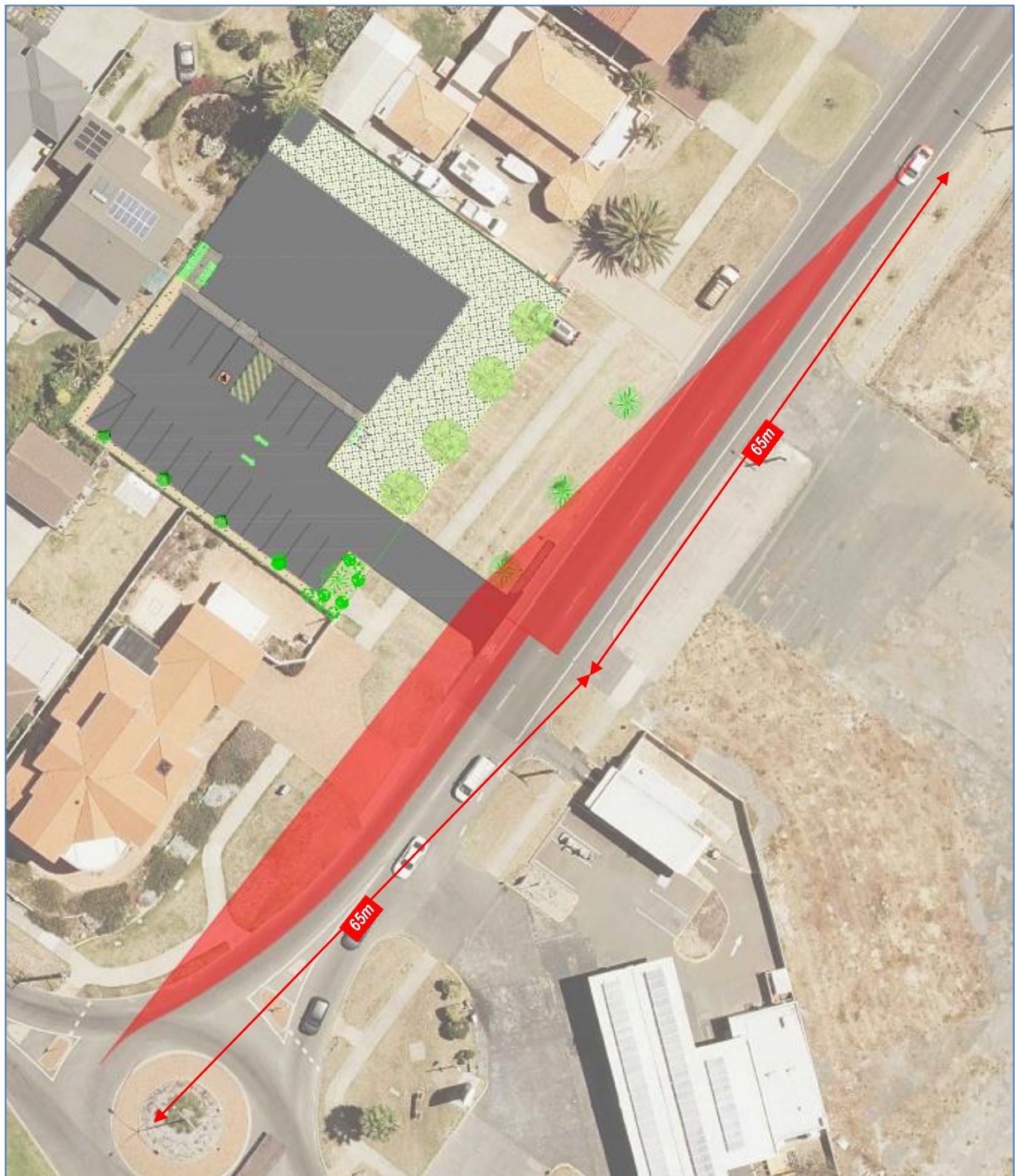


Figure 8: Sight Distance Check

## 4.3 Car Parking

It is proposed to provide a total of 19 car parking bays on the site.

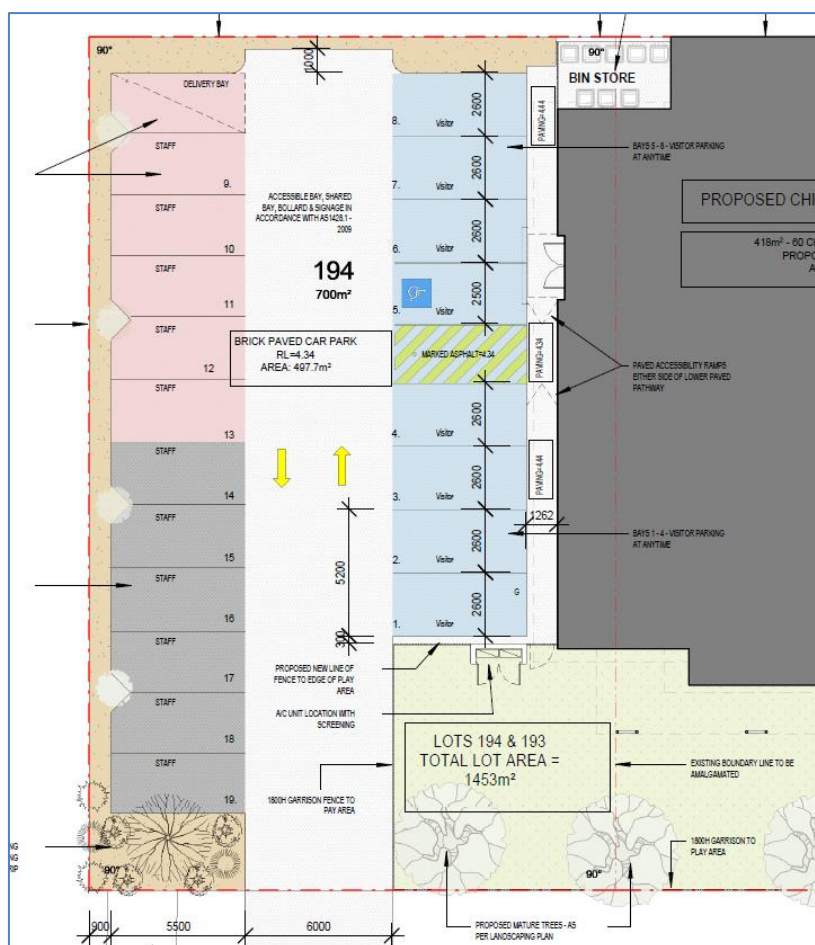
### 4.3.1 Planning Scheme Requirements

The car parking requirements calculated in accordance with the City of Rockingham Town Planning Scheme No 2. are outlined in **Table 1**.

**Table 1: Car Parking Calculation – TPS2**

Land Use	Requirement	Quantum	Bays Required
Childcare	1 space per every 8 children	60 children	8
	1 space for every employee	11 staff	11

As shown, the proposed development is required to provide 19 car bays. The proposed 19 bays satisfy the calculated requirements and are therefore considered to be adequate. The parking will be allocated as shown in **Figure 9**.



**Figure 9: Parking Allocation**

## 4.4 Bicycle Parking

The City's TPS does not appear to specify requirements for bicycle parking.

The demand for bicycle parking is expected to be low and limited to staff only. Child care centres are typically well secured sites and so staff could potentially park bicycles within the site where there is room to do so.

## 4.5 Parking Design

The parking layout will need to comply with the requirements of Australian Standard AS2890.1. The user class will depend on the purpose of the bay as detailed in **Figure 10**.

9			
AS/NZS 2890.1:2004			
TABLE 1.1 CLASSIFICATION OF OFF-STREET CAR PARKING FACILITIES			
User class	Required door opening	Required aisle width	Examples of uses (Note 1)
1	Front door, first stop	Minimum for single manoeuvre entry and exit	Employee and commuter parking (generally, all-day parking)
1A	Front door, first stop	Three-point turn entry and exit into 90° parking spaces only, otherwise as for User Class 1	Residential, domestic and employee parking
2	Full opening, all doors	Minimum for single manoeuvre entry and exit	Long-term city and town centre parking, sports facilities, entertainment centres, hotels, motels, airport visitors (generally medium-term parking)
3	Full opening, all doors	Minimum for single manoeuvre entry and exit	Short-term city and town centre parking, parking stations, hospital and medical centres
3A	Full opening, all doors	Additional allowance above minimum single manoeuvre width to facilitate entry and exit	Short term, high turnover parking at shopping centres
4	Size requirements are specified in AS/NZS 2890.6 (Note 2)		Parking for people with disabilities

**Figure 10: Classification of Parking Facilities**

Staff parking (long-term parking) would be classified as User Class 1. Pick-up and drop-off parking (short term parking) would most likely be classified as User Class 3.

An assessment of the AS2890.1 parking requirements is detailed in **Table 2**.

Table 2: AS2890.1 Car Parking Compliance

Dimension	Requirement	Provided
<b>90 degree parking – Class 1 – Long Term Parking (Staff)</b>		
Car Bay Width	2.4m	2.5m minimum
Car Bay Length	5.4m	5.5m
Parking Aisle Width	5.8m	6.0m
<b>90 degree parking – Class 3 – Short Term Parking (Pick-up / Drop-off)</b>		
Car Bay Width	2.6m	2.6m
Car Bay Length	5.4m	5.5m
Parking Aisle Width	5.8m	6.0m

As shown, the dimensions of the parking bays are compliant with AS2890.1.

As the parking layout comprises a blind aisle longer than the width of 6 bays, provision to turn around is required in the event that the car park is full. This could be achieved by converting the delivery bay into a turnaround bay. Deliveries are likely to occur outside of the pick-up / drop-off periods and so delivery vehicles would be able to use the visitor bays.

#### 4.6 Provision for Service Vehicles

It is understood that waste will be collected from the verge and so there is no need to accommodate waste vehicles on-site. Deliveries are assumed to be undertaken using light vehicles and vans which can park within the on-site bays.



## 5 Traffic Generation

The volume of traffic generated by the proposed development has been estimated using trip generation rates from the Institute of Transportation Engineers (ITE) *Trip Generation*.

The traffic generation is detailed in **Table 3**.

**Table 3: Proposed Development Vehicle Trip Generation**

Land Use	Units	Quantity	Generation Rate			Number of Trips		
			Daily	AM Peak	PM Peak	Daily	AM Peak	PM Peak
Child Care / Day Care Centre	Children	60	4.09	0.78	0.79	245	47	47

As shown above, the development is estimated to generate 245 daily vehicle trips including 47 during the AM peak hour and 47 vehicle trips during the PM peak hour.

According to the WAPC TIA guidelines, an increase of between 10 to 100 peak hour vehicles is considered to have a low to moderate impact and is generally deemed acceptable without requiring detailed capacity analysis. The estimated 47 vehicles per hour is at the middle of this range and so the development traffic is considered to have a moderate impact and can be accommodated within the existing capacity of the road network.

The following is noted with regards to the traffic impact of the development:

- According to Austroads guidelines, the theoretical capacity of an urban road with no kerbside parking is 900 vehicles per hour (vph) in each direction or 1,800vph for a two-lane, two-way road. 47vph is less than 3% of the theoretical mid-block capacity of the road.
- Safety Bay Road is a Distributor A road and Malibu Road is a Distributor B road. Both of these roads are designed to carry relatively high volumes of traffic and some congestion at intersections during peak hours is to be expected during peak periods.
- Queuing at the nearby roundabout intersection during peak periods will reduce travel speeds and create gaps for development traffic to enter and exit the site.

## 6 Pedestrian and Cyclist Access

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All existing roads in the surrounding area have at least one footpath except for very minor access roads and laneways where pedestrian movements are unlikely to occur.

The existing path network is considered to be adequate for the movement of pedestrians and cyclists to and from the development.

## 7 Public Transport Access

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The following public transport services currently operate within 1km walking distance of the site:

- Transperth Bus Route 553 which operates between Rockingham Station and Shoalwater via Waikiki Road. The closest stops are on Malibu Road within 110m walking distance of the site.

The existing public transport services are considered to be adequate to meet the likely demand.

## 8 Site Specific Issues and Safety Issues

### 8.1 Crash History

The crash history of the adjacent road network was obtained from Main Roads WA's *Reporting Centre*. A summary of the recorded incidents over the five-year period ending December 2022 is shown in **Figure 11**. The search included Malibu Road between Safety Bay Road and Waikiki Road.

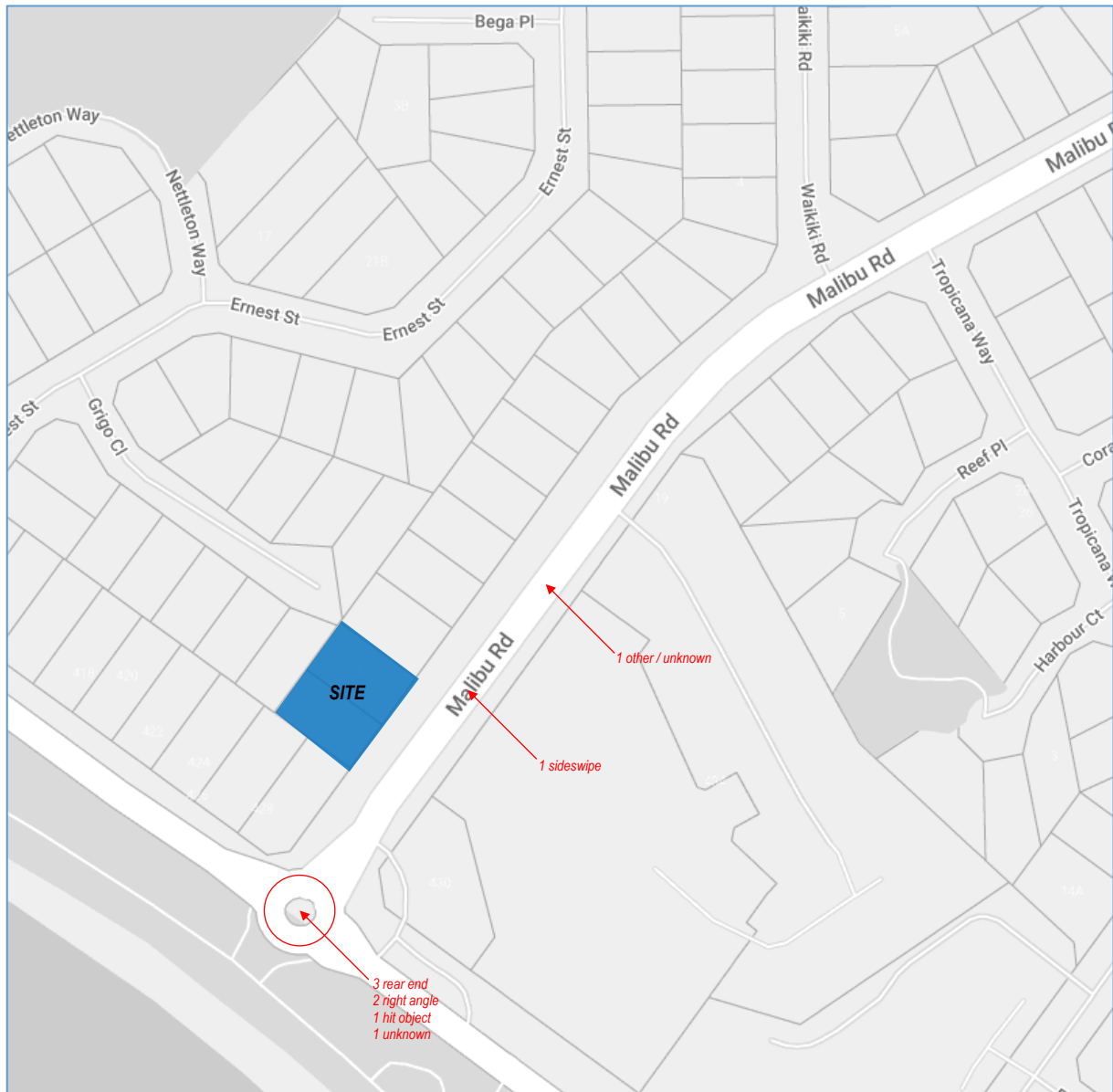


Figure 11: Crash History – January 2018 to December 2022

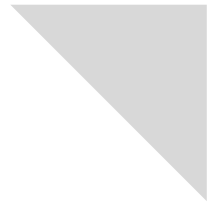
The number, type and location of the crashes do not appear to indicate a major safety issue on the road network. There is also no indication that the proposed development will increase the risk of crashes to an unacceptable level.

## 9 Conclusion

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This Transport Impact Statement for the proposed child care centre at 4-6 Malibu Road in Safety Bay concludes the following:

- The proposed development is predicted to generate approximately 245 vehicle trips per day including 47 trips during the morning peak hour and 47 during the afternoon peak hour. This volume of traffic is low to moderate and can be accommodated within the existing capacity of the road network with no modifications required.
- The minimum sight distance requirement of AS2890.1 is achieved from proposed crossovers in both directions.
- The provision of 19 car parking bays satisfies the minimum requirements of the City's Town Planning Scheme.
- The demand for bicycle parking is expected to be low and limited to staff only. Child care centres are typically well secured sites and so staff could potentially park within the site where there is room to do so.
- The parking layout mostly complies with the AS2890.1.
- As the parking layout comprises a blind aisle longer than the width of 6 bays, provision to turn around is required in the event that the car park is full. This could be achieved by converting the delivery bay into a turnaround bay. Deliveries are likely to occur outside of the pick-up / drop-off periods and so delivery vehicles would be able to use the visitor bays.
- The existing path network is considered to be adequate for the movement of pedestrians and cyclists to and from the development.
- The crash history of the adjacent road network did not indicate any safety issue on the adjacent road network and there is no indication that the development would increase the risk of crashes unacceptably.
- The demand for public transport is likely to be relatively low based on the proposed uses and so the existing public transport services are considered to be adequate to meet the likely demand.



# ATTACHMENT 4

ACOUSTIC ASSESSMENT



**ROWE**  
GROUP

**PROPOSED CHILD CARE CENTRE  
LOTS 194 & 196 (# 4 – 6) MALIBU ROAD  
SAFETY BAY**

**ENVIRONMENTAL ACOUSTIC ASSESSMENT**

**SEPTEMBER 2023**

**OUR REFERENCE: 31601-1-23085-02**



DOCUMENT CONTROL PAGE

**ENVIRONMENTAL ACOUSTIC ASSESSMENT**  
**PROPOSED CHILD CARE CENTRE**  
**MALIBU ROAD, SAFETY BAY**

Job No: 23085-02

Document Reference: 31601-1-23085-02

FOR

**ROWE GROUP**

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Date of Issue:	19 September 2023			
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This report has been prepared in accordance with the scope of services and on the basis of information and documents provided to Herring Storer Acoustics by the client. To the extent that this report relies on data and measurements taken at or under the times and conditions specified within the report and any findings, conclusions or recommendations only apply to those circumstances and no greater reliance should be assumed. The client acknowledges and agrees that the reports or presentations are provided by Herring Storer Acoustics to assist the client to conduct its own independent assessment.

## CONTENTS

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2.	SUMMARY	1
3.	CRITERIA	2
4.	PROPOSAL	5
5.	MODELLING	5
6.	RESULTS	9
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8.	CONCLUSION	13

## APPENDICIES

A	PLANS
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## 1. INTRODUCTION

Herring Storer Acoustics were commissioned to undertake an acoustic assessment of noise emissions associated with the proposed day care centre to be located at Lots 194 and 196 (No. 4 - 6) Malibu Road, Safety Bay.

The report considers noise received at the neighbouring premises from the proposed development for compliance with the requirements of the *Environmental Protection (Noise) Regulations 1997*. This report considers noise emissions from:

- Children playing within the outside play areas of the centre; and
- Mechanical services.

We note that from information received from DWER, the bitumised area would be considered as a road, thus noise relating to motor vehicles is exempt from the *Environmental Protection (Noise) Regulations 1997*. We note that these noise sources are rarely critical in the determination of compliance. However, as requested by council and for completeness, they have been included in the assessment, for information purposes only.

For information, a plan of the proposed development is attached in Appendix A.

## 2. SUMMARY

Noise received at the neighbouring premises from the outdoor play areas would comply with the requirements of the *Environmental Protection (Noise) Regulations 1997*, provided outdoor play is limited to the day period (ie after 7am), with the inclusion of the boundary fencing as shown on the drawings attached in Appendix A and the babies outdoor area is to be located as shown on Figure 5.1 in Section 5 – Modelling and the north eastern boundary fence being 2.1 metres high, as shown in Figure 5.2 in Section 5 – Modelling.

With the air conditioning condensing units located as shown on the drawings attached in Appendix A and screened from the neighbours, noise received at the neighbouring residences from the air conditioning condensing units have also been assessed to comply with the requirements of the *Environmental Protection (Noise) Regulations 1997* at all times. Even so, it is recommended that the air conditioning units be installed with “low noise” night period modes and the kitchen exhaust fan either be screened from the neighbouring residence to the north west of the discharge be located toward the centre of the building.

It is noted that noise associated with cars movements and cars starting are exempt from complying with the Regulations. However, noise emissions from car doors are not strictly exempt from the Regulations. Noise received at the neighbouring premises would also comply with the Regulatory requirements, at all times with the inclusion of the parking restrictions, as shown on Figure 5.3 in Section 5 – Modelling.

Thus, noise emissions from the proposed development, would be deemed to comply with the requirements of the *Environmental Protection (Noise) Regulations 1997* for the proposed hours of operation, with the inclusion of the following:

- 1 Although, the proposed facility would open before 7 am (ie during the night period), the outdoor play area would not be used until after 7am. Thus, noise received at the neighbouring existing residences from the outdoor play area needs to comply with the assigned day period noise level. Additionally, the babies outdoor area is to be located as shown on Figure 5.1 in Section 5 – Modelling.
- 2 Fencing along the north eastern boundary to be as shown in Figure 5.2 in Section 5 – Modelling/ Other fencing to be as shown on the drawings attached in Appendix A. It is noted that for a child care centre, colourbond is an acceptable fencing material.
- 3 Although not required for compliance, it is recommended that the air conditioning units be installed with “low noise” night period modes and the kitchen exhaust fan either be screened from the neighbouring residence to the north west of the discharge be located toward the centre of the building. Additionally, it is recommended that an assessment of the mechanical services design be undertaken to ensure compliance with the Regulations.
- 4 For noise associated with cars within the car park to comply with the Regulations, parking restrictions, as shown in Figure 5.3 in Section 5 - Modelling.
- 5 Deliveries to be limited to the day period.

### 3. CRITERIA

The allowable noise level at the surrounding locales is prescribed by the *Environmental Protection (Noise) Regulations 1997*. Regulations 7 & 8 stipulate maximum allowable external noise levels. For highly sensitive area of a noise sensitive premises this is determined by the calculation of an influencing factor, which is then added to the base levels shown below in Table 3.1. The influencing factor is calculated for the usage of land within two circles, having radii of 100m and 450m from the premises of concern. For other areas within a noise sensitive premises, the assigned noise levels are fixed throughout the day, as listed in Table 3.1.

**TABLE 3.1 - BASELINE ASSIGNED OUTDOOR NOISE LEVEL**

Premises Receiving Noise	Time of Day	Assigned Level (dB)		
		LA10	LA1	LAm <sub>ax</sub>
Noise sensitive premises: highly sensitive area	0700 - 1900 hours Monday to Saturday (Day)	45 + IF	55 + IF	65 + IF
	0900 - 1900 hours Sunday and Public Holidays (Sunday / Public Holiday Day)	40 + IF	50 + IF	65 + IF
	1900 - 2200 hours all days (Evening)	40 + IF	50 + IF	55 + IF
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holidays (Night)	35 + IF	45 + IF	55 + IF
Noise sensitive premises: any area other than highly sensitive area	All hours	60	75	80

Note:  
 LA10 is the noise level exceeded for 10% of the time.  
 LA1 is the noise level exceeded for 1% of the time.  
 LAm<sub>ax</sub> is the maximum noise level.  
 IF is the influencing factor.

It is a requirement that received noise be free of annoying characteristics (tonality, modulation and impulsiveness), defined below as per Regulation 9.

- “impulsiveness”** means a variation in the emission of a noise where the difference between  $L_{Apeak}$  and  $L_{Amax(Slow)}$  is more than 15 dB when determined for a single representative event;
- “modulation”** means a variation in the emission of noise that –
- (a) is more than 3 dB  $L_{Afast}$  or is more than 3 dB  $L_{Afast}$  in any one-third octave band;
  - (b) is present for more at least 10% of the representative assessment period; and
  - (c) is regular, cyclic and audible;
- “tonality”** means 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  $L_{ASlow}$  levels.

Where the noise emission is not music, if the above characteristics exist and cannot be practicably removed, then any measured level is adjusted according to Table 3.2 below.

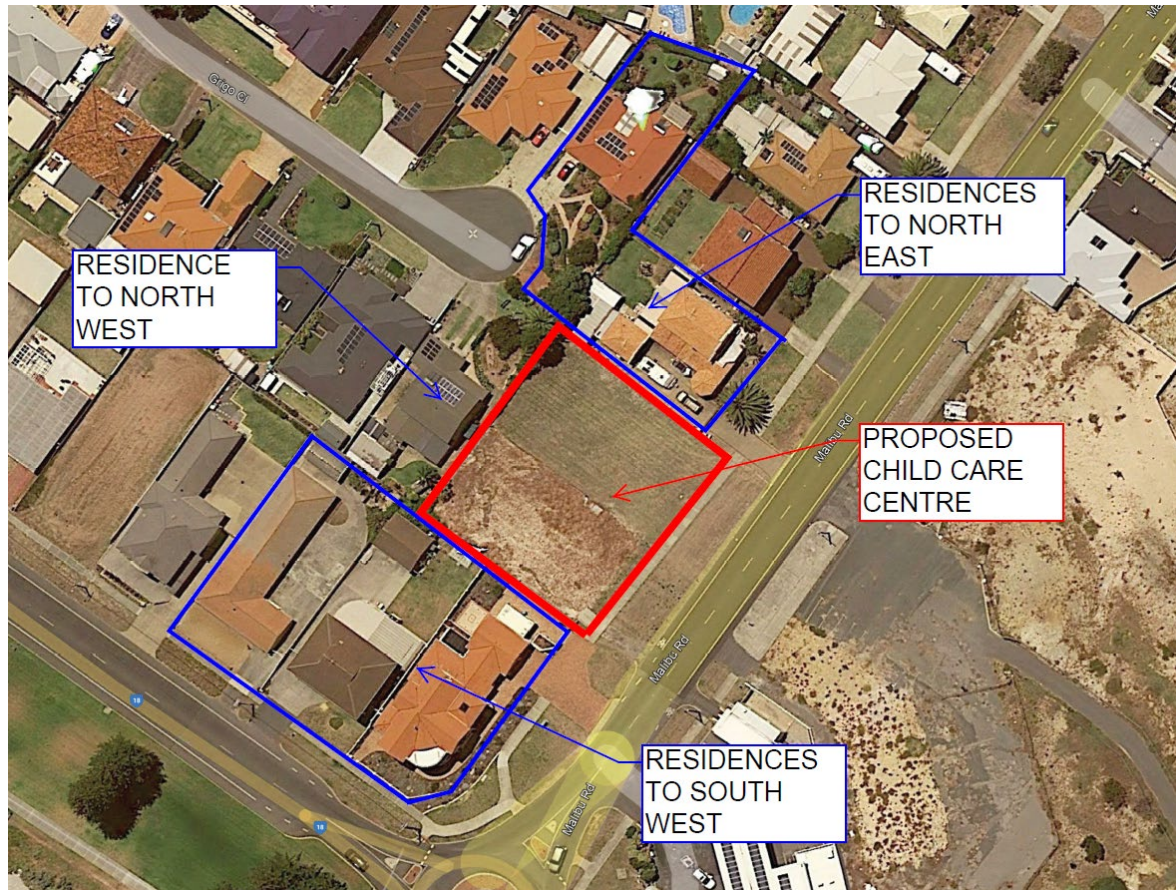
**TABLE 3.2 - ADJUSTMENTS TO MEASURED LEVELS**

Where <b>tonality</b> is present	Where <b>modulation</b> is present	Where <b>impulsiveness</b> is present
+5 dB(A)	+5 dB(A)	+10 dB(A)

Note: These adjustments are cumulative to a maximum of 15 dB.

The development is located on the south eastern corner of Safety Bay Road and Malibu Road. From information available from the Main Roads traffic Map, the current traffic flow along Safety Bay Road is around 14 500vpd, with the traffic volume along Malibu Road being around 5,500 vpd. Thus, Safety Bay Road would be considered as a secondary road.

For this development, the closest residential premises of concern are located, as shown on Figure 3.1 below.



**FIGURE 3.1 – RECEIVER POINTS**

We have reviewed the Influencing Factors and provide the following analysis of the Influencing Factors to the neighbouring residents. The influencing factor at the nearest residential locations around the site have been determined as summarised in Table 3.4.

**TABLE 3.4 – INFLUENCING FACTORS**

Influencing Factor Parameter	Influencing Factor (dB)		
	Residences to South West	Residences to North East	Residence to North West
Major Road within inner circle	-	-	-
Major Road within outer circle	-	-	-
Secondary Road within inner circle	+2	+2	+2
Commercial Premises within the inner circle	+1.0 (20%)	+1.4 (28%)	+0.7 (14%)
Commercial Premises within the outer circle	+0.2 (4%)	+0.2 (4%)	+0.2 (4%)
<b>TOTAL IF</b>	<b>+3.2 (Rounded to 3 dB)</b>	<b>+3.6 (Rounded to 4 dB)</b>	<b>+2.9 (Rounded to 3 dB)</b>

Based on the above, the assigned noise levels are as listed in Tables 3.5 and 3.6.



**TABLE 3.5 - ASSIGNED OUTDOOR NOISE LEVEL  
NEIGHBOURING RESIDENCES TO NORTH EAST**

Premises Receiving Noise	Time of Day	Assigned Level (dB)		
		L <sub>A</sub> 10	L <sub>A</sub> 1	L <sub>A</sub> max
Noise sensitive premises : Highly sensitive area	0700 - 1900 hours Monday to Saturday	49	59	69
	0900 - 1900 hours Sunday and Public Holidays	44	54	69
	1900 - 2200 hours all days	44	54	59
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holidays	39	49	59

Note: L<sub>A10</sub> is the noise level exceeded for 10% of the time.  
L<sub>A1</sub> is the noise level exceeded for 1% of the time.  
L<sub>Amax</sub> is the maximum noise level.

**TABLE 3.6 - ASSIGNED OUTDOOR NOISE LEVEL  
NEIGHBOURING RESIDENCES TO SOUTH WEST AND NORTH WEST**

Premises Receiving Noise	Time of Day	Assigned Level (dB)		
		L <sub>A</sub> 10	L <sub>A</sub> 1	L <sub>A</sub> max
Noise sensitive premises : Highly sensitive area	0700 - 1900 hours Monday to Saturday	48	58	68
	0900 - 1900 hours Sunday and Public Holidays	43	53	68
	1900 - 2200 hours all days	43	53	58
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holidays	38	48	58

Note: L<sub>A10</sub> is the noise level exceeded for 10% of the time.  
L<sub>A1</sub> is the noise level exceeded for 1% of the time.  
L<sub>Amax</sub> is the maximum noise level.

#### 4. PROPOSAL

From information supplied, we understand that the child care centre normal hours of operations would be between 0630 and 1830 hours, Monday to Friday (closed on public holidays). It is understood that the proposed childcare centre will cater for a maximum of 60 children: with the following breakdown:

0 – 2 years	9 places
2 - 3 years	12 places
3+ years	39 places

It is noted that although the proposed child care centre would open before 7 am (ie during the night period), the outdoor play area would not be used until after 7am.

#### 5. MODELLING

To assess the noise received at the neighbouring premises from the proposed development, noise modelling was undertaken using the noise modelling program SoundPlan.

Calculations were carried out using the DWER's weather conditions, which relate to worst case noise propagation, as stated in the Department of Environment Regulation "*Draft Guidance on Environmental Noise for Prescribed Premises*". These conditions include winds blowing from sources to the receiver(s).

As noted by the City, given the breakdown of the children using a noise level closer to that listed in the AAAC guideline may be more appropriate in the case. Thus, we have undertaken noise modelling for the children within the outdoor play area, based on the AAAC guidelines.

We note that under the latest AAAC guideline the following is provided as the sound power level for outdoor play:

**Table 1 – Effective Sound Power Levels ( $L_{Aeq, 15min}$ ) for Groups of 10 Children Playing**

Number and Age of Children	Sound Power Levels [dB] at Octave Band Centre Frequencies [Hz]								
	dB(A)	63	125	250	500	1k	2k	4k	8k
10 Children - 0 to 2 years	78	54	60	66	72	74	71	67	64
10 Children - 2 to 3 years	85	61	67	73	79	81	78	74	70
10 Children - 3 to 5 years	87	64	70	75	81	83	80	76	72

Notes:

- 1 If applicable, an adjustment to the above sound power levels of -6 dB could be applied in each age group for children involved in passive play.

The AAAC noise levels also note that an adjustment of -6 dB could be applied to children at passive play.

Calculations for other sources were based on the sound power levels used in the calculations are listed in Tables 5.1.

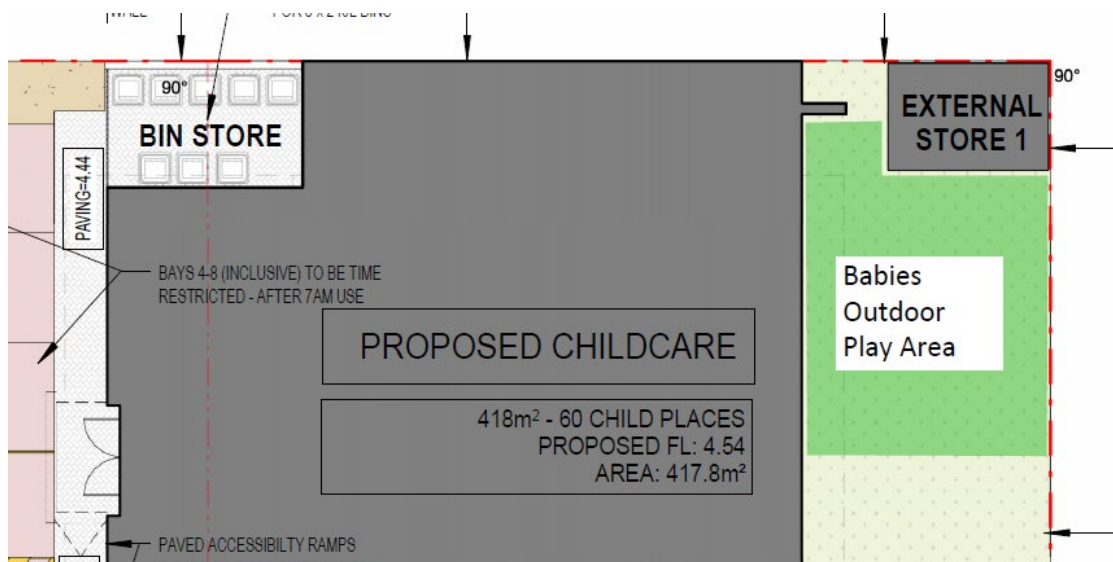
**TABLE 5.1 – SOUND POWER LEVELS**

Item	Sound Power Level, dB(A)
Car Moving in Car Park	79
Car Starting	85
Door Closing	87 (for drop off / pick ups) 84 (Staff)
Air conditioning condensing Unit	2 @ 73
Kitchen Exhaust	72
Deliveries	87

Notes:

- 1 Given the number and breakdown of children, noting that the noise emissions from children under the age of 2 years is significantly reduced, acoustic modelling of outdoor play noise was made, based on 60 children playing, being 6 groups of 10 children, distributed as plane sources.
- 2 With the first floor of the residence to the north west the north east corner of the outdoor play space needs to be the 0 – 2 years outdoor play area as shown on Figure 5.1.
- 3 The building construction would be sufficient to contain noise generated internally and noise emissions from the outdoor playscape would be considered the worst case scenario. However, when music is played internally, the external doors to that activity room are to be closed.

- 4 Again, with the first floor of the residence to the north west, to achieve compliance at this location from car doors closing, the parking restrictions, as shown on Figure 5.3 have been determined and used within this assessment.
- 5 The noise level for the air conditioning has been based on the sound power levels used for previous assessment of child care centres. From other studies, we understand that the noise associated with the condensing units would be conservative.
- 6 The kitchen exhaust would only be used during the day period.
- 7 Deliveries to only occur during the day period.
- 8 The noise modelling has been based on the fencing to the north eastern side of the outdoor play area being 2.1 metres high, as shown on Figure 5.2. Other fencing to be as indicted on the plans attached in Appendix A.
- 9 Noise modelling was undertaken to a number of different receiver locations for each of the neighbouring residences. However, to simplify the assessment, only the noise level in the worst case location (ie highest noise level), have been listed. The first floor windows / rooms of the neighbouring residence to the north west is also noted; and noise assessment undertaken includes these.



**FIGURE 5.1 – ACOUSTIC REQUIREMENTS**

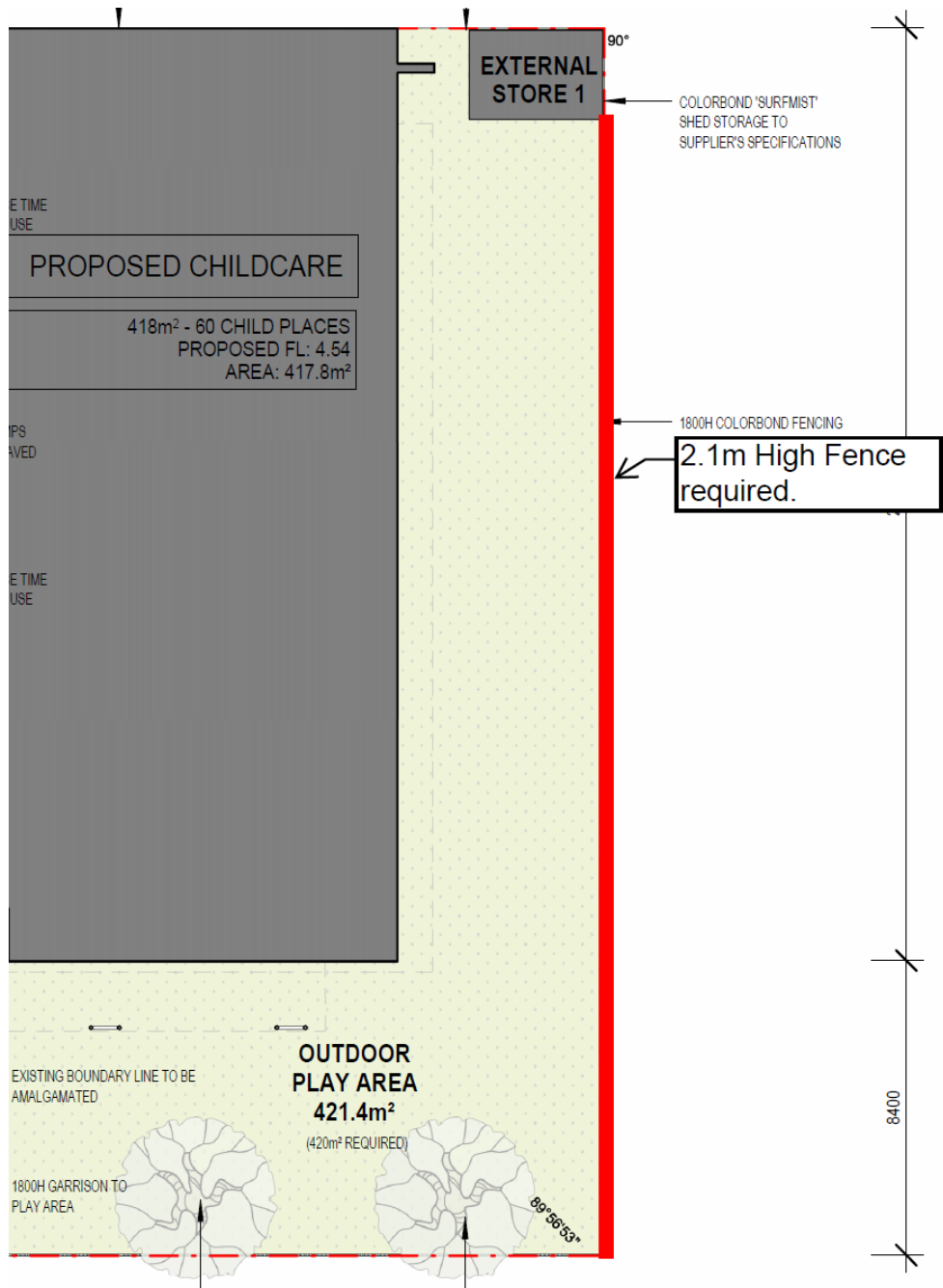
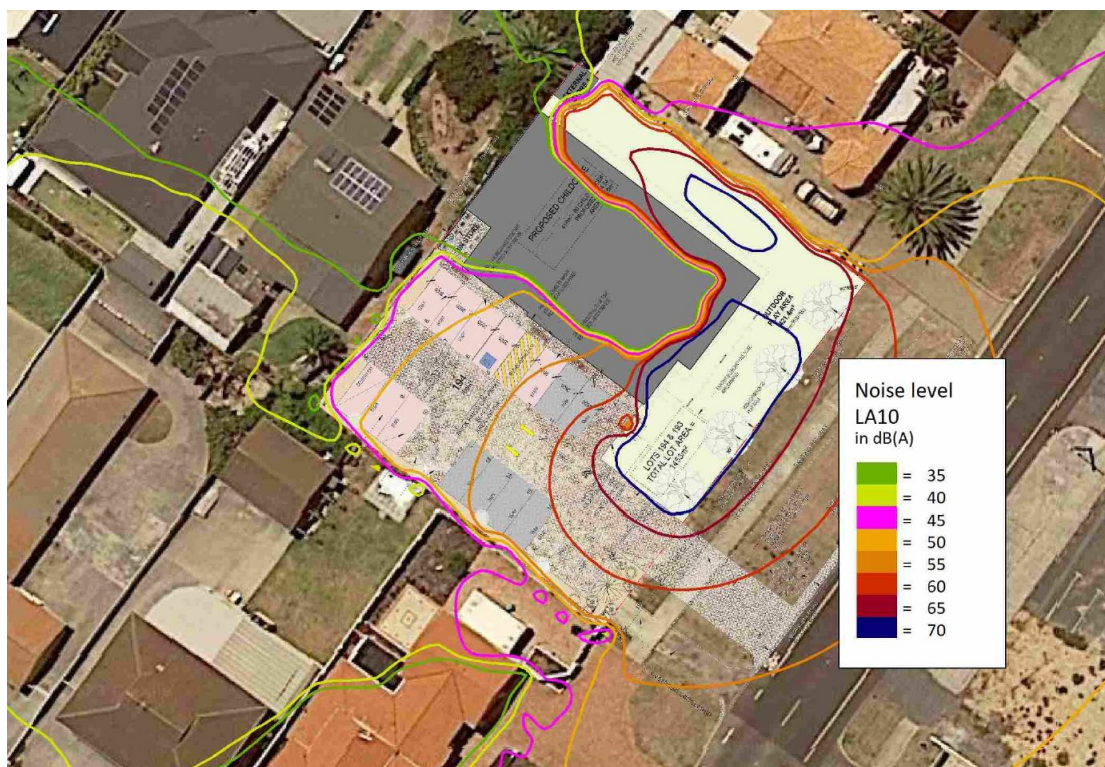


FIGURE 5.2 – NORTH EASTERN FENCE REQUIREMENT





For information, we provide the following Figure 6.1, noise contour plot for the outdoor play.



**FIGURE 6.1 – NOISE CONTOUR PLOT FOR OUTDOOR PLAY TO GROUND FLOOR**

With regards to noise associated with cars within the parking area, resultant noise levels are tabulated in Tables 6.2 and 6.3. It is noted that noise emissions from a moving car being an  $L_{A1}$  noise level, with noise emissions from cars starting and doors closing being an  $L_{Amax}$  noise level.

Based on the definitions of tonality, noise emissions from car movements and car starts, being an  $L_{A1}$  and  $L_{Amax}$  respectively, being present for less than 10% of the time, would not be considered tonal. Thus, no penalties would be applicable, and the assessment would be as listed in Table 6.2 (Car Moving) and Table 6.3 (Car Starting). However, noise emissions from car doors closing could be impulsive, hence the +10dB penalty has been included in the assessment.

**TABLE 6.2 - ACOUSTIC MODELLING RESULTS  $L_{A1}$  CRITERIA  
CAR MOVING AND DELIVERIES**

Neighbouring Premises	Calculated Noise Level (dB(A))	
	Cars Moving	Deliveries
South West	38	46
North East	27	35
North West	47	55

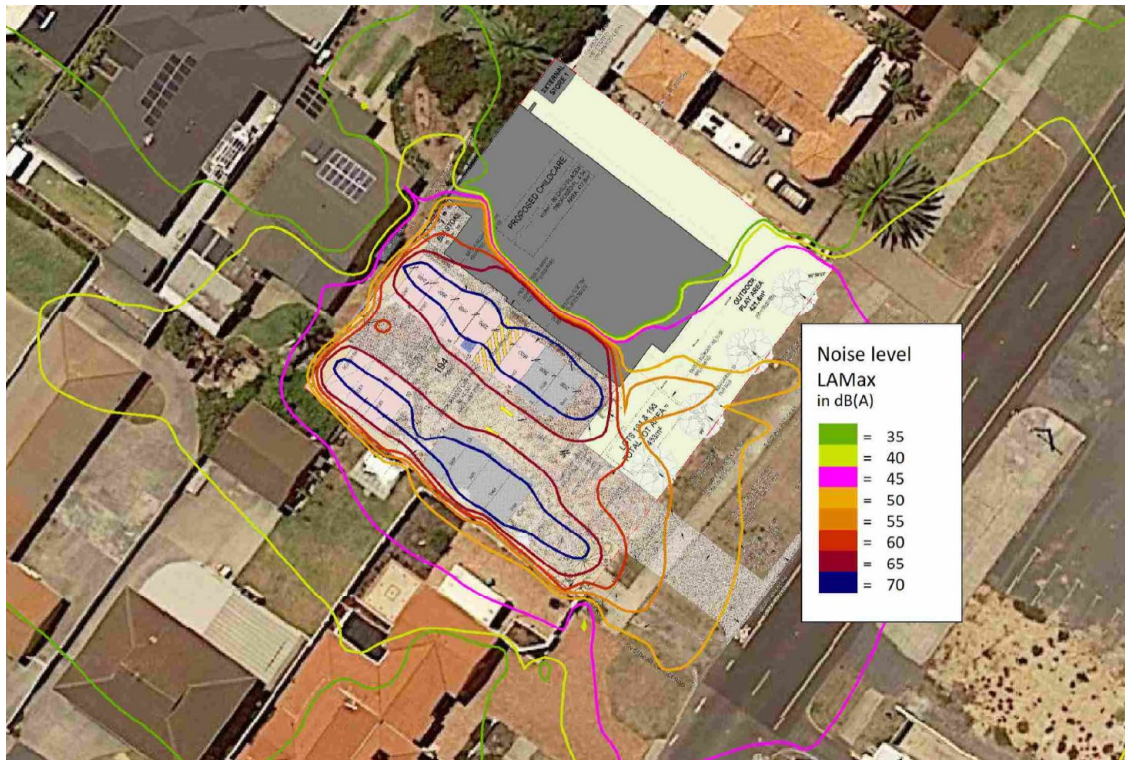
**TABLE 6.3 - ACOUSTIC MODELLING RESULTS  $L_{Amax}$  CRITERIA  
CAR STARTING / DOOR CLOSING**

Neighbouring Premises	Calculated Noise Level (dB(A))			
	Car Starting		Door Closing	
	Day Period	Night Period	Day Period	Night Period
South West	43	43	44 [54]	44 [54]
North East	30	30	32 [42]	32 [42]
North West	52	46	53 [63]	47 [57]

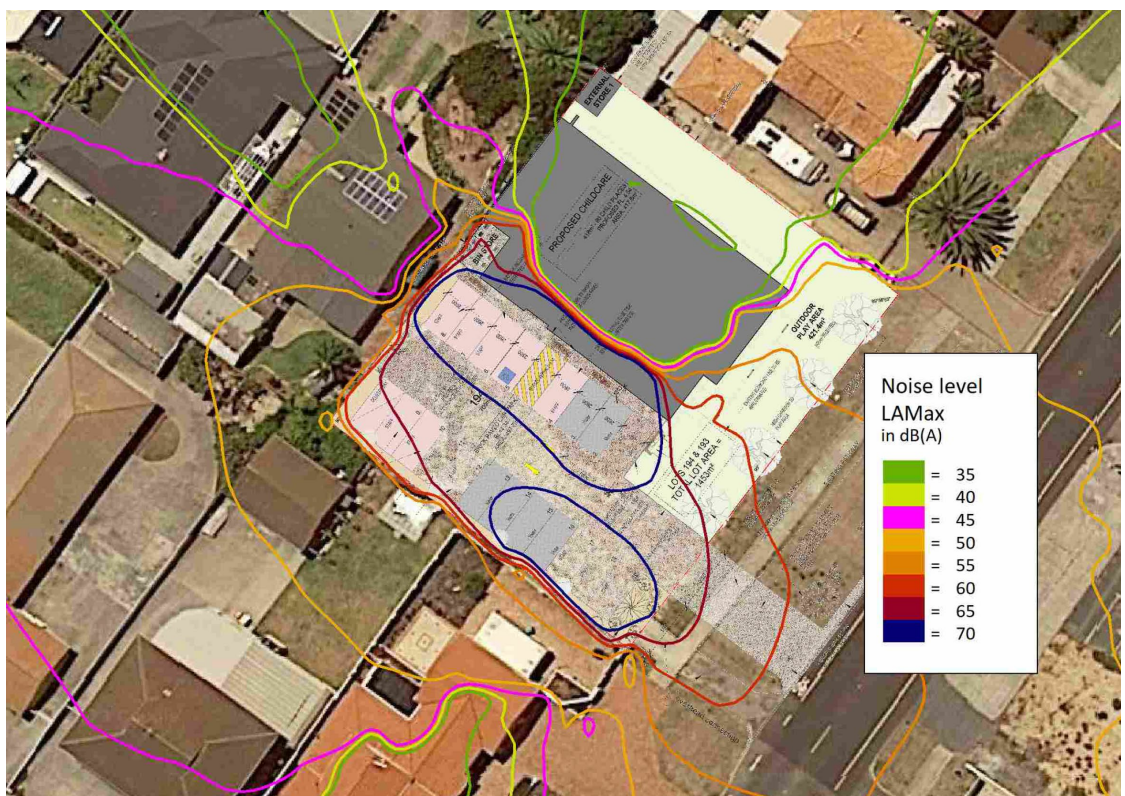
[ ] Includes +10 dB(A) penalty for impulsiveness.



For information, we provide the following Figures 6.2 and 6.3, being the noise contour plots for car door closing during the day and night periods.



**FIGURE 6.2 – DAY PERIOD NOISE CONTOUR PLOT FOR  
CAR DOOR CLOSING TO GROUND FLOOR**



**FIGURE 6.3 – NIGHT PERIOD NOISE CONTOUR PLOT FOR  
CAR DOOR CLOSING TO GROUND FLOOR**

## 7. ASSESSMENT

Tables 7.1 to 7.9 summarise the applicable Assigned Noise Levels, and assessable noise level emissions for each identified noise.

**TABLE 7.1 – ASSESSMENT OF  $L_{A10}$  NOISE LEVEL EMISSIONS  
OUTDOOR PLAY (DAY PERIOD)**

Location	Assessable Noise Level dB(A)	Applicable Assigned Noise Level (dB(A))	Exceedance to Assigned Noise Level
South West	46	48	Complies
North East	48	49	Complies
North West	46	48	Complies

**TABLE 7.2 – ASSESSMENT OF  $L_{A10}$  DAY PERIOD NOISE LEVEL EMISSIONS  
AIR CONDITIONING**

Location	Assessable Noise Level dB(A)	Applicable Assigned Noise Level (dB(A))	Exceedance to Assigned Noise Level
South West	37	48	Complies
North East	34	49	Complies
North West	47	48	Complies

**TABLE 7.3 – ASSESSMENT OF  $L_{A10}$  NIGHT PERIOD NOISE LEVEL EMISSIONS  
AIR CONDITIONING**

Location	Assessable Noise Level dB(A)	Applicable Assigned Noise Level (dB(A))	Exceedance to Assigned Noise Level
South West	35	38	Complies
North East	16	39	Complies
North West	26	38	Complies

**TABLE 7.4 – ASSESSMENT OF  $L_{A1}$  NIGHT PERIOD NOISE LEVEL EMISSIONS  
CAR MOVEMENTS**

Location	Assessable Noise Level dB(A)	Applicable Assigned Noise Level (dB(A))	Exceedance to Assigned Noise Level
South West	38	48	Complies
North East	27	49	Complies
North West	47	48	Complies

**TABLE 7.5 – ASSESSMENT OF  $L_{A1}$  DAY PERIOD NOISE LEVEL EMISSIONS  
DELIVERIES**

Location	Assessable Noise Level dB(A)	Applicable Assigned Noise Level (dB(A))	Exceedance to Assigned Noise Level
South West	46	58	Complies
North East	35	59	Complies
North West	55	58	Complies

**TABLE 7.6 – ASSESSMENT OF  $L_{Amax}$  DAY PERIOD NOISE LEVEL EMISSIONS  
CAR STARTING**

Location	Assessable Noise Level dB(A)	Applicable Assigned Noise Level (dB(A))	Exceedance to Assigned Noise Level
South West	43	68	Complies
North East	30	69	Complies
North West	52	68	Complies

**TABLE 7.7 – ASSESSMENT OF  $L_{Amax}$  NIGHT PERIOD NOISE LEVEL EMISSIONS  
CAR STARTING**

Location	Assessable Noise Level dB(A)	Applicable Assigned Noise Level (dB(A))	Exceedance to Assigned Noise Level
South West	43	58	Complies
North East	30	59	Complies
North West	46	58	Complies

**TABLE 7.8 – ASSESSMENT OF  $L_{Amax}$  DAY PERIOD NOISE LEVEL EMISSIONS  
CAR DOOR**

Location	Assessable Noise Level dB(A)	Applicable Assigned Noise Level (dB(A))	Exceedance to Assigned Noise Level
South West	54	68	Complies
North East	42	69	Complies
North West	63	68	Complies

**TABLE 7.9 – ASSESSMENT OF  $L_{Amax}$  NIGHT PERIOD NOISE LEVEL EMISSIONS  
CAR DOOR**

Location	Assessable Noise Level dB(A)	Applicable Assigned Noise Level (dB(A))	Exceedance to Assigned Noise Level
South West	54	58	Complies
North East	42	59	Complies
North West	57	58	Complies

## 8. CONCLUSION

Noise received at the neighbouring residences from the outdoor play area would comply with day period assigned noise level for the day period, with the babies outdoor play area is to be located as shown on Figure 5.1 in Section 5 – Modelling and the north eastern boundary fence being 2.1 metres high, as shown in Figure 5.2 in Section 5 – Modelling.

With the air conditioning condensing units located as shown of the drawings attached in Appendix A and screened from the neighbours, noise received at the neighbouring residences from the air conditioning condensing units have also been assessed to comply with the requirements of the *Environmental Protection (Noise) Regulations 1997* at all times. Even so, it is recommended that the air conditioning units be installed with “low noise” night period modes and the kitchen exhaust fan either be screened from the neighbouring residence to the north west of the discharge be located toward the centre of the building.

It is noted that noise associated with cars movements and cars starting are exempt from complying with the Regulations. However, noise emissions from car doors are not strictly exempt from the Regulations. Noise received at the neighbouring premises would also comply with the Regulatory requirements, at all times with the inclusion of the parking restrictions, as shown on Figure 5.3 in Section 5 – Modelling.

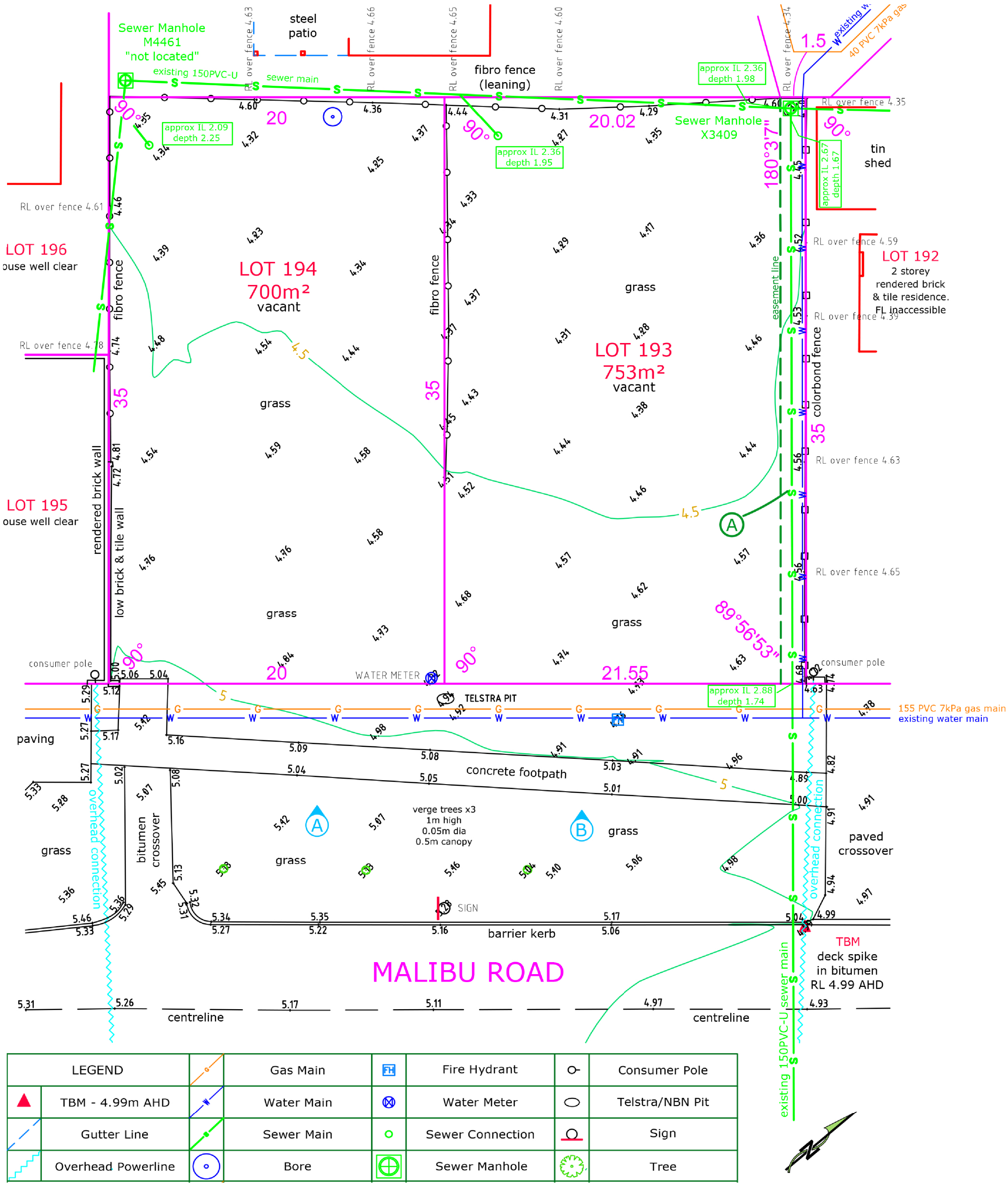
Thus, noise emissions from the proposed development, would be deemed to comply with the requirements of the *Environmental Protection (Noise) Regulations 1997* for the proposed hours of operation, with the inclusion of the following:

- 6 Although, the proposed facility would open before 7 am (ie during the night period), the outdoor play area would not be used until after 7am. Thus, noise received at the neighbouring existing residences from the outdoor play area needs to comply with the assigned day period noise level. Additionally, the babies outdoor area is to be located as shown on Figure 5.1 in Section 5 – Modelling.
- 7 Fencing along the north eastern boundary to be as shown in Figure 5.2 in Section 5 – Modelling/ Other fencing to be as shown on the drawings attached in Appendix A. It is noted that for a child care centre, colourbond is an acceptable fencing material.
- 8 Although not required for compliance, it is recommended that the air conditioning units be installed with “low noise” night period modes and the kitchen exhaust fan either be screened from the neighbouring residence to the north west of the discharge be located toward the centre of the building. Additionally, it is recommended that an assessment of the mechanical services design be undertaken to ensure compliance with the Regulations.
- 9 For noise associated with cars within the car park to comply with the Regulations, parking restrictions, as shown in Figure 5.3 in Section 5 - Modelling.
- 10 Deliveries to be limited to the day period.

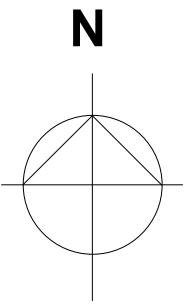
# **APPENDIX A**

## **PLANS**





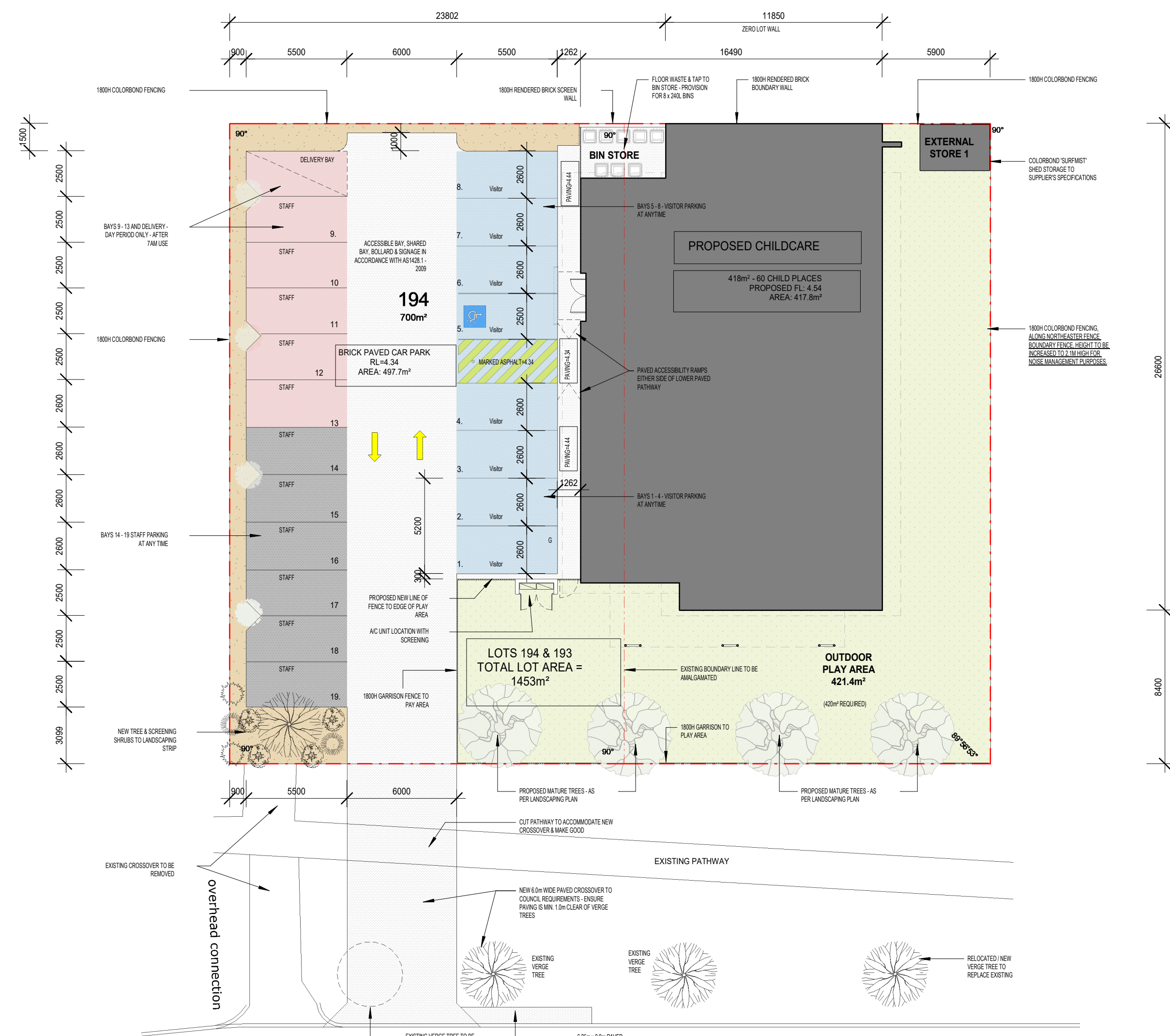
LEGEND		Gas Main	Fire Hydrant	Consumer Pole
	TBM - 4.99m AHD			
	Gutter Line			
	Overhead Powerline			



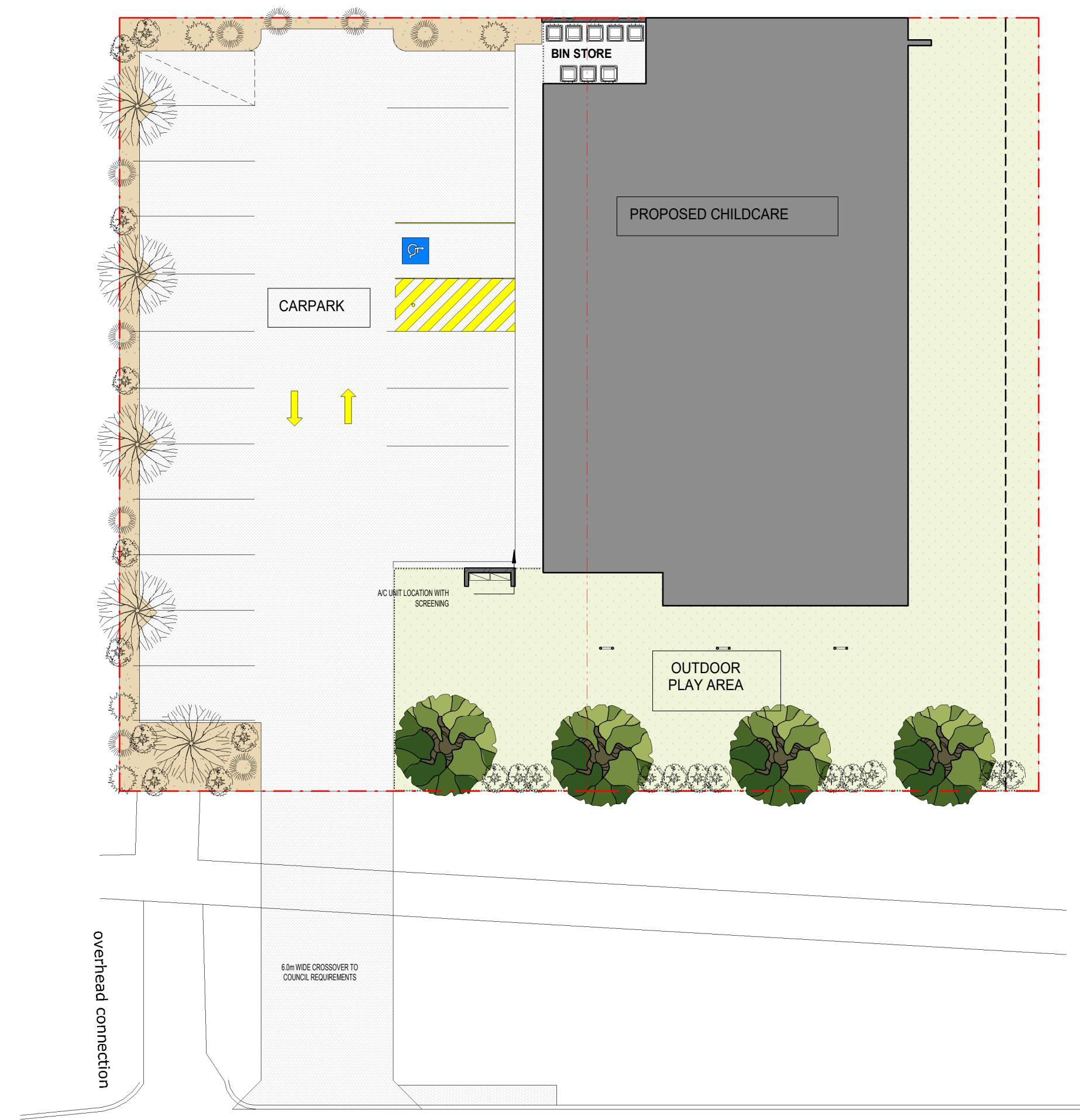
2 LOCATION PLAN  
SCALE 1 : 500

1 EXISTING SURVEY PLAN  
SCALE 1 : 200





2 PROPOSED SITE PLAN  
SCALE 1:200



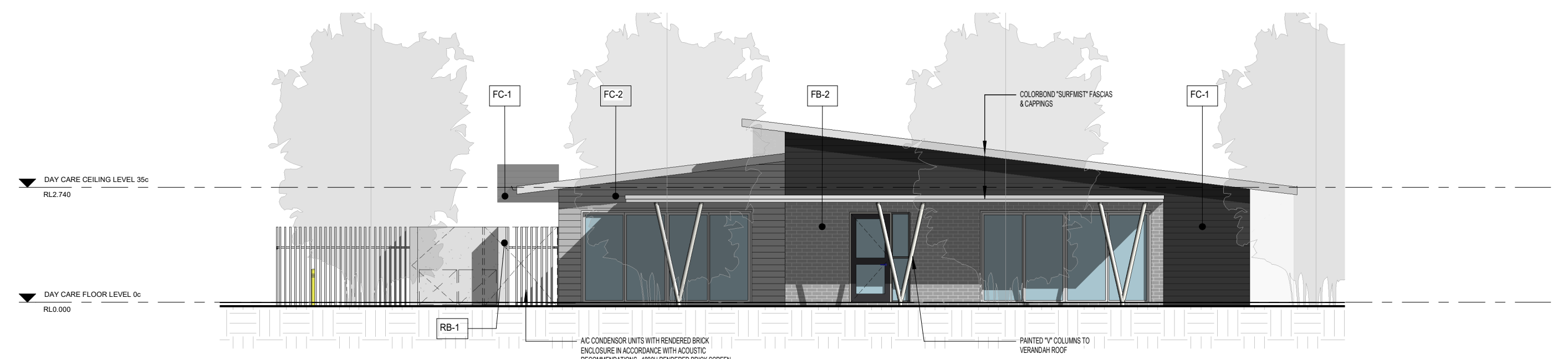
1 LANDSCAPING PLAN  
SCALE 1:200

LANDSCAPING LEGEND	
	SELECTED CONCRETE PAVING - REFER TO SPECIFICATIONS
	LANDSCAPING AND PLAY EQUIPMENT BY SPECIALIST CONTRACTOR TO FUTURE DESIGN
	MULCHED GARDEN AREA
	CARPAKING - BITUMEN TO CIVIL ENGINEERS DESIGN
	TREE x 1 TREE 1 (UP TO 12m HIGH, 6m CANOPY) CORYMBIA CALOPHYLLA VIA MARRI
	TREE x 2 TREE 2 (UP TO 2m HIGH, 1.5m CANOPY) LAMACEAE, WESTRINGIA (NATIVE ROSEMARY) FRUITICOSA JERVIS GEM
	SHRUB x 13 SHRUB (40cm HIGH, 40cm WIDE) ADONANTHOS SERICEUS ALBANY WOOLY BUSH
	GROUND COVER x 7 LOW SHRUB (50cm HIGH, 1.5m WIDE) SCAEVOLA AEMULA CULTIVARS FAIRY FAN FLOWER
	MEDIUM - LARGE TREES MATURE TREES ALONG FRONT FENCE LINE - SPECIES AND QUANTITY TO BE CONFIRMED
NOTE: FINAL LAYOUT OF OUTDOOR PLAY SPACES TO BE DESIGNED IN CONJUNCTION WITH OPERATORS PREFERRED PLAY SPACE DESIGN CONSULTANT.	

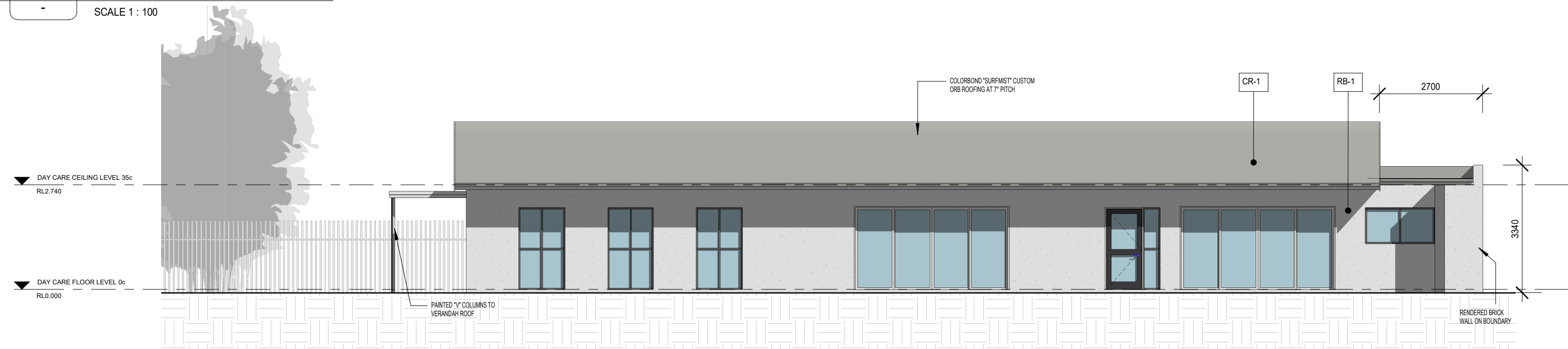




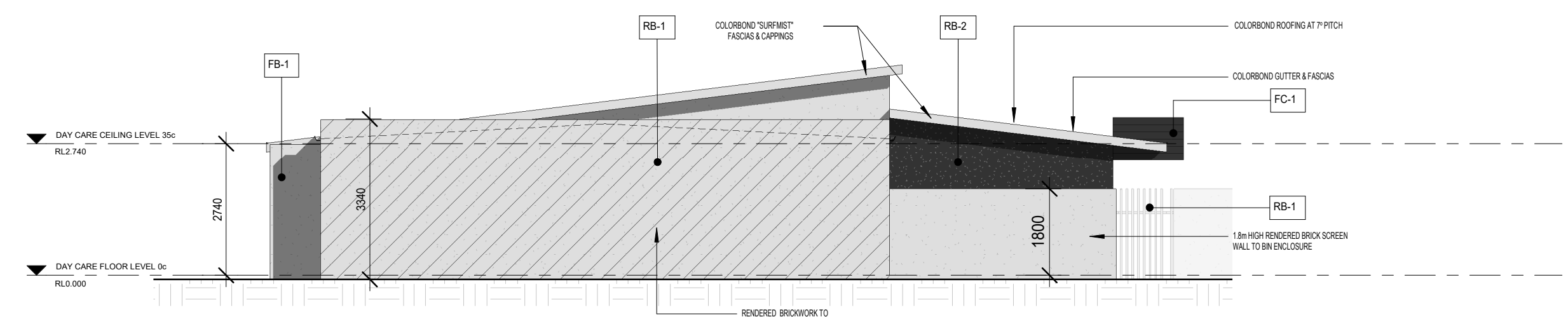
5 FLOOR PLAN GA  
- SCALE 1 : 100



1 ELEVATION SOUTH-EAST  
- SCALE 1 : 100




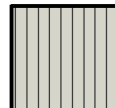




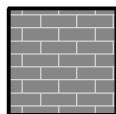
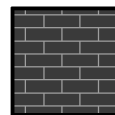
2 ELEVATION SOUTH-WEST  
- SCALE 1 : 100

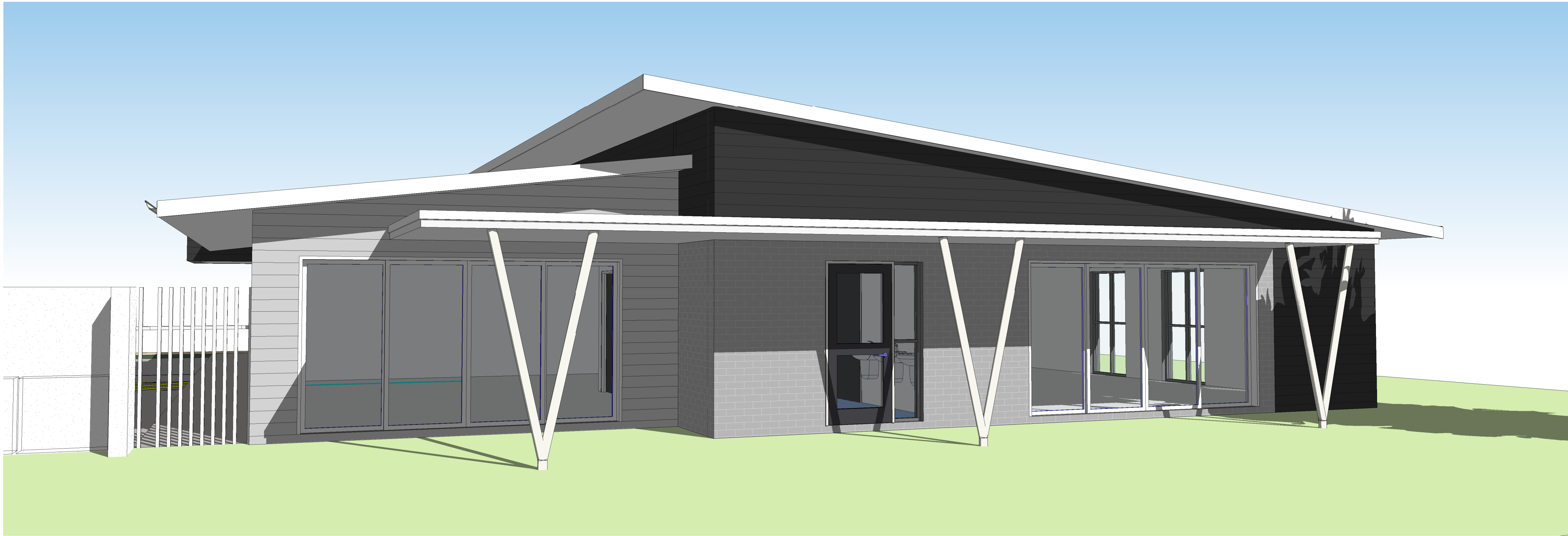


3 ELEVATION NORTH-WEST  
- SCALE 1 : 100



4 ELEVATION NORTH-EAST  
- SCALE 1 : 100

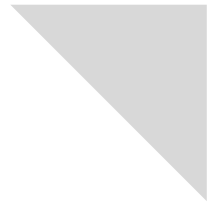
EXTERNAL FINISHES LEGEND					
SAMPLE	TAG	DESCRIPTION	SAMPLE	TAG	DESCRIPTION
	FC-1	JAMES HARDIE SCYON STRIA CLADDING 325mm - "MONUMENT" COLOUR		CR-1	COLORBOND CUSTOM ORB ROOF SHEETING COLOUR: COLORBOND "SURFMIST"
	FC-2	JAMES HARDIE SCYON STRIA CLADDING 325mm - "SURFMIST" COLOUR		RB-1	RENDERED BRICK VENEER COLOUR "SURFMIST"
	FB-1	"RESTORATION RED - TUMBLED" FACE BRICKWORK - 230mm x 110mm x 76mm		RB-2	RENDERED BRICK VENEER COLOUR "MONUMENT"
	FB-2	PAINTED FACE BRICKWORK "SHALE GREY" - 230mm x 110mm x 76mm		FB-3	PAINTED FACE BRICKWORK "MONUMENT" - 230mm x 110mm x 76mm



1 3D - CHILDCARE PERSPECTIVE  
SCALE



2 3D - CHILDCARE PERSPECTIVE 2  
SCALE



# ATTACHMENT 5

EMISSIONS IMPACT ASSESSMENT



**ROWE**  
GROUP





# EMISSIONS IMPACT ASSESSMENT OF BP SERVICE STATION ADJACENT TO PROPOSED CHILD CARE CENTRE

**MALIBU ROAD, SAFETY  
BAY, WESTERN AUSTRALIA**



# Emissions Impact Assessment of BP Service Station adjacent to Proposed Child Care Centre

Malibu Road, Safety Bay, Western Australia

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Prepared for: Greener4 Pty Ltd c/- ROWE Group

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Project Ref: EAQ-23016

January 2024

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Environment | Air Quality



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#### Report Revision(s)

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Final		01.05.2023		
Finalv2	Revised for Layout	13.09.2023	J. Hurley	
Finalv3	Revised Emissions	05.12.2023		
Finalv4	Revised following P.Review	25.01.2024		

#### Approved for Release

Name	Position	File Reference
John Hurley	Principal Consultant	EAQ23016-MalibuRoadChildCare+BPSStation+EIA-FINAL(2024)

#### Signature

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*This document presents the outcomes of a Desktop Emissions Modelling Assessment. All emissions inputs into the model were sourced from previous site-specific measurements, from peer reviewed public domain data and/or industry specific emissions' factor publications except where detailed otherwise herein. EAQ has not attempted to verify externally sourced data beyond its use herein. The modelling assessment has been prepared using the best available information provided by the Client and in conjunction with regulatory guidance from the appropriate regulatory jurisdiction(s), either State-wide or Nationally. EAQ has exercised its diligence and due-care in delivering the outcomes of the assessment according to accepted assessment practices and techniques. EAQ disclaims any and all liability and responsibilities for damages of any nature, to any party, which may be caused from misapplication or misinterpretation by third parties of this assessment*



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## Executive Summary

Environmental and Air Quality Consulting Pty Ltd undertook an Air Emissions Assessment of an existing BP Service Station located at the corner of Safety Bay Road and Malibu Road Safety Bay, Western Australia.

The site-specific scientific study addressed the health risks associated with vapour emissions from the BP Site for the purposes of determining the risk of emissions' impacts at an adjacently proposed Child Care Centre.

The proposed Child Care Centre will satisfy the guideline separation distance of 50 metres from the nearest refuelling location at the BP Site, however; for the purposes of proper and orderly planning, the Assessment has been undertaken to demonstrate the low risk of vapour emissions exposure on human receptors at the Child Care Centre.

The BP Site is within an urban developed area with residential properties surrounding, and operates under limited hours daily i.e., not a 24-hour operation.

Importantly, the Child Care Centre proposed hours of operation were assessed for predicted emissions impacts, rather than the total hours of operation for the BP Site, given that the timeframes for exposure of human receptors at the Child Care Centre rely wholly on the Child Care Centre's hours of operations.

The Assessment utilised accepted standards for estimating pollutant emission rates of primary airborne pollutants from fuel storage and refuelling activities at the 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.

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 Western Australian Department of Water and Environmental Regulation and that of the National Environment Protection (Air Toxics) Measure.

The predicted concentrations of these primary pollutants demonstrated that the service station emissions are unlikely to have an unreasonable impact on the future health of those attending the Child Care Centre.

## 1 Background & Scope

Environmental & Air Quality Consulting Pty Ltd (EAQ) was engaged by Greener4 Pty Ltd, through ROWE Group, to undertake an Air Emissions' Impact Assessment (the Assessment) of an existing limited hours BP Service Station (the BP Site) located on the corner of Safety Bay Road and Malibu Road, Safety Bay Western Australia.

The Assessment was commissioned to determine the risk of vapour impacts from refuelling activities at the BP Site, on a proposed Child Care Centre (the Centre) to be located adjacent to the Site at 4-6 Malibu Road, Safety Bay.

The Centre is proposed to be built within an established residential area where sensitive receptors are already established with respect to the BP Site and its vapour emissions.

The Centre will operate Monday to Friday between maximal hours of 0600 hrs – 1800 hrs.

The Assessment addressed toxic emissions of principal chemical compounds in petrols by undertaking a desktop scientific Assessment into the health risks associated with vapour emissions from the Site.

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 BP Site and subsequently determine the risk of health and amenity impacts for the proposed Centre which is categorised as a future sensitive receiver and/or sensitive land use (receptor).

The Assessment predicted ground level concentrations (GLCs) of various pollutants from vapour losses using regulatory standard dispersion modelling techniques.

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.



### 1.1.1 Legislative Context

The existing BP Site is not a Prescribed Premise with regard to the WA Department of Water and Environmental Regulation (DWER).

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 and the nearest sensitive receptor is as follows:

**Table 1-1: WA EPA Guidance for Separation Distances – Service Station**

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

The EPA recommended buffers imply 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.”*

Importantly, there have been sweeping changes to the operational hours of service stations and retail businesses in Western Australia i.e., deregulation of hours.

Notwithstanding:

- The Site is a limited-hours operation, however;
  - The Centre is not a 24-hour operation, and therefore;
    - The operational hours of the Centre represent the timeframe when emissions may impact the Centre.
- Given the hours of operations for the Centre, the 50 m separation distance is applicable.

### 1.1.2 Adjacent Receptors & Land Uses

The nearest existing receptor (residential) is approximately 35 m to the north-west of the nearest refueling bowser at the BP Site. This distance excludes the public footpath that crosses along the front of this adjacent residential home.





Public open space is approximately 30 m to the south and west of the BP Site. The location is long-established residential which surrounds the BP Site.

The proposed Centre is located to the immediate north from the BP Site and will achieve a minimum 50 m separation distance from the nearest refueling bowser and/or refuelling ventilation point.

### 1.1.3 Assessment Substances

Principal chemical compounds (pollutants) typically emitted from service station activities are listed below. These compounds are part of the Total 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)**

Pollutant	
Benzene	Cyclohexane
Toluene	<i>n</i> -Hexane
Ethyl benzene	Styrene
Xylenes	

## 1.2 Guidance for Assessing Impacts

The DWER prescribes maximum ambient concentrations of an array of pollutants and toxic substances. In prescribing these maximum concentrations, the DWER has referred to (among others); The National Environment Protection (Air Toxics) Measure (NEPM). These DWER, NEPM, and other jurisdictional recommendations have been adopted for this Assessment.

Importantly, the benzene exposure guidelines have been more rigorously reviewed by the Victorian (VIC) EPA and are considered more applicable to Australia-wide service station emissions.

The VIC EPA guidelines for benzene are based on an acute minimal risk level to toxic substances and have provided exposure limit recommendations for health effects from short-term exposure based on the Texas Commission on Environmental Quality ([TCEQ](#)) Air Monitoring Comparison Values, where; *“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 maximum ambient concentration exposure limits, as assessed, are listed in **Table 1-3**.

**Table 1-3: Assessment Criteria for Toxic Substances**

Substance	Averaging Period	Criteria Source	Maximum (ambient) concentration	
			ppm	µg/m <sup>3</sup> at 25°C
Benzene	1 hour	<a href="#">EPA VIC, 2022</a>	0.18	580
	24 hours		0.009	29
	Annual	<a href="#">NEPM 2011</a>	0.003	9.6

<b>Toluene</b>	24 hours		1	3,770
	Annual		0.1	377
<b>Ethyl benzene</b>	1 hour	<a href="#">EPA NSW 2016</a>	1.8	8,000
	Annual	Toxicos 2011		270
<b>Xylenes</b>	24 hours	<a href="#">NEPM 2011</a>	0.25	1,080
	Annual		0.2	870
<b>Cyclohexane</b>	1 hour	<a href="#">EPA NSW 2016</a>	5	190
<b>n-Hexane</b>			0.9	3,200
<b>Styrene</b>	1 hour	Dept. of Health WA	70	64

### 1.3 The BP Site

The BP Site operates between 0600 hrs – 2200 hrs weekly and provides three (3) ‘two-sided’ refuelling bowsters, and one (1) additional ‘one-sided’ diesel bowster that is separate from the main vehicular refueling bowsters to allow access for wider/taller vehicles. A total of seven (7) refuelling positions are available daily.

The emission sources at the BP Site comprise the ventilation of the sub-terrain fuel storage tanks, and the refueling locations (7 of). Incidental spills can also be a source of vapour release, albeit minor. Emission sources are primarily passive vapour losses from refilling (storage tanks) and bowster refuelling processes.

The BP Site comprises the following main features:

- 3 ‘two-sided’ bowster ranks comprising a total of 6 bowster outlets at any one time;
- 1 ‘one-sided’ bowster comprising of 1 bowster outlet at any one time;
- 2 x Bulk Storage Tank Pressure and Vapour control Vents;
- Car Wash;
- Restaurant/Convenience store;
- Trailer Hire;
- The types of fuels dispensed are;
  - Diesels & AdBlue (reduces NOx emissions),
  - Unleaded Petrols (ULPs), and
  - Autogas.

#### 1.3.1 Emissions Assumptions

EAQ has estimated fuel throughputs based on the following assumptions:

- Bulk refuelling events would likely take place twice (x2) weekly;
- Bulk Storage Volumes of up to 42,000 Litres;
- Average vehicle refuelling volume per day, approximately 14,837 Litres between the hours of 0600 – 2200 hrs;
- Child Care Centre operational hours are maximally 0600 – 1800 hrs, 5-days per week;



- Average vehicle refuelling volume per day, approximately 11,696 Litres during Centre operational hours.
- The peak flow of vehicles for an averaged fuel volume of 35 L is 30 per hour based on peak hourly volume of 1,050 L.

The Locality of the Site and Centre are illustrated in **Figure 1-1**. The Centre designs are illustrated in [Appendix C](#).





Figure 1-1: Safety Bay Locality, Existing BP Service Station Site & Proposed Child Care Centre



## 2 Service Station Emissions Estimation

Activities at the BP Site that will produce emissions are related to losses of fuel vapours to atmosphere, 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 BP Site throughputs are estimated based on like-for-like 3-bowser service stations’ average throughput. Precise hourly throughputs are however unknown but would be comparable to typical service stations within residential areas.

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 is in place for submerged underground storage tank(s) referred to as VR1.

- Vapour recovery at the bowser (VR2) is unknown and therefore assumed to be absent from the BP Site.

### 2.1 BP Site Operations and Emissions

The maximum volume of fuel that can be dispensed into the storage tanks at the Site is estimated at 42,000 L/hour based on a total bulk storage tank volume. The estimated total daily sales of fuels is 17,073 L over 24 hours, however; based on the BP Site’s operational hours of between 0600 – 2200 hrs, the revised weekly fuel sales volume is 14,837 L.

- **NOTE:** The total fuel sales between the Child Care Centre’s operational hours of 0600 – 1800 hrs is approximately 11,696 L.

The BP Site bulk fuel deliveries schedule will shift based on fuel volumes dispensed. To account for variability in daily hours where deliveries are made, and assuming deliveries are over 5-days to represent the Centre’s operational hours; 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 over a 5-day week.

**Table 2-1: Example of Bulk Fuel Delivery Schedule (L/hr)**

Time (24 hrs)	Monday	Tuesday	Wednesday	Thursday	Friday
0600	42,000				
0700		42,000			
0800			42,000		
0900				42,000	
1000					42,000
1100	42,000				
1200		42,000			
1300			42,000		
1400				42,000	
1500					42,000
1600	42,000				
1700		42,000			

## 2.2 VOC Emissions

Of the fuel types proposed 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 Ethanol blend fuels e.g., E5, E10. The vapour composition of VOCs in petroleum fuel ([NPI, 1999](#)), are listed in **Table 2-2**.

The vapour composition of Benzene has been revised in accordance with the Australian Government's Federal Register of Legislation, specifically the current [Fuel Quality Standards \(Petrol\) Determination 2019](#), which limits the volume of Benzene in petrol to 1% v/v maximum. Assuming a Benzene density value of 0.8765, the petrol vapour Benzene composition (% weight) is listed in **Table 2-3**.

**Table 2-2: Composition of Petrol (NPI, 1999)**

Species	Petrol Liquid (% weight)	Petrol Vapour (% weight)
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

**Table 2-3: Composition of Petrol (Fuel Standards, 2019)**

Species	Petrol Liquid (% weight)	Petrol Vapour (% weight)
Benzene	1.0	0.374

The composition percentages of the compounds listed in **Table 2-2** and **Table 2-3** 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 Estimates

**Table 2-4: BP Site Service Station Operating Detail**

Parameter	Operational Data
Operating hours	0600 – 2200 hrs / 7 days per week
<b>Child Care Centre Operating hours</b>	<b>0600 – 1800 hrs / 5 days per week</b>
<b>Tanker delivery</b>	42,000 L/hour - <b>VR1</b> Vapour Recovery
Vent stacks (2 of)	4.0 m high
<b>Filling Stations/Bowzers</b>	3.5 x Bowzers = 7 x filling points in total ( <b>no VR2</b> )
Fuel Storage	Diesel & ULP

## 2.4 Derived Emission Factors

Emissions generated from activities at the BP Site have been derived based on those vapour losses published by the NPI and CAPCOA guidance. **Table 2-5** lists those emission factors that apply to those processes where vapour losses occur.

**Table 2-5: Emissions Factors for Service Stations**

Emission Source	NPI, 1999 Mg / L throughput	CAPCOA, 1997 Lbs / 1000 Gallons throughput
<b>Underground Tank Filling</b>	-	-
Submerged Filling	880	8.4
Splash Filling	1380	-
Submerged filling with vapour balance	<b>40</b>	0.42
Underground tank breathing losses	<b>120</b>	0.84
<b>Vehicle Refuelling</b>	-	-
Displacement Losses (uncontrolled)	1320	<b>8.4</b>
Displacement Losses (90% controlled e.g. VR 2)	132	0.74
<b>Spillages</b>	-	-
Uncontrolled	80	<b>0.61</b>
Controlled	-	0.41
<b>"Whoosh" Emissions (fuel cap removal)</b>	-	0.26 - <b>0.66</b>

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

To determine the hourly throughputs of fuel dispensing for service stations in accordance with the BCC, 2017 recommendations, the hourly profile of fuel sales daily is derived using the BCC, 2017 published profiles as listed in **Table 2-6**.

**Table 2-6: Representative Service Station Fuel Throughputs (BCC, 2017)**

Hour	Hourly Profile (%)
1	1.2
2	0.8
3	0.6
4	0.8
5	1.9
6	4.6
7	5.5
8	5.7
9	5.5
10	5.7
11	6.0
12	6.0
13	5.7
14	5.6
15	5.9
16	<b>6.2</b>
17	<b>6.2</b>
18	5.8
19	5.1
20	4.0
21	3.5
22	3.4
23	2.6
24	1.8

In **Table 2-6** the peak throughput hour is at 4-5pm (1600 - 1700 hrs).

Applying the BP Site's Average Daily Refuelling Volume of 14,837 L, the emission factors in **Table 2-5**, and deriving total hourly volumes based on **Table 2-6**, 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 (7) at any one time, and single bowser (SINGLE) operations, and are listed in **Table 2-7**.

**NOTE:** The green-highlighted cells and rows represent the operational hours for the proposed Child Care Centre and are those values used in the modelling Assessment. All other values were marked to '0' in the modelling.



**Table 2-7: Factored Total VOC Emission Rates per Hour**

Hour	Throughput % daily volume/hr	Petrol Throughput (L/hr)	% to Peak Daily Hour	ALL Browsers Mass Emission Rate (g/s)	SINGLE Bowser Mass Emission Rate (g/s)
1	1.2	205	19.51%	0.462	0.132
2	0.8	137	13.01%	0.308	0.088
3	0.6	102	9.76%	0.231	0.066
4	0.8	137	13.01%	0.308	0.088
5	1.9	324	30.89%	0.731	0.209
6	4.6	785	74.80%	1.769	0.506
7	5.5	939	89.43%	2.116	0.604
8	5.7	973	92.68%	2.193	0.626
9	5.5	939	89.43%	2.116	0.604
10	5.7	973	92.68%	2.193	0.626
11	6	1,024	97.56%	2.308	0.659
12	6	1,024	97.56%	2.308	0.659
13	5.7	973	92.68%	2.193	0.626
14	5.6	956	91.06%	2.154	0.615
15	5.9	1,007	95.93%	2.270	0.648
16	6.1	1,050	<b>100.00%</b>	<b>2.366</b>	<b>0.676</b>
17	6	1,050	<b>100.00%</b>	<b>2.366</b>	<b>0.676</b>
18	5.8	990	94.31%	2.231	0.637
19	5.1	871	82.93%	1.962	0.561
20	4	683	65.04%	1.539	0.440
21	3.5	598	56.91%	1.346	0.385
22	3.4	580	55.28%	1.308	0.374
23	2.6	444	42.28%	1.000	0.286
24	1.8	307	29.27%	0.692	0.198

The bowser vehicle fueling activities and that of the bulk refueling deliveries were modelled as cumulative emissions, with the bulk refueling schedule in **Table 2-1** modelled as an alternating emission rate based on staggered bulk fuel daily deliveries, and:

- **NOTE:** The model was additionally configured to assess constant emissions over weekdays between the hours of 0600 – 1800 hrs for the bulk delivery refueling activity and the subsequent worst-hour determined to provide further insight into the worst-case scenario for weekday bulk refueling deliveries.

[Appendix A](#) presents the summary calculations for the derived mass emission rates.



### 3 Aermod Dispersion Modelling Methods

#### 3.1 Meteorology

A 2-year annual dataset (2020-2022) of meteorology was developed using surface observations from the Mandurah Bureau of Meteorology (BoM) Automatic Weather Station (AWS) and supplemented with CSIRO’s TAPM prognostic model for upper air characteristics.

The Mandurah BoM AWS is coastal and representative of coastal meteorological conditions for the Site’s locality.

#### 3.2 Modelling Domain Surface Characteristics

Seven sectors were chosen to represent surface characteristics within a 5 km radius of the Site. The 3 western sectors represent the ocean (open water), with the remaining 4 sectors representative of urban developed land. The surface characteristics for each sector are listed in the table below.

Land Use	Albedo	Bowen Ratio	Surface Roughness
Open Water	0.14	0.32	0.0001
Urban Developed			0.4

#### 3.3 Sensitive Receptors

Discrete receptors were placed at locations adjacent to the Site to determine the ground level concentrations of vapours with respect to the Centre’s proposed location (**refer Figure 1-1**).

#### 3.4 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](#).

#### 3.5 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 existing BP Site and its vapour emissions' impacts on the location of the proposed Child Care Centre have projected ground level concentrations (GLCs) for assessed pollutants of BTEX (Benzene, Toluene, Ethyl benzene, Xylenes), Cyclohexane, *n*-Hexane and Styrene that are below the guideline exposure standards.

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 Tables 2-2 and 2-3**).

**Table 4-1** lists each predicted pollutant concentration for each averaging period. These pollutant concentrations are revised based on each compounds vapour contribution to petrol VOC emissions.

Within **Table 4-1** are each pollutants respective assessment criteria, the projected GLCs from the modelling Assessment and the revised projected GLCs at the nearest assessed sensitive receptor 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 assessed 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;
- All units of concentration are in  $\mu\text{g}/\text{m}^3$  unless stated otherwise; and
- The worst-case bulk fuel delivery hour as cumulative emissions with all vehicle refueling events at the bowsers, was predicted by the model to be at 0700 hrs, during the month of May and with a GLC value of < 30 % of the Benzene exposure limit (i.e., PASS) at the nearest modelled grid point receptor.

**Figure 4-1** illustrates the emissions profile for the Top 100 Maximum ground level concentrations during hourly bulk fuel deliveries. **Figure 4-2** illustrates the GLCs for annual Benzene predictions.

### 4.1 Conclusion

In reviewing the predicted GLCs for those pollutants in **Table 4-1**, within this Assessment, the pollutant emissions predicted at the proposed Child Care Centre are less than the exposure limits in ambient air.





Additionally, the Centre already satisfies the WA EPA guidance separation distance of 50 m from the nearest refuelling location, and given this and the Centre's limited operational hours, the risk of exposure at this sensitive receptor location is low.



Table 4-1: Assessment Results for GLC’s of Pollutants

Receptor Location	Pollutant	Averaging Period	Exposure Limit (µg/m³ at 25°C)	Predicted GLC (µg/m³)	% of CF	Pass/Fail
front door	Benzene	1-hour	580	80.41	13.86%	Pass
play				85.83	14.80%	Pass
play2				63.27	10.91%	Pass
front door		24-hr	29	8.46	29.17%	Pass
play				7.15	24.66%	Pass
play2				6.32	21.80%	Pass
front door		Annual	9.6	0.42	4.36%	Pass
play				0.39	4.01%	Pass
play2				0.27	2.79%	Pass
front door	Toluene	24-hour	3,770	24.44	0.65%	Pass
play				20.67	0.55%	Pass
play2				18.27	0.48%	Pass
front door		Annual	377	1.21	0.32%	Pass
play				1.11	0.30%	Pass
play2				0.77	0.21%	Pass
front door	Ethyl benzene	1-hour	8,000	17.02	0.21%	Pass
play				18.17	0.23%	Pass
play2				13.39	0.17%	Pass
front door		Annual	270	0.09	0.03%	Pass
play				0.08	0.03%	Pass
play2				0.06	0.02%	Pass
front door	Xylenes	24-hour	1,080	9.80	0.91%	Pass
play				8.29	0.77%	Pass
play2				7.32	0.68%	Pass
front door		Annual	870	0.49	0.06%	Pass
play				0.45	0.05%	Pass
play2				0.31	0.04%	Pass
front door	Cyclohexane	1-hour	190	13.70	7.21%	Pass
play				14.63	7.70%	Pass
play2				10.78	5.68%	Pass
front door	n-Hexane	1-hour	3,200	372.20	11.63%	Pass
play				397.31	12.42%	Pass
play2				292.86	9.15%	Pass
front door	Styrene	1-hour	64	0.61	0.95%	Pass
play				0.65	1.01%	Pass
play2				0.48	0.75%	Pass

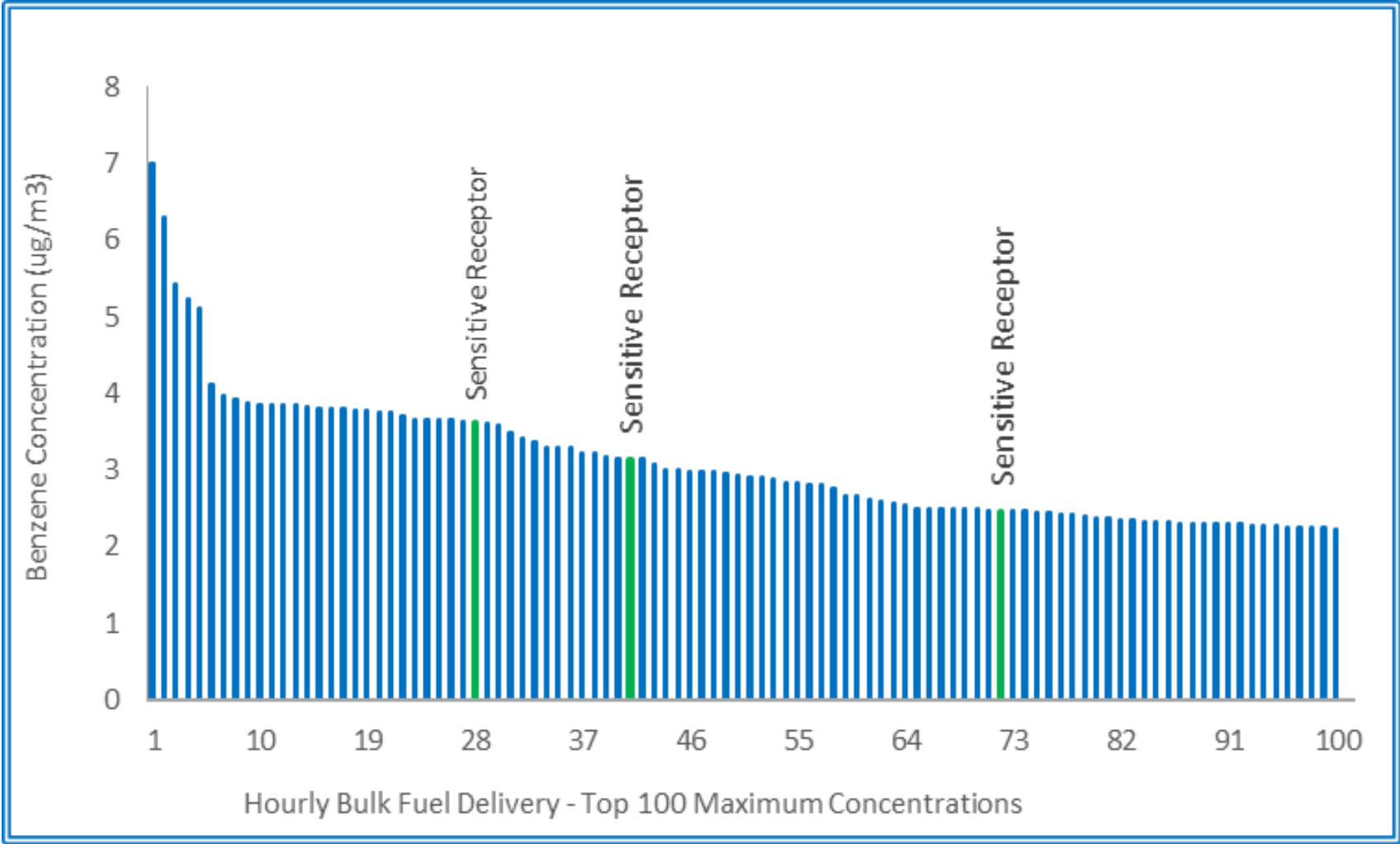


Figure 4-1: Top 100 Ranked Hours for Bulk Fuel Deliveries





Figure 4-2: Predicted GLCs ( $\mu\text{g}/\text{m}^3$ ) for Annual Benzene Concentrations





## **Appendix A:** Emissions Calculations



[illegible]



## **Appendix B:** Example of AERMOD Input File

```

1  **
2  *****
3  **
4  ** AERMOD Input Produced by:
5  ** AERMOD View Ver. 12.0.0
6  ** Lakes Environmental Software Inc.
7  ** Date: 22/01/2024
8  ** File: D:\MyAERMOD\23016\SLR config 2024\SLR config 2024.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 DFAULT CONC
21     AVERTIME 1 24 ANNUAL
22     POLLUTID VOC
23     RUNORNOT RUN
24     ERRORFIL "SLR config 2024.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      380672.839   6424485.754       7.860
36 ** DESCRSRC Bowser 1
37     LOCATION BOWS2          VOLUME      380670.949   6424492.505       7.940
38 ** DESCRSRC Bowser 2
39     LOCATION BOWS3          VOLUME      380669.050   6424499.348       8.000
40 ** DESCRSRC Bowser 3
41     LOCATION BOWS4          VOLUME      380654.659   6424500.455       7.980
42 ** DESCRSRC Bowser 4
43     LOCATION VENT           POINTCAP    380651.819   6424501.377       7.940
44 ** DESCRSRC Tank Breather
45     LOCATION VENT2          POINTCAP    380660.728   6424515.307       7.140
46 ** DESCRSRC Tank Breather
47 ** Source Parameters **
48     SRCPARAM BOWS1          1.0         1.200         1.395         2.233
49     SRCPARAM BOWS2          1.0         1.200         1.395         2.233
50     SRCPARAM BOWS3          1.0         1.200         1.395         2.233
51     SRCPARAM BOWS4          0.5         1.200         1.395         2.233
52     SRCPARAM VENT           1.0         4.500         0.000         0.1           0.1
53     SRCPARAM VENT2          1.0         4.500         0.000         0.1           0.1
54
55 ** Building Downwash **
56     BUILDHGT VENT           0.00         0.00         0.00         0.00         0.00         0.00
57     BUILDHGT VENT           0.00         0.00         0.00         0.00         0.00         0.00
58     BUILDHGT VENT           0.00         0.00         0.00         0.00         0.00         0.00
59     BUILDHGT VENT           0.00         0.00         0.00         0.00         0.00         0.00
60     BUILDHGT VENT           0.00         0.00         5.00         5.00         5.00         5.00
61     BUILDHGT VENT           0.00         0.00         0.00         0.00         0.00         0.00
62
63     BUILDHGT VENT2          4.00         4.00         4.00         4.00         4.00         4.00
64     BUILDHGT VENT2          4.00         4.00         4.00         4.00         0.00         0.00
65     BUILDHGT VENT2          0.00         0.00         0.00         0.00         0.00         0.00
66     BUILDHGT VENT2          4.00         4.00         4.00         4.00         4.00         4.00
67     BUILDHGT VENT2          4.00         4.00         4.00         4.00         5.00         5.00
68     BUILDHGT VENT2          5.00         5.00         5.00         0.00         0.00         0.00
69
70     BUILDWID VENT           0.00         0.00         0.00         0.00         0.00         0.00
71     BUILDWID VENT           0.00         0.00         0.00         0.00         0.00         0.00
72     BUILDWID VENT           0.00         0.00         0.00         0.00         0.00         0.00
73     BUILDWID VENT           0.00         0.00         0.00         0.00         0.00         0.00

```

74	BUILDWID	VENT	0.00	0.00	20.73	21.96	22.53	22.41		
75	BUILDWID	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
76										
77	BUILDWID	VENT2	17.65	17.11	16.04	15.77	16.94	17.59		
78	BUILDWID	VENT2	17.71	17.29	16.34	14.90	0.00	0.00		
79	BUILDWID	VENT2	0.00	0.00	0.00	0.00	0.00	0.00		
80	BUILDWID	VENT2	17.65	17.11	16.04	15.77	16.94	17.59		
81	BUILDWID	VENT2	17.71	17.29	16.34	14.90	22.53	22.41		
82	BUILDWID	VENT2	21.61	20.15	18.08	0.00	0.00	0.00		
83										
84	BUILDLIN	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
85	BUILDLIN	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
86	BUILDLIN	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
87	BUILDLIN	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
88	BUILDLIN	VENT	0.00	0.00	18.09	20.16	21.62	22.42		
89	BUILDLIN	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
90										
91	BUILDLIN	VENT2	14.90	13.00	10.71	10.20	12.56	14.54		
92	BUILDLIN	VENT2	16.08	17.13	17.66	17.65	0.00	0.00		
93	BUILDLIN	VENT2	0.00	0.00	0.00	0.00	0.00	0.00		
94	BUILDLIN	VENT2	14.90	13.00	10.71	10.20	12.56	14.54		
95	BUILDLIN	VENT2	16.08	17.13	17.66	17.65	21.62	22.42		
96	BUILDLIN	VENT2	22.54	21.97	20.74	0.00	0.00	0.00		
97										
98	XBADJ	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
99	XBADJ	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
100	XBADJ	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
101	XBADJ	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
102	XBADJ	VENT	0.00	0.00	-41.48	-43.30	-43.80	-42.98		
103	XBADJ	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
104										
105	XBADJ	VENT2	1.19	3.87	6.44	7.76	7.25	6.52		
106	XBADJ	VENT2	5.59	4.49	3.26	1.93	0.00	0.00		
107	XBADJ	VENT2	0.00	0.00	0.00	0.00	0.00	0.00		
108	XBADJ	VENT2	-16.09	-16.88	-17.15	-17.96	-19.81	-21.06		
109	XBADJ	VENT2	-21.67	-21.62	-20.92	-19.58	-40.20	-42.23		
110	XBADJ	VENT2	-42.97	-42.42	-40.57	0.00	0.00	0.00		
111										
112	YBADJ	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
113	YBADJ	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
114	YBADJ	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
115	YBADJ	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
116	YBADJ	VENT	0.00	0.00	7.36	1.62	-4.17	-9.84		
117	YBADJ	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
118										
119	YBADJ	VENT2	-10.75	-9.09	-7.15	-4.99	-2.68	-0.29		
120	YBADJ	VENT2	2.10	4.44	6.64	8.64	0.00	0.00		
121	YBADJ	VENT2	0.00	0.00	0.00	0.00	0.00	0.00		
122	YBADJ	VENT2	10.75	9.09	7.15	4.99	2.68	0.29		
123	YBADJ	VENT2	-2.10	-4.44	-6.64	-8.64	11.96	6.68		
124	YBADJ	VENT2	1.19	-4.33	-9.73	0.00	0.00	0.00		
125										
126										
127	** Variable Emissions Type: "By Hour / Seven Days (HRDOW7)"									
128	** Variable Emission Scenario: "Vent (1)"									
129	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.187	0.187
130	EMISFACT	VENT	HRDOW7	0.187	0.187	0.187	0.187	0.187	0.187	0.187
131	EMISFACT	VENT	HRDOW7	0.187	0.187	0.0	0.0	0.0	0.0	0.0
132	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.187	0.187
133	EMISFACT	VENT	HRDOW7	0.187	0.187	0.187	0.187	0.187	0.187	0.187
134	EMISFACT	VENT	HRDOW7	0.187	0.187	0.0	0.0	0.0	0.0	0.0
135	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.187	0.187
136	EMISFACT	VENT	HRDOW7	0.187	0.187	0.187	0.187	0.187	0.187	0.187
137	EMISFACT	VENT	HRDOW7	0.187	0.187	0.0	0.0	0.0	0.0	0.0
138	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.187	0.187
139	EMISFACT	VENT	HRDOW7	0.187	0.187	0.187	0.187	0.187	0.187	0.187
140	EMISFACT	VENT	HRDOW7	0.187	0.187	0.0	0.0	0.0	0.0	0.0
141	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.187	0.187
142	EMISFACT	VENT	HRDOW7	0.187	0.187	0.187	0.187	0.187	0.187	0.187
143	EMISFACT	VENT	HRDOW7	0.187	0.187	0.0	0.0	0.0	0.0	0.0
144	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
146	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.0	0.0



147	EMISFACT VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
148	EMISFACT VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
149	EMISFACT VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150	EMISFACT VENT2	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.0	0.187	0.187
151	EMISFACT VENT2	HRDOW7	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187
152	EMISFACT VENT2	HRDOW7	0.187	0.187	0.0	0.0	0.0	0.0	0.0	0.0
153	EMISFACT VENT2	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.0	0.187	0.187
154	EMISFACT VENT2	HRDOW7	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187
155	EMISFACT VENT2	HRDOW7	0.187	0.187	0.0	0.0	0.0	0.0	0.0	0.0
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169	EMISFACT VENT2	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170	EMISFACT VENT2	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
171										
172	** Variable Emissions Type: "By Hour / Day (HRDOW) "									
173	** Variable Emission Scenario: "Scenario 4"									
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176	EMISFACT BOWS1	HRDOW	0.604	0.626	0.604	0.626	0.659	0.659		
177	EMISFACT BOWS1	HRDOW	0.626	0.615	0.648	0.676	0.676	0.0		
178	EMISFACT BOWS1	HRDOW	0.0	0.0	0.0	0.0	0.0	0.0		
179	** Saturday:									
180	EMISFACT BOWS1	HRDOW	0.0	0.0	0.0	0.0	0.0	0.0		
181	EMISFACT BOWS1	HRDOW	0.0	0.0	0.0	0.0	0.0	0.0		
182	EMISFACT BOWS1	HRDOW	0.0	0.0	0.0	0.0	0.0	0.0		
183	EMISFACT BOWS1	HRDOW	0.0	0.0	0.0	0.0	0.0	0.0		
184	** Sunday:									
185	EMISFACT BOWS1	HRDOW	0.0	0.0	0.0	0.0	0.0	0.0		
186	EMISFACT BOWS1	HRDOW	0.0	0.0	0.0	0.0	0.0	0.0		
187	EMISFACT BOWS1	HRDOW	0.0	0.0	0.0	0.0	0.0	0.0		
188	EMISFACT BOWS1	HRDOW	0.0	0.0	0.0	0.0	0.0	0.0		
189	** WeekDays:									
190	EMISFACT BOWS2	HRDOW	0.0	0.0	0.0	0.0	0.0	0.506		
191	EMISFACT BOWS2	HRDOW	0.604	0.626	0.604	0.626	0.659	0.659		

```
220      EMISFACT BOWS4      HRDOW 0.0 0.0 0.0 0.0 0.0 0.506
221      EMISFACT BOWS4      HRDOW 0.604 0.626 0.604 0.626 0.659 0.659
222      EMISFACT BOWS4      HRDOW 0.626 0.615 0.648 0.676 0.676 0.0
223      EMISFACT BOWS4      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
224      ** Saturday:
225      EMISFACT BOWS4      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
226      EMISFACT BOWS4      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
227      EMISFACT BOWS4      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
228      EMISFACT BOWS4      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
229      ** Sunday:
230      EMISFACT BOWS4      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
231      EMISFACT BOWS4      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
232      EMISFACT BOWS4      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
233      EMISFACT BOWS4      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
234      SRCGROUP ALL
235      SO FINISHED
236      **
237      *****
238      ** AERMOD Receptor Pathway
239      *****
240      **
241      **
242      RE STARTING
243      INCLUDED "SLR config 2024.rou"
244      RE FINISHED
245      **
246      *****
247      ** AERMOD Meteorology Pathway
248      *****
249      **
250      **
251      ME STARTING
252      SURFFILE ..\23016.SFC
253      PROFFILE ..\23016.PFL
254      SURFDATA 0 2020
255      UAIRDATA 0 2020
256      SITEDATA 0 2020
257      PROFBASE 5.0 METERS
258      ME FINISHED
259      **
260      *****
261      ** AERMOD Output Pathway
262      *****
263      **
264      **
265      OU STARTING
266      RECTABLE ALLAVE 1ST
267      RECTABLE 1 1ST
268      RECTABLE 24 1ST
269      MAXTABLE ALLAVE 100
270      ** Auto-Generated Plotfiles
271      PLOTFILE 1 ALL 1ST "SLR CONFIG 2024.AD\01H1GALL.PLT" 31
272      PLOTFILE 24 ALL 1ST "SLR CONFIG 2024.AD\24H1GALL.PLT" 32
273      PLOTFILE ANNUAL ALL "SLR CONFIG 2024.AD\AN00GALL.PLT" 33
274      SUMMFILE "SLR config 2024.sum"
275      OU FINISHED
276      **
277      *****
278      ** Project Parameters
279      *****
280      ** PROJCTN CoordinateSystemUTM
281      ** DESCPTN UTM: Universal Transverse Mercator
282      ** DATUM World Geodetic System 1984
283      ** DTMRGN Global Definition
284      ** UNITS m
285      ** ZONE -50
286      ** ZONEINX 0
287      **
288
```

```

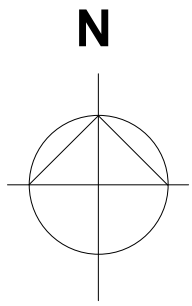
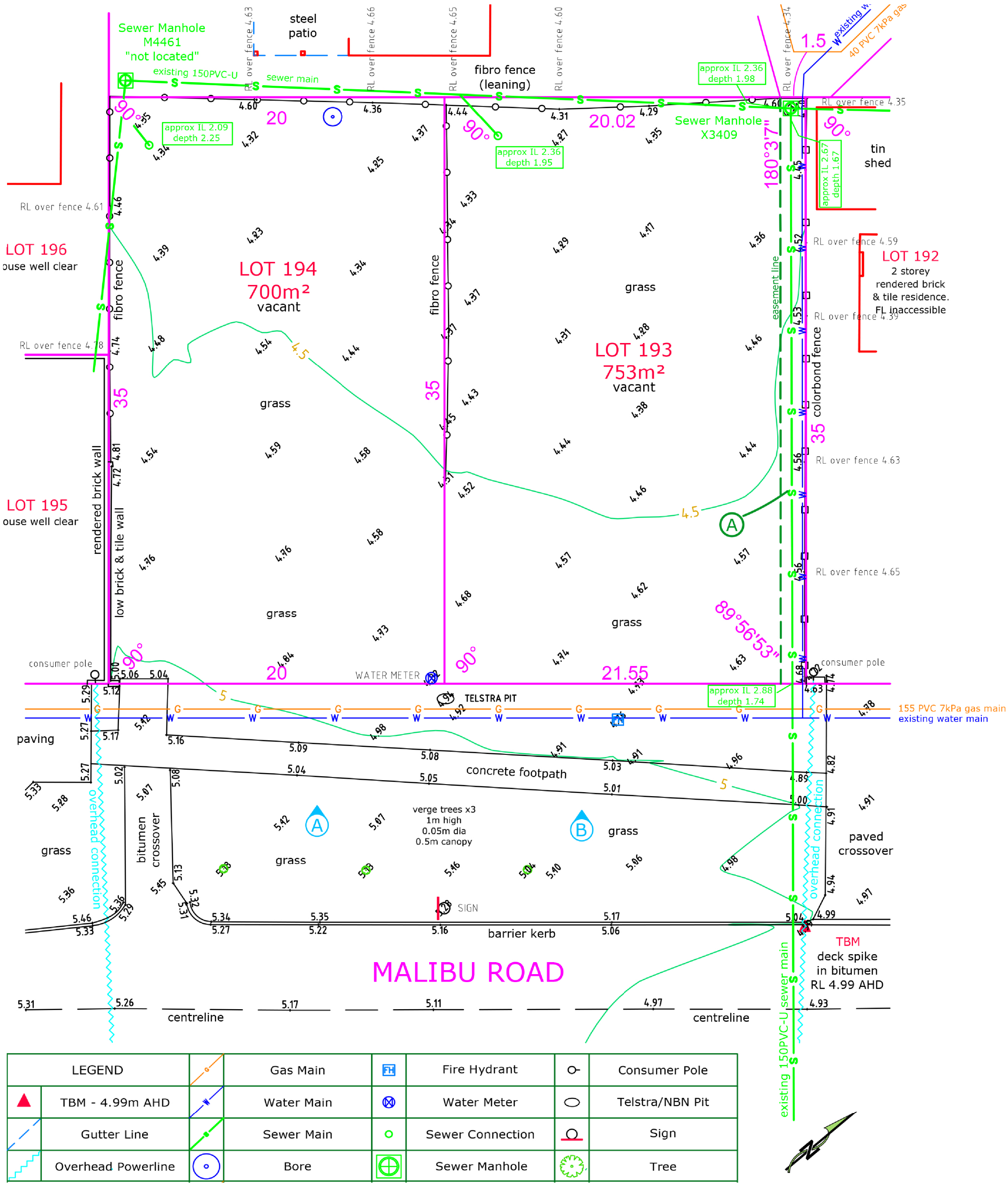
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2  **                                                                    14:38:23 **
3
4  ** Title 1: 23016
5  ** Primary Site (Zo):
6  **   Center Latitude (decimal degrees): -32.316670
7  **   Center Longitude (decimal degrees): 115.733300
8  **   Datum: NAD83
9  ** NLCD Version: 2016
10 ** NLCD DataFile: ..\jh.tif
11 ** Non-Airport Sector IDs: All
12 ** Zo Method: ZORAD
13 ** Zo Radius (m): 5000.0
14 ** Continuous snow cover: N
15 ** Surface moisture: Average; Arid: N
16 ** Month/Season assignments: User-specified
17 ** Late autumn after frost and harvest, or winter with no snow: 6 7 8
18 ** Winter with continuous snow on the ground:
19 ** Transitional spring (partial green coverage, short annuals): 9 10 11
20 ** Midsummer with lush vegetation: 1 2 12
21 ** Autumn with unharvested cropland: 3 4 5
22
23
24   FREQ_SECT  ANNUAL  7
25   SECTOR    1      0.00  51.00
26   SECTOR    2     51.00 102.00
27   SECTOR    3    102.00 153.00
28   SECTOR    4    153.00 204.00
29   SECTOR    5    204.00 255.00
30   SECTOR    6    255.00 306.00
31   SECTOR    7    306.00 360.00
32
33  **
34  SITE_CHAR    1      1      0.14      0.32      0.4000
35  SITE_CHAR    1      2      0.14      0.32      0.4000
36  SITE_CHAR    1      3      0.14      0.32      0.4000
37  SITE_CHAR    1      4      0.14      0.32      0.0001
38  SITE_CHAR    1      5      0.14      0.32      0.0001
39  SITE_CHAR    1      6      0.14      0.32      0.0001
40  SITE_CHAR    1      7      0.14      0.32      0.4000
41

```



## **Appendix C:** Design Drawings of proposed Child Care Centre

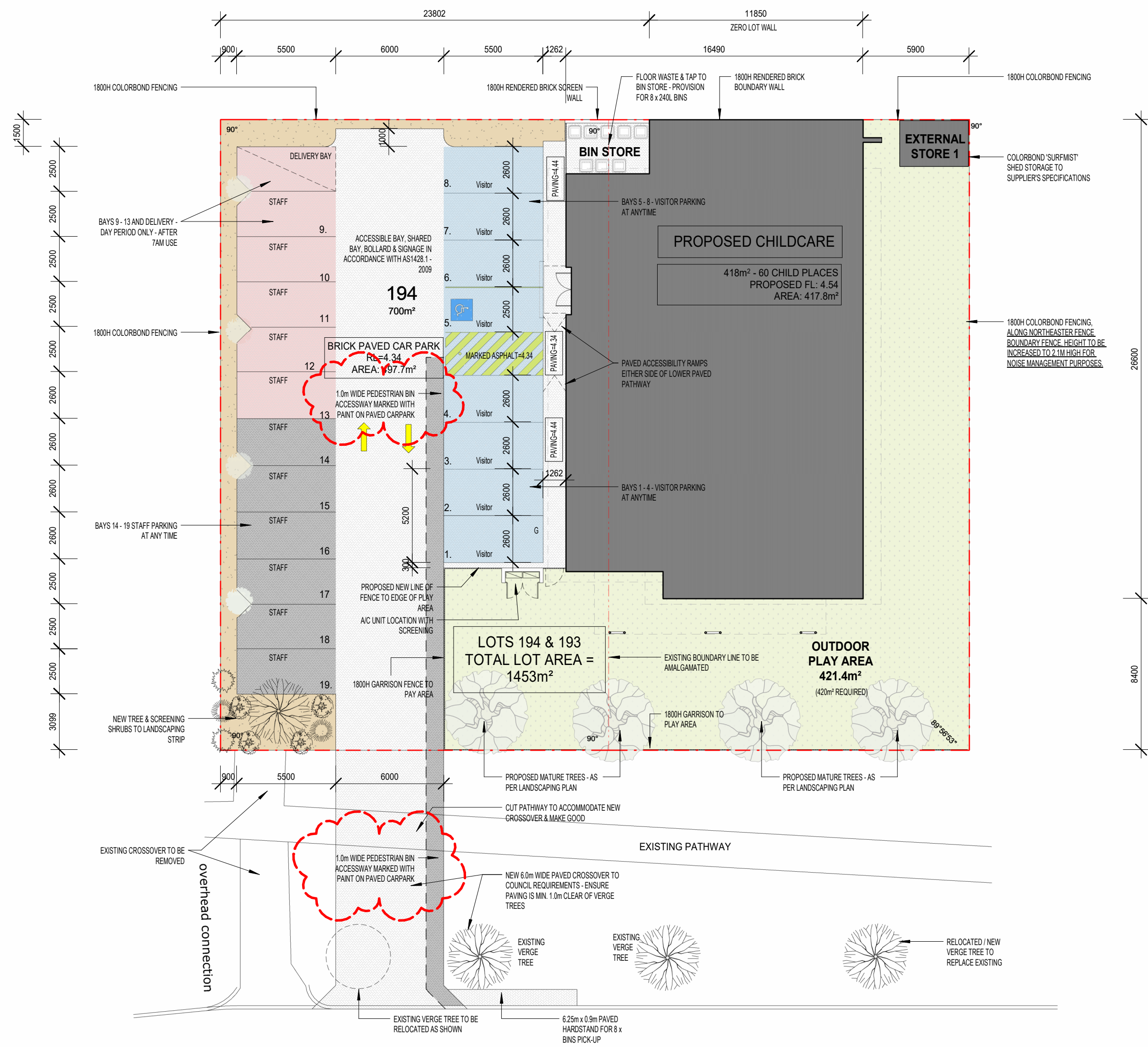




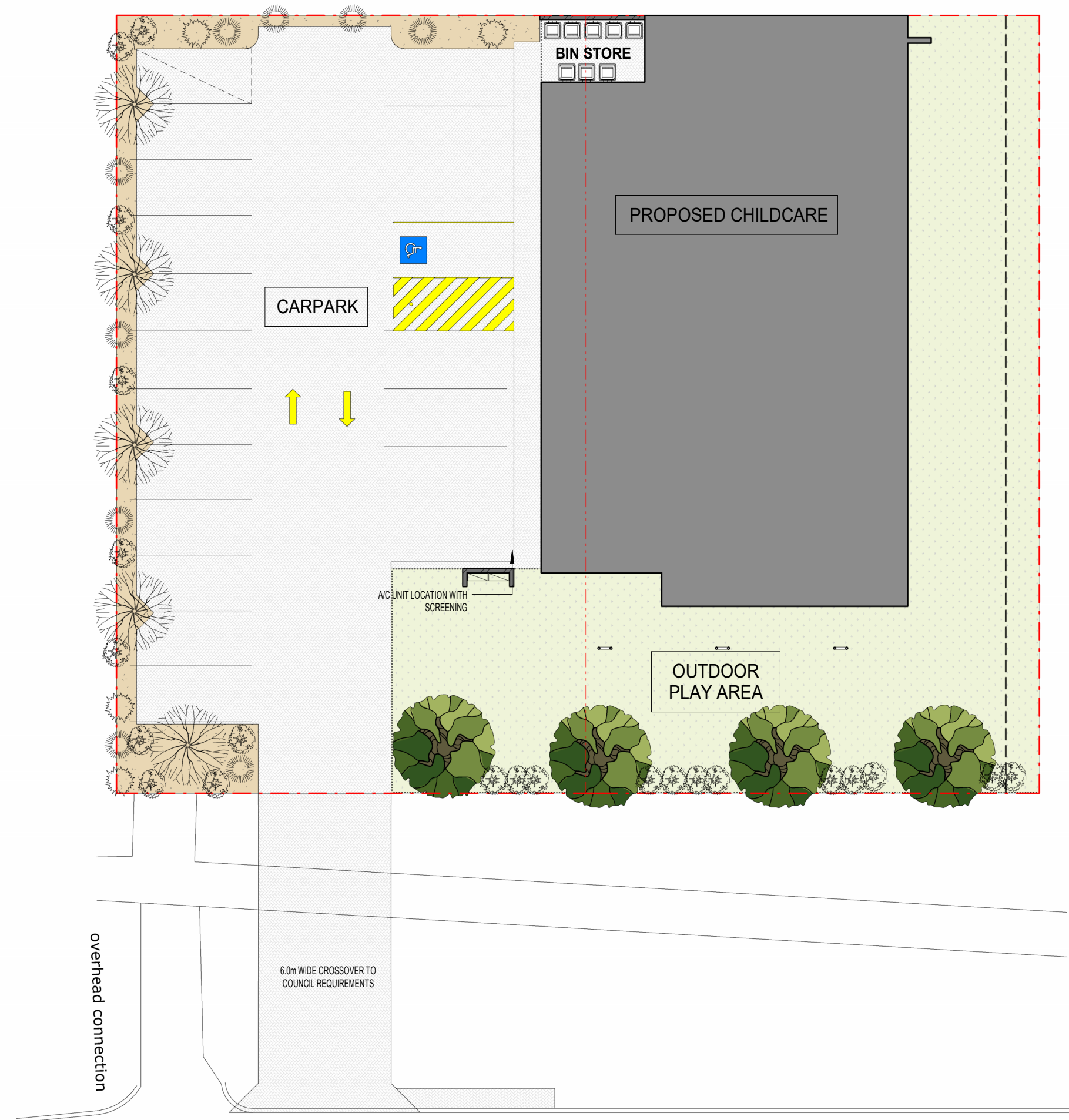
2 LOCATION PLAN  
SCALE 1: 500

1 EXISTING SURVEY PLAN  
SCALE 1: 200





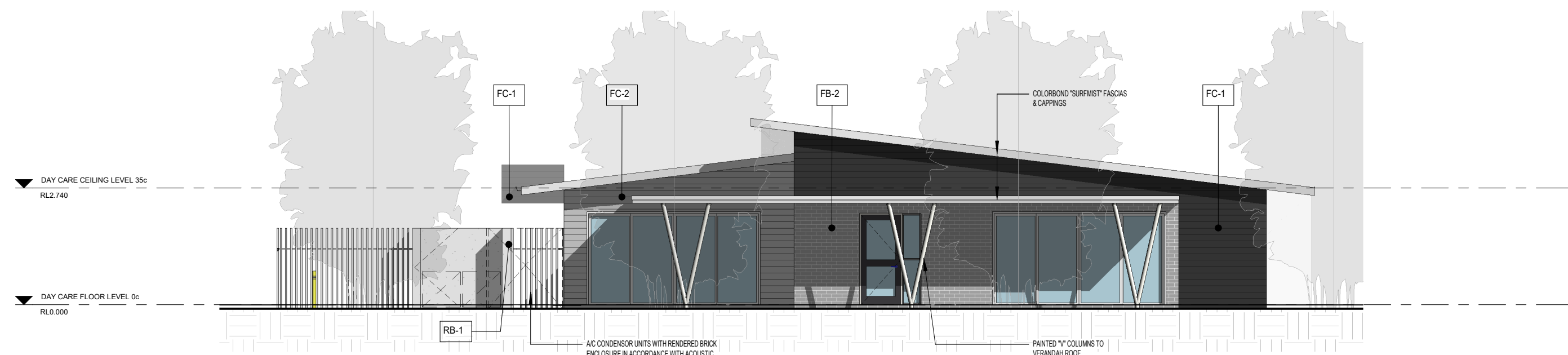
2 PROPOSED SITE PLAN  
SCALE 1 : 200



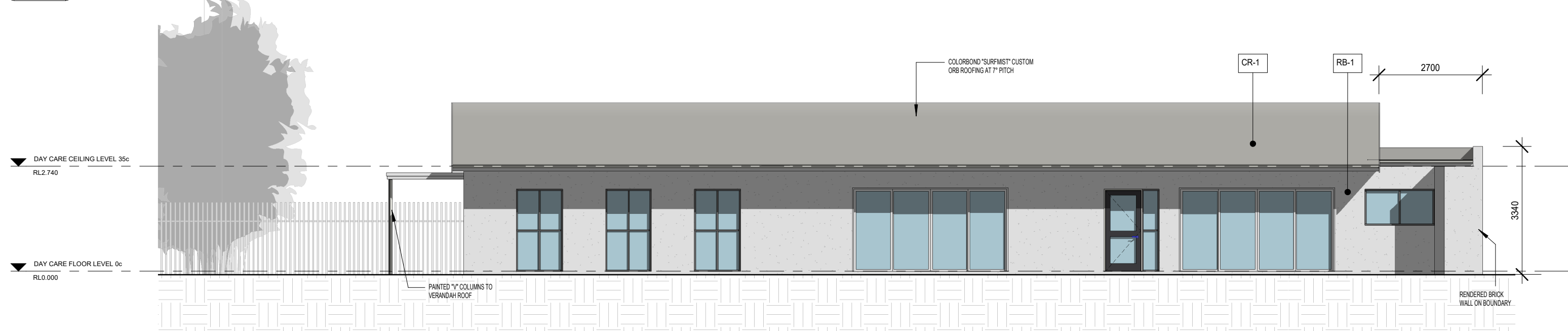
1 LANDSCAPING PLAN  
SCALE 1 : 200

LANDSCAPING LEGEND	
	SELECTED CONCRETE PAVING - REFER TO SPECIFICATIONS
	LANDSCAPING AND PLAY EQUIPMENT BY SPECIALIST CONTRACTOR TO FUTURE DESIGN
	MULCHED GARDEN AREA
	CARPARKING - BITUMEN TO CIVIL ENGINEERS DESIGN
	TREE x 1 TREE 1 (UP TO 12m HIGH, 6m CANOPY) CORYMBIA CALOPHYLLA WA MARRI
	TREE x 8 TREE 2 (UP TO 2m HIGH, 1.5m CANOPY) LAMIAEAE, WESTRINGIA (NATIVE ROSEMARY) FRUTICOSA JERVIS GEM
	SHRUB x 13 SHRUB (40cm HIGH, 40cm WIDE) ADENANTHOS SERICEUS ALBANY WOOLY BUSH
	GROUND COVER x 7 LOW SHRUB (50cm HIGH, 1.5m WIDE) SCAEVOLA AEMULA CULTIVARS FAIRY FAN FLOWER
	MEDIUM - LARGE TREES MATURE TREES ALONG FRONT FENCE LINE - SPECIES AND QUANTITY TO BE CONFIRMED
NOTE: FINAL LAYOUT OF OUTDOOR PLAY SPACES TO BE DESIGNED IN CONJUNCTION WITH OPERATORS PREFERRED PLAY SPACE DESIGN CONSULTANT.	

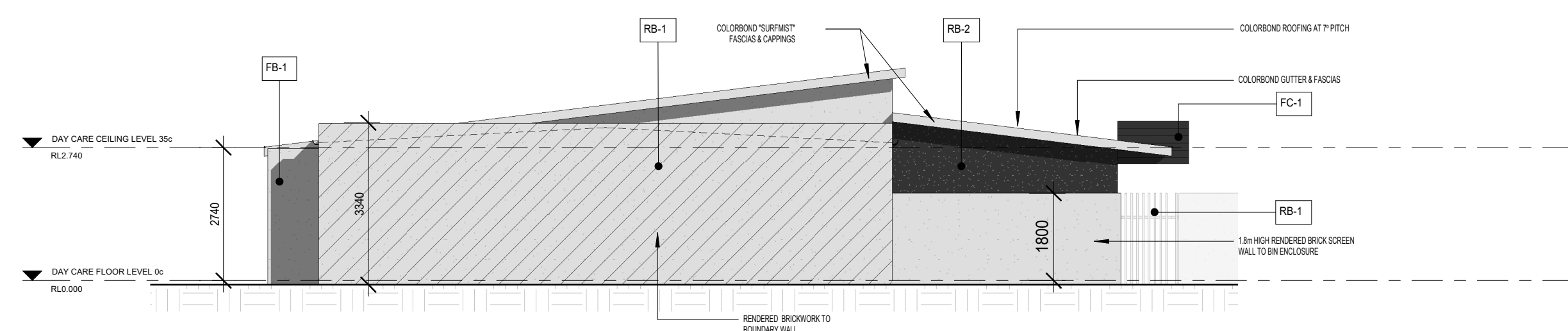




1 ELEVATION SOUTH-EAST  
SCALE 1 : 100



2 ELEVATION SOUTH-WEST  
SCALE 1 : 100



3 ELEVATION NORTH-WEST  
SCALE 1 : 100

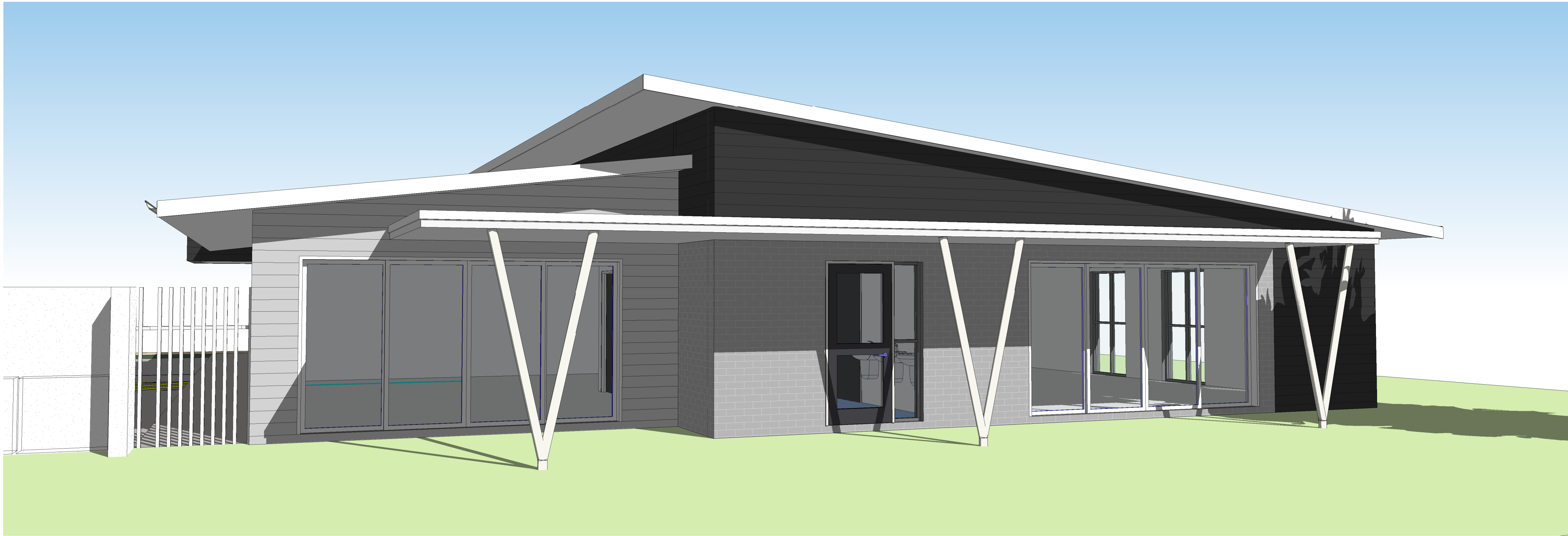


4 ELEVATION NORTH-EAST  
SCALE 1 : 100

EXTERNAL FINISHES LEGEND					
SAMPLE	TAG	DESCRIPTION	SAMPLE	TAG	DESCRIPTION
	FC-1	JAMES HARDIE SCYON STRIA CLADDING 325mm - "MONUMENT" COLOUR		CR-1	COLORBOND CUSTOM ORB ROOF SHEETING COLOUR "SURFMIST"
	FC-2	JAMES HARDIE SCYON STRIA CLADDING 325mm - "SURFMIST" COLOUR		RB-1	RENDERED BRICK VENEER COLOUR "SURFMIST"
	FB-1	"RESTORATION RED - TUMBLED" FACE BRICKWORK - 230mm x 110mm x 76mm		RB-2	RENDERED BRICK VENEER COLOUR "MONUMENT"
	FB-2	PAINTED FACE BRICKWORK "SHALE GREY" - 230mm x 110mm x 76mm		FB-3	PAINTED FACE BRICKWORK "MONUMENT" - 230mm x 110mm x 76mm



5 FLOOR PLAN GA  
SCALE 1 : 100



1 3D - CHILDCARE PERSPECTIVE  
SCALE



2 3D - CHILDCARE PERSPECTIVE 2  
SCALE





# EMISSIONS IMPACT ASSESSMENT OF BP SERVICE STATION ADJACENT TO PROPOSED CHILD CARE CENTRE

**MALIBU ROAD, SAFETY  
BAY, WESTERN AUSTRALIA**



# Emissions Impact Assessment of BP Service Station adjacent to Proposed Child Care Centre

Malibu Road, Safety Bay, Western Australia

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Prepared for: Greener4 Pty Ltd c/- ROWE Group

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Project Ref: EAQ-23016  
September 2023

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Environment | Air Quality



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Final		01.05.2023		
Finalv2	Revised for Layout	13.09.2023	J. Hurley	

#### Approved for Release

Name	Position	File Reference
John Hurley	Principal Consultant	EAQ23016-MalibuRoadChildCare+BPSStation+EIA-FINALv2

#### Signature

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## Executive Summary

Environmental and Air Quality Consulting Pty Ltd undertook an Air Emissions Assessment of an existing BP Service Station located at the corner of Safety Bay Road and Malibu Road Safety Bay, Western Australia.

The site-specific scientific study addressed the health risks associated with vapour emissions from the BP Site for the purposes of determining the risk of emissions' impacts at an adjacently proposed Child Care Centre.

The proposed Child Care Centre will satisfy the guideline separation distance of 50 metres from the nearest refuelling location at the BP Site, however; for the purposes of proper and orderly planning, the Assessment has been undertaken to demonstrate the low risk of vapour emissions exposure on human receptors at the Child Care Centre.

The BP Site is within an urban developed area with residential properties surrounding, and operates under limited hours daily i.e., not a 24-hour operation.

Importantly, the Child Care Centre proposed hours of operation were assessed for predicted emissions impacts, rather than the total hours of operation for the BP Site, given that the timeframes for exposure of human receptors at the Child Care Centre rely wholly on the Child Care Centre's hours of operations.

The Assessment utilised accepted standards for estimating pollutant emission rates of primary airborne pollutants from fuel storage and refuelling activities at the 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.

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 Western Australian Department of Water and Environmental Regulation and that of the National Environment Protection (Air Toxics) Measure.

The predicted concentrations of these primary pollutants demonstrated that the service station emissions are unlikely to have an unreasonable impact on the future health of those attending the Child Care Centre.



## 1 Background & Scope

Environmental & Air Quality Consulting Pty Ltd (EAQ) was engaged by Greener4 Pty Ltd, through ROWE Group, to undertake an Air Emissions' Impact Assessment (the Assessment) of an existing limited hours BP Service Station (the BP Site) located on the corner of Safety Bay Road and Malibu Road, Safety Bay Western Australia.

The Assessment was commissioned to determine the risk of vapour impacts from refuelling activities at the BP Site, on a proposed Child Care Centre (the Centre) to be located adjacent to the Site at 4-6 Malibu Road, Safety Bay.

The Centre is proposed to be built within an established residential area where sensitive receptors are already established with respect to the BP Site and its vapour emissions.

The Centre will operate Monday to Friday between maximal hours of 0600 hrs – 1800 hrs.

The Assessment addressed toxic emissions of principal chemical compounds in petrols by undertaking a desktop scientific Assessment into the health risks associated with vapour emissions from the Site.

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.

### 1.1 Assessment Scope

The Assessment was undertaken to determine the extent of offsite pollutant impacts beyond the boundary of the BP Site and subsequently determine the risk of health and amenity impacts for the proposed Centre which is categorised as a future sensitive receiver and/or sensitive land use (receptor).

The Assessment predicted ground level concentrations (GLCs) of various pollutants from vapour losses using regulatory standard dispersion modelling techniques.

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 AERMOD and its supporting pre- and post- processors.

### 1.1.1 Legislative Context

The existing BP Site is not a Prescribed Premise with regard to the WA Department of Water and Environmental Regulation (DWER).

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 and the nearest sensitive receptor is as follows:

**Table 1-1: WA EPA Guidance for Separation Distances – Service Station**

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

The EPA recommended buffers imply 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.”*

Importantly, there have been sweeping changes to the operational hours of service stations and retail businesses in Western Australia i.e., deregulation of hours.

Notwithstanding:

- The Site is a limited-hours operation, however;
  - The Centre is not a 24-hour operation, and therefore;
    - The operational hours of the Centre represent the timeframe when emissions may impact the Centre.
- Given the hours of operations for the Centre, the 50 m separation distance is applicable.

### 1.1.2 Adjacent Receptors & Land Uses

The nearest existing receptor (residential) is approximately 35 m to the north-west of the nearest refueling bowser at the BP Site. This distance excludes the public footpath that crosses along the front of this adjacent residential home.



Public open space is approximately 30 m to the south and west of the BP Site. The location is long-established residential which surrounds the BP Site.

The proposed Centre is located to the immediate north from the BP Site and will achieve a minimum 50 m separation distance from the nearest refueling bowser.

### 1.1.3 Assessment Substances

Principal chemical compounds (pollutants) typically emitted from service station activities are listed below. These compounds are part of the Total 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)**

Pollutant	
Benzene	Cyclohexane
Toluene	<i>n</i> -Hexane
Ethyl benzene	Styrene
Xylenes	

## 1.2 Guidance for Assessing Impacts

The DWER prescribes maximum ambient concentrations of an array of pollutants and toxic substances. In prescribing these maximum concentrations, the DWER has referred to (among others); The National Environment Protection (Air Toxics) Measure (NEPM). These DWER, NEPM, and other jurisdictional recommendations as per DWER's guidance have been adopted for this Assessment. These maximum ambient concentration exposure limits are listed in **Table 1-3**.

**Table 1-3: Assessment Criteria for Toxic Substances**

Substance	Averaging Period	DWER Pollutant References	Maximum (ambient) concentration	
			ppm	µg/m <sup>3</sup> at 25°C
<b>Benzene</b>	Annual	<a href="#">NEPM 2011</a>	0.003	9.6
<b>Toluene</b>	24 hour	<a href="#">NEPM 2011</a>	1	3,770
	Annual		0.1	377
<b>Ethyl benzene</b>	1 hour	<a href="#">EPA NSW 2022</a>	1.8	8,000
	Annual	Toxicos 2011	-	270
<b>Xylenes</b>	24 hours	<a href="#">NEPM 2011</a>	0.25	1,080
	Annual		0.2	870
<b>Cyclohexane</b>	1 hour	<a href="#">EPA NSW 2022</a>	5	190
<b><i>n</i>-Hexane</b>			0.9	3,200
<b>Styrene</b>	1 hour	Dept. of Health WA	70	64

## 1.3 The BP Site

The BP Site operates between 0600 hrs – 2200 hrs weekly and provides three (3) ‘two-sided’ refuelling bowser, and one (1) additional ‘one-sided’ diesel bowser that is separate from the main vehicular refueling bowser to allow access for wider/taller vehicles. A total of seven (7) refuelling positions are available daily.

The emission sources at the BP Site comprise the ventilation of the sub-terrain fuel storage tanks, and the refueling locations (7 of). 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.

The BP Site comprises the following main features:

- 3 ‘two-sided’ bowser ranks comprising a total of 6 bowser outlets at any one time;
- 1 ‘one-sided’ bowser comprising of 1 bowser outlet at any one time;
- Car Wash;
- Restaurant/Convenience store;
- Trailer Hire;
- The types of fuels dispensed are;
  - Diesels & AdBlue (reduces NOx emissions),
  - Unleaded Petrols (ULPs), and
  - Autogas.

### 1.3.1 Emissions Assumptions

EAQ has estimated fuel throughputs based on the following assumptions:

- Bulk refuelling events would likely take place twice (x2) weekly;
- Bulk Storage Volumes of up to 42,000 Litres;
- Average vehicle refuelling volume per day, approximately 14,837 Litres between the hours of 0600 – 2200 hrs;
- Child Care Centre operational hours are maximally 0600 – 1800 hrs, 5-days per week;
  - Average vehicle refuelling volume per day, approximately 11,696 Litres during Centre operational hours.
- The peak flow of vehicles for an averaged fuel volume of 35 L is 30 per hour based on peak hourly volume of 1,050 L.

The Locality of the Site and Centre are illustrated in **Figure 1-1**. The Centre designs are illustrated in [Appendix C](#).





Figure 1-1: Safety Bay Locality, Existing BP Service Station Site & Proposed Child Care Centre



## 2 Service Station Emissions Estimation

Activities at the BP Site that will produce emissions are related to losses of fuel vapours to atmosphere, 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 BP Site throughputs are estimated based on like-for-like 3-bowser service stations’ average throughput. Precise hourly throughputs are however unknown but would be comparable to typical service stations within residential areas.

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 is in place for submerged underground storage tank(s) referred to as VR1.

- Vapour recovery at the bowser (VR2) is unknown and therefore assumed to be absent from the BP Site.

### 2.1 BP Site Operations and Emissions

The maximum volume of fuel that can be dispensed into the storage tanks at the Site is estimated at 42,000 L/hour based on a total bulk storage tank volume. The estimated total daily sales of fuels is 17,073 L over 24 hours, however; based on the BP Site’s operational hours of between 0600 – 2200 hrs, the revised weekly fuel sales volume is 14,837 L.

- **NOTE:** The total fuel sales between the Child Care Centre’s operational hours of 0600 – 1800 hrs is approximately 11,696 L.

The BP Site bulk fuel deliveries schedule will shift based on fuel volumes dispensed. To account for variability in daily hours where deliveries are made, and assuming deliveries are over 5-days to represent the Centre’s operational hours; 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 over a 5-day week.



**Table 2-1: Example of Bulk Fuel Delivery Schedule (L/hr)**

Time (24 hrs)	Monday	Tuesday	Wednesday	Thursday	Friday
0600	42,000				
0700		42,000			
0800			42,000		
0900				42,000	
1000					42,000
1100	42,000				
1200		42,000			
1300			42,000		
1400				42,000	
1500					42,000
1600	42,000				
1700		42,000			

## 2.2 VOC Emissions

Of the fuel types proposed 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 Ethanol blend fuels e.g., E5, E10. The vapour composition of VOCs in petroleum fuel ([NPI, 1999](#)), are listed in **Table 2-2**.

The vapour composition of Benzene has been revised in accordance with the Australian Government's Federal Register of Legislation, specifically the current [Fuel Quality Standards \(Petrol\) Determination 2019](#), which limits the volume of Benzene in petrol to 1% v/v maximum. Assuming a Benzene density value of 0.8765, the petrol vapour Benzene composition (% weight) is listed in **Table 2-3**.

**Table 2-2: Composition of Petrol (NPI, 1999)**

Species	Petrol Liquid (% weight)	Petrol Vapour (% weight)
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

**Table 2-3: Composition of Petrol (Fuel Standards, 2019)**

Species	Petrol Liquid (% weight)	Petrol Vapour (% weight)
Benzene	1.0	0.374

The composition percentages of the compounds listed in **Table 2-2** and **Table 2-3** 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 Estimates

**Table 2-4: BP Site Service Station Operating Detail**

Parameter	Operational Data
Operating hours	0600 – 2200 hrs / 7 days per week
<b>Child Care Centre Operating hours</b>	<b>0600 – 1800 hrs / 5 days per week</b>
Tanker delivery	42,000 L/hour - VR1 Vapour Recovery
Vent stack	4.0 m high
Filling Stations/Bowsers	3.5 x Bowsers = 7 x filling points in total
Fuel Storage	Diesel & ULP

## 2.4 Derived Emission Factors

Emissions generated from activities at the BP Site have been derived based on those vapour losses published by the NPI and CAPCOA guidance. **Table 2-5** lists those emission factors that apply to those processes where vapour losses occur.

**Table 2-5: Emissions Factors for Service Stations**

Emission Source	NPI, 1999 Mg / L throughput	CAPCOA, 1997 Lbs / 1000 Gallons throughput
<b>Underground Tank Filling</b>	-	-
Submerged Filling	880	8.4
Splash Filling	1380	-
Submerged filling with vapour balance	<b>40</b>	0.42
Underground tank breathing losses	<b>120</b>	0.84
<b>Vehicle Refuelling</b>	-	-
Displacement Losses (uncontrolled)	1320	<b>8.4</b>
Displacement Losses (90% controlled e.g. VR 2)	132	0.74
<b>Spillages</b>	-	-
Uncontrolled	80	<b>0.61</b>
Controlled	-	0.41
<b>"Whoosh" Emissions (fuel cap removal)</b>	-	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

To determine the hourly throughputs of fuel dispensing for service stations in accordance with the BCC, 2017 recommendations, the hourly profile of fuel sales daily is derived using the BCC, 2017 published profiles as listed in **Table 2-6**.

**Table 2-6: Representative Service Station Fuel Throughputs (BCC, 2017)**

Hour	Hourly Profile (%)
1	1.2
2	0.8
3	0.6
4	0.8
5	1.9
6	4.6
7	5.5
8	5.7
9	5.5
10	5.7
11	6.0
12	6.0
13	5.7
14	5.6
15	5.9
16	<b>6.2</b>
17	<b>6.2</b>
18	5.8
19	5.1
20	4.0
21	3.5
22	3.4
23	2.6
24	1.8

In **Table 2-6** the peak throughput hour is at 4-5pm (1600 - 1700 hrs).

Applying the BP Site's Average Daily Refuelling Volume of 14,837 L, the emission factors in **Table 2-5**, and deriving total hourly volumes based on **Table 2-6**, 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 (7) at any one time, and single bowser (SINGLE) operations, and are listed in **Table 2-7**.

**NOTE:** The green-highlighted cells and rows represent the operational hours for the proposed Child Care Centre and are those values used in the modelling Assessment. All other values were marked to '0' in the modelling.

**Table 2-7: Factored Total VOC Emission Rates per Hour**

Hour	Throughput % daily volume/hr	Petrol Throughput (L/hr)	% to Peak Daily Hour	ALL Browsers Mass Emission Rate (g/s)	SINGLE Bowser Mass Emission Rate (g/s)
1	1.2	205	19.51%	0.462	0.132
2	0.8	137	13.01%	0.308	0.088
3	0.6	102	9.76%	0.231	0.066
4	0.8	137	13.01%	0.308	0.088
5	1.9	324	30.89%	0.731	0.209
6	4.6	785	74.80%	1.769	0.506
7	5.5	939	89.43%	2.116	0.604
8	5.7	973	92.68%	2.193	0.626
9	5.5	939	89.43%	2.116	0.604
10	5.7	973	92.68%	2.193	0.626
11	6	1,024	97.56%	2.308	0.659
12	6	1,024	97.56%	2.308	0.659
13	5.7	973	92.68%	2.193	0.626
14	5.6	956	91.06%	2.154	0.615
15	5.9	1,007	95.93%	2.270	0.648
16	6.1	1,050	<b>100.00%</b>	<b>2.366</b>	<b>0.676</b>
17	6	1,050	<b>100.00%</b>	<b>2.366</b>	<b>0.676</b>
18	5.8	990	94.31%	2.231	0.637
19	5.1	871	82.93%	1.962	0.561
20	4	683	65.04%	1.539	0.440
21	3.5	598	56.91%	1.346	0.385
22	3.4	580	55.28%	1.308	0.374
23	2.6	444	42.28%	1.000	0.286
24	1.8	307	29.27%	0.692	0.198

The bowser fueling activities and that of the bulk refueling deliveries were modelled as cumulative emissions, with the bulk refueling schedule in **Table 2-1** modelled as an alternating emission rate based on staggered bulk fuel daily deliveries, and:

- The model was additionally configured to assess constant emissions over weekdays between the hours of 0600 – 1800 hrs for the bulk delivery refueling activity and the subsequent worst-hour determined to provide further insight into the worst-case scenario for weekday bulk refueling deliveries.

[Appendix A](#) presents the summary calculations for the derived mass emission rates.



## 3 Aermod Dispersion Modelling Methods

### 3.1 Meteorology

A 2-year annual dataset (2020-2022) of meteorology was developed using surface observations from the Mandurah Bureau of Meteorology (BoM) Automatic Weather Station (AWS) and supplemented with CSIRO's TAPM prognostic model for upper air characteristics.

The Mandurah BoM AWS is coastal and representative of coastal meteorological conditions for the Site's locality.

### 3.2 Modelling Domain Surface Characteristics

Seven sectors were chosen to represent surface characteristics within a 5 km radius of the Site. The 3 western sectors represent the ocean (open water), with the remaining 4 sectors representative of urban developed land. The surface characteristics for each sector are listed in the table below.

Land Use	Albedo	Bowen Ratio	Surface Roughness
Open Water	0.14	0.45	0.0001
Urban Developed	0.2075	1.625	1.0

### 3.3 Sensitive Receptors

Discrete receptors were placed at locations adjacent to the Site to determine the ground level concentrations of vapours with respect to the Centre's proposed location (refer **Figure 1-1**).

### 3.4 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](#).

### 3.5 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 existing BP Site and its vapour emissions' impacts on the location of the proposed Child Care Centre have projected ground level concentrations (GLCs) for assessed pollutants of BTEX (Benzene, Toluene, Ethyl benzene, Xylenes), Cyclohexane, *n*-Hexane and Styrene that are below the guideline exposure standards.

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 Tables 2-2 and 2-3**).

**Table 4-1** lists each predicted pollutant concentration for each averaging period. These pollutant concentrations are revised based on each compounds vapour contribution to petrol VOC emissions.

Within **Table 4-1** are each pollutants respective assessment criteria, the projected GLCs from the modelling Assessment and the revised projected GLCs at the nearest assessed sensitive receptor 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 assessed 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;
- All units of concentration are in  $\mu\text{g}/\text{m}^3$  unless stated otherwise; and
- The worst-case bulk fuel delivery hour was predicted by the model to be at 0700 hrs, during the month of July and with a GLC value of < 7 % of the Benzene exposure limit (i.e., PASS) at the nearest Child Care Centre outdoor receptor.

**Figure 4-1** illustrates the emissions profile for the Top 100 Maximum ground level concentrations during hourly bulk fuel deliveries. **Figure 4-2** illustrates the GLCs for annual Benzene predictions.

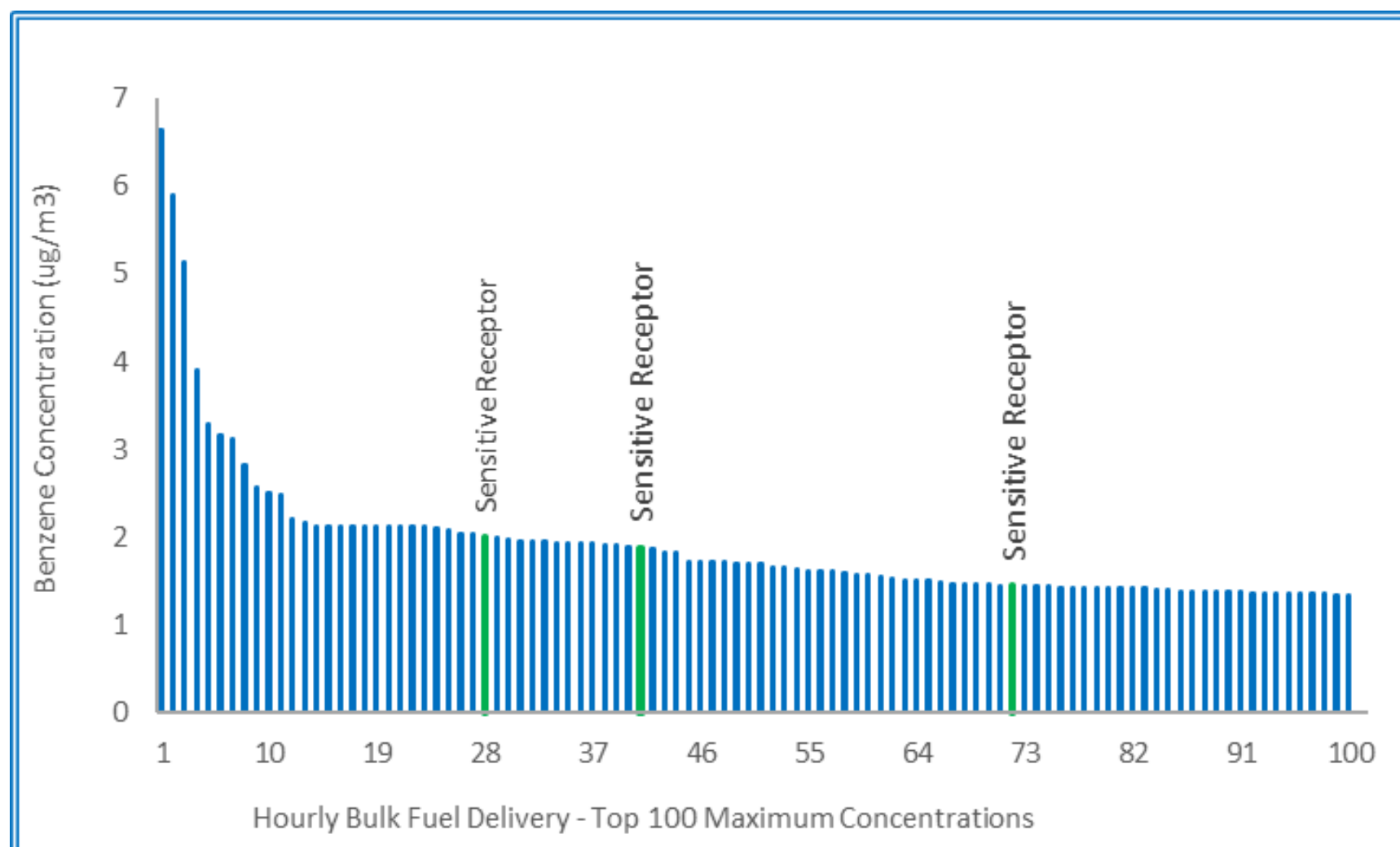
### 4.1 Conclusion

In reviewing the predicted GLCs for those pollutants in **Table 4-1**, within this Assessment, the pollutant emissions predicted at the proposed Child Care Centre are less than the exposure limits in ambient air.

Additionally, the Centre already satisfies the WA EPA guidance separation distance of 50 m from the nearest refuelling location, and given this and the Centre's limited operational hours, the risk of exposure at this sensitive receptor location is low.

**Table 4-1: Assessment Results for GLC's of Pollutants**

Receptor Location	Pollutant	Averaging Period	Exposure Limit (DWER) $\mu\text{g}/\text{m}^3$ at 25°C	Predicted GLC ( $\mu\text{g}/\text{m}^3$ )	Percentage of Exposure Limit	Pass/Fail
fdoor_1	Benzene	Annual	9.6	0.33	3.45%	Pass
play_2				0.34	3.50%	Pass
play2_3				0.24	2.50%	Pass
fdoor_1	Ethyl benzene	Annual	270	0.07	0.03%	Pass
play_2				0.07	0.03%	Pass
play2_3				0.05	0.02%	Pass
fdoor_1	Toluene	24-hour	3,770	24.43	0.65%	Pass
play_2				20.03	0.53%	Pass
play2_3				17.86	0.47%	Pass
fdoor_1	Xylenes	24-hour	1,080	9.79	0.91%	Pass
play_2				8.03	0.74%	Pass
play2_3				7.16	0.66%	Pass
fdoor_1	n-Hexane	1-hour	3,200	372.17	11.63%	Pass
play_2				397.31	12.42%	Pass
play2_3				292.86	9.15%	Pass
fdoor_1	Toluene	Annual	377	0.96	0.25%	Pass
play_2				0.97	0.26%	Pass
play2_3				0.69	0.18%	Pass
fdoor_1	Xylenes	Annual	870	0.38	0.04%	Pass
play_2				0.39	0.04%	Pass
play2_3				0.28	0.03%	Pass
fdoor_1	Ethyl benzene	1-hour	8,000	17.02	0.21%	Pass
play_2				18.17	0.23%	Pass
play2_3				13.39	0.17%	Pass
fdoor_1	Cyclohexane	1-hour	190	13.70	7.21%	Pass
play_2				14.63	7.70%	Pass
play2_3				10.78	5.68%	Pass
fdoor_1	Styrene	1-hour	64	0.61	0.95%	Pass
play_2				0.65	1.01%	Pass
play2_3				0.48	0.75%	Pass



**Figure 4-1: Top 100 Ranked Hours for Bulk Fuel Deliveries**





Figure 4-2: Predicted GLCs ( $\mu\text{g}/\text{m}^3$ ) for Annual Benzene Concentrations





## **Appendix A:** Emissions Calculations

[illegible]



## **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: 13/09/2023
8  ** File: D:\MyAERMOD\23016\constvent\constvent.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
21     AVERTIME 1 24 ANNUAL
22     POLLUTID VOC
23     RUNORNOT RUN
24     ERRORFIL constvent.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      380672.839   6424485.754          7.860
36 ** DESCRSRC Bowser 1
37     LOCATION BOWS2          VOLUME      380670.949   6424492.505          7.940
38 ** DESCRSRC Bowser 2
39     LOCATION BOWS3          VOLUME      380669.050   6424499.348          8.000
40 ** DESCRSRC Bowser 3
41     LOCATION BOWS4          VOLUME      380654.659   6424500.455          7.980
42 ** DESCRSRC Bowser 4
43     LOCATION VENT           POINTCAP    380651.819   6424501.377          7.940
44 ** DESCRSRC Tank Breather
45 ** Source Parameters **
46     SRCPARAM BOWS1          1.0          1.200          1.395          2.233
47     SRCPARAM BOWS2          1.0          1.200          1.395          2.233
48     SRCPARAM BOWS3          1.0          1.200          1.395          2.233
49     SRCPARAM BOWS4          0.5          1.200          1.395          2.233
50     SRCPARAM VENT           1.0          4.500          0.000          0.1          0.1
51
52 ** Building Downwash **
53     BUILDHGT VENT           0.00          0.00          0.00          0.00          0.00          0.00
54     BUILDHGT VENT           0.00          0.00          0.00          0.00          0.00          0.00
55     BUILDHGT VENT           0.00          0.00          0.00          0.00          0.00          0.00
56     BUILDHGT VENT           0.00          0.00          0.00          0.00          0.00          0.00
57     BUILDHGT VENT           0.00          0.00          5.00          5.00          5.00          5.00
58     BUILDHGT VENT           0.00          0.00          0.00          0.00          0.00          0.00
59
60     BUILDWID VENT           0.00          0.00          0.00          0.00          0.00          0.00
61     BUILDWID VENT           0.00          0.00          0.00          0.00          0.00          0.00
62     BUILDWID VENT           0.00          0.00          0.00          0.00          0.00          0.00
63     BUILDWID VENT           0.00          0.00          0.00          0.00          0.00          0.00
64     BUILDWID VENT           0.00          0.00          20.73         21.96         22.53         22.41
65     BUILDWID VENT           0.00          0.00          0.00          0.00          0.00          0.00
66
67     BUILDLEN VENT           0.00          0.00          0.00          0.00          0.00          0.00
68     BUILDLEN VENT           0.00          0.00          0.00          0.00          0.00          0.00
69     BUILDLEN VENT           0.00          0.00          0.00          0.00          0.00          0.00
70     BUILDLEN VENT           0.00          0.00          0.00          0.00          0.00          0.00
71     BUILDLEN VENT           0.00          0.00          18.09         20.16         21.62         22.42
72     BUILDLEN VENT           0.00          0.00          0.00          0.00          0.00          0.00
73

```

74	XBADJ	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
75	XBADJ	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
76	XBADJ	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
77	XBADJ	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
78	XBADJ	VENT	0.00	0.00	-41.48	-43.30	-43.80	-42.98		
79	XBADJ	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
80										
81	YBADJ	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
82	YBADJ	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
83	YBADJ	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
84	YBADJ	VENT	0.00	0.00	0.00	0.00	0.00	0.00		
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87										
88										
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90	** Variable Emission Scenario: "Vent (1)"									
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94	EMISFACT	VENT	HRDOW7	0.0	0.0	0.0	0.0	0.0	0.187	0.187
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203  ** AERMOD Output Pathway
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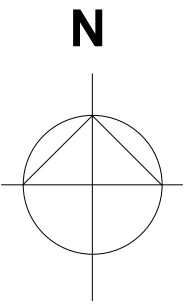
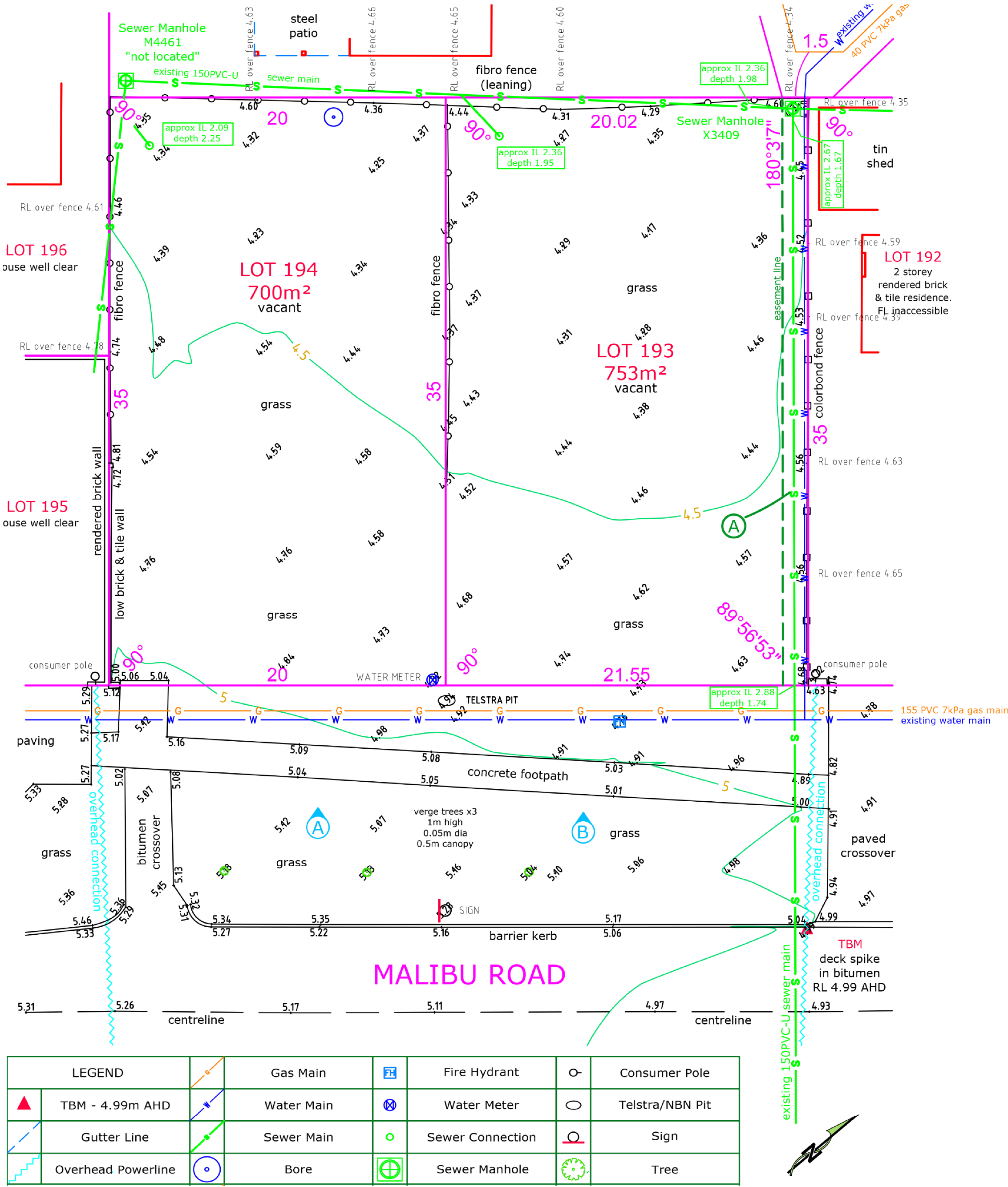
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222 *****
223 ** Project Parameters
224 *****
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226 ** DESCPTN UTM: Universal Transverse Mercator
227 ** DATUM World Geodetic System 1984
228 ** DTMRGN Global Definition
229 ** UNITS m
230 ** ZONE -50
231 ** ZONEINX 0
232 **
233
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## **Appendix C:** Design Drawings of proposed Child Care Centre





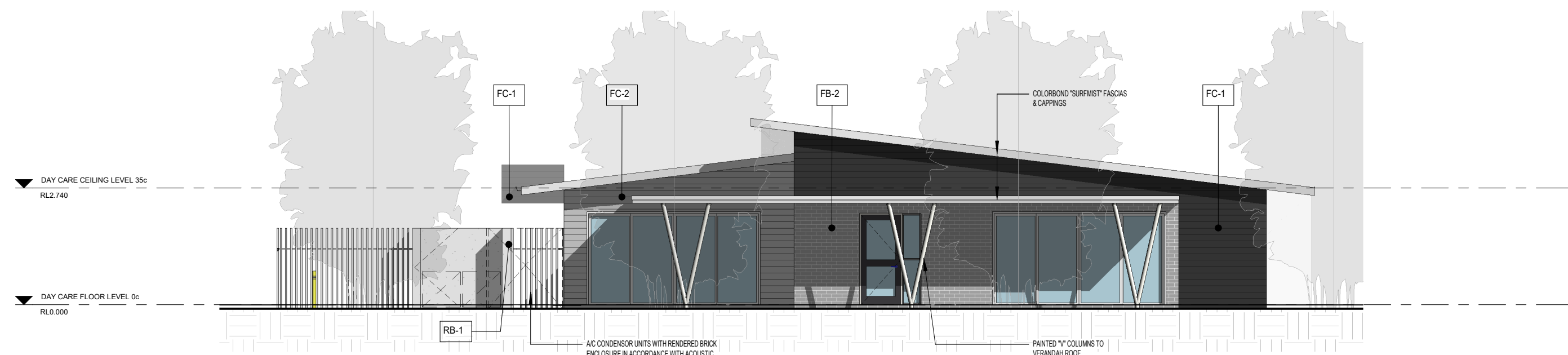
2 LOCATION PLAN  
SCALE 1: 500

1 EXISTING SURVEY PLAN  
SCALE 1: 200





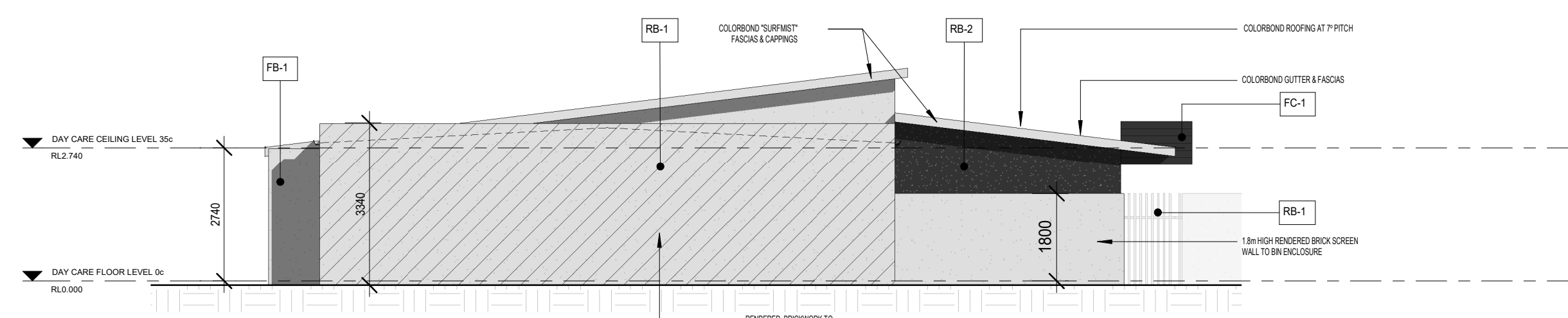




1 ELEVATION SOUTH-EAST  
SCALE 1 : 100



2 ELEVATION SOUTH-WEST  
SCALE 1 : 100



3 ELEVATION NORTH-WEST  
SCALE 1 : 100



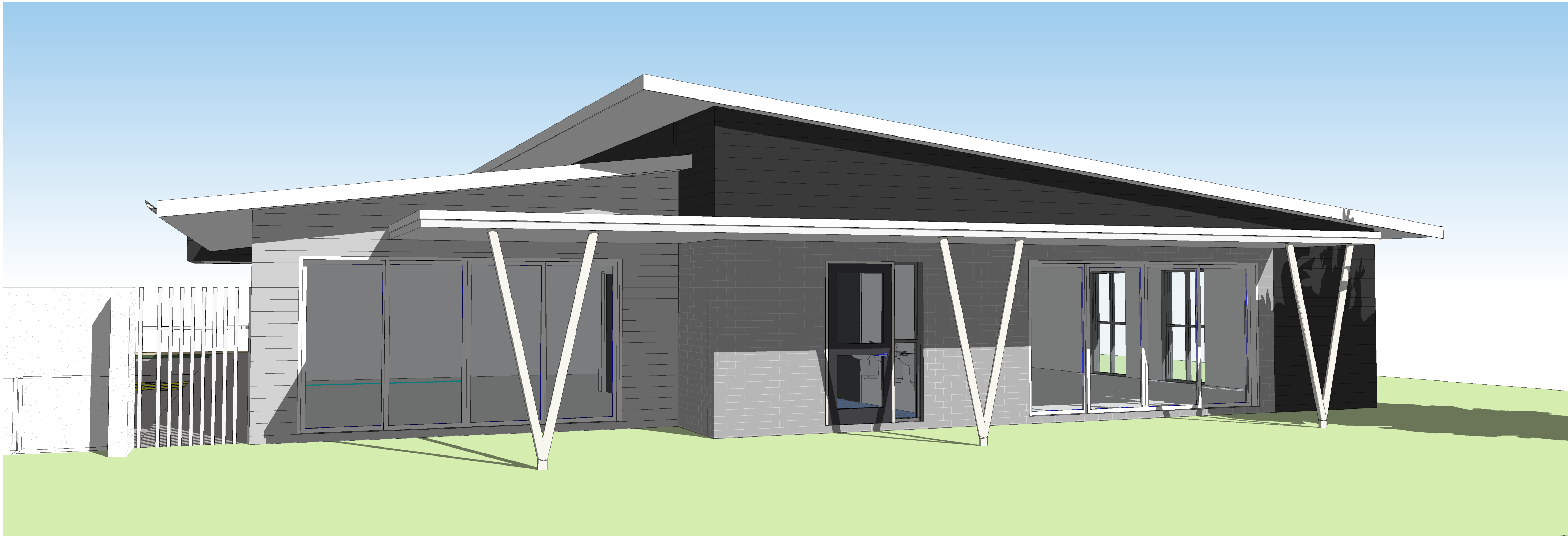
4 ELEVATION NORTH-EAST  
SCALE 1 : 100

EXTERNAL FINISHES LEGEND					
SAMPLE	TAG	DESCRIPTION	SAMPLE	TAG	DESCRIPTION
	FC-1	JAMES HARDIE SCYON STRIA CLADDING 325mm - "MONUMENT" COLOUR		CR-1	COLORBOND CUSTOM ORB ROOF SHEETING COLOUR "SURFMIST"
	FC-2	JAMES HARDIE SCYON STRIA CLADDING 325mm - "SURFMIST" COLOUR		RB-1	RENDERED BRICK VENEER COLOUR "SURFMIST"
	FB-1	"RESTORATION RED - TUMBLED" FACE BRICKWORK - 230mm x 110mm x 76mm		RB-2	RENDERED BRICK VENEER COLOUR "MONUMENT"
	FB-2	PAINTED FACE BRICKWORK "SHALE GREY" - 230mm x 110mm x 76mm		FB-3	PAINTED FACE BRICKWORK "MONUMENT" - 230mm x 110mm x 76mm



5 FLOOR PLAN GA  
SCALE 1 : 100

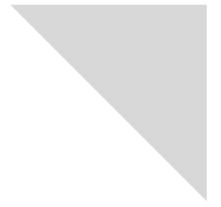




1 3D - CHILDCARE PERSPECTIVE  
SCALE



2 3D - CHILDCARE PERSPECTIVE 2  
SCALE



# ATTACHMENT 6

WASTE MANAGEMENT PLAN



**ROWE**  
GROUP



# Waste Management Plan

Lots 194 and 193 (Nos. 4 – 6) Malibu Road, Safety Bay

Prepared for Rowe Group

15 September 2023

Project Number: WMP23025

#### DOCUMENT CONTROL

Version	Description	Date	Author	Reviewer	Approver
1.0	First Approved Release	1/05/2023	AB	DP	AB
2.0	Second Approved Release	10/07/2023	AB	DP	DP
3.0	Third Approved Release	15/09/2023	AB	DP	AB

#### Approval for Release

Name	Position	File Reference
Ann Brouwer	Waste Management Consultant	WMP23025-02_Waste Management Plan_3.0

**Signature**

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## Executive Summary

Rowe Group is seeking development approval for the proposed Childcare Centre located at Lots 194 and 193 (Nos. 4 – 6) Malibu Road, Safety Bay (the Proposal).

To satisfy the conditions of the development application the City of Rockingham (the City) requires the submission of a Waste Management Plan (WMP) that will identify how waste is to be stored and collected from the Proposal. Talis Consultants has been engaged to prepare this WMP to satisfy the City's requirements.

A summary of the bin size, numbers, collection frequency and collection method is provided in the below table.

### Proposed Waste Collection Summary

Waste Type	Generation (L/week)	Bin Size (L)	Number of Bins	Collection Frequency	Collection
Refuse	954	240	Four	Once each week	Private Contractor
Recycling	954	240	Four	Once each week	Private Contractor

A private contractor will service the bins from the Bin Presentation Area on the Malibu Road verge at the front of the Proposal utilising its kerbside collection service.

A caretaker/suitably qualified staff will oversee the relevant aspects of waste management at the Proposal.

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Diagram 2: Bin Presentation Area

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Figure 1: Locality Plan

## 1 Introduction

Rowe Group is seeking development approval for the proposed Childcare Centre located at Lots 194 and 193 (Nos. 4 – 6) Malibu Road, Safety Bay (the Proposal).

To satisfy the conditions of the development application the City of Rockingham (the City) requires the submission of a Waste Management Plan (WMP) that will identify how waste is to be stored and collected from the Proposal. Talis Consultants has been engaged to prepare this WMP to satisfy the City's requirements.

The Proposal is bordered by residential properties to the north, south and west, and Malibu Road to the east, as shown in Figure 1.

### 1.1 Objectives and Scope

The objective of this WMP is to outline the equipment and procedures that will be adopted to manage waste (refuse and recyclables) at the Proposal. Specifically, the WMP demonstrates that the Proposal is designed to:

- Adequately cater for the anticipated volume of waste to be generated;
- Provide adequately sized Bin Storage Area, including appropriate bins; and
- Allow for efficient collection of bins by appropriate waste collection vehicles.

To achieve the objective, the scope of the WMP comprises:

- Section 2: Waste Generation;
- Section 3: Waste Storage;
- Section 4: Waste Collection;
- Section 5: Waste Management; and
- Section 6: Conclusion.

## 2 Waste Generation

The following section shows the waste generation rates used and the estimated waste volumes to be generated at the Proposal.

### 2.1 Proposed Tenancies

The anticipated volume of refuse and recyclables is based on the floor area (m<sup>2</sup>) of the Activity Rooms, Cot Room, Kitchen, Reception and Staff Room at the Childcare Centre – **273m<sup>2</sup>**.

### 2.2 Waste Generation Rates

In order to achieve an accurate projection of waste volumes for the Proposal, consideration was given to the City of Melbourne's *Guidelines for Waste Management Plans* (2021) as they contain contemporary estimates of waste generated from childcare centres.

Table 2-1 shows the waste generation rates which have been applied to the Proposal.

**Table 2-1: Waste Generation Rates**

Tenancy Use Type	City of Melbourne Guideline Reference	Refuse Generation Rate	Recycling Generation Rate
Childcare Centre	Childcare	350L/100m <sup>2</sup> /week	350L/100m <sup>2</sup> /week

### 2.3 Waste Generation Volumes

Waste generation is estimated by volume in litres (L) as this is generally the influencing factor when considering bin size, numbers and storage space required.

#### 2.3.1 Waste Generation

Waste generation volumes in litres per week (L/week) adopted for this waste assessment is shown in Table 2-2. It is estimated that the Proposal will generate 954L of refuse and 954L of recyclables each week.

**Table 2-2: Estimated Waste Generation**

Childcare Centre	Area (m <sup>2</sup> )	Waste Generation Rate (L/100m <sup>2</sup> /week)	Waste Generation (L/week)
Refuse	273	350	954
Recyclables	273	350	954
Total			1,908



### 3 Waste Storage

Waste materials generated within the Proposal will be collected in the bins located in the Bin Storage Area, as shown in Diagram 1, and discussed in the following sub-sections.

Note: the waste generation volumes are best practice estimates and the number of bins to be utilised represents the maximum requirements once the Proposal is fully operational. Bin requirements may be impacted as the development becomes operational and the nature of the tenants and waste management requirements are known.

#### 3.1 Internal Transfer of Waste

To promote positive recycling behaviour and maximise diversion from landfill, internal bins will be available throughout the Proposal for the source separation of refuse and recycling.

These internal bins will be collected by suitably qualified staff/cleaners and transferred to the Bin Storage Area for consolidation into the appropriate bins, as required. This internal servicing method may be conducted outside of main operational hours to mitigate disturbances to staff/visitors.

All bins will be colour coded and labelled in accordance with Australian Standards (AS 4123.7) to assist visitors, staff and cleaners to dispose of their separate waste materials in the correct bins.

#### 3.2 Bin Sizes

Table 3-1 gives the typical dimensions of standard bins sizes that may be utilised at the Proposal. It should be noted that these bin dimensions are approximate and can vary slightly between suppliers.

**Table 3-1: Typical Bin Dimensions**

Dimensions (m)	Bin Sizes			
	240L	360L	660L	1,100L
Depth	0.730	0.848	0.780	1.070
Width	0.585	0.680	1.260	1.240
Height	1.060	1.100	1.200	1.330

*Reference: SULO Bin Specification Data Sheets*

#### 3.3 Bin Storage Area Size

To ensure sufficient area is available for storage of the bins, the amount of bins required for the Bin Storage Area was modelled utilising the estimated waste generation in Table 2-2, bin sizes in Table 3-1 and based on collection of refuse and recyclables once each week.

Based on the results shown in Table 3-2, the Bin Storage Area has been sized to accommodate:

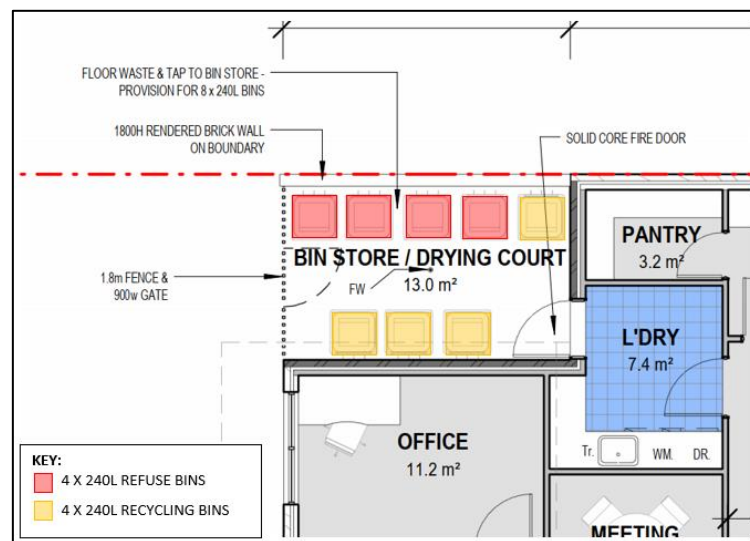
- Four 240L refuse bins; and
- Four 240L recycling bins.

**Table 3-2: Bin Requirements for Bin Storage Area**

Waste Stream	Waste Generation (L/week)	Number of Bins Required			
		240L	360L	660L	1,100L
Refuse	954	4	-	2	1
Recycling	954	4	3	2	1

The configuration of these bins within the Bin Storage Area is shown in Diagram 1. It is worth noting that the number of bins and corresponding placement of bins shown in Diagram 1 represents the maximum requirements assuming one collection each week of refuse and recyclables.

**Diagram 1: Bin Storage Area**



### 3.4 Bin Storage Area Design

The design of the Bin Storage Area will take into consideration:

- Smooth impervious floor sloped to a drain connected to the sewer system;
- Taps for washing of bins and Bin Storage Area;
- Adequate aisle width for easy manoeuvring of bins;
- No double stacking of bins;
- Doors to the Bin Storage Area self-closing and vermin proof;
- Doors to the Bin Storage Area wide enough to fit bins through;
- Ventilated to a suitable standard;
- Appropriate signage;
- Undercover where possible and be designed to not permit stormwater to enter the drain;
- Located behind the building setback line;
- Bins not to be visible from the property boundary or areas trafficable by the public; and
- Bins are reasonably secured from theft and vandalism.

Bin numbers and storage space within the Bin Storage Area will be monitored by the caretaker/suitably qualified staff during the operation of the Proposal to ensure that the number of bins and collection frequency is sufficient.

## 4 Waste Collection

A private contractor will service the Proposal and provide four 240L bins for refuse and four 240L bins for recyclables.

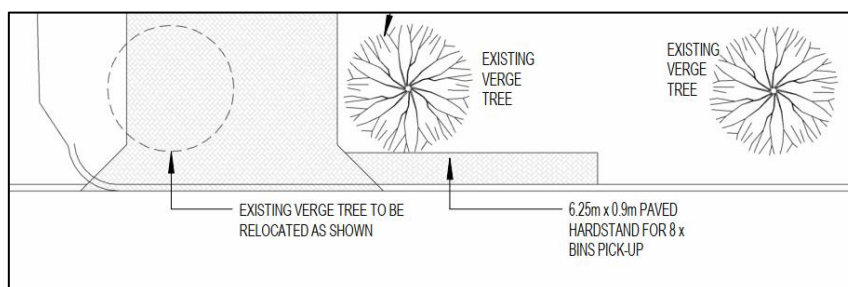
The private contractor will collect refuse and recyclables once each week from the Proposal utilising its side arm waste collection vehicle.

The private contractor will service bins from the Bin Presentation Area on the verge on Malibu Road at the front of the Proposal, as shown in Diagram 2.

Bins will be presented for collection 1m from the verge with the wheels and handles facing away from the street. The bins will remain clear of obstructions such as power poles, signs and street trees, and will be placed so as not to obstruct pedestrians, footpaths or bike lanes. Bins will be lined up neatly and in a single row along the verge, with sufficient space between each bin to facilitate collection by the private contractor's side arm waste collection vehicle.

The caretaker/suitably qualified staff will ferry the bins to and from the Bin Presentation Area on collection days. The travel path between the Bin Storage Area and the Bin Presentation Area will be of flat surface and kept free of obstacles. The Strata Manager will return the bins to the Bin Storage Area as soon as possible on the same day following collection.

**Diagram 2: Bin Presentation Area**



### 4.1 Bulk and Speciality Waste

Bulk and speciality waste materials will be removed from the Proposal as they are generated on an 'as required' basis.

Adequate space may be allocated throughout the Proposal for placement of cabinets/containers for collection and storage of bulk and specialty wastes that are unable to be disposed of within the bins in the Bin Storage Area. These may include items such as:

- Refurbishment wastes from fit outs;
- Batteries and E-wastes;
- White goods/appliances;
- Cleaning chemicals; and
- Commercial Light globes.

These materials will be removed from the Proposal once sufficient volumes have been accumulated to warrant disposal. Specialty waste collection will be monitored by the caretaker/suitably qualified staff who will organise their transport to the appropriate waste facility, as required.

## 5 Waste Management

The caretaker/suitably qualified staff will be engaged to complete the following tasks:

- Monitoring and maintenance of bins and the Bin Storage Areas;
- Cleaning of bins and Bin Storage Areas, when required;
- Ferrying of bins to and from the Bin Storage Area and Bin Presentation Area on collection days;
- Ensure all staff/cleaners at the Proposal are made aware of this WMP and their responsibilities thereunder;
- Monitor staff/cleaner behaviour and identify requirements for further education and/or signage;
- Monitor bulk and speciality waste accumulation and assist with its removal, as required;
- Regularly engage with staff/cleaners to develop opportunities to reduce waste volumes and increase resource recovery; and
- Regularly engage with the private contractor to ensure efficient and effective waste service is maintained.



## 6 Conclusion

As demonstrated within this WMP, the Proposal provides a sufficiently sized Bin Storage Area for storage of refuse and recyclables, based on the estimated waste generation volumes and suitable configuration of bins. This indicates that an adequately designed Bin Storage Area has been provided, and collection of refuse and recyclables can be completed from the Proposal.

- Four 240L refuse bins, collected once each week; and
- Four 240L recycling bins, collected once each week.

A private contractor will service the bins from the Bin Presentation Area on the Malibu Road verge at the front of the Proposal utilising its kerbside collection service.

A caretaker/suitably qualified staff will oversee the relevant aspects of waste management at the Proposal.

## Figures

Figure 1: Locality Plan





LEGEND

- Site Boundary
- Cadastre
  - Crown Allotment
  - Freehold
  - Road
  - Strata Plan or Lot
  - Easement
  - Reserve

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LOCALITY

Lots 194 and 193, 4-6 Malibu Rd  
Safety Bay 6169 WA

Greener4 Pty Ltd  
c/- Rowe Group



Prepared:	E Jackson	Date:	28/03/2023
Reviewed:	A Brouwer	Revision:	A
Project:	WMP23025		



Figure 01

Data source: Roads, Cadastre - Landgate, 2023. Imagery: Landgate, 2022.





**Assets | Engineering | Environment | Noise | Spatial | Waste**

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Job Ref: 9736  
29 November 2023

City of Rockingham  
PO Box 2142  
Rockingham DC WA 6967

**Attention: Casey Gillespie**

Dear Madam

**PROPOSED CHILD CARE CENTRE  
LOT 194 AND LOT 193 (NO. 4 AND NO. 6) MALIBU ROAD, SAFETY BAY**

Rowe Group acts on behalf of the landowner of Lot 194 and Lot 193 (No. 4 and No. 6) Malibu Road, Safety Bay ('the subject site') in relation to the Development Application for the proposed child care centre at the subject site. On 31 October 2023, the City of Rockingham ('the City') issued a Request for Information ('RFI'). The purpose of this letter is to respond to the City's RFI, as well as advice that the City has received from the Department of Water and Environmental Regulation ('DWER') and the Department of Health ('DoH').

We provide our responses to all three (3) letters in the following sections of this correspondence.

**Department of Water and Environmental Regulation Wednesday, 11  
October 2023 Letter**

Issue: Stormwater Management

A Stormwater Management Plan will be prepared by a suitably qualified consultant and implemented by our Client as part of the detailed design phase of the proposed child care centre. We request that the City recommend that an appropriately worded condition is prepared to require a Stormwater Management Plan to be submitted with the City for approval, prior to the issue of a building permit. We are of the view that the condition could be worded as follows:

- X. *Prior to the issue of a building permit, a stormwater management plan shall be submitted to and approved by the City of Rockingham. All stormwater shall be directed so stormwater is disposed of within the property. Direct disposal of stormwater onto the road and neighbouring properties is not permitted.*

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Issue: Emissions

Please refer to the advice provided by Mr John Hurley (Director | Principal Air Quality Consultant) at EAQ Consulting, which is contained in Attachment One – Environmental and Air Quality Consulting Advice.

**Department of Health Tuesday, 17 October 2023 Letter**

Issue: Emissions

Please refer to the advice provided by Mr John Hurley (Director | Principal Air Quality Consultant) at EAQ Consulting, which is contained in Attachment One – Environmental and Air Quality Consulting Advice.

**City of Rockingham Tuesday, 31 October 2023 Letter**

Issue: Traffic, Access, and Car Parking

The Site Plan has been amended as follows:

- ▲ The traffic flow directional line marking within the car parking area of the proposed development have been corrected; and
- ▲ Line marking has been included within the vehicle access way of the proposed development to provide a safe and direct pedestrian linkage between the bin store area and bin pad area on the verge.

Refer Attachment Two – Amended Site Plan.

Further to the above, Mr Paul Nguyen (Senior Traffic Engineer) at Shawmac has provided the below response with respect to the other queries raised by the City:

- ▲ *There are two crossovers on the other side of Malibu Road, opposite the child care crossover. Both are slightly offset from the child care crossover.*
- ▲ *The south-west crossover is an exit only crossover from the service station car wash. According to the BP site, the car wash cycle takes approximately 6 minutes and so this crossover is going to be generating fairly minimal traffic.*
- ▲ *The north-east crossover is an unused crossover to the vacant/undeveloped lot (Lot 100). Based on the recent development application for Lot 100, this crossover will be retained/modified for exit movements only and the adjoining section of roadway looks like a “back-of-house” or service area with a loading bay and 6 staff bays.*
- ▲ *The Transcore assessment estimates that this exit crossover will generate 9 movements during the morning peak hour and 16 movements during the afternoon peak hour. This estimate seems high considering there are only 6 staff bays along this carriageway and drivers in other parking areas are unlikely to choose this crossover over the main access points. Even if this amount of traffic was correct, it is low and unlikely to create a major safety issue along with the child care crossover and car wash crossover.*
- ▲ *The alternative/original location would have the child care crossover opposite one of the main access points to Lot 100 which would be less safe compared to the current location. It is also noted that 4-6 Malibu Road has a*

*much smaller frontage and therefore limited space to located the access. On the other hand, Lot 100 has a much wider frontage and more options to achieve access.*

- ▲ *By comparison, the child care premises at 4-6 Malibu Road will accommodate less children and therefore generate less traffic compared to Lot 100.*
- ▲ *The main service station crossovers do not coincide with the child care access and there are also two crossovers to the services station on Safety Bay Road.*
- ▲ *The proximity to the roundabout also means that vehicles along Malibu Road are likely to be travelling below the speed limit as they will be slowing down towards the roundabout, still gaining speed after leaving the roundabout or slowed down if there is queueing at the roundabout. The lower speeds will reduce the risk of conflicts at the various crossovers.*

Refer Attachment Three – Updated Traffic Impact Statement.

On the basis of the above, the proposed development will not create any adverse impacts on the surrounding local road network, even with the additional levels of traffic generated from the proposed development at Lot 100 Safety Bay Road, Safety Bay.

#### Issue: Waste Management

Ms Ann Brouwer (Waste Management Consultant) at Talis Consultants has provided the below response regarding the City's waste management queries:

*We usually note that sanitary wastes (nappies, etc.) from the child care will be collected in situ and that a suitably qualified sanitary waste collection and disposal provider will be engaged to determine storage and collection requirements once the development is operational. It is likely that sanitary waste would be collected in smaller internal bins with regular collections utilising vans, which could be proposed to service the development outside of hours to utilise the empty carpark for manoeuvring.*

*The fairly regular collection of refuse and recyclables once each week also minimises risk of odours from the Bin Storage Area, and given the flexibility of private contractor collections, if needed during busier or hotter periods, the child care centre could request increased general waste collections to twice each week.*

*Lastly, the Bin Storage Area will also be fitted with a tap and drain for the washing of bins and the Bin Storage Area to maintain cleanliness.*

Furthermore, the waste collection details outlined in the Waste Management Plan prepared by Talis Consultants is correct, there was an error in our Development Application Report. In this regard, a private contractor will collect all the bins from the bin presentation area on the verge of Malibu Road once a week. A suitably qualified staff member will oversee all the waste management operations involved with the proposed child care centre at the subject site to ensure these are emptied outside of peak hours.

Issue: Compliance with the City of Rockingham's Local Planning Policy 3.3.5 - Child Care Premises

According to GapMaps data as of 1 November 2023, there are currently two (2) existing 'long day' child care centres located within the Safety Bay/Shoalwater catchment area. The subject site and the land at Lot 100 Safety Bay Road, Safety Bay are both located within the boundaries of this catchment area. The two (2) existing child care centres provide a total of 118 'long day' places, and there are approximately 757 children aged between 0-5 who currently reside within the catchment area. Therefore, the current ratio of 'long day' places to children is 1:6.4 (we are advised that a rate of 1 place per 2.5 children is considered to indicate a demand for additional childcare places).

The proposed child care centre at the subject site will provide an additional 60 'long day' places, while the proposed development at Lot 100 will provide an additional 82 'long day' places. Therefore, the inclusion of two (2) new child care centres in this locality increases the total number of 'long day' places in the Safety Bay/Shoalwater catchment area from 118 to 260.

Notwithstanding this increase, the ratio of 'long day' places to children would be 1:2.9. This ratio would exceed the 1 place per 2.5 children threshold and indicates that even if the two (2) proposed child care centres (at the subject site and Lot 100) are approved, there will still be a demand for additional childcare places within the catchment area. It is also important to note that the two (2) existing 'long day' child care centres are located in Shoalwater area and not the Safety Bay locality.

In addition to the above, ABS data (2021) concludes that there will be an increase of 715 people who reside in the Safety Bay/Shoalwater catchment area over the next five (5) years. A significant percentage of these people will be children aged 0-5, whose families will require child care centre services in the locality.

On the basis of the above, the proposed development is consistent with Policy Statement 4.1 'Location' outlined in the City's *Local Planning Policy 3.3.5 - Child Care Premises* because it is appropriately located to provide additional child care places/services required in the Safety Bay/Shoalwater catchment area.

We trust that the information contained in this correspondence sufficiently addresses all the issues raised by the DWER, the DoH, and the City regarding the proposed child care centre at the subject site. Should you require any further information or clarification in relation to this matter, please contact the undersigned or Mr Nathan Stewart on 9221 1991.

Yours faithfully,



**Sam Bowers**

Rowe Group





Environment | Air Quality

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14 November 2023

**Attn: Sam Bowers**

*Town Planner*

**Rowe Group**

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Northbridge WA 6003

[EAQ Project: 23016]

By email: [Sam.Bowers@rowegroup.com.au](mailto:Sam.Bowers@rowegroup.com.au)

---

**ROWE Group - Response to CoR Advice+DWER+DoH (DAP/23/02487)**

---

Environmental and Air Quality Consulting Pty Ltd (EAQ) provides the following clarifications, information and/or commentary in support of Greener4 Pty Ltd's proposed Childcare Centre to be located on Malibu Road, Safety Bay Western Australia (the Site).

The following clarifications, information and/or commentary are in response to the current Deferred Application (the Application) for the Site as per the current proceedings' DAP/23/02487.

The Application is deferred pending additional amendments and further information provided (the Amendments) to the City of Rockingham (CoR) to satisfy the planning requirements for the Site.

The CoR has provided a Letter oOf response to these recent Amendments to include further advice from the Western Australia Department of Water and Environmental Regulation (DWER), and the Department of Health (DoH)

DWER states that:

*"The report Emissions Impact Assessment of BP Service Station Adjacent to the Proposed Child Care Centre contained in the development application, does not contain the necessary modelling information. Emission impact assessment reports should be accompanied by supporting modelling raw data. This enables the reviewer to identify any errors in the input data which can lead to air quality estimates that are not representative and which can compromise the integrity of the assessment. Providing the modelling raw*



*data also allows the reviewer to check and reproduce the model results. As the report does not contain the required modelling raw data the Department cannot assess the conclusions reached in the report.*

*In addition, the use of technical studies, such as modelling and monitoring of air pollutants, can inform possible incompatibility between land uses but should not be used as the only input for planning decision making as there can be significant uncertainty in the accuracy of such studies, and they cannot determine if impacts may or may not occur. Notwithstanding the scientific studies undertaken, the residual risk associated with uncertainties in emission management and the lack of any regulatory controls or contingency management actions that could be effectively employed in the event of impacts, should be considered within the planning decision”.*

- EAQ provides the following response to the DWER advice:

The modelling files have been provided to the Applicant and are available to review by DWER. However, DWER has contemporaneously reviewed these types of modelling projects for similar applications and has to date provided no response to the dispersion modelling setup and outcomes other than to say:

*“In addition, the use of technical studies, such as modelling and monitoring of air pollutants, can inform possible incompatibility between land uses but should not be used as the only input for planning decision making as there can be significant uncertainty in the accuracy of such studies, and they cannot determine if impacts may or may not occur. Notwithstanding the scientific studies undertaken, the residual risk associated with uncertainties in emission management and the lack of any regulatory controls or contingency management actions that could be effectively employed in the event of impacts, should be considered within the planning decision”.*

For the purposes of proper and orderly planning, the use of dispersion modelling as a tool for planning is a widely accepted practice, and in many national and international jurisdictions is the first tool advised and accepted by those regulatory review bodies. In the absence of all other methods of assessment a dispersion model should be used to inform the risk where applicable.

Notwithstanding, the contention with the Application lies in majority on the presence of service station vapours from the adjacent service station which may impact the proposed Site.

The outcomes of the dispersion modelling have demonstrated that the hours of activity for which the Site will operate, compared to those of the worst-case vapour emissions from the service station, are outside of those daily hours where emissions would pose the highest risk.

Moreover, the modelling demonstrated that exposure guidelines, consistent with other Australian Jurisdictions, and adhering to the Australian Federal exposure guidelines do not pose a risk of exceedance at the Site.

The Amendments to the Application have been provided to the CoR and have demonstrated compliance with regard to the risk of emissions from the adjacent service station.

Finally, the DWER has stated that they have no objection to the Site being developed in its proposed location and in consideration of its proximity to the existing service station.



Regarding the DoH's response, which states that:

*"The boundary of the proposed childcare premises is >50m from the nearest emission source (fuel bowser) of the service station located to the southeast of the proposed development. Separation distances are based on boundary-to-boundary distances to allow an emission source to be moved within the industrial site (service station). Should the childcare premises be approved, any future plans to move the fuel bowsers within the service station lot will need to consider the proximity to the childcare premises to achieve an appropriate separation distance".*

- EAQ provides the following response to the DoH advice:

The DoH has applied a boundary-to-boundary approach for the measured separation distance from the service station to the Site, the correct method (urban) is the distance from the boundary of the industrial activity, which is the closest refuelling bowser, to that of the boundary of the sensitive receptor, which in this case is the Site.

Whilst EAQ acknowledges and respects the DoH's role in public health, the DoH have previously stated in other applications where service stations were within the vicinity of an application activity, that they have no expertise in relation to service station emissions and subsequent dispersion modelling emissions assessments.

## Closing

Please do not hesitate to contact me for any clarifications or additional information to the above.

Yours sincerely,

**John Hurley (B.Sc (Chem/Biotech), CAQP)**

Director | Principal Air Quality Consultant

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# Transport Impact Statement

Project:	Proposed Child Care Centre 4-6 Malibu Road, Safety Bay
Client:	Greener4 Pty Ltd c/- Rowe Group
Author:	N. Baby / P. Nguyen
Date:	27 <sup>th</sup> November 2023
Shawmac Document #:	2303013-TIS-001

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## Document Status: Client Review

Version	Prepared By	Reviewed By	Approved By	Date
A	N. Baby	P. Nguyen	P. Nguyen	08/05/2023
B	N. Baby / P. Nguyen	-	P. Nguyen	18/09/2023
C	N. Baby / P. Nguyen	-	P. Nguyen	19/09/2023
D	N. Baby / P. Nguyen	-	P. Nguyen	27/11/2023

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# 1 Introduction

---

## 1.1 Proponent

Shawmac has been engaged by Rowe Group to prepare a Transport Impact Statement (TIS) for a proposed child care centre in Safety Bay.

This TIS has been prepared in accordance with the Western Australian Planning Commission (WAPC) *Transport Impact Assessment Guidelines Volume 4 – Individual Developments*. The assessment considers the following key matters:

- Details of the proposed development.
- Vehicle access and parking.
- Provision for service vehicles.
- Daily traffic volumes and vehicle types.
- Traffic management on frontage streets.
- Public transport access.
- Pedestrian access.
- Cycle access
- Site specific and safety issues.

## 1.2 Site Location

The site address is 4-6 Malibu Road, Safety Bay. The local authority is the City of Rockingham.

The general site location is shown in **Figure 1**. An aerial view of the existing site is shown in **Figure 2**.



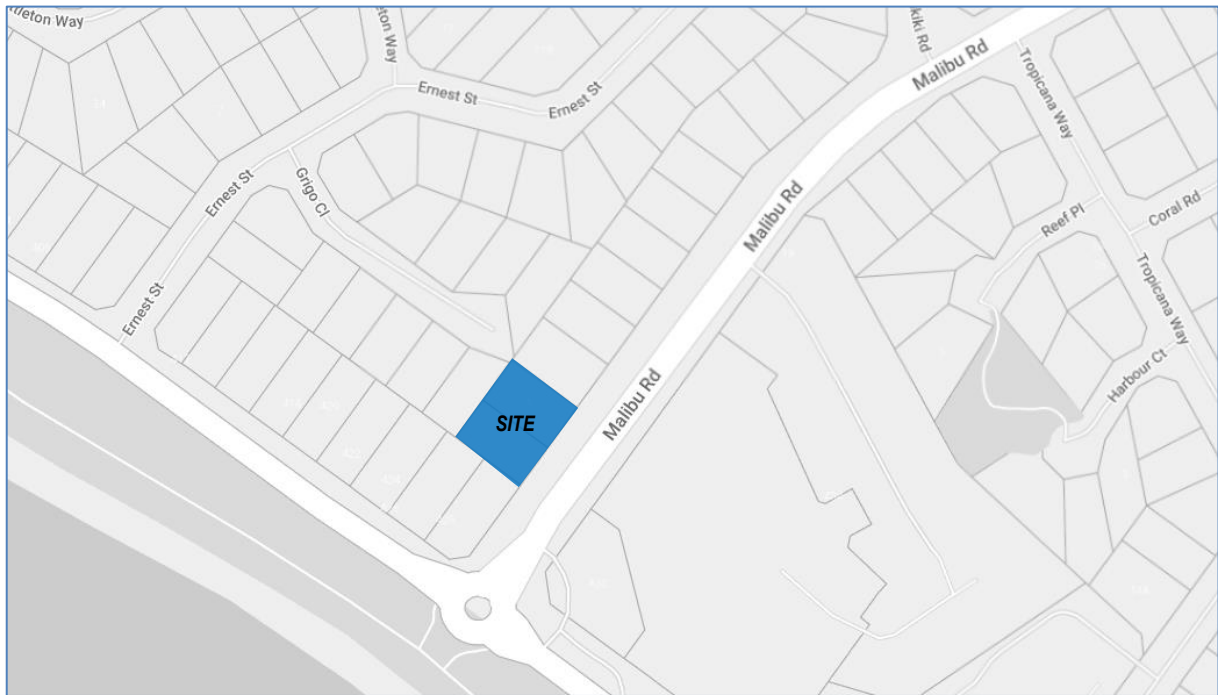


Figure 1: Site Location



Figure 2: Aerial View (August 2023)

## 2 Proposed Development

### 2.1 Land Use

The proposed development is a child care centre accommodating up to 60 children and 11 staff. 19 car parking spaces are proposed which includes 1 ACROD car bay.

The proposed site plan is shown in **Figure 3**.

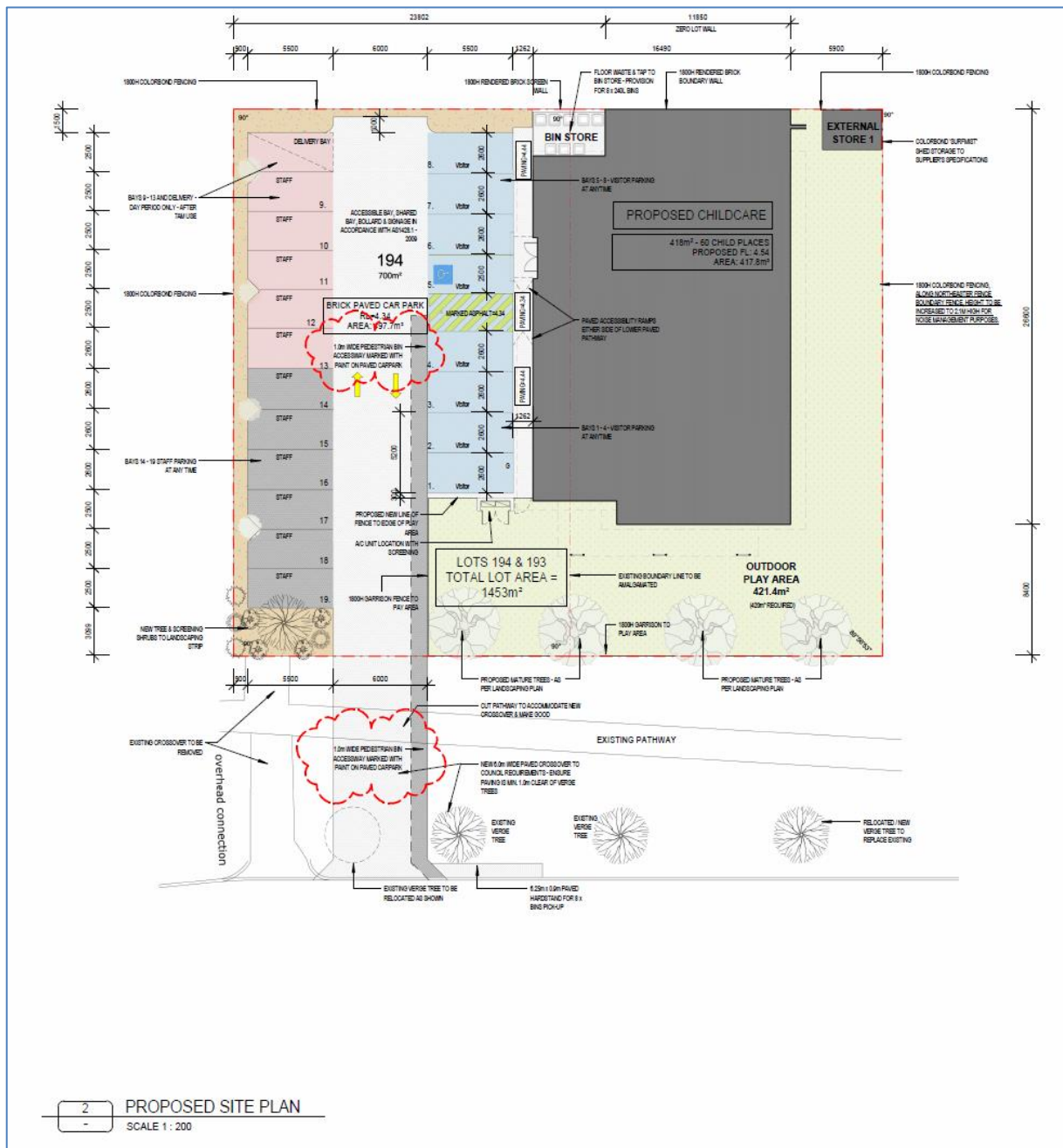


Figure 3: Site Plan

### 3 Traffic Management on Frontage Streets

#### 3.1 Road Network Layout and Hierarchy

The layout and hierarchy of the existing local road network according to the Main Roads WA *Road Information Mapping System* is shown in **Figure 4**.

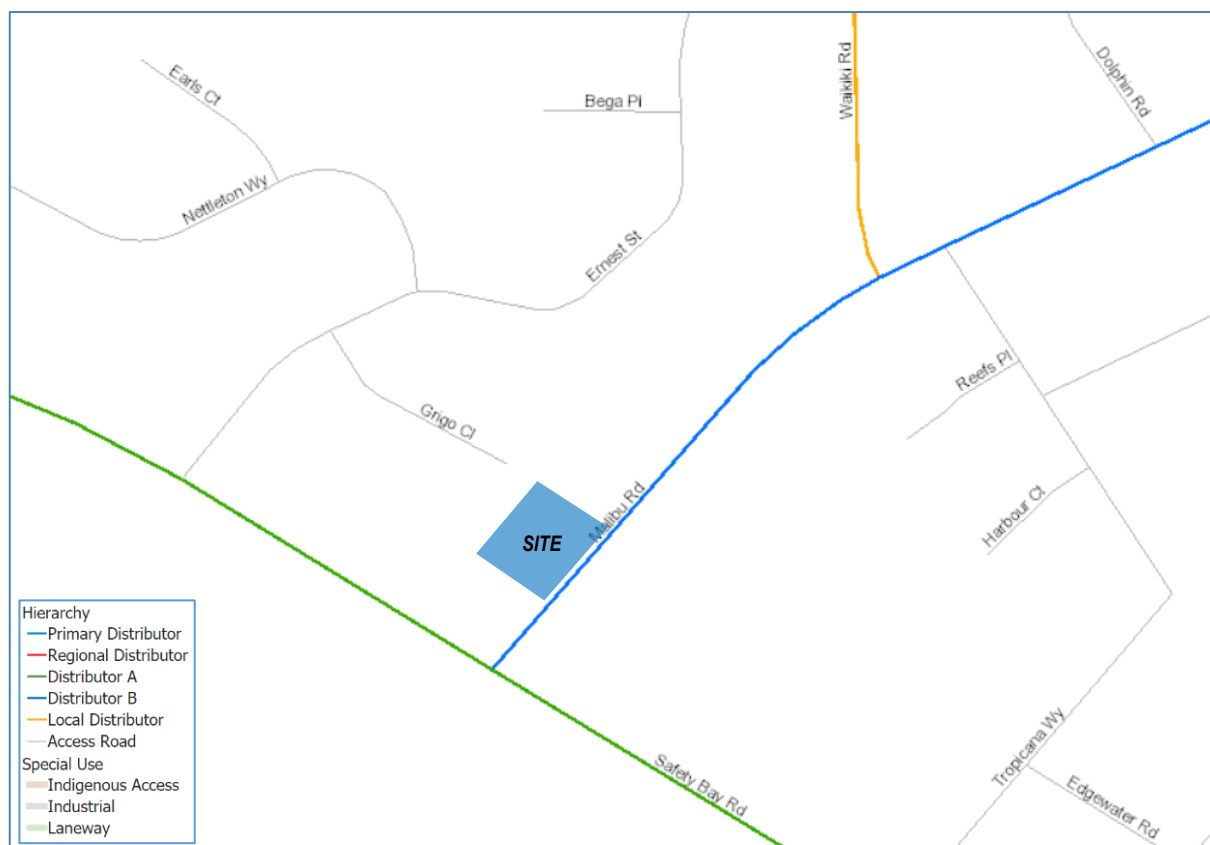
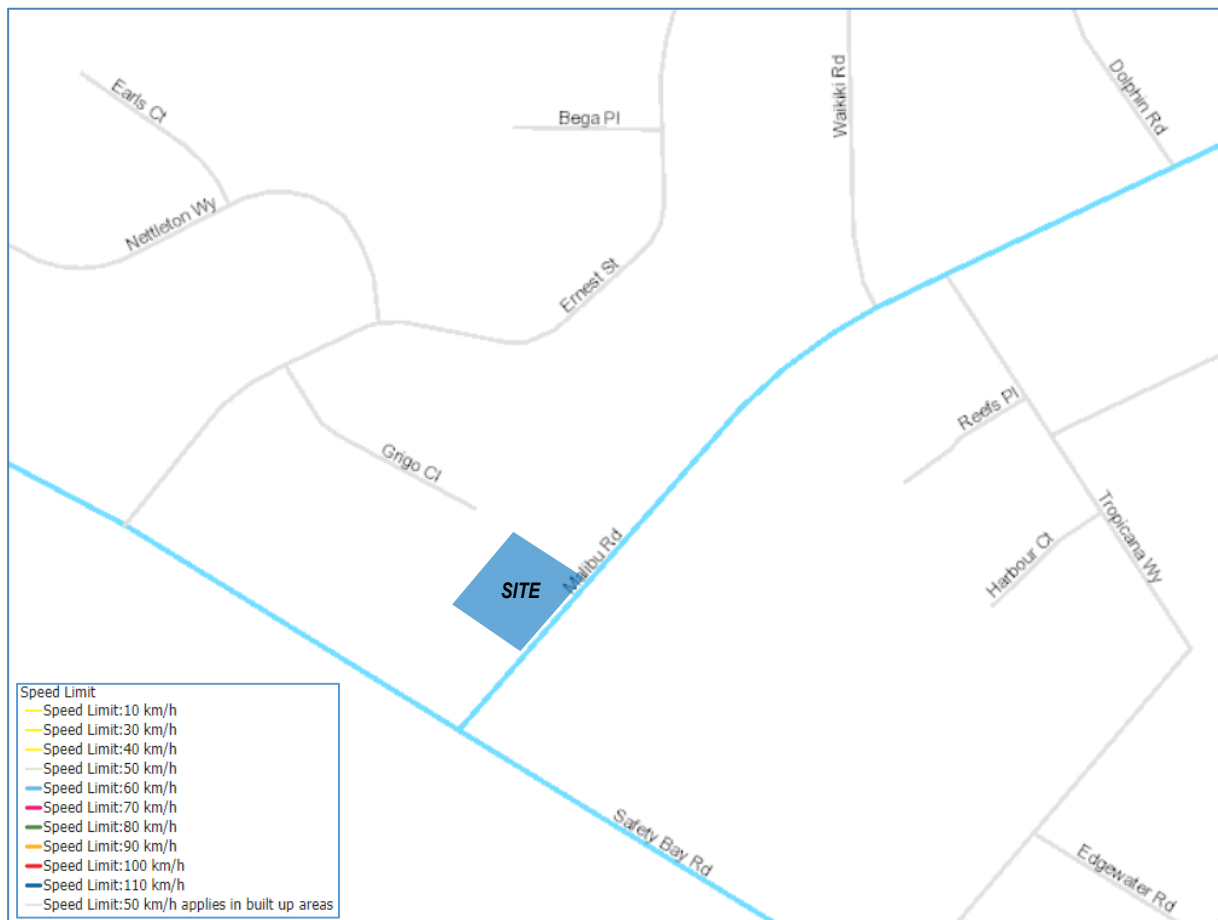


Figure 4: Existing Road Network Hierarchy

### 3.2 Speed Limits

The speed limit along the existing local road network according to the Main Roads WA *Road Information Mapping System* is shown in **Figure 5**.



**Figure 5: Speed Limits**



## 4 Vehicle Access and Parking

### 4.1 Access

Vehicle access is proposed via new crossover on Malibu Road in **Figure 6**.

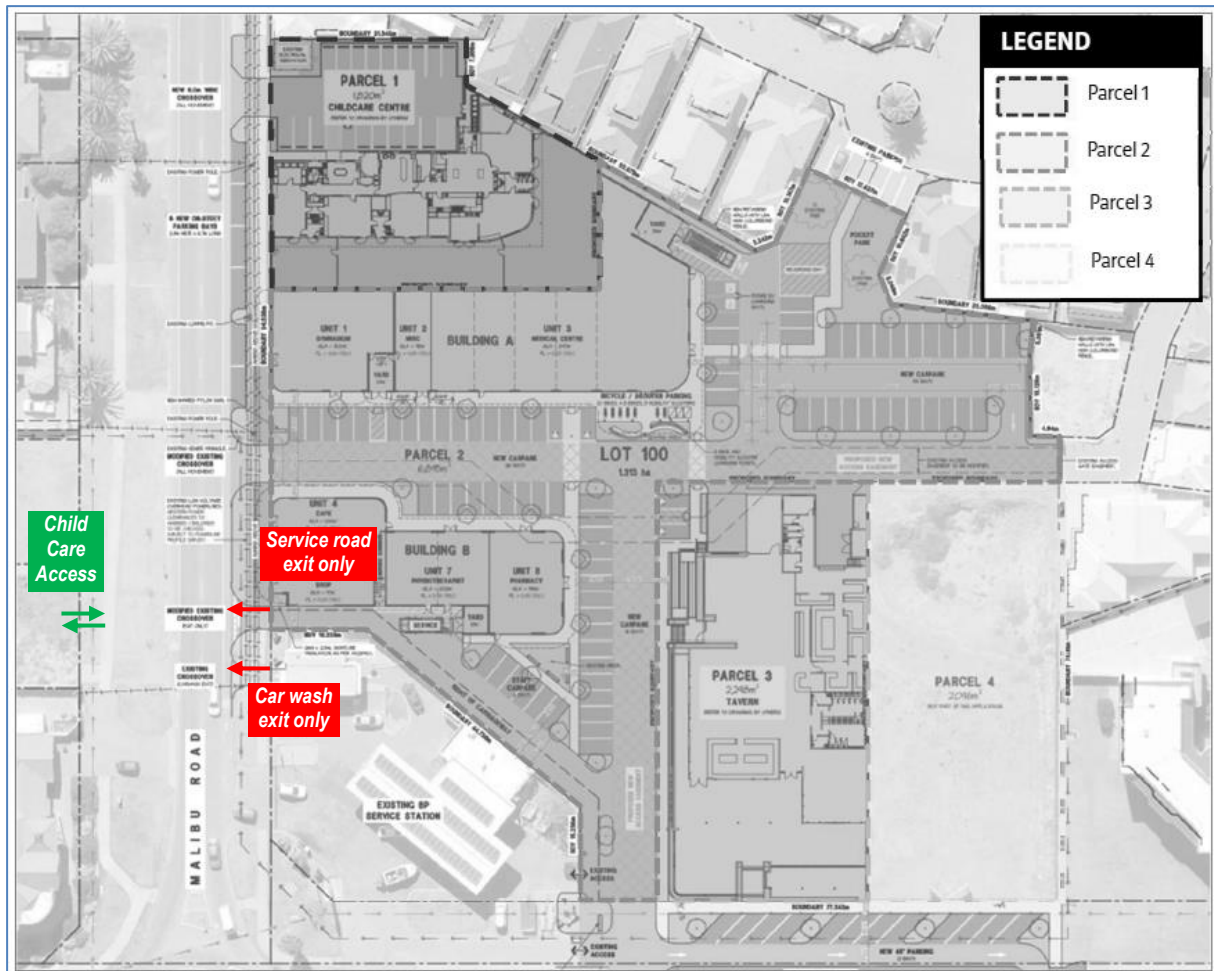


**Figure 6: Vehicle Access Arrangement**

According to the City of Rockingham's *Specification for the Construction of Commercial / Industrial Crossovers*, crossovers are to be between 4m and 10m wide at the property boundary and between 7m and 13m wide at the kerb line. The proposed crossover is 6m wide at the property boundary and 8.6m at the kerb line. The crossover width is therefore compliant.

The proposed access is located opposite two existing crossovers including an exit crossover from the BP car wash and another crossover to the vacant Lot 100 Safety Bay Road. It is understood that a development application for Lot 100 was recently submitted which proposes a mixed-use development with multiple crossovers to Malibu Road.

The layout of the proposed development on Lot 100 and associated access on Malibu Road is shown in **Figure 7**.



**Figure 7: Proposed Malibu Road Crossovers**

As shown, the southern crossover opposite the child care access is an exit only crossover from the service station car wash. According to the BP site, the car wash cycle takes approximately 6 minutes and so this crossover will generate minimal traffic.

Based on the recent development application for Lot 100, the northern crossover opposite the child care access will be retained/modified for exit movements from the adjoining service area with a loading bay and 6 staff bays. The Transport Impact Assessment for the development of Lot 100 prepared by Transcore estimates that this exit crossover will generate 9 movements during the morning peak hour and 16 movements during the afternoon peak hour. This estimate is considered to be high as there are only 6 staff bays along this carriageway and drivers in other parking areas are unlikely to choose this crossover over the main access points. Even if this amount of traffic was correct, it is low and unlikely to create a major safety issue along with the child care crossover and car wash crossover.

The following is also noted:

- The alternative/original location would have the child care crossover opposite one of the main access points to Lot 100 which would be less safe compared to the current location.
- The main service station crossovers do not coincide with the child care access and there are also two crossovers to the service station on Safety Bay Road.
- The proposed child care centre at 4-6 Malibu Road only has approximately 40m of frontage to locate the access. By comparison, Lot 100 Safety Bay Road has approximately 95m of frontage along Malibu Road as well as frontage to Safety Bay Road and therefore the developer of Lot 100 has much more room to coordinate their access points around other sites.
- The proximity to the roundabout also means that vehicles along Malibu Road are likely to be travelling below the speed limit as they will be slowing down towards the roundabout, still gaining speed after leaving the roundabout or slowed down if there is queueing at the roundabout. The lower speeds will reduce the risk of conflicts at the various crossovers.

## 4.2 Sight Distance

Sight distance requirements from vehicle exit points are defined in Figure 3.2 of Australian Standard AS2890.1-2004 *Parking facilities Part 1: Off street car parking* (AS2890.1) which is shown in **Figure 8**.

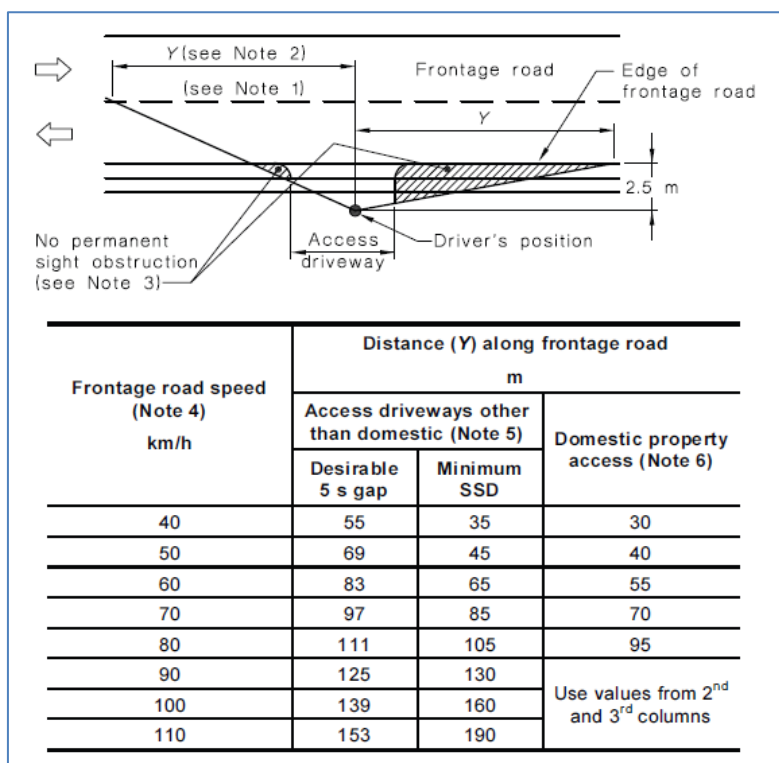
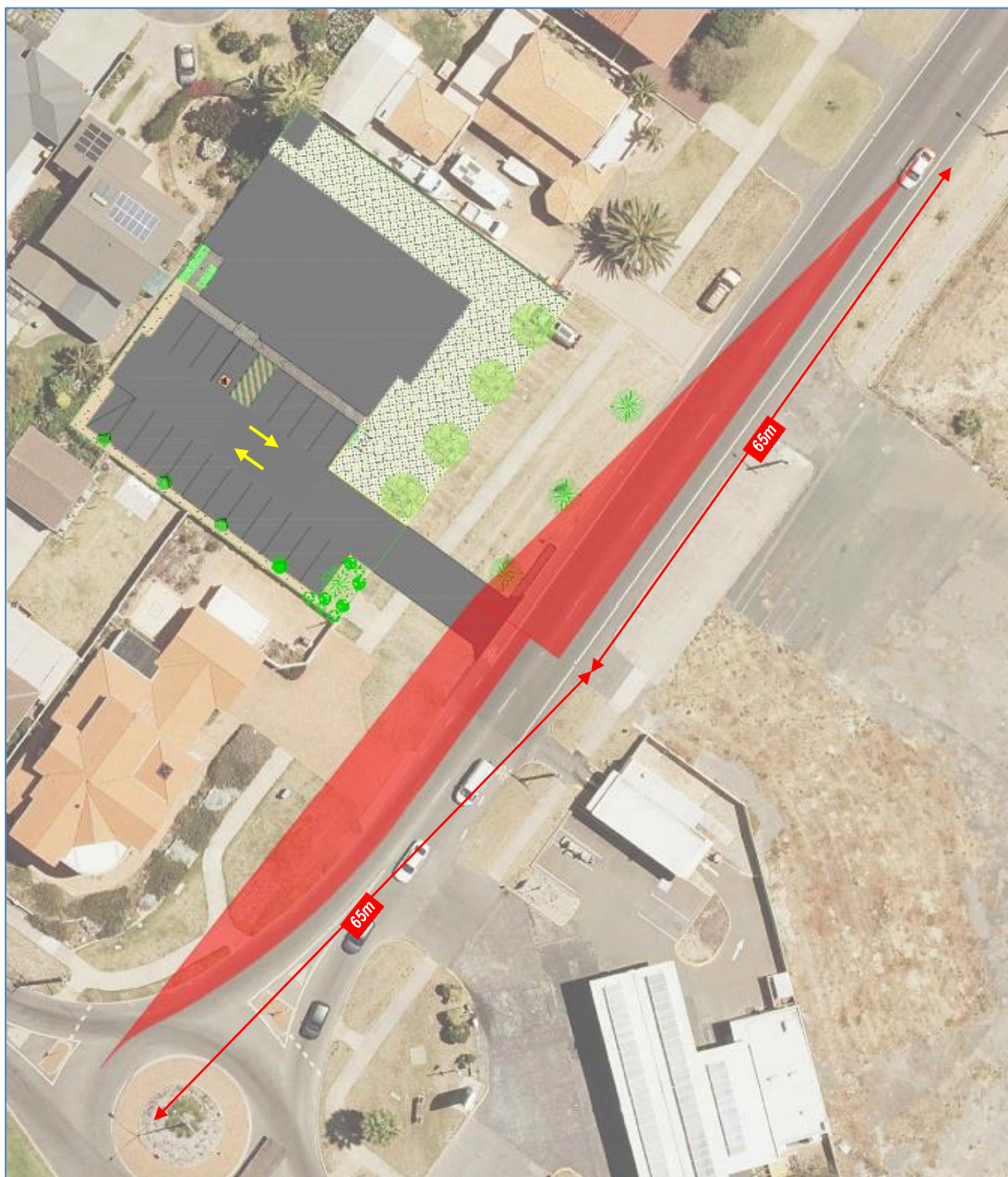


Figure 8: AS2890.1 Sight Distance Requirements



Based on the 60km/h speed limit along Malibu Road, the minimum required sight distance is 65m.

As shown in **Figure 9**, the minimum required sight distance is achieved in both directions from the new crossover. It is noted that vehicles approaching from the south-west will be travelling well below 60km/h as they will have just turned from Safety Bay Road.



**Figure 9: Sight Distance Check**





## 4.4 Bicycle Parking

The City's TPS does not appear to specify requirements for bicycle parking.

The demand for bicycle parking is expected to be low and limited to staff only. Child care centres are typically well secured sites and so staff could potentially park bicycles within the site where there is room to do so.

## 4.5 Parking Design

The parking layout will need to comply with the requirements of Australian Standard AS2890.1. The user class will depend on the purpose of the bay as detailed in **Figure 11**.

9			
AS/NZS 2890.1:2004			
TABLE 1.1 CLASSIFICATION OF OFF-STREET CAR PARKING FACILITIES			
User class	Required door opening	Required aisle width	Examples of uses (Note 1)
1	Front door, first stop	Minimum for single manoeuvre entry and exit	Employee and commuter parking (generally, all-day parking)
1A	Front door, first stop	Three-point turn entry and exit into 90° parking spaces only, otherwise as for User Class 1	Residential, domestic and employee parking
2	Full opening, all doors	Minimum for single manoeuvre entry and exit	Long-term city and town centre parking, sports facilities, entertainment centres, hotels, motels, airport visitors (generally medium-term parking)
3	Full opening, all doors	Minimum for single manoeuvre entry and exit	Short-term city and town centre parking, parking stations, hospital and medical centres
3A	Full opening, all doors	Additional allowance above minimum single manoeuvre width to facilitate entry and exit	Short term, high turnover parking at shopping centres
4	Size requirements are specified in AS/NZS 2890.6 (Note 2)		Parking for people with disabilities

**Figure 11: Classification of Parking Facilities**

Staff parking (long-term parking) would be classified as User Class 1. Pick-up and drop-off parking (short term parking) would most likely be classified as User Class 3.

An assessment of the AS2890.1 parking requirements is detailed in **Table 2**.

Table 2: AS2890.1 Car Parking Compliance

Dimension	Requirement	Provided
<b>90 degree parking – Class 1 – Long Term Parking (Staff)</b>		
Car Bay Width	2.4m	2.5m minimum
Car Bay Length	5.4m	5.5m
Parking Aisle Width	5.8m	6.0m
<b>90 degree parking – Class 3 – Short Term Parking (Pick-up / Drop-off)</b>		
Car Bay Width	2.6m	2.6m
Car Bay Length	5.4m	5.5m
Parking Aisle Width	5.8m	6.0m

As shown, the dimensions of the parking bays are compliant with AS2890.1.

As the parking layout comprises a blind aisle longer than the width of 6 bays, provision to turn around is required in the event that the car park is full. This could be achieved by converting the delivery bay into a turnaround bay. Deliveries are likely to occur outside of the pick-up / drop-off periods and so delivery vehicles would be able to use the visitor bays.

#### 4.6 Provision for Service Vehicles

It is understood that waste will be collected from the verge and so there is no need to accommodate waste vehicles on-site. Deliveries are assumed to be undertaken using light vehicles and vans which can park within the on-site bays.

## 5 Traffic Generation

The volume of traffic generated by the proposed development has been estimated using trip generation rates from the Institute of Transportation Engineers (ITE) *Trip Generation*.

The traffic generation is detailed in **Table 3**.

**Table 3: Proposed Development Vehicle Trip Generation**

Land Use	Units	Quantity	Generation Rate			Number of Trips		
			Daily	AM Peak	PM Peak	Daily	AM Peak	PM Peak
Child Care / Day Care Centre	Children	60	4.09	0.78	0.79	245	47	47

As shown above, the development is estimated to generate 245 daily vehicle trips including 47 during the AM peak hour and 47 vehicle trips during the PM peak hour.

According to the WAPC TIA guidelines, an increase of between 10 to 100 peak hour vehicles is considered to have a low to moderate impact and is generally deemed acceptable without requiring detailed capacity analysis. The estimated 47 vehicles per hour is at the middle of this range and so the development traffic is considered to have a moderate impact and can be accommodated within the existing capacity of the road network.

The following is noted with regards to the traffic impact of the development:

- According to Austroads guidelines, the theoretical capacity of an urban road with no kerbside parking is 900 vehicles per hour (vph) in each direction or 1,800vph for a two-lane, two-way road. 47vph is less than 3% of the theoretical mid-block capacity of the road.
- Safety Bay Road is a Distributor A road and Malibu Road is a Distributor B road. Both of these roads are designed to carry relatively high volumes of traffic and some congestion at intersections during peak hours is to be expected during peak periods.
- Queuing at the nearby roundabout intersection during peak periods will reduce travel speeds and create gaps for development traffic to enter and exit the site.



## 6 Pedestrian and Cyclist Access

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All existing roads in the surrounding area have at least one footpath except for very minor access roads and laneways where pedestrian movements are unlikely to occur.

The existing path network is considered to be adequate for the movement of pedestrians and cyclists to and from the development.

## 7 Public Transport Access

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The following public transport services currently operate within 1km walking distance of the site:

- Transperth Bus Route 553 which operates between Rockingham Station and Shoalwater via Waikiki Road. The closest stops are on Malibu Road within 110m walking distance of the site.

The existing public transport services are considered to be adequate to meet the likely demand.

## 8 Site Specific Issues and Safety Issues

### 8.1 Crash History

The crash history of the adjacent road network was obtained from Main Roads WA's *Reporting Centre*. A summary of the recorded incidents over the five-year period ending December 2022 is shown in **Figure 12**. The search included Malibu Road between Safety Bay Road and Waikiki Road.

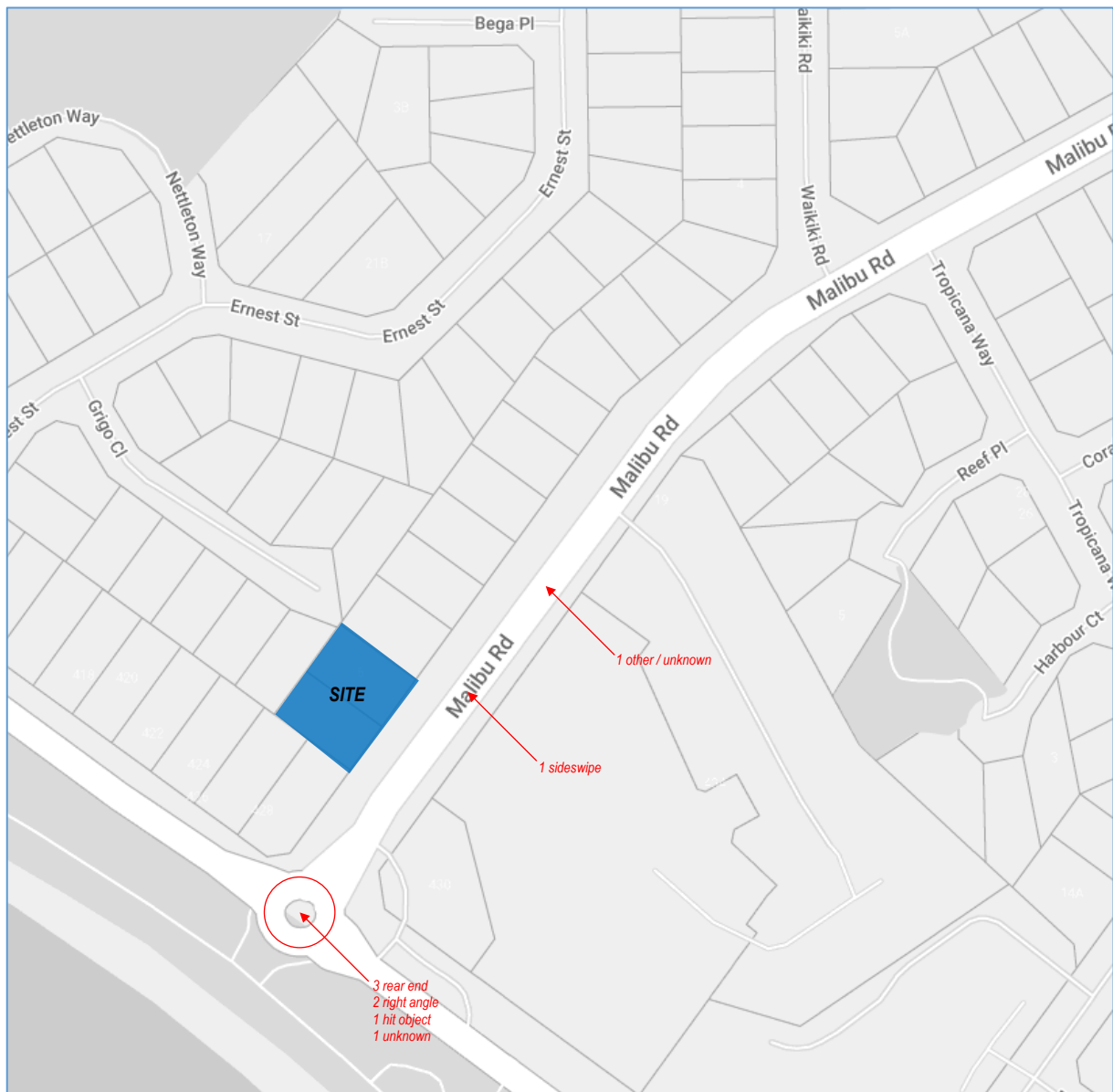


Figure 12: Crash History – January 2018 to December 2022

The number, type and location of the crashes do not appear to indicate a major safety issue on the road network. There is also no indication that the proposed development will increase the risk of crashes to an unacceptable level.

## 9 Conclusion

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This Transport Impact Statement for the proposed child care centre at 4-6 Malibu Road in Safety Bay concludes the following:

- The proposed development is predicted to generate approximately 245 vehicle trips per day including 47 trips during the morning peak hour and 47 during the afternoon peak hour. This volume of traffic is low to moderate and can be accommodated within the existing capacity of the road network with no modifications required.
- The location of the site access relative to existing and proposed crossovers on Malibu Road is considered to be acceptable and unlikely to create a safety issue.
- The minimum sight distance requirement of AS2890.1 is achieved from proposed crossovers in both directions.
- The provision of 19 car parking bays satisfies the minimum requirements of the City's Town Planning Scheme.
- The demand for bicycle parking is expected to be low and limited to staff only. Child care centres are typically well secured sites and so staff could potentially park within the site where there is room to do so.
- The parking layout mostly complies with the AS2890.1.
- As the parking layout comprises a blind aisle longer than the width of 6 bays, provision to turn around is required in the event that the car park is full. This could be achieved by converting the delivery bay into a turnaround bay. Deliveries are likely to occur outside of the pick-up / drop-off periods and so delivery vehicles would be able to use the visitor bays.
- The existing path network is considered to be adequate for the movement of pedestrians and cyclists to and from the development.
- The crash history of the adjacent road network did not indicate any safety issue on the adjacent road network and there is no indication that the development would increase the risk of crashes unacceptably.
- The demand for public transport is likely to be relatively low based on the proposed uses and so the existing public transport services are considered to be adequate to meet the likely demand.



Your ref: AD23/106587  
Our ref: RF2024-06 & PA058975  
Enquiries: Mark Hingston, Ph 9550 4209

City of Rockingham  
PO Box 2142  
ROCKINGHAM DC, WA, 6967

*Attention: Casey Gillespie*

Dear Casey

**Proposed Child Care Centre – Lots 193 & 194 Malibu Road, Safety Bay**

Thank you for providing the proposed Child Care Centre at Lots 193 and 194 Malibu Road, Safety Bay received on 26 September 2023 for the Department of Water and Environmental Regulation (the Department) to consider.

The Department has identified that the proposed Child Care Centre has the potential for impacts on water resource management as well as may be impacted upon by nearby land uses. 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.

**Issue**

Stormwater Management

**Advice**

The Department recommends the proposed Child Care Centre car park stormwater drainage system be designed, constructed and managed in accordance with the *Stormwater Management Manual for Western Australia* (DWER, 2022) and *Decision Process for Stormwater Management in Western Australia* (DWER, 2017). Stormwater runoff should be fully contained onsite for small and minor storm events (first 15mm and 20% AEP respectively) and runoff from the carpark and hardstand areas should undergo water quality treatment via biofiltration through rain gardens or tree pits.



**Issue**

## Emissions Impact Report

**Advice**

The report *Emissions Impact Assessment of BP Service Station Adjacent to the Proposed Child Care Centre* contained in the development application, does not contain the necessary modelling information. Emission impact assessment reports should be accompanied by supporting modelling raw data. This enables the reviewer to identify any errors in the input data which can lead to air quality estimates that are not representative and which can compromise the integrity of the assessment. Providing the modelling raw data also allows the reviewer to check and reproduce the model results.

As the report does not contain the required modelling raw data the Department cannot assess the conclusions reached in the report. In addition, the use of technical studies, such as modelling and monitoring of air pollutants, can inform possible incompatibility between land uses but should not be used as the only input for planning decision-making as there can be significant uncertainty in the accuracy of such studies, and they cannot determine if impacts may or may not occur. Notwithstanding the scientific studies undertaken, the residual risk associated with uncertainties in emission management and the lack of any regulatory controls or contingency management actions that could be effectively employed in the event of impacts, should be considered within the planning decision.

**Issue**

## Industry Buffers


**Advice**

The Environmental Protection Authority's (EPA) *Guidance for the Assessment of Environmental Factors, Separation Distances between Industrial and Sensitive Land Uses* (EPA, June 2005) (GS3) provides advice on the use of generic separation distances (buffers) between industrial and sensitive land uses. The intent is to avoid conflicts between incompatible land uses and assist in the determination of suitable distances between industry and sensitive land uses where industry may have the potential to affect the amenity of a sensitive land use. Child Care Centres are considered a sensitive land use within the document.

The GS3 notes three different descriptions of industry with varying operating hours for service station premises (being Monday-Saturday from 7am to 7pm, 24-hour operations and Freeway 24-hour operations) with varying recommended buffer distances. For fuel stations, the GS 3 recommends a default buffer distance of 50m for daytime operating hours. As detailed above, the City of Rockingham should determine the suitable buffer distance is achieved in any planning decision.

Should you require any further information on the comments please contact Mark Hingston at the Mandurah office on 9550 4209.

Yours sincerely

A handwritten signature in black ink, appearing to be 'J. Sturgess', with a stylized, flowing script.

Jane Sturgess  
Acting Program Manager – Planning Advice  
Kwinana Peel Region

11 / 10 / 2023



Our Ref: F-AA-90514-3; D-AA-23/359690  
Contact: Chris Hill / Yashvee Manrakhan-Field 9222 2000

Chief Executive Officer  
City of Rockingham  
PO Box 2142  
ROCKINGHAM DC WA 6967

Attention: Mrs Casey Gillespie

Via email: [customer@rockingham.wa.gov.au](mailto:customer@rockingham.wa.gov.au)

Dear Sir/Madam

**RE: PROPOSED CHILDCARE PREMISES – LOT 194 AND LOT 195 (NO. 4 AND NO.6) MALIBU ROAD, SAFETY BAY**

Thank you for your letter dated 21 September 2023 requesting comments from the Department of Health (DoH) on the above proposal.

DoH provides the following comment in relation to this proposal:

- The boundary of the proposed childcare premises is >50m from the nearest emission source (fuel bowser) of the service station located to the southeast of the proposed development. Separation distances are based on boundary-to-boundary distances to allow an emission source to be moved within the industrial site (service station). Should the childcare premises be approved, any future plans to move the fuel bowsers within the service station lot will need to consider the proximity to the childcare premises to achieve an appropriate separation distance

Should you have any queries or require further information please contact Chris Hill or Yashvee Manrakhan-Field on 9222 2000 or [eh.eSubmissions@health.wa.gov.au](mailto:eh.eSubmissions@health.wa.gov.au).

Yours sincerely

Peter Gray  
**A/EXECUTIVE DIRECTOR  
ENVIRONMENTAL HEALTH DIRECTORATE**

17 October 2023

**From:** [DOH, Chemical Hazards](#)  
**To:** [Casey Gillespie](#)  
**Subject:** Child Care Premises - LOT: 194 & 193 PCL: 18790 No. 4 & 6 Malibu Road SAFETY BAY 6169  
**Date:** Thursday, 19 October 2023 2:21:57 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)  
[image005.png](#)

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Hi Casey, as we just discussed, the DOH advice has not changed. We do not accept the emissions report and it was not considered in our response. Our advice is for the 50m separation distance but we were providing the room for a decision to be made on what was an acceptable starting point. This could be source to boundary if the source is not going to move. If you cant guarantee the source wont move then boundary to boundary is the safest option. I hope this helps

Regards

Peter

**Peter Franklin**

Chemical Hazards | Environmental Health Directorate

**Public and Aboriginal Health Division**

May Holman Building, Level 3, A Block, 189 Royal Street, EAST PERTH WA 6004

PO Box 8172 | Perth Business Centre | WA 6849

T: +61 8 9222 2000 |

E: [peter.franklin@health.wa.gov.au](mailto:peter.franklin@health.wa.gov.au)

[www.health.wa.gov.au](http://www.health.wa.gov.au) | [www.healthywa.wa.gov.au](http://www.healthywa.wa.gov.au)

Note: I only work from Wed - Fri

**From:** Casey Gillespie <[Casey.Gillespie@rockingham.wa.gov.au](mailto:Casey.Gillespie@rockingham.wa.gov.au)>

**Sent:** Wednesday, 18 October 2023 1:37 PM

**To:** Hill, Chris <[Chris.Hill@health.wa.gov.au](mailto:Chris.Hill@health.wa.gov.au)>

**Subject:** Review/Clarity of advice received - Child Care Premises - LOT: 194 & 193 PCL: 18790 No. 4 & 6 Malibu Road SAFETY BAY 6169

Hi Chris,

In relation to the advice received for the proposed Child Care Premises on 4 & 6 Malibu Rd, Safety Bay (attached) I seek some further clarity please.

Based on previous and current advice from both DWER and DoH, due to model input uncertainties, the use of dispersion modelling to make precise judgements on separation distances is not possible. Therefore, it is recommend that the application of the separation distances as outlined in the Environment Protection Authority (EPA) 'Guidance Statement 3 Separation Distances between Industrial and Sensitive Land Uses (GS 3)', 2005 be used. The GS3 notes three different descriptions of industry with varying operating hours for service station premises (being Monday-Saturday from 7am to 7pm, 24-hour operations and Freeway 24-hour operations) with varying recommended buffer distances. As such, the GS3 recommends a default buffer



distance of 50m in this instance/scenario.

As the City understands, separation distances relates to the distance between the boundary of the source (industry) and boundary of the sensitive land-use, also referenced in the DoH recent advice. Based on this, and previous advice from DWER and DoH, the City determines that the separation distance is not greater than 50m, contrary to DoH current advice.

Can you please detail how this revised advise relating to distance has been considered and measured.

Please provide a map/plan showing the distance measured, indicating from and where to.

Can the City assume based on the current advice that the DoH accepts the Emissions Impact Report submitted by the applicant also, despite the lack of necessary modelling information? If this is the case, please explain why this is acceptable.

Please provide some details and clarity on the current advice. I have attached for reference the DoH previous comments, and I am happy to provide DWER advise also for assistance if required.

Regards,  
Casey



**Casey Gillespie** - Senior Planning Officer

**PO Box 2142 Rockingham DC WA 6967**  
**Civic Boulevard Rockingham Western Australia**  
telephone **+61 8 9528 0429** facsimile **+61 8 9592 1705**  
email [casey.gillespie@rockingham.wa.gov.au](mailto:casey.gillespie@rockingham.wa.gov.au)  
web [rockingham.wa.gov.au](http://rockingham.wa.gov.au)



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**Schedule of Submissions**  
**Proposed Child Care Premises (Deferred Application)**  
**Lot 194 and 193 (No.4 and No.6) Malibu Road, Safety Bay**

<b>PUBLIC SCHEDULE OF SUBMISSIONS</b>		
<b>Name</b>	<b>Address</b>	<b>Comment</b>
1. Ms Carolyn Whitford	Malibu Road SAFETY BAY WA 6169	In regards to above my concern would be traffic congestion. I live on Malibu Road and it's already busy with many not adhering to the speed limit ( often making it difficult to exit your property ) When the other development hopefully gets approved ( which also has a childcare in the plans ) traffic will drastically increase. The service station can already halt traffic near the roundabout as people enter right from Safety Bay Road but need to wait for clear traffic along Malibu Road before entering. Going forward with future developments the increase in traffic needs to be seriously considered.
2. Mr Dion Alston (Dion, Trang, Johann and Baily Alston)	Grigo Close SAFETY BAY WA 6169	<p>On the City of Rockingham Website - Proposed Childcare Centre - Malibu Rd Safety Bay The document titled: Deferred Development Application - Lot 193 &amp; 194 Malibu Road, Safety Bay (11.6MB) Is not the titled document. It is the acoustic assessment (appendix 4 to the development application only). The Acoustic emissions assessment is not listed separately in the documents. Please Make All Relevant Documents Available for Public Comment.</p> <p>This letter and attachments are in response to the revised application seeking development approval of a proposed childcare premises at Lot 194 and 193 (No 4 &amp; 6) Malibu Road Safety Bay WA 6169.</p> <p>It should be noted that this is the revised proposal following the Rockingham Council's decision to REJECT the previous proposal. The developers then proposed at the JDAP to submit a revised application which the JDAP agreed to defer and further consider the revised proposal.</p> <p>In addition to the general concerns of the residents of the neighbourhood, Our family of 4 persons have specific concerns regarding the revised proposed development and we STRONGLY OBJECT to the proposed application development. Ours is a nearby affected residence labelled in the application as the "Residence to the North West". It is our home, and our fear remains unchanged that if the development received approval, our quiet and peaceful home would never be the same again.</p> <p>It is noted that a recent application development for another childcare facility on Corner of Rae Road and Safety Bay Road has already been approved. More recently another application for development has been made for a Childcare facility which is diagonally adjacent the current proposal under discussion. The adjacent childcare facility would be in the mixed-use development proposed in the commercially zoned area near the Malibu Road BP Service Station. Since the two development applications are being considered almost concurrently, and the having overlaps in their acoustic emissions footprints the proposed childcare facility developments both affect the same residents. These two proposals therefore cannot be considered independently or without consideration of the combined effect of these proposed developments on the nearby residents. To consider each in isolation would be negligent of the Council's DAP, the Council, and also the future consideration by the JDAP should also take this into account.</p> <p><u>General Concerns:</u></p> <p>Traffic:</p> <ul style="list-style-type: none"> <li>• Increase in traffic and traffic noise on Safety Bay Road, Malibu Road and connecting local streets as feeder roads. During Morning and Afternoon commute times Safety Bay Road is heavily utilised, Malibu Road (eastern end) can be very congested particularly during the High School Zone times, this will increase the traffic load on connecting local streets, many of which are narrow, and easily obstructed.</li> </ul>

Name	Address	Comment
2. cont...		<p>The additional mixed purpose development application further increases the traffic load, parking difficulties, and general noise and hazards.</p> <ul style="list-style-type: none"> <li>Proximity of proposed crossover to childcare carpark to BP Petrol Station Entrance and Malibu/Safety Bay Road Roundabout increases issues with traffic flow and potential for accidents particularly from vehicles Eastbound on Safety Bay Road turning left onto Malibu Road. Considering the future proposed re-development including commercial, residential and licenced premises with multiple crossovers opposite this creates additional concerns. There is little difference between the original proposal and the current proposal except the layout is flipped to put the carpark and entrance closer to the Safety Bay Road roundabout, increasing the risk of traffic accidents. The 'flipping' of the Childcare and Carpark as revised, makes this even more hazardous and reduces the line of sight from the roundabout to the crossover even further.</li> </ul> <p>Proximity of Childcare to Petrol Station and Licenced premises of Future re-development of Waikiki Hotel Site:</p> <ul style="list-style-type: none"> <li>Childcare premises are ideally located near Schools, and Primary Schools in particular. There are other sites more suitable for the proposed development. One such site has received recent approval nearby (cnr Rae Rd and Safety Bay Rd).</li> <li>The proximity of the proposed childcare to the Malibu Road BP Petrol station remains a concern. It is noted the assessment has been amended to include the Hi-Flow Diesel bowser that is in closest proximity to the proposed childcare location. The emissions map showing benzene concentrations still shows that this overlaps the proposed childcare site and outdoor play areas. Whilst it is stated this is an acceptable risk, how much exposure in children is the DAP and Rockingham council willing to condone?</li> <li>According to PLANNING POLICY No.3.3.23 Waikiki Hotel Site – Urban design Guidelines Future re-development conditions for the site require a licenced premises. Positioning of childcare opposite licenced premises is a concern for several reasons, particularly child safety and further increased traffic density, increased traffic flow disturbances, and increased risk to traffic and pedestrian safety.</li> </ul> <p>Noise and loss of peaceful beachside ambience:</p> <ul style="list-style-type: none"> <li>Residents in the neighbourhood at present can hear the ocean. This is something that no environmental noise assessment or local planning requirement will ever consider. This intangible quality and it's value to residents cannot be quantified &amp; needs to be considered especially for the homes within the overlapping acoustic emissions zone of the TWO proposed childcare facilities.</li> <li>Sensitivity to Noise is further increased due to the low background noise and beachside ambience.</li> <li>Please note that there are numerous existing noise sources and disturbances which presently exist. e.g., from Safety Bay and Malibu Road Traffic flow and vehicle accelerations and decelerations, BP service Station Vehicle Movements (&amp; startups in particular), bowser announcements, automatic car wash, car vacuum station, fuel deliveries, inground fuel tank lids and level checks, Safety Bay Road Beachfront carpark and activities, council beachside rubbish bin collection etc.</li> <li>The Proposed Childcare will create a General increase in Night-time (Early Morning) and Daytime noise levels in addition to these existing noise levels and disturbances, causing further loss of peaceful beachside ambience. No consideration has been made in the Environmental Acoustic Assessment for combined effects of noise generated from the proposed childcare premises, nor any of the existing noise disturbances aside from ambient traffic.</li> </ul>

Name	Address	Comment
2. cont...		<ul style="list-style-type: none"> <li>There is also a current mixed used development proposal on Corner of Safety Bay and Malibu Road adjacent the BP, which also includes a proposed childcare facility diagonally adjacent this current proposed facility which has an overlapping acoustic emissions footprint affecting the same nearby residences. Noting one of these facilities is in a commercial area, whilst the current proposal under discussion is in a residential area. This scenario further highlights how critical it is to carefully consider the effect on residents, of such a development in a residential area and the total combined effect of noise and disturbances from all sources. The two proposals must be considered in conjunction, to avoid approval of ridiculous, unacceptable and inappropriate development in a residential area. Especially with another development across the road creating overlapping acoustic emissions and overall totally unacceptable impact on the residents of those nearby houses.</li> </ul> <p>Waste and Carpark Runoff:</p> <ul style="list-style-type: none"> <li>Garbage and Recycling from the Site is stored immediately adjacent to the rear boundary of the proposed centre. The concentration of waste storage is more than comparable residential premises. Aside from potential smell and flies associated with the garbage, the proximity of the waste storage is in close proximity to nearby households. This is an additional noise source during normal access, and creates a larger additional noise disturbance on collection due to the number of bins compared to a typical residence.</li> <li>Additional load on the local sewer system and potential consequences of blockages etc could have large impact on neighbouring properties.</li> <li>No mention has been made in the application or associated attachments in relation to the proposed means of dealing with carpark runoff or drainage.</li> </ul> <p>Demand for Childcare:</p> <ul style="list-style-type: none"> <li>The perceived demand for childcare in the area is understood, however noting there are a number of applications for childcare premises in the area, some of which have recently been approved by JDAP (eg in Safety Bay/Shoalwater, Rae Road Safety Bay Rd, nearby Safety Bay Primary school which agreeably is an excellent location for a childcare premises, and was an existing commercial site), it is felt that the demand expressed in the application is overstated, and does not take into account the known future competing developments, and increased number of places available. For example it is noted that recent proposals include new Child Care Premises in nearby Warnbro, and the Mixed use development proposal across Malibu Rd, as well as the approved development on cnr of Safety Bay Rd and Rae Rd.</li> </ul> <p>Specific concerns:</p> <p>The proposed development is entirely within an area zoned residential, and is not consistent with, and does not improve the amenity of the area. It has the potential to severely impact the habitability of nearby homes. The result could be unhappy residents stuck living alongside a high turnover commercial development, with no ability to move to a comparable location. A price cannot be placed on disruption of peace. It cannot be denied that the location is a peaceful beachside area, which increases the sensitivity of the impact of noise on nearby residents.</p> <p>The proximity of the proposed development is immediately adjacent to the full length of the boundary line of our residential block. The proposed building has zero setback from this boundary, making the proposed building, carparks and play areas within metres of our house, living areas, and bedrooms. If residential, the existing 2 (or subdivided 3) blocks would limit the zero setback to one third of the rear width of each block.</p>



Name	Address	Comment
2. cont...		<p>In the case of this development the amalgamated block boundary effectively doubles (or triples) the length of zero setback compared to typical residential land use in the area.</p> <p>The proposed building and play area is directly adjacent our front yard and front of home, with direct line of sight and sound propagation to the first-floor windows (front bedrooms) of our home. The Bulk of the fence and building adjacent the boundary will significantly affect the morning sunlight from the east to our front, side and rear yards.</p> <p>The outdoor play area extends to the rear of the proposed development site, at the front of our property, and has line of sight and direct sound propagation to the front first floor bedrooms.</p> <p>The carpark is adjacent the rear of our property with line of sight to rear bedrooms. Carpark chatter, vehicle noise, impulse, vibration, ground borne noise, and vehicle emissions will severely impact the privacy and liveability of our home. The radiated heat from the carpark with prevailing sea breeze, and particularly easterly winds will make our rear outdoor areas significantly less comfortable in summer.</p> <p>The proposed operating hours of the centre from 06:30 to 18:30, 5 days a week, all year round would severely impact the peace and quiet of our home and the surrounding neighbourhood, pets would also be affected with surrounding dog barking increased due to the numerous and continuous close proximity disturbances.</p> <p><u>Additionally, it must be noted that 3 of 4 people in our household work atypical hours, often outside the hours of operation of the proposed development, making their rest hours within the operating times of the centre.</u> The potential reduction in quality of rest during the operating times of the proposed centre cannot be overstated. This is a residential area, residents should be considered above any proposed commercial premises in the residential area. Will the DAP and JDAP protect residents against inappropriate development in residential areas?</p> <p>The Environmental Acoustic assessment submitted, considers the various sources of noise individually, some of which are <u>at the allowable upper limits</u>. The assessment does not consider the combined effect of these, which together with the number of noise events accumulate to an intolerable level of noise and number of noise impulses over a 12 hour duration.</p> <p>The proposed 1.8m high Colourbond fence would provide limited shielding and insignificant reduction in noise levels both at the front and rear of our property and may add additional characteristics to the noise with potential reverberation and vibration of the fencing material depending on the vehicles and their proximity to the fencing.</p> <p>The proposed bitumen carpark could also potentially generate more noise than a concrete carpark. Aside from the noise there are also effects from increased heat and radiated heat in summer, and drainage concerns for the carpark itself. There are further disturbances and security concerns if the carpark is accessible on nights and weekends, as it will be used by beachgoers and for parking at community events, and to make up the shortfall of parking at the proposed mixed use development across the road. Also carpark and building lighting will add additional light pollution and light intrusion.</p> <p>To provide additional context, Traffic on Malibu Road is noticeable from our first floor front windows especially in the early morning hours. The noise of vehicles slowing and accelerating for the nearby Roundabout currently experienced will be more intense with vehicles frequently entering and leaving the carpark of the proposed childcare facility. The traffic assessment indicates the volume of vehicle visits to the childcare premises would be <u>approximately 70% of the traffic experienced at the neighbouring BP service station,</u></p>

Name	Address	Comment
2. cont...		<p>This is immediately adjacent to our rear bedrooms, outdoor and recreational areas. This has not been considered in the traffic assessment in any way.</p> <p>Please consider the overall effect this will have on our neighbourhood, our neighbours, and on us trying to rest and live in our home, with the additional persistent disturbances this proposal could create in the area. Consideration also needs to be made that future re-development in the vicinity will further compound the noise effects, and increase the duration and regularity of disturbances to residents in the area.</p> <p>The proposal should be rejected again because it is in a residential area, and the proximity to existing residences is too close, the setbacks are inappropriate for the type of development in a residential area, the noise levels are excessive in combination, and the location remains an unacceptable position for childcare, noting the proximity to the BP, and particularly considering the additional nearby proposal and the further combined effects and intolerable impact on the nearby residents, and traffic nightmares yet to come.</p> <p><u>APPENDIX A: Additional Points in Direct response to the Items contained within the submission:</u></p> <p>[1] ROWE GROUP - REF: 9736_20230309_R_ROCKINGHAM_DAV3_SB 19/09/2023</p> <p>COMMENTS:</p> <p>This proposed <u>commercial</u> development is set entirely within an established area zoned <u>residential</u>.</p> <p>The development of a child care premises in a peaceful beachside residential area is not consistent with, and does not improve the amenity of the area. It detracts from the quiet beachside ambience significantly and has potential to create continuous disturbance throughout the day and early morning 'night' hours.</p> <p>The number of childcare places (60). It is noted that there are other Perth Suburbs where childcare centres in residential areas are limited to 50 places. A development of this magnitude is excessive, particularly in this location, and noting the existing BP Service Station and Future proposed re-development of the Waikiki Hotel site, which requires a mix of retail, residential and tavern creates additional concerns for noise and disturbances at all times, on all days.</p> <p>Garbage and Recycling from the Site is stored immediately adjacent to the rear boundary of the proposed centre. The concentration of waste storage is more than comparable residential premises. Aside from potential smell and flies associated with the garbage, the proximity of the waste storage is in extremely close proximity to nearby households. This is also an additional noise source during normal access and creates a larger additional noise disturbance on collection due to the number of bins compared to a typical residence.</p> <p>Additional load on the local sewer system and potential consequences of blockages etc could have large impact on neighbouring properties.</p> <p>No mention has been made in the application or associated attachments in relation to the proposed means of dealing with carpark runoff or drainage.</p> <p>The grassed play area which is in front of and in the side margin of the building. It is noted that play areas shouldn't be located in the margins of the building.</p> <p><i>Outdoor play areas are to be located so as to limit their impact on the amenity of adjoining properties, whilst taking advantage of a passive solar orientation wherever possible. Measures should be taken to ensure that play areas are large enough and of such dimensions to be useful as play areas, and side setback and leftover building areas are not desirable for the purpose.</i></p> <p>It is predicted that the grassed play area will be mowed and garden care will also occur outside the hours of operation of the centre, again creating an additional disturbance in close proximity to nearby residences.</p> <p>ZERO Setback: Whilst this may be allowed within the planning requirements within residential areas, consideration needs to be made that this proposed development is not residential, but commercial. It is also an amalgamation of two residential blocks. It appears the developer's subsidiary real estate agent claims to have applied and gained pre-approval for further subdivision, into (3) smaller blocks which would limit the allowable zero setback at rear boundary of each to one third of each of the individual blocks rear boundary length. Here in the case of the development application the amalgamated block has a rear boundary length of 41.5m. Consequently, the length of zero setback</p>

Name	Address	Comment																																																															
		<p>allowed for the amalgamated block is considerably more than would be typically be proposed or approved on two of the existing residential lots, or the claimed pre-approved 3 subdivided lots.</p> <p>Due to the residential zoning of the site, determination of setbacks and particularly zero setbacks should be commensurate with that of the surrounding residences.</p> <p>Regarding the elevation of the site at the rear of the lots 193 and 194 it is assumed that the proposed development site would be levelled with additional soil at the rear of the block, which will increase the heights of the building and the fences encroaching on the neighbouring residence, and further restricting morning sunlight and ventilation, whilst potentially increasing the noise transmission and privacy issues with the extremely close proximity (ZERO SETBACK) of the proposed childcare premises.</p> <p>The partial setback of the peak of the roof slightly reduces the bulk, but now that the design is flipped the orientation of the building and carpark is more intrusive to the side boundary of our home (the rear boundary of the proposed childcare), than the previous design.</p> <p><u>COMMENTS ON ENVIRONMENTAL ACOUSTIC ASSESSMENT:</u> Herring Storer Acoustics Ref: 30830-3-23085</p> <p>1. INTRODUCTION</p> <p>Herring Storer Acoustics were commissioned to undertake an acoustic assessment of noise emissions associated with the proposed day care centre to be located at Lots 194 and 196 (No.4 - 6) Malibu Road, Safety Bay.</p> <p>COMMENT: The address stated on the cover and introduction of this document is not the correct address of the development application. Lot 196 is an existing residence on Safety Bay Road. This still has not been corrected. REJECT IT FOR INACCURACY.</p> <p>The report considers noise received at the neighbouring premises from the proposed development for compliance with the requirements of the <i>Environmental Protection (Noise) Regulations 1997</i>. This report considers noise emissions from:</p> <ul style="list-style-type: none"><li>- Children playing within the outside play areas of the centre; and</li><li>- Mechanical services.</li></ul> <p>We note that from information received from DWER, the bituminised area would be considered as a road, thus noise relating to motor vehicles is exempt from the <i>Environmental Protection (Noise) Regulations 1997</i>. <u>We note that these noise sources are rarely critical in the determination of compliance. However, as requested by council and for completeness, they have been included in the assessment, for information purposes only.</u></p> <p>COMMENT: DWER The Department of Water and Environmental Regulation may consider a bitumen carpark as a road. However road is not normally within metres of a home's side boundary, adjacent to a home's windows and doors or on a boundary with no setback. There are strict setback requirements for public roads. It is noted that limited interest or concern is shown for the effect of vehicle noise, which is considered 'for information purposes only' because requested by council.</p> <p><u>"Environmental Protection (Noise) Regulations 1997 Part 1 Preliminary</u></p> <p>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; (b) noise emissions from a safety warning device, other than a reversing alarm, fitted to a motor vehicle operating on a road;"</p> <p>Nothing in the regulations suggests that the consideration of vehicle noise within a car park, door closing and vehicle startups should not be considered. The point regarding reversing alarms is noted, now that a delivery bay has been provided this should definitely be considered, since this is an additional possible disturbance that has not been considered in the Environmental Acoustic assessment.</p> <p>The assessment has amended the Sound power levels as follows:</p> <p>We note that under the latest AAAC guideline the following is provided as the sound power level for outdoor play:</p> <p><b>Table 1 – Effective Sound Power Levels (L<sub>Aeq, 15min</sub>) for Groups of 10 Children Playing</b></p> <table><tr><th rowspan="2">Number and Age of Children</th><th colspan="9">Sound Power Levels [dB] at Octave Band Centre Frequencies [Hz]</th></tr><tr><th>dB(A)</th><th>63</th><th>125</th><th>250</th><th>500</th><th>1k</th><th>2k</th><th>4k</th><th>8k</th></tr><tr><td>10 Children - 0 to 2 years</td><td>78</td><td>54</td><td>60</td><td>66</td><td>72</td><td>74</td><td>71</td><td>67</td><td>64</td></tr><tr><td>10 Children - 2 to 3 years</td><td>85</td><td>61</td><td>67</td><td>73</td><td>79</td><td>81</td><td>78</td><td>74</td><td>70</td></tr><tr><td>10 Children - 3 to 5 years</td><td>87</td><td>64</td><td>70</td><td>75</td><td>81</td><td>83</td><td>80</td><td>76</td><td>72</td></tr></table> <p>Notes:</p> <p>1 If applicable, an adjustment to the above sound power levels of -6 dB could be applied in each age group for children involved in passive play.</p> <p><b>Table 5.1 – Sound Power Levels:</b></p> <p><b>TABLE 5.1 – SOUND POWER LEVELS</b></p> <table><tr><th>Item</th><th>Sound Power Level, dB(A)</th></tr><tr><td>Car Moving in Car Park</td><td>79</td></tr><tr><td>Car Starting</td><td>85</td></tr><tr><td>Door Closing</td><td>87 (for drop off / pick ups) 84 (Staff)</td></tr><tr><td>Air conditioning condensing Unit</td><td>2 @ 73</td></tr><tr><td>Kitchen Exhaust</td><td>72</td></tr><tr><td>Deliveries</td><td>87</td></tr></table> <p>COMMENT: It is noted the Sound Power Levels of 10 Children over 2 years Playing exceeds that of a car starting and is similar to a car door closing. (Conveniently, staff door closing is still presented here as quieter than a Parents car door closing, likely due to the close proximity to the adjacent northwest property, noting staff arrival times begin in 'Night' hours).</p> <p>Assuming there is no difference between the cars or the method of operating the doors between staff and parents there should be no difference in the sound power level of the car doors. The difference in the resulting noise propagation will only be from the parking restrictions applied and location of 'nigh time' staff car parks.</p> <p>Otherwise, what will be the restriction on the types of cars the staff have to drive to achieve this criterion? What additional Training and assessment will the staff undergo to ensure their door closing is 3dB(A) less (effectively half) that of the Parents dropping of and collecting their children as modelled?</p>	Number and Age of Children	Sound Power Levels [dB] at Octave Band Centre Frequencies [Hz]									dB(A)	63	125	250	500	1k	2k	4k	8k	10 Children - 0 to 2 years	78	54	60	66	72	74	71	67	64	10 Children - 2 to 3 years	85	61	67	73	79	81	78	74	70	10 Children - 3 to 5 years	87	64	70	75	81	83	80	76	72	Item	Sound Power Level, dB(A)	Car Moving in Car Park	79	Car Starting	85	Door Closing	87 (for drop off / pick ups) 84 (Staff)	Air conditioning condensing Unit	2 @ 73	Kitchen Exhaust	72	Deliveries	87
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Name	Address	Comment																																																																		
2. cont...		<p>Obviously, this is not feasible, or sensible, so it cannot be assumed that Staff door closing is quieter, and that child drop off and pickups are louder. The difference is in the timing, and the impact of the 'Night' (early Morning) staff door closing is clearly greater, so this is either an error that needs to be addressed or has been deliberately altered to reduce the impact of the noise assessment.</p> <p>It is also a requirement of the assessment that the parking arrangement provides the staff parking in closest proximity to our home. Which increases the impact of these 'night time' door closures. This point needs to be considered very closely.</p> <p>In addition to this there are the car movements, HVAC plant (air conditioning), which are all considered in isolation. HVAC Plant noise will most likely be continuous during winter and summer extremes. Combined effects of these can create more significant accumulated sound power levels that the assessment presents.</p> <p>No consideration is made of other vehicle noises and vibrations, example vehicles braking and accelerating in the adjacent street, or additional noise and vibration from vehicles within the carpark, example engine and brake noise, car radios, and music, or occupant noise when exiting and entering the vehicle, or voices of vehicle occupants in the car park, and doors or gates of the centre opening and closing. Less frequently other noises such as such as access to and noise from rubbish bins and garbage trucks on bin day pickups are also neglected.</p> <p>It is also noted that it is a condition of the assessment that doors and windows of the centre are required to be closed when playing music inside. How this is controlled is of particular importance.</p> <p>As an example on the point of vehicle noise, one Vehicle Starting to South-West on a daily basis (often multiple times) our internal home SPL raises from 30 dB(A) to between 50 and 63 dB(A) and can be experienced several times per day which disturbs the peace and quiet. Please note this one vehicle, heard through a Fibro fence, a brick building (shed) and a wall. This is one vehicle, not 262 vehicles throughout the day. The proposed childcare could have 71 vehicles arriving and 60 departing each morning and 60 vehicles arriving and 71 departing each afternoon.</p> <p>Additional noise sources to the South-East BP petrol station Carwash and vacuum cleaner which operates on and off for most of the day, there are fuel deliveries, opening and closing of inground fuel tank lids and level checks, Safety Bay Road Beachfront carpark and activities, council beachside rubbish bin collection etc.</p> <p>These are things we tolerate, some of which were here when we moved to the house, some are new. The additional impact of the childcare noise needs to be considered in combination with existing disturbances, and definitely combinations of noise from concurrent development applications in the same area affecting the same nearby residences simply cannot be considered in isolation, since they <u>will</u> combine and <u>will</u> have an adverse impact on the residents, and their ability to rest in the homes.</p> <p>Whilst 'previous measurements' may indicate that children playing do not contain any annoying characteristics, children certainly do make other sounds besides playing, such as screaming, squealing and squawking noises, yelling and potential banging or drumming noises on fences etc are an additional concern and would have impulsiveness and tonality. Also, considerations should be made in case of any elevated play equipment and resultant increased noise transmission effects and additional privacy concerns associated with this.</p> <p>The results of the previous assessment were:</p> <p><b>TABLE 6.1 - ACOUSTIC MODELLING RESULTS FOR L<sub>A10</sub> CRITERIA OUTDOOR PLAY AREAS AND MECHANICAL PLANT</b></p> <table><tr><th rowspan="2">Neighbouring Premises</th><th colspan="2">Calculated Noise Level (dB(A))</th></tr><tr><th>Children Playing</th><th>Air Conditioning</th></tr><tr><td>South West</td><td>46</td><td>15 (20)</td></tr><tr><td>North East</td><td>41</td><td>32 (37)</td></tr><tr><td>North West</td><td>41</td><td>30 (35)</td></tr></table> <p>( ) Includes +5 dB(A) penalty for tonality</p> <p><b>COMMENT: The below results from the current assessment are the same or WORSE than previously for ALL the surrounding properties.</b></p> <p><b>TABLE 6.1 - ACOUSTIC MODELLING RESULTS FOR L<sub>A10</sub> CRITERIA OUTDOOR PLAY AREAS AND MECHANICAL PLANT</b></p> <table><tr><th rowspan="3">Neighbouring Premises</th><th rowspan="3">Children Playing</th><th colspan="2">Calculated Noise Level (dB(A))</th></tr><tr><th colspan="2">Air Conditioning</th></tr><tr><th>Day Period</th><th>Night Period</th></tr><tr><td>South West</td><td>46</td><td>32 (37)</td><td>30 (35)</td></tr><tr><td>North East</td><td>48</td><td>29 (34)</td><td>11 (16)</td></tr><tr><td>North West</td><td>46</td><td>42 (47)</td><td>21 (26)</td></tr></table> <p>( ) Includes +5 dB(A) penalty for tonality</p> <p><b>TABLE 7.1 – ASSESSMENT OF L<sub>A10</sub> NOISE LEVEL EMISSIONS OUTDOOR PLAY (DAY PERIOD)</b></p> <table><tr><th>Location</th><th>Assessable Noise Level dB(A)</th><th>Applicable Assigned Noise Level (dB(A))</th><th>Exceedance to Assigned Noise Level</th></tr><tr><td>South West</td><td>46</td><td>48</td><td>Complies</td></tr><tr><td>North East</td><td>48</td><td>49</td><td>Complies</td></tr><tr><td>North West</td><td>46</td><td>48</td><td>Complies</td></tr></table> <p><b>COMMENT: OUTDOOR PLAY IS CLOSE TO THE LIMIT FOR ALL NEARBY RESIDENCES. Also it is noted that no Tonality is included for children playing, but tonality is considered for air conditioning so if this was considered for child play it would definitely not be acceptable. Superimpose the other proposed childcare over this and how tolerable is it? NOT AT ALL.</b></p> <p><b>TABLE 7.2 – ASSESSMENT OF L<sub>A10</sub> DAY PERIOD NOISE LEVEL EMISSIONS AIR CONDITIONING</b></p> <table><tr><th>Location</th><th>Assessable Noise Level dB(A)</th><th>Applicable Assigned Noise Level (dB(A))</th><th>Exceedance to Assigned Noise Level</th></tr><tr><td>South West</td><td>37</td><td>48</td><td>Complies</td></tr><tr><td>North East</td><td>34</td><td>49</td><td>Complies</td></tr><tr><td>North West</td><td>47</td><td>48</td><td>Complies</td></tr></table> <p><b>COMMENT: AIR CONDITONING NOISE IS VERY CLOSE TO THE LIMIT FOR THE NW Residence.</b></p>	Neighbouring Premises	Calculated Noise Level (dB(A))		Children Playing	Air Conditioning	South West	46	15 (20)	North East	41	32 (37)	North West	41	30 (35)	Neighbouring Premises	Children Playing	Calculated Noise Level (dB(A))		Air Conditioning		Day Period	Night Period	South West	46	32 (37)	30 (35)	North East	48	29 (34)	11 (16)	North West	46	42 (47)	21 (26)	Location	Assessable Noise Level dB(A)	Applicable Assigned Noise Level (dB(A))	Exceedance to Assigned Noise Level	South West	46	48	Complies	North East	48	49	Complies	North West	46	48	Complies	Location	Assessable Noise Level dB(A)	Applicable Assigned Noise Level (dB(A))	Exceedance to Assigned Noise Level	South West	37	48	Complies	North East	34	49	Complies	North West	47	48	Complies
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2. cont...		<div>TABLE 7.4 – ASSESSMENT OF <math>L_{A1}</math> NIGHT PERIOD NOISE LEVEL EMISSIONS CAR MOVEMENTS</div> <table><tr><th>Location</th><th>Assessable Noise Level dB(A)</th><th>Applicable Assigned Noise Level (dB(A))</th><th>Exceedance to Assigned Noise Level</th></tr><tr><td>South West</td><td>38</td><td>48</td><td>Complies</td></tr><tr><td>North East</td><td>27</td><td>49</td><td>Complies</td></tr><tr><td>North West</td><td>47</td><td>48</td><td>Complies</td></tr></table> <div>COMMENT: NIGHT PERIOD CAR MOVEMENT NOISE IS VERY CLOSE TO THE LIMIT FOR THE NW Residence.</div> <div>TABLE 7.9 – ASSESSMENT OF <math>L_{Amax}</math> NIGHT PERIOD NOISE LEVEL EMISSIONS CAR DOOR</div> <table><tr><th>Location</th><th>Assessable Noise Level dB(A)</th><th>Applicable Assigned Noise Level (dB(A))</th><th>Exceedance to Assigned Noise Level</th></tr><tr><td>South West</td><td>54</td><td>58</td><td>Complies</td></tr><tr><td>North East</td><td>42</td><td>59</td><td>Complies</td></tr><tr><td>North West</td><td>57</td><td>58</td><td>Complies</td></tr></table> <div>COMMENT: NIGHT PERIOD NOISE OF CAR DOORS IS VERY CLOSE TO THE LIMIT FOR THE NW Residence. IF NIGHT AND DAY NOISE LEVELS WERE EVEN FOR THIS PROPERTY THE LIMIT WOULD BE EXCEEDED. SEE BELOW:</div> <div>TABLE 6.3 - ACOUSTIC MODELLING RESULTS <math>L_{Amax}</math> CRITERIA CAR STARTING / DOOR CLOSING</div> <table><tr><th rowspan="3">Neighbouring Premises</th><th colspan="4">Calculated Noise Level (dB(A))</th></tr><tr><th colspan="2">Car Starting</th><th colspan="2">Door Closing</th></tr><tr><th>Day Period</th><th>Night Period</th><th>Day Period</th><th>Night Period</th></tr><tr><td>South West</td><td>43</td><td>43</td><td>44 [54]</td><td>44 [54]</td></tr><tr><td>North East</td><td>30</td><td>30</td><td>32 [42]</td><td>32 [42]</td></tr><tr><td>North West</td><td>52</td><td>46</td><td>53 [63]</td><td>47 [57]</td></tr></table> <div>[ ] Includes +10 dB(A) penalty for impulsiveness.</div> <p>Noted for the North West property ONLY there is a difference in results between Night and Day period for both car starting and door closing. This difference is not seen for the North East and South West Neighbouring premises. Again, it seems there is an error or faulty logic with the difference between noise disturbances in the night and day periods. Night period should have greater impact but is already on the limit, so any increase in values during the night period would exceed allowable limits.</p> <p>Noting the allowable (assigned) noise levels determined above it can be seen from the results that the noise from car door closing is on the limit of what is allowable, for the residences immediately adjacent the proposed carpark during the night period.</p> <p>To further highlight the sheer number of impulses of this extremely high level disturbance, please see the below table showing possible numbers for single child drop-offs, and dual child drop-offs.</p> <p>CONSIDERATION OF PERSISTENT NOISE IMPULSE AND INTERRUPTIONS TO PEACE:</p> <table><tr><th></th><th>HIGH</th><th>LOW</th></tr><tr><td>No Of Children:</td><td>60</td><td>60</td></tr><tr><td>No of Staff:</td><td>11</td><td>11</td></tr><tr><td>No of Carparks:</td><td>19</td><td>19</td></tr><tr><td>No of Adults/car:</td><td>1</td><td>1</td></tr><tr><td>No of Children/car:</td><td>1</td><td>2</td></tr><tr><td>No of Cars:</td><td>71</td><td>41</td></tr><tr><td>No of Carpark Entries/Exits:</td><td>262</td><td>142</td></tr><tr><td>No of Startups:</td><td>131</td><td>71</td></tr><tr><td>No of Drivers Doors:</td><td>262</td><td>142</td></tr><tr><td>No of Passenger Doors:</td><td>120</td><td>120</td></tr><tr><td>No of Car Boots/Hatchbacks (assume 1/2 of cars accessing boot)</td><td>60</td><td>30</td></tr><tr><td>Total Number of Door Slams</td><td>442</td><td>292</td></tr><tr><td>Over 12 Hours, slams per hour</td><td>37</td><td>24</td></tr><tr><td>Seconds between door slams</td><td>98</td><td>148</td></tr><tr><td>Over 6 Hours, slams per hour</td><td>74</td><td>49</td></tr><tr><td>Seconds between door slams</td><td>49</td><td>74</td></tr></table> <p>Averaged over two 3 hour periods from 06:30 to 09:30 and 15:30 to 18:30 barely a minute goes by without a door slam. Obviously the intensity at times will be far greater, and considerably more disturbing to the peace.</p> <p>Considering the high noise impact and close proximity of the carpark to neighboring residences, the fact that this is on the allowable limit, even when considered in isolation from all other noise sources, it is clear that in combination with all other noise sources and disturbances that <u>the number of disturbances at these noise levels is intolerable, and should not be allowed in a residential area.</u></p> <p><u>Transport Impact assessment:</u></p> <p>The crash history surrounding the development site shows several incidents on Malibu Rd and the adjacent roundabout. With Traffic flow to the BP Service Station as well as the childcare facility and future re-development of the Waikiki Hotel Site, these incidents will no doubt increase significantly given the number of different entrances and traffic moving in multiple different directions. Example parents dropping children and then cutting across to fuel up at the BP or vice versa, meanwhile traffic on Roundabout entering the congested Malibu Road with a line of parents hurrying to get to/from work with their cars ready to pull across Malibu road to enter the childcare carpark.</p> <p>Whilst it may not be considered in the report as a major safety issue, <u>the risk is increased considerably.</u></p> <p>The report does not consider the potential increase in traffic density considered in other recent development applications eg the nearby mixed-use development, (or the shortfall of parking threof).</p> <p>From the Transport impact assessment:</p> <h3>9 Conclusion</h3> <p>This Transport Impact Statement for the proposed child care centre at 4-6 Malibu Road in Safety Bay concludes the following:</p> <ul style="list-style-type: none"><li>The proposed development is predicted to generate approximately 245 vehicle trips per day including 47 trips during the morning peak hour and 47 during the afternoon peak hour. This volume of traffic is low to moderate and can be accommodated within the existing capacity of the road network with no modifications required.</li></ul> <p>COMMENT: Given the number of vehicle trips, and noting the contents of the calculations of the Emissions assessment report the 245 vehicle trips per day predicted for the Childcare Premises is more than <u>seventy percent</u> of the calculated throughput of the adjacent Petrol Station (338 cars).</p> <p>This is a continuous and noticeable number of vehicle movements into and out of the carpark, in addition to the existing volume, and future additional traffic volumes</p>	Location	Assessable Noise Level dB(A)	Applicable Assigned Noise Level (dB(A))	Exceedance to Assigned Noise Level	South West	38	48	Complies	North East	27	49	Complies	North West	47	48	Complies	Location	Assessable Noise Level dB(A)	Applicable Assigned Noise Level (dB(A))	Exceedance to Assigned Noise Level	South West	54	58	Complies	North East	42	59	Complies	North West	57	58	Complies	Neighbouring Premises	Calculated Noise Level (dB(A))				Car Starting		Door Closing		Day Period	Night Period	Day Period	Night Period	South West	43	43	44 [54]	44 [54]	North East	30	30	32 [42]	32 [42]	North West	52	46	53 [63]	47 [57]		HIGH	LOW	No Of Children:	60	60	No of Staff:	11	11	No of Carparks:	19	19	No of Adults/car:	1	1	No of Children/car:	1	2	No of Cars:	71	41	No of Carpark Entries/Exits:	262	142	No of Startups:	131	71	No of Drivers Doors:	262	142	No of Passenger Doors:	120	120	No of Car Boots/Hatchbacks (assume 1/2 of cars accessing boot)	60	30	Total Number of Door Slams	442	292	Over 12 Hours, slams per hour	37	24	Seconds between door slams	98	148	Over 6 Hours, slams per hour	74	49	Seconds between door slams	49	74
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2. cont...		<p>Excerpt from Emissions assessment:</p> <table><thead><tr><th>hour</th><th>% daily caries</th><th>% to peak hr</th><th># cars/peak hour</th><th>Petrol Throughput (L/hr)</th></tr></thead><tbody><tr><td>1</td><td>1.20%</td><td>19.51%</td><td>6</td><td>205</td></tr><tr><td>2</td><td>0.80%</td><td>13.01%</td><td>4</td><td>137</td></tr><tr><td>3</td><td>0.60%</td><td>9.76%</td><td>3</td><td>102</td></tr><tr><td>4</td><td>0.80%</td><td>13.01%</td><td>4</td><td>137</td></tr><tr><td>5</td><td>1.90%</td><td>30.89%</td><td>10</td><td>324</td></tr><tr><td>6</td><td>4.60%</td><td>74.80%</td><td>23</td><td>785</td></tr><tr><td>7</td><td>5.50%</td><td>85.43%</td><td>27</td><td>939</td></tr><tr><td>8</td><td>5.70%</td><td>92.68%</td><td>28</td><td>973</td></tr><tr><td>9</td><td>5.50%</td><td>85.43%</td><td>27</td><td>939</td></tr><tr><td>10</td><td>5.70%</td><td>92.68%</td><td>28</td><td>973</td></tr><tr><td>11</td><td>6.00%</td><td>97.56%</td><td>30</td><td>1,024</td></tr><tr><td>12</td><td>6.00%</td><td>97.56%</td><td>30</td><td>1,024</td></tr><tr><td>13</td><td>5.70%</td><td>92.68%</td><td>28</td><td>973</td></tr><tr><td>14</td><td>5.60%</td><td>91.06%</td><td>28</td><td>956</td></tr><tr><td>15</td><td>5.90%</td><td>95.93%</td><td>29</td><td>1,007</td></tr><tr><td>16</td><td>6.15%</td><td>100.00%</td><td>30</td><td>1,050</td></tr><tr><td>17</td><td>6.15%</td><td>100.00%</td><td>30</td><td>1,050</td></tr><tr><td>18</td><td>5.80%</td><td>94.31%</td><td>29</td><td>990</td></tr></tbody></table> <p>This further highlights the persistent disturbance of the LOCAL carpark traffic immediately adjacent to the proposed childcare's neighbours. This has not been considered in the traffic assessment in any way. The number of vehicles and multiple arrivals and departures throughout the day is excessive for a residential zoned area, especially noting the immediately adjacent residences.</p> <p><u>Other interesting information indicating contradictions and potential conflicts of interest:</u></p> <p>It is noted that the Application for Development is submitted as follows: (Section 1) Introduction:</p> <p>"Rowe Group acts on behalf of Greener4 Pty Ltd (Greener4), the landowner of Lot 193 (No. 6) and Lot 194 (No. 4) Malibu Road, Safety Bay (the subject site or Lot 193 and Lot 194). This Report has been prepared in support of a Development Application (the Application) to obtain Development Approval from the City of Rockingham (the City) for a child care centre at the subject site."</p> <p><b>COMMENT:</b></p> <p>It is noted that the same company Greener4 is also the Parent company of "Listing Toolbox", a small volume Real Estate Agent with principal Bo Xiong, who to date <u>still</u> has the development site listed for sale.</p> <div><div><div><div>ABN details</div><div><div>Entity name:</div><div>GREENER4 PTY LTD</div></div><div><div>ABN status:</div><div>Active from 22 Sep 2010</div></div><div><div>Entity type:</div><div>Customer/Standard Company</div></div><div><div>Goods &amp; Services Tax (GST):</div><div>Registered from 23 Sep 2010</div></div><div><div>Main business location:</div><div>WA 6169</div></div></div></div><div><div><div>Business name(s)</div><div><div>Business name:</div><div>Listing Toolbox</div><div>From:</div><div>20 Jun 2021</div></div><div><div>Until:</div><div>30 Apr 2021</div></div><div><div>Listing Toolbox:</div><div>30 Nov 2021</div></div></div></div></div> <p>This companies business interests do not appear to be within the local community, and although the further subdivided blocks stated: "WAPC Has pre-approved for a 3 Green Title Lots subdivision on this block" it is mentioned that one of these blocks is "reserved" however there no apparent intention to establish a residence in the area, which is described on the website as a "Perfect Home Site at a Premium Location". Instead, the plan is to develop the site into a 1.7 million dollar per year business in a residential area. The applicants contradict themselves. If it is a perfect home site, opposite a BP &amp; Future Hotel development, then clearly this is not an ideal childcare location.</p> <div><div><div>See your travel time</div><div><div>Perfect Home Site at a Premium Location</div><div>4-6 MALIBU ROAD, SAFETY BAY</div><div>We are proudly presenting this massive 1454sqm level vacant block (i.e. 3 individual Lots) to the market! It is a great opportunity to own a perfect piece of land on the premium coastline of WA.</div><div>At the opposite side of the street is the iconic Walkiki Hotel redevelopment site. Check out the Local Government Planning Policy No.3.3.23 if you haven't been aware of the site's former reputation as a focal point for the coastal strip along the Safety Bay foreshore. If you are looking for a vibrant and convenient Beachside Lifestyle, this is exactly what you expected!</div><div>WAPC has pre-approved for a 3 Green Title Lots subdivision on this block, therefore you can choose to buy an individual lot to build your dream beach house, or to own the whole development site and enjoy the potential in future.</div><div>Lot 701 has been reserved, and Lot 702 and Lot 705 are available from \$429,000 each. Take action now and secure one of the most premium locations before it is too late.</div><div>If you are interested in buying the whole development site please contact the agent on 0432 104 675 or send an online enquiry.</div><div>Read less</div></div></div><div><div><div>Bo Xiong</div><div>5.0 (2 reviews)</div><div>0432104675</div><div>Get in touch</div><div>Save property</div></div><div><div>Apply by 30 June 2023</div><div>Find out more</div><div>WAPC</div></div></div></div>	hour	% daily caries	% to peak hr	# cars/peak hour	Petrol Throughput (L/hr)	1	1.20%	19.51%	6	205	2	0.80%	13.01%	4	137	3	0.60%	9.76%	3	102	4	0.80%	13.01%	4	137	5	1.90%	30.89%	10	324	6	4.60%	74.80%	23	785	7	5.50%	85.43%	27	939	8	5.70%	92.68%	28	973	9	5.50%	85.43%	27	939	10	5.70%	92.68%	28	973	11	6.00%	97.56%	30	1,024	12	6.00%	97.56%	30	1,024	13	5.70%	92.68%	28	973	14	5.60%	91.06%	28	956	15	5.90%	95.93%	29	1,007	16	6.15%	100.00%	30	1,050	17	6.15%	100.00%	30	1,050	18	5.80%	94.31%	29	990
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3. Mr Mark Hiscock	Malibu Road SAFETY BAY WA 6169	They will just need to slow down the Traffic around that area a lot of car and motorbike come from roundabout and want to show off to people beach side and scream away down the road, Also very hard to cross road if elderly so pedestrians crossing or similar on Malibu Road and Safety Bay Road.																																																																																															
4. Mr M & Mrs A Horbach	Grigo Close SAFETY BAY WA 6169	<ul style="list-style-type: none"><li>There is currently a large multicomplex proposal opposite/across the road from this proposed childcare centre. This multicomplex includes many commercial goods and services plus another childcare centre. A childcare centre at this multicomplex we believe is further away from the petrol station which raised health and safety concerns for children at a childcare centre on the Malibu Road proposal due to its proximity to the petrol station of both diesel and petrol omissions. We believe also that the childcare centre of this multicomplex proposal will be further away from residential homes.</li></ul>																																																																																															

Name	Address	Comment
4. cont...		<ul style="list-style-type: none"> <li>• The large multicomplex proposal as noted in the previous point will add greatly to the additional concerns noted below about traffic congestion, traffic bottlenecking and increased risk to pedestrians seeking to cross the road to access the beach and park areas.</li> <li>• Petrol station health and safety concerns have been reviewed and noted by residents and the Council for this Malibu childcare proposal. I think a past proposal of a multi-complex which included a petrol station in the City of Rockingham vicinity was refused by Council and upheld in the independent review process, due to its proximity to an already established childcare centre due to health and safety concerns mapped to the petrol station. Unfortunately, I haven't had the time to research this further to verify. The current proposal may be a mirror to the past refused proposal but in reverse. For in this current case the petrol station is present with the desire to build a childcare centre near it.</li> <li>• We have elderly neighbours who live very close to the proposed centre. We cannot speak for them and nor are we suggesting this is the case, but we wish to highlight the possibility that some residents in the community may not have had the appropriate or accessible structures in place to present a submission to voice their opinion. We hope a lack of response by residents isn't conceptualized as these residents not caring about or not having an opinion about the proposal when this we suggest is just speculation.</li> <li>• We concur with other residents' concerns on the negative daily impacts that will occur.</li> <li>• The current quietude and ambiance of being able to listen to the ocean cannot be quantified and will be destroyed due to the variable noises from such a centre. For example, the number of people/children, voices from conversation, crying, yelling, laughter, car doors and car engine noise and so on. At the Council's Planning meeting a resident played a recording of a local day care centre. The noise was so loud it was hard to understand how this noise level could be ok for residents to hear daily.</li> <li>• Residents may likely feel they have to shut their windows and close external doors that usually allow the sea breeze in to cool their homes.</li> <li>• This is an old residential area. One of the proposed lots originally had a house on it. Many residents have lived in the area for years and chose the location due to its location to the beach, and the fact that it is zoned for housing.</li> <li>• Traffic congestion already occurs at the roundabout, one block from the proposed centre. This is because it's a main artery during peak hours, funnelling workers to and from work. This will dramatically increase and stem the flow of traffic with the proposal.</li> <li>• The increased traffic, decreasing traffic flow will make pedestrian crossing to recreational beach and parks across the road extremely difficult, along with increased difficulty for vehicles on exit roads.</li> <li>• The roundabout, one block from the proposed centre will likely become gridlocked with cars entering and exiting the proposed centre and we believe this will likely be an increase safety hazard to both pedestrians and traffic.</li> <li>• Residents with A-typical work hours will likely have their sleep and thus their health negatively impacted.</li> <li>• We consider the possible worry that may occur for some residents adjacent to the centre, of having their properties devalued and finding them harder to sell. That this possible consequence may have a negative impact on their well-being and on their financial stability and security and into retirement.</li> </ul>

Name	Address	Comment
4. cont...		<p>Whilst the financial impact to residents isn't a considered variable with such proposals, we think in a mature and inclusive way when trying to weigh up the balance between commercial and residential co-existence this is very important, especially when it maps to social and health outcomes of residents.</p> <p>We wish to thank you in anticipation of a very considered review of both Residents and the Council's rejection of this proposal.</p>
5. Mr Gordon and Mrs Kylie Melling	Grigo Close SAFETY BAY WA 6169	<p>Due to our concerns, we are wanting it to be noted that we are adamantly opposed to the building of the childcare centre on lots 194 and 193 Malibu Road. Under no circumstances will we support the proposal to build a childcare centre on the proposed lots.</p> <p>Attached are our concerns to both our quality of life and health that will be impacted by this proposal.</p> <p>In the initial application image 3D - CHILDCARE PERSPECTIVE 2 it shows the fence around the play area to be open fencing. It also states in the planning report that Clause 4.6 'Design Considerations' in LPP 3.3.5 outlines the following: "Where a play area is located in the front setback area, fencing of the area should be of predominantly open construction to provide a safe playing area without closing the site in, casting shadows on the play area, or adversely affecting the residential streetscape". In the noise emission report it makes note of the use of Colourbond fencing as an acceptable type of fencing to use in a childcare centres for noise management purposes.</p> <p>Clarification needs to be made as to whether open fencing as above should be used or the Colourbond as referred to in the emissions report as each document contradicts each other in which is best and this needs to be clarified as open fencing could leave the emission report invalid.</p> <p>Open fencing will allow for the sea breeze to blow through the play area and carpark carry with it sound continuing into the surrounding houses and the open street area of Grigo Close carrying with it the sounds from the playground and the children. Whilst the report says that "From previous measurements, noise emissions from children playing does not contain any annoying characteristics" I as both a previous childcare worker and my husband and I as workers in the field of education know that this is not always the case. The noise of children playing can range from enjoyable laughter to screaming, crying, shouting and arguing which heard on a daily basis would definitely be considered by many as annoying at times. Many of our houses due to the location of the beach and the sea breeze are not climate controlled rather rely on being open in order to take advantage of the sea breeze for cooling and fresh air. Our own property we rely on the sea breeze coming through our house to cool it in summer with windows and doors secured open for the majority of summer day and night. At times the sounds of people from the beach carries all the way into our house. The concern is that the additional sounds of 60 children and their parents vehicles will also carry into our house and those of our surrounding neighbours affecting our quality of life. This also doesn't take into account the vehicle fumes which will also carry on the sea breeze into neighbouring houses which will be significantly increased due to the drop off and pick up of 60 children and the additional 11 vehicles of the staff thus potentially up to 71 vehicles starting their engines, plus those of any delivery and service vehicles, twice a day, with their sound and fumes adding to the emissions received by our families. It is also common especially with parents of young children that vehicles are started or left running for a period of time to adjust the temperature and allow for air conditioning to take effect before they then proceed to clip children into child restraints. This whole length of time allowing additional emissions to impact on surrounding neighbouring properties. Added to this you have the sound of up to 142 car doors being opened and closed each day and then potentially 71 car boots on top of this as well as majority of vehicles will have a driver and at least one passenger.</p>



Name	Address	Comment
5. cont...		<p>Whilst the report considers this to be of little impact due to the loop hole as "the bitumised area would be considered as a road, thus noise relating to motor vehicles is exempt from the Environmental Protection (Noise) Regulations 1997" we still consider whether or not it is a bitumised area that the impact on us, our children and my neighbours, some of which are elderly and unlikely to have the skills and ability to advocate for themselves, to be considerable. We chose this location due to the fact it is close to the beach, allowing us a relaxing and healthy lifestyle in which we can hear and smell the beach from our property. I feel the potential of losing the sound of the beach from our daily life only to be replaced by noisy children, car doors and the sounds of engines to be a negative impact to my quality of life and my reason for choosing this area to live. The healthy natural lifestyle we chose to adopt will also be impacted by the increased vehicle emissions we will be exposed to.</p> <p>The planning report makes notes that the building will fit in with the surrounding area aesthetically, yet they are stretching the truth as none of the surrounding houses have a 19 car carpark attached or up to potentially 131 people coming and going each day, the 60 children, their parent/s and the workers. It feels like the report is written taking note of only what they feel might be relevant to promote the development. Such as not including the emissions from the centre rather just those that will impact it. When taking into account the emissions from the BP service station it would have made sense to do an emissions report that adds the emissions from the centre vehicles coming and going onto the BP emissions to get a total accumulated potential emissions for the surrounding houses.</p> <p>It is noted that the emission report focussed solely on the impact emissions would be upon the childcare centre and not from the centre and its vehicles to that of neighbouring properties.</p> <p>In the report it states "Due to its location at the subject site and how it has been designed, the proposed development will not have any adverse impacts on the surrounding residential properties or the existing road network." (Page 14 of the Planning report) We believe this to be incorrect. At times crossing Safety Bay Road to access the beach can be extremely difficult due to the sheer volume of traffic that uses the road especially at peak periods when Navy personnel are entering and exiting the base and driving along Safety Bay Road. This increased traffic load led to the installation of pedestrian islands in multiple sites along the Safety Bay foreshore in order to deal with the increased traffic load and pedestrian safety. The childcare centre will be one property back from Safety Bay Road at a busy roundabout intersection and therefore it is significantly likely to have an increased traffic load impact on both pedestrians and road users of Safety Bay and Malibu roads. At times of school drop offs and pickups the Malibu Road and Read Street intersection has congestion leading to traffic delays and local roads users creating 'rat runs' in neighbouring streets to avoid this. It would be reasonable to assume that the increased traffic from the Childcare centre will add to this problem and a continuation of more 'rat runs' along neighbouring roads.</p> <p>In reply to our initial response it was confirmed that cleaners would attend the property outside of opening hours. In no reports has the concern of the additional noise this will bring been addressed. What impact will this have on both vehicle and cleaning noise outside of the acceptable noise limitation hours?</p> <p>The planning report notes in section 2.1 that this is "an established residential area" yet fails to make a connection between the residents and the impact that this commercial operation will have.</p> <p>Under the provisions of LPS 2, Table No.1 'Zoning Table' stipulates that a 'Child Care Premises' is classified as an 'A' (discretionary) use within the 'Residential' Zone.</p>

Name	Address	Comment
5. cont...		<p>An 'A' use is defined in LPS 2 as follows: means that the use is not permitted unless the local government has exercised its discretion by granting development approval after giving special notice in accordance with Clause 64 of the deemed provisions.</p> <p>We feel that due to multiple concerns in regard to compliance and impact on the quality of surrounding residents living standards that the local government should not employ discretionary powers to approve a development on lot 193 and 194 which is not in the best interests of the community or the local government. Rather a further proposal which has been received for a child care premises as part of a mixed commercial development at Lot 100 (across the road from this proposal) is in a location which has had multiple previous commercial uses. It is more fitting with the interests and community acceptance to approve a childcare premises in this location rather than make changes to zoning under the Residential zone and the discretionary powers of the council. We do not need two childcare centres across the road from each other. Rather than rezoning a residential zone the commercial zoning is a more appropriate location.</p> <p>As local rate payers who have lived in our house at this location for twelve years we feel that this proposal goes against our wishes. We chose this location based on the lifestyle choices it would provide which include closeness to the beach and the quiet ambience of the area. The proposal has reasonable likelihood to disturb and impact both of these significantly important aspects of our daily life. When we purchased our property there was only one vacant lot in the proposed childcare locality with the other having a house on it that was impacted by fire and subsequently knocked down. It was reasonable for us to assume that a commercial operation would not be likely on a residential zoned lot and therefore impact upon our lifestyle which was our reason for purchasing our house.</p>
6. Mrs Beate Kuchar	Malibu Road SAFETY BAY WA 6169	<p>As a Safety Bay resident living close by, I would like to strongly object to the development of this Childcare Centre.</p> <p>One of the reasons being, this is already a very busy road with traffic generated by schools and shopping centre at the other side of Malibu Road, mornings and afternoons, and the busy roundabout on Safety Bay Road, which already causes a lot of congestion and traffic slowdown in this area, and with these developments we would have a lot of traffic jam all around.</p> <p>Another cause of concern has to be the close proximity of the ocean for small children, plus the accumulation of traffic on an already busy road. I had a close call when my 4 yr. old daughter decided to go for a walk, at the daycare centre, she was staying, after someone left the gate open.</p> <p>The community of this area consists mostly of elderly residents, many retirees who enjoy this peaceful place, and not being woken by noise levels starting at 6.30am until 6.30pm, every day 5 days a week.</p> <p>On a personal note, I live across the road from the other proposed childcare centre (lot 100), plus the above mentioned, 2 houses down the road from our house, with a capacity of 60 children each, too close to even want to think about it. It certainly would effect our lives a great deal.</p> <p>I cannot believe the shire would even consider having 2 childcare centres built in such close proximity within a well established elderly community. This is a residential area, so why can't it stay a residential area.</p>
7. Mr Stephen and Mrs Robyn Bianchini	Ullapool Road APPLECROSS WA 6153	<p>Proposal</p> <p>It appears the development will necessitate the subdivision of Lots 193 and 194 into one large Lot before development can proceed. Currently the subdivision application is Lots 193 and 194 to create 3 separate domestic building Lots.</p>

Name	Address	Comment
7. cont...		<p>The existing north eastern colourbond fence together with the 300mm raised height will not limit the noise transfer from child care centre play area to adjoining neighbours. The noise will be transferred through the fence medium. Sound absorption medium is necessary for noise reduction, not metal fences.</p> <p>The garrison security fence across the front SE street frontage and NE portion of open fence between front building line and boundary will allow the full force of child and staff noise will permit pedestrian on the footpath to be exposed to noise generated.</p> <p>The garrison fencing is more suited to industrial premises located in an industrial zoned area, not infill within an established residential zone. The garrison fence will not only be secure however will look like a correctional facility within the neighbourhood. Not the view residents want to see on their walk to the beach.</p> <p>The relocated carpark appears to be open 365 days x 24 hr days. Unfortunately this will quickly be established as a hang out for others without homes. The Rockingham beach suburbs have become popular with homeless (some with cars) people and tourists seeking free parking overnight. This could be an unwelcomed development in our neighbourhood. Residents see this as an issue.</p> <p>The proposed time restricted car parking will be ineffective. What staff will police this? The restriction on the delivery bay for client turn around is too small for any vehicle effective turn around.</p> <p>Elevation 1 (South East elevation) of the proposed building, at first glance appears to be an industrial style small office. All houses in Safety Bay and Malibu Roads are of conventional modern day residential appearance. The drawing "Child Care Centre Perspective" should include the garrison fence viewed at street level. This industrial style behind the garrison security fence provides an unattractive view along Malibu Road.</p> <p>Maybe the notation on elevation drawing is incorrect. Appears Elevation 2 south west, should be north east. Whilst Elevation 4 north east should be south west. Adds to the confusion of the proposal supporting documentation, please correct.</p> <p>Traffic</p> <p>Sight distances</p> <p>Quote ex Proposal documents "noted that vehicles approaching from the SW will be travelling well below 60Km/Hr as they have just turned from Safety Bay Road". How do you measure "well below" when the legal speed limit is 60Km/Hr! Personally having crossed this intersection / round about many times a day, drivers are in a hurry. There is no tolerance or margin given by drivers entering or leaving this round about. Hence the SW minimum sight distance is not available to child care patrons especially during peak traffic periods.</p> <p>Also NE sight distance will be obscured on rubbish collection days especially with 8 rubbish bins stacked along Malibu Road. Please review sight distances as we believe this to be the source of much driver frustrations.</p> <p>Patrons of child care centre turn around bay in parking layout.</p> <p>Using the delivery bay to facilitate patrons car turn around needs further consideration. To expect patrons to turn their care around when car park is full using the end bay is impossible unless you do a 33 point turn! To ask patrons to reverse from car park onto Malibu Road would cause traffic frustrations to boil over.</p> <p>The proposed car parking time restrictions will be impossible to police by centre staff. The acoustic report based on this implied restriction will need reviewing.</p> <p>The Criteria references in the proposal documents state "Safety Bay Road a secondary road"! It is a Distributor A classification. Hardly a "secondary road". Whilst Malibu Road is Distributor B road.</p>

Name	Address	Comment
7. cont...		<p>Generally the traffic report appears to candy coat the importance of how critical this aspect of depositing child at the centre during the daily peak traffic periods.</p> <p>Noise</p> <p>The reference to times neighbouring residents will be exposed is incorrect. The centre opens 6.30am to 6.30pm, not a casual reference to "before 7am".</p> <p>The child care centre staff to be ready for 6.30am opening and children recieval would necessitate opening and readying the centre earlier than 6.30am. Too early for any strange noises awakening the elderly residents that surround the proposed centre.</p> <p>Waste</p> <p>Estimated waste generated is based on 273m2 child care centre. The building footprint stated throughout the proposal documents is 418m2. Please review and provide explanation regarding the different areas.</p> <p>Emissions</p> <p>Quote ex Proposal documents "The proposed child care centre will satisfy the guide line separation distance of 50m". EPA Guidance for the Assessment of Environmental Factors, Separation Distances between Industrial and Sensitive land users, provides the definition of separation distance is quote "the shortest distance between the boundary of the area that may potentially be used by an industrial land use, and the boundary of the area that may be used by a sensitive land use". The Table referenced for Buffer distance states 50m. The actual distance between boundaries is 30.79m.</p> <p>Not compliance of such a delicate commodity as children should be avoided. This alone precludes the permission to operate the proposed child care centre.</p> <p>Conclusion</p> <p>The building and car park storm water controls are important and need to be provided.</p> <p>The centre staff will be burdened with too many extra duties that will preclude their primary work , looking after children. Extra duties include</p> <p>Time restricted car parking,</p> <p>Time restrictions for noise wrt open / close doors and windows.</p> <p>Limited or nil end of journey facilities and safe dedicated bicycle storage</p> <p>Waste controls</p> <p>Carpark accessibility after hours</p> <p>We believe the child care proposal has been ill considered and information available to the community has been poorly prepared and presented. The proposal exceeds communities' boundaries and guidelines, noise, fit within existing community, traffic, and staff duty requirements. The proposal pushes the limits of the local and greater community expectations.</p> <p>We reject the proposal.</p>
8. Mr Richard Pittard	Grigo Close SAFETY BAY WA 6169	<p>We wish to lodge an objection to the proposed , Child care centre ,to be constructed on lots 4 and 6 Malibu Road, Safety Bay.</p> <p>Our Objections are as follows</p> <p>A] The care park for the proposed centre is far too close to the congested one lane round-a-bout of both Malibu and Safety Bay Road.</p> <p>B] the proposed construction is opposite the established BP garage driveway and car wash driveway exiting onto Malibu Road.</p> <p>C] There are already plans for construction of a tavern and shops behind the garage which will further endanger and worsen the problems as mentioned above.</p>



Name	Address	Comment
8. cont...		<p>D] Once cars attempt to enter the driveway of the said,[ up to 60 children,] child care centre, there will be a total traffic jam around the round-a-bout without any side roads to solve the problem.</p> <p>E] Homes immediately around Lots 4 and 6 Malibu Road are owned by retired people and also shift workers, and not only will the noise from the children be disturbing from 6am to 7pm but will also devalue our properties.</p> <p>F] We cannot believe that this proposed building is even contemplated re danger of these young children being off loaded so close to a blocked one lane round-a-bout.</p> <p>Please be aware that the Navy personal use the Safety Bay Road extensively to get to the Garden Island Base.</p> <p><b>Petition</b></p> <p>Kathy Kostecki (Safety Bay Road, Safety Bay WA 6169)</p> <p>Dave Lore (Safety Bay Road, Safety Bay WA 6169)</p> <p>Fay Pittard (Grigo Close, Safety Bay WA 6169)</p> <p>Hazel Ecker (Grigo Close, Safety Bay WA 6169)</p> <p>Lisa Johnson (Cooloongup, Services for H. Ecker)</p> <p>Unknown (Malibu Road, Safety Bay WA 6169)</p> <p>Unknown (Grigo Close, Safety Bay WA 6169)</p> <p>Unknown (Malibu Road, Safety Bay WA 6169)</p> <p>Judith Malley (Safety Bay Road, Safety Bay WA 6169)</p>
9. Ms Alison Greening	Tropicana Way SAFETY BAY WA 6169	This would be another childcare centre if you include the proposal for the Waikiki hotel site this will cause traffic issues, with the access and egress of the current BP service centre and the roundabout . Many cars go down safety bay road at peak times servicing garden island and beyond. Tropicana way and the side streets will become a rat run , what is councils traffic mitigation proposal so this and other developments dont affect the current residence of these streets
10. Mrs Sharon Calleja-Davey	Safety Bay Road SAFETY BAY WA 6169	The local traffic on Safety Bay Road and Malibu Rd have increased exponentially over the past couple years to the point where I struggle to drive out of my home during certain times of the day. This is a residential area, I believe placing a commercial operation such as a child care centre right in the middle of residence is unfair to the folk that both live in the immediate proximity and around the area. Please consider the human factor over the commercial outcome ... Thank you council, in the main you do a fantastic job and my family and I love living in Safety Bay.
11. Mr Pieris Pieri	Malibu Road SAFETY BAY WA 6169	My wife and live next door to the proposed child care premises -lot 193-194 Malibu Road Safety Bay. The proposed fence along our border is a height of 2.1 meters or 7 feet which is 300 mm (1foot) higher than the standard fencing in the area. If it is this high to rebound noise it will fail because its construction is colourbond steel and most likely amplify the noise. The height of the fence will have the effect on us being hemmed in and the loss of ocean views. We are both retired and have lived here for 15 years in peace and quiet and rarely go out so we have to listen to the noise from cars, children, and associated noises on or before 6-30 am to 6-30 pm 52 weeks a year. (2) the garrison fence on Malibu Road, (Not in the elevation) is an industrial fence and would not stop noise it will look awful in a residential area. I am sure that the residents agree (3). The car park has not changed, 19 parking spaces 11 staff, van, leaves 7 bays to drop off up to 60 children and no turning area, does not tally up. Parents dropping off children will be verge parking at risk. (4) A commercial 2 way crossover to a open car park can only invite homeless and free parkers not what is wanted or needed in our residential area and may cause trouble for close residents. (5) Petrol Station, The EPA has set a distance of 50 meters from boundary to boundary because the fumes from the petrol/diesel are cancer causing and can have fatal outcomes.

Name	Address	Comment
11. cont...		The boundary's between the petrol station and the proposed child care center is only 31 meters. (6) There also is a proposal for an 80 child care center at the old Waikiki hotel site across the road (REALY) (7) Nothing has changed to much from the last proposal, just some glossing over. (8) I/We oppose and reject this proposal.

SERVICING AUTHORITY SCHEDULE OF SUBMISSIONS		
Name	Address	Comment
<b>1. Chris Hill/ Yashvee Manrakhan- Field</b> Environmental Health Directorate <b>Department of Health</b>	PO Box 8172 PERTH BC WA 6849	<p>Thank you for your letter dated 21 September 2023 requesting comments from the Department of Health (DoH) on the above proposal.</p> <p>DoH provides the following comment in relation to this proposal:</p> <ul style="list-style-type: none"> <li>• The boundary of the proposed childcare premises is &gt;50m from the nearest emission source (fuel bowser) of the service station located to the southeast of the proposed development. Separation distances are based on boundary-to-boundary distances to allow an emission source to be moved within the industrial site (service station). Should the childcare premises be approved, any future plans to move the fuel bowzers within the service station lot will need to consider the proximity to the childcare premises to achieve an appropriate separation distance</li> </ul>

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Submitter Comment	Applicant response
<ul style="list-style-type: none"> <li>• Traffic congestion on Malibu Road is a concern. Malibu Road is already busy with many not adhering to the speed.</li> <li>• The other proposed development (Lot 100 Safety Bay Rd to the north of the site) which also has a childcare in the plans, traffic will drastically increase.</li> <li>• The service station already halts traffic near the roundabout as people enter right from Safety Bay Road but need to wait for clear traffic along Malibu Road before entering.</li> </ul>	<p>The conclusion outlined in the updated Traffic Impact Statement (TIS) states that the proposed child care premises will not be adversely impact the existing local road network. In making this conclusion, the TIS has considered the existing service station and the future development at Lot 100.</p>
<ul style="list-style-type: none"> <li>• It is noted that a recent application for another childcare facility on Corner of Rae Road and Safety Bay Road has already been approved. More recently another application for development has been made for a Childcare facility which is diagonally adjacent the current proposal under discussion. The adjacent childcare facility would be in the mixed-use development proposed in the commercially zoned area near the Malibu Road BP Service Station.</li> </ul>	<p>The proposed development is consistent with Policy Statement 4.1 'Location' outlined in the City's <i>Local Planning Policy 3.3.5 - Child Care Premises</i> because it is appropriately located to provide additional child care places/services required in the Safety Bay/Shoalwater catchment area. Refer page 4 in our submission lodged with the City on 29 November 2023 for further information.</p>
<ul style="list-style-type: none"> <li>• Since the two development applications are being considered almost concurrently, and the having overlaps in their acoustic emissions footprints the proposed childcare facility developments both affect the same residents. These two proposals therefore cannot be considered independently or without consideration of the combined effect of these proposed developments on the nearby residents. To consider each in isolation would be negligent of the Council's DAP, the Council, and also the future consideration by the JDAP should also take this into account.</li> </ul>	<p>Following a review of the Environmental Noise Assessment prepared by Lloyd George Acoustics for the proposed development at Lot 100, Herring Storer confirmed that the cumulative noise from both child care centres received at neighbouring residences would not result in an exceedance of the assigned noise levels. Therefore, both proposed child care centres are compliant with the requirements of the <i>Environmental Protection (Noise) Regulations 1997</i>.</p>

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<ul style="list-style-type: none"> <li>Proximity of proposed crossover to childcare carpark to BP Petrol Station Entrance and Malibu/Safety Bay Road Roundabout increases issues with traffic flow and potential for accidents particularly from vehicles Eastbound on Safety Bay Road turning left onto Malibu Road. Considering the future proposed re-development including commercial, residential and licenced premises with multiple crossovers opposite this creates additional concerns.</li> </ul>	<p>The conclusion outlined in the updated Traffic Impact Statement (TIS) states that the proposed child care premises will not be adversely impact the existing local road network. In making this conclusion, the TIS has considered the existing service station and the future development at Lot 100.</p>
<ul style="list-style-type: none"> <li>There is little difference between the original proposal and the current proposal except the layout is flipped to put the carpark and entrance closer to the Safety Bay Road roundabout, increasing the risk of traffic accidents. The 'flipping' of the Childcare and Carpark as revised, makes this even more hazardous and reduces the line of sight from the roundabout to the crossover even further.</li> </ul>	<p>The conclusion outlined in the updated Traffic Impact Statement (TIS) states that the proposed child care premises will not be adversely impact the existing local road network. In making this conclusion, the TIS has considered the existing service station and the future development at Lot 100.</p> <p>Furthermore, the flipped design of the proposed development also results in an improved outcome from an acoustic perspective.</p>
<ul style="list-style-type: none"> <li>The proximity of the proposed childcare to the Malibu Road BP Petrol station remains a concern. It is noted the assessment has been amended to include the Hi-Flow Diesel bowser that is in closest proximity to the proposed childcare location. The emissions map showing benzene concentrations still shows that this overlaps the proposed childcare site and outdoor play areas.</li> </ul>	<p>The conclusions outlined in the updated Emissions Impact Assessment (EIA) state that the pollutant emissions predicted at the proposed child care premises are less than the exposure limits in ambient air. Therefore, the risk of exposure at this sensitive receptor location is low.</p>
<ul style="list-style-type: none"> <li>Sensitivity to Noise is further increased due to the low background noise and beachside ambience.</li> </ul>	<p>The conclusions outlined in the Environmental Acoustic Assessment (EAA) state that the proposed child care premises complies with all the relevant noise requirements. Therefore, the noise generated by the proposed development will not adversely impact the existing amenity of neighbouring properties. The proposed is compliant with the relevant noise requirements at all times of the day, as outlined within the EAA. Therefore, the proposed development will not adversely impact the existing amenity of neighbouring properties.</p>



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<ul style="list-style-type: none"> <li>• The Proposed Childcare will create a General increase in Night-time (Early Morning) and Daytime noise levels in addition to these existing noise levels and disturbances, causing further loss of peaceful beachside ambience. No consideration has been made in the Environmental Acoustic Assessment for combined effects of noise generated from the proposed childcare premises, nor any of the existing noise disturbances aside from ambient traffic.</li> </ul>	<p>Refer above.</p>
<ul style="list-style-type: none"> <li>• There is also a current mixed used development proposal on Corner of Safety Bay and Malibu Road adjacent the BP, which also includes a proposed childcare facility diagonally adjacent this current proposed facility which has an overlapping acoustic emissions footprint affecting the same nearby residences. Noting one of these facilities is in a commercial area, whilst the current proposal under discussion is in a residential area. This scenario further highlights how critical it is to carefully consider the effect on residents, of such a development in a residential area and the total combined effect of noise and disturbances from all sources.</li> </ul>	<p>Refer above regarding noise.</p> <p>Furthermore, a 'child care premises' is a discretionary use in the 'Residential' Zone under the provisions of the City's Local Planning Scheme No. 2 (LPS 2).</p>
<ul style="list-style-type: none"> <li>• Garbage and Recycling from the Site is stored immediately adjacent to the rear boundary of the proposed centre. The concentration of waste storage is more than comparable residential premises. Aside from potential smell and flies associated with the garbage, the proximity of the waste storage is in close proximity to nearby households. This is an additional noise source during normal access, and creates a larger additional noise disturbance on collection due to the number of bins compared to a typical residence.</li> </ul>	<p>The waste generated by the proposed development will be managed in accordance with the Waste Management Plan (WMP). The bin storage area will be maintained and cleaned as needed to ensure there are no odours or pests.</p> <p>Further to the above, waste generation in childcare centers is a common aspect across all types of operations that are adjoining or nearby households. The WMP ensures that waste is handled responsibly and disposed of in a way that considers the expected generation of waste. There is a commitment by the developer and operator to adopt appropriate management strategies to help minimize any noise, odours and disturbances associated with this activity.</p>
<ul style="list-style-type: none"> <li>• Additional load on the local sewer system and potential consequences of blockages</li> </ul>	<p>Any necessary infrastructure upgrades will be identified during the detailed</p>

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etc could have large impact on neighbouring properties.	design stage. The upgrades will then be carried out as part of the development.
<ul style="list-style-type: none"> <li>No mention has been made in the application or associated attachments in relation to the proposed means of dealing with carpark runoff or drainage.</li> </ul>	A Stormwater Management Plan will be prepared by a suitable qualified consultant at detailed design stage. Refer above and page 1 of our 29 November 2023 submission with the City.
<ul style="list-style-type: none"> <li>The perceived demand for childcare in the area is understood, however noting there are a number of applications for childcare premises in the area, some of which have recently been approved, it is felt that the demand expressed in the application is overstated, and does not take into account the known future competing developments, and increased number of places available.</li> </ul>	<p>The proposed development is consistent with Policy Statement 4.1 'Location' outlined in the City's <i>Local Planning Policy 3.3.5 – Child Care Premises</i> because it is appropriately located to provide additional child care places/services required in the Safety Bay/Shoalwater catchment area. Also refer page 4 in our submission lodged with the City on 29 November 2023.</p> <p>In addition to the points raised in our submission with the City, we recognise the recent productivity commission report undertaken by the Federal Government which highlights accessibility issues nationwide to child care services. The report encourages further places to be created to allow children aged 0-5 at least 30 hours of care a week to allow parents to go back into the workforce. In this regard, there is continued demand for new child care centres in this locality.</p>
<ul style="list-style-type: none"> <li>The proposed development is entirely within an area zoned residential, and is not consistent with, and does not improve the amenity of the area. It has the potential to severely impact the habitability of nearby homes.</li> </ul>	A 'child care premises' is a discretionary use in the 'Residential' Zone under the provisions of the City's Local Planning Scheme No. 2 (LPS 2). The proposed development does not adversely impact the existing residential amenity of the locality.
<ul style="list-style-type: none"> <li>The proximity of the proposed development is immediately adjacent to the full length of the boundary line of a residential lot. The proposed building has zero setback from this boundary, making the proposed building, carparks and play areas within metres of living areas and bedrooms.</li> </ul>	The proposed child care premises directly abuts the north western boundary of the subject site for a length of only 11.85m. This is compliant with the Residential Design Codes (R-Codes) as the entire length of this boundary is 40.02m. A single house could be constructed at the subject site in the same manner and not require Development Approval.

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<ul style="list-style-type: none"> <li>The proposed building and play area is directly adjacent, with direct line of sight and sound propagation to the first-floor windows (front bedrooms) of the adjoining residential homes. The bulk of the fence and building adjacent the boundary will significantly affect the morning sunlight from the east to front, side and rear yards.</li> </ul>	<p>The proposed development is a single storey building and is compliant with the relevant setback and solar access requirements of the R-Codes. Therefore, the proposed development will not prohibit solar access onto the neighbouring properties.</p>
<ul style="list-style-type: none"> <li>The outdoor play area extends to the rear of the proposed development site, and has line of sight and direct sound propagation to the front first floor bedrooms of adjoining residential homes.</li> </ul>	<p>The conclusions outlined in the EAA state that the proposed child care premises complies with all the relevant noise requirements. Therefore, the noise generated by the proposed development will not adversely impact the existing amenity of neighbouring properties. The proposed is compliant with the relevant noise requirements at all times of the day, as outlined within the EAA. Therefore, the proposed development will not adversely impact the existing amenity of neighbouring properties.</p>
<ul style="list-style-type: none"> <li>The carpark is adjacent residential homes. Carpark chatter, vehicle noise, impulse, vibration, ground borne noise, and vehicle emissions will severely impact the privacy and liveability of residents. The radiated heat from the carpark with prevailing sea breeze, and particularly easterly winds will make rear outdoor areas significantly less comfortable in summer.</li> </ul>	<p>Also refer the additional advice provided by EAQ Consulting which is contained in Attachment One of our 29 November 2023 submission to the City.</p>
<ul style="list-style-type: none"> <li>The proposed operating hours of the centre from 06:30 to 18:30, 5 days a week, all year round would severely impact the amenity and the surrounding neighbourhood, pets would also be affected with surrounding dog barking increased due to the numerous and continuous close proximity disturbances.</li> </ul>	<p>The proposed development is consistent with the hours of operation restrictions outlined in the City's <i>Local Planning Policy 3.3.5 - Child Care Premises</i></p>
<ul style="list-style-type: none"> <li>Additionally, it must be noted that residents work atypical hours, often outside the hours of operation of the proposed development, making their rest hours within the operating times of the centre. The potential reduction in quality of rest during the operating times of the proposed centre cannot be overstated. This is a residential area, residents should be considered above any proposed commercial premises in the residential area.</li> </ul>	<p>Discretionary use – not a valid argument.</p>

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<ul style="list-style-type: none"> <li>The Environmental Acoustic assessment submitted, considers the various sources of noise individually, some of which are at the allowable upper limits. The assessment does not consider the combined effect of these, which together with the number of noise events accumulate to an intolerable level of noise and number of noise impulses over a 12 hour duration.</li> </ul>	<p>The noise levels were assessed individually for the following reasons:</p> <ul style="list-style-type: none"> <li>Noise levels are logarithmic and given the resultant levels, one does not contribute to the other.</li> <li>One of the main noise sources being the outdoor play is not present during the night period, which is the critical period for the other noise sources.</li> <li>If you combined the car park noise with the noise generated from the car door, the noise from the car door closing would no longer be impulsive and complies with the assigned night period noise level.</li> </ul>
<ul style="list-style-type: none"> <li>The proposed 1.8m high Colourbond fence would provide limited shielding and insignificant reduction in noise levels both at the front and rear residential properties and may add additional characteristics to the noise with potential reverberation and vibration of the fencing material depending on the vehicles and their proximity to the fencing.</li> </ul>	<p>The conclusions outlined in the EAA state that the proposed child care premises complies with all the relevant noise requirements. Therefore, the noise generated by the proposed development will not adversely impact the existing amenity of neighbouring properties. The proposed is compliant with the relevant noise requirements at all times of the day, as outlined within the EAA. Therefore, the proposed development will not adversely impact the existing amenity of neighbouring properties.</p>
<ul style="list-style-type: none"> <li>The proposed bitumen carpark could also potentially generate more noise than a concrete carpark. There are also effects from increased heat and radiated heat in summer, and drainage concerns for the carpark itself.</li> </ul>	<p>There is no evidence that different materials in the carpark would generate additional noise. .</p>
<ul style="list-style-type: none"> <li>There are further disturbances and security concerns if the carpark is accessible on nights and weekends, as it will be used by beachgoers and for parking at community events, and to make up the shortfall of parking at the proposed mixed use development across the road. Also carpark and building lighting will add additional light pollution and light intrusion.</li> </ul>	<p>CCTV will be installed as part of the proposed development. The locations of the CCTV infrastructure will be confirmed at detailed design stage.</p>
<ul style="list-style-type: none"> <li>The noise of vehicles slowing and accelerating for the nearby roundabout currently experienced will be more intense with vehicles frequently entering and leaving the carpark of the proposed childcare facility. The traffic assessment indicates the volume of vehicle visits to the childcare premises</li> </ul>	<p>The TIS states that the proposal will generate approximately 47 vehicle trips during the peak hour. The conclusions outlined in the TIS clearly state that the proposed child care premises complies with all the relevant traffic and parking requirements. Therefore, the proposed</p>



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would be approximately 70% of the traffic experienced at the neighbouring BP service station. This has not been considered in the traffic assessment in any way.	child care premises will not be adversely impacted by (or adversely impact) the existing local road network.
<ul style="list-style-type: none"> <li>Consider the overall effect this will have on our neighbourhood, our neighbours, with the additional persistent disturbances this proposal could create in the area. Consideration also needs to be made that future re-development in the vicinity will further compound the noise effects, and increase the duration and regularity of disturbances to residents in the area.</li> </ul>	Refer additional traffic advice regarding the proposed development at Lot 100 outlined in our 29 November 2023 submission with the City.
<ul style="list-style-type: none"> <li>There will be a need to slow down the Traffic around that area. Also very hard to cross road if elderly so pedestrians crossing or similar on Malibu Road and Safety Bay Road to be considered</li> </ul>	The conclusion outlined in the updated Traffic Impact Statement (TIS) states that the proposed child care premises will not be adversely impact the existing local road network. In making this conclusion, the TIS has considered the existing service station and the future development at Lot 100.
<ul style="list-style-type: none"> <li>There is currently a proposal opposite/across the road from this proposed childcare centre. This proposal is further away from the service station and residential homes.</li> </ul>	The proposed development is consistent with Policy Statement 4.1 'Location' outlined in the City's <i>Local Planning Policy 3.3.5 - Child Care Premises</i> because it is appropriately located to provide additional child care places/services required in the Safety Bay/Shoalwater catchment area. Refer page 4 in our submission lodged with the City on 29 November 2023 for further information.
<ul style="list-style-type: none"> <li>Both proposals will add greatly to the additional concerns - traffic congestion, traffic bottlenecking and increased risk to pedestrians seeking to cross the road to access the beach and park areas.</li> </ul>	The conclusion outlined in the updated Traffic Impact Statement (TIS) states that the proposed child care premises will not be adversely impact the existing local road network. In making this conclusion, the TIS has considered the existing service station and the future development at Lot 100. Also refer the additional traffic advice provided by

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	Shawmac which is outlined in our 29 November 2023 submission to the City.
<ul style="list-style-type: none"> <li>• Petrol station health and safety concerns have been previously reviewed and noted by residents and the Council for this proposal. There is no change.</li> </ul>	The conclusions outlined in the updated Emissions Impact Assessment (EIA) state that the pollutant emissions predicted at the proposed child care premises are less than the exposure limits in ambient air. Therefore, the risk of exposure at this sensitive receptor location is low.
<ul style="list-style-type: none"> <li>• Concur with other residents' concerns on the negative daily impacts that will occur.</li> </ul>	As previously mentioned, the proposed development will not cause an adverse impact on the adjoining properties.
<ul style="list-style-type: none"> <li>• The current quietude and ambiance of being able to listen to the ocean cannot be quantified and will be destroyed due to the variable noises from such a centre. For example, the number of people/children, voices from conversation, crying, yelling, laughter, car doors and car engine noise and so on. At the Council's Planning meeting a resident played a recording of a local day care centre. The noise was so loud it was hard to understand how this noise level could be ok for residents to hear daily.</li> </ul>	The conclusions outlined in the EAA state that the proposed child care premises complies with all the relevant noise requirements. Therefore, the noise generated by the proposed development will not adversely impact the existing amenity of neighbouring properties. The proposed is compliant with the relevant noise requirements at all times of the day, as outlined within the EAA. Therefore, the proposed development will not adversely impact the existing amenity of neighbouring properties.
<ul style="list-style-type: none"> <li>• Residents may likely feel they have to shut their windows and close external doors that usually allow the sea breeze in to cool their homes.</li> </ul>	As previously mentioned, the proposed development will not cause an adverse impact on the adjoining properties.
<ul style="list-style-type: none"> <li>• This is an established residential area. Many residents have lived in the area for years and chose the location due to its location to the beach, and the fact that it is zoned for housing.</li> </ul>	<p>A 'child care premises' is a discretionary use in the 'Residential' Zone under the provisions of the City's Local Planning Scheme No. 2 (LPS 2).</p> <p>Furthermore, the proposed development is consistent with Policy Statement 4.1 'Location' outlined in the City's <i>Local Planning Policy 3.3.5 - Child Care Premises</i> because it is appropriately located to provide additional child care places/services required in the Safety Bay/Shoalwater catchment area. Refer page 4 in our submission lodged with the City on 29 November 2023 for further information.</p>

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<ul style="list-style-type: none"> <li>• Traffic congestion already occurs at the roundabout, one block from the proposed centre. This is because it's a main artery during peak hours, funnelling workers to and from work. This will dramatically increase and stem the flow of traffic with the proposal.</li> </ul>	<p>The conclusion outlined in the updated Traffic Impact Statement (TIS) states that the proposed child care premises will not be adversely impact the existing local road network. In making this conclusion, the TIS has considered the existing service station and the future development at Lot 100.</p>
<ul style="list-style-type: none"> <li>• The increased traffic, decreasing traffic flow will make pedestrian crossing to recreational beach and parks across the road extremely difficult, along with increased difficulty for vehicles on exit roads.</li> </ul>	<p>Refer above.</p>
<ul style="list-style-type: none"> <li>• The roundabout on safety Road/Malibu Rd intersection will likely become gridlocked with cars entering and exiting the proposed centre and we believe this will likely be an increase safety hazard to both pedestrians and traffic.</li> </ul>	<p>Refer above.</p>
<ul style="list-style-type: none"> <li>• Residents with A-typical work hours will likely have their sleep and thus their health negatively impacted.</li> </ul>	<p>As previously mentioned, the proposed development will not cause an adverse impact on the adjoining properties.</p>
<ul style="list-style-type: none"> <li>• The consequence of reduced amenity and the impacts may have a negative impact on residents well-being and on their financial stability and security and into retirement. Whilst the financial impact to residents isn't a considered variable with such proposals, we think in a mature and inclusive way when trying to weigh up the balance between commercial and residential co-existence this is very important, especially when it maps to social and health outcomes of residents.</li> </ul>	<p>There is no evidence that the proposed child care premises will devalue the existing residential area. Further, there is no evidence to suggest that the proposed child care premises will adversely impact the 'social and health' outcomes of residents in the locality. Child care is considered an essential community service and encourages young families to consider this area for purchasing a home, which will then add to the social fabric by bringing a more diverse range of families and households to the locality.</p>
<ul style="list-style-type: none"> <li>• In the initial application image 3D - CHILDCARE PERSPECTIVE 2 it shows the fence around the play area to be open fencing. It also sates in the planning report that Clause 4.6 'Design Considerations' in LPP 3.3.5 outlines the following: "Where a play area is located in the front setback area, fencing of the area should be of predominantly open construction to provide a safe playing area without closing the site</li> </ul>	<p>The EAA does not recommend the use of any solid material in the front fence in order to meet compliance. Therefore, the front fence can be and is proposed to be open. This will produce a better aesthetic outcome for children of the centre.</p>

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<p>in, casting shadows on the play area, or adversely affecting the residential streetscape". In the noise emission report it makes note of the use of Colourbond fencing as an acceptable type of fencing to use in a childcare centres for noise management purposes. Clarification needs to be made as to whether open fencing as above should be used or the Colourbond as referred to in the emissions report as each document contradicts each other in which is best and this needs to be clarified as open fencing could leave the emission report invalid.</p>	
<ul style="list-style-type: none"> <li>• Open fencing will allow for the sea breeze to blow through the play area and carpark carrying with it sound continuing into the surrounding houses and the open street area carrying with it the sounds from the playground and the children. Whilst the report says that <i>"From previous measurements, noise emissions from children playing does not contain any annoying characteristics"</i>. The noise of children playing can range from enjoyable laughter to screaming, crying, shouting and arguing which heard on a daily basis would definitely be considered by many as annoying at times. Many of the houses due to the location of the beach and the sea breeze are not climate controlled rather rely on being open in order to take advantage of the sea breeze for cooling and fresh air, with windows and doors secured open for the majority of summer day and night. The concern is that the additional sounds of 60 children and their parent's vehicles will also carry into the houses and those of our surrounding neighbours affecting our quality of life. This also doesn't take into account the vehicle fumes which will also carry on the sea breeze into neighbouring houses which will be significantly increased due to the drop off and pick up of 60 children and the additional 11 vehicles of the staff thus potentially up to 71 vehicles starting their engines, plus those of any delivery and service vehicles, twice a day, with their sound and fumes adding to the emissions received.</li> </ul>	<p>The conclusions outlined in the EAA state that the proposed child care premises complies with all the relevant noise requirements. Therefore, the noise generated by the proposed development will not adversely impact the existing amenity of neighbouring properties. The proposed is compliant with the relevant noise requirements at all times of the day, as outlined within the EAA. Therefore, the proposed development will not adversely impact the existing amenity of neighbouring properties.</p>



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<ul style="list-style-type: none"> <li>It is also common especially with parents of young children that vehicles are started or left running for a period of time to adjust the temperature and allow for air conditioning to take effect before they then proceed to clip children into child restraints. This whole length of time allowing additional emissions to impact on surrounding neighbouring properties.</li> </ul>	<p>The NSW RTA (now RMS) <i>Guide to Traffic Generating Developments</i> indicates that the average length of stay for vehicles at all child care centre types is 6.8 minutes. On this basis, the vehicles visiting the proposed development will not be left running for an extended period of time, and therefore, will not adversely impact any neighbouring properties from an emissions perspective.</p>
<ul style="list-style-type: none"> <li>Added to this you have the sound of up to 142 car doors being opened and closed each day and then potentially 71 car boots on top of this as well as majority of vehicles will have a driver and at least one passenger.</li> </ul>	<p>The conclusions outlined in the EAA state that the proposed child care premises complies with all the relevant noise requirements. Therefore, the noise generated by the proposed development will not adversely impact the existing amenity of neighbouring properties. The proposed is compliant with the relevant noise requirements at all times of the day, as outlined within the EAA. Therefore, the proposed development will not adversely impact the existing amenity of neighbouring properties.</p>
<ul style="list-style-type: none"> <li>Whilst the report considers this to be of little impact due to the loop hole as “the bitumised area would be considered as a road, thus noise relating to motor vehicles is exempt from the Environmental Protection (Noise) Regulations 1997” , considering whether or not it is a bitumised area, the impact to residents is considerable.</li> </ul>	<p>Refer above.</p>
<ul style="list-style-type: none"> <li>The potential of losing the existing natural amenity to be replaced by noisy children, car doors and the sounds of engines to be a negative impact to the quality of life.</li> </ul>	<p>Refer above.</p>
<ul style="list-style-type: none"> <li>It is noted that the emission report focussed solely on the impact emissions would be upon the childcare centre and not from the centre and its vehicles to that of neighbouring properties.</li> </ul>	<p>There is no evidence that vehicles visiting the proposed development will generate significant emissions to impact on the adjoining properties. No further assessment is required.</p>
<ul style="list-style-type: none"> <li>In the report it states “<i>Due to its location at the subject site and how it has been designed, the proposed development will not have any adverse impacts on the surrounding residential properties or the existing road network.</i>” (Page 14 of the Planning report) We believe this to be</li> </ul>	<p>The conclusion outlined in the updated Traffic Impact Statement (TIS) states that the proposed child care premises will not be adversely impact the existing local road network. In making this conclusion, the TIS has considered the</p>

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incorrect. At times crossing Safety Bay Road to access the beach can be extremely difficult due to the sheer volume of traffic that uses the road especially at peak periods when Navy personnel are entering and exiting the base and driving along Safety Bay Road.	existing service station and the future development at Lot 100.
<ul style="list-style-type: none"> <li>Previously, this increased traffic load led to the installation of pedestrian islands in multiple locations along the Safety Bay foreshore in order to deal with the increased traffic load and pedestrian safety. The childcare centre will be one property back from Safety Bay Road at a busy roundabout intersection and therefore it is significantly likely to have an increased traffic load impact on both pedestrians and road users of Safety Bay and Malibu roads.</li> </ul>	With regards to traffic generation, the development is estimated to generate 47 vehicle movements during the peak hour. According to Austroads guidelines, the theoretical capacity of an urban road with no kerbside parking is 900 vehicles per hour (vph) in each direction or 1,800vph for a two-lane, two-way road. 47vph is less than 3% of the theoretical mid-block capacity of the road.
<ul style="list-style-type: none"> <li>At times of school drop offs and pickups the Malibu Road and Read Street intersection has congestion leading to traffic delays and local roads users creating 'rat runs' in neighbouring streets to avoid this. It would be reasonable to assume that the increased traffic from the Childcare centre will add to this problem and a continuation of more 'rat runs' along neighbouring roads. What will be done?</li> </ul>	Furthermore, Safety Bay Road is a Distributor A road and Malibu Road is a Distributor B road. Both of these roads are designed to carry high volumes of traffic and some congestion at intersections during peak hours is to be expected during peak periods. It should be noted that the TIS concludes that the proposed development will not adversely impact the surrounding road network.
<ul style="list-style-type: none"> <li>It is noted that cleaners would attend the property outside of opening hours. In no reports has the concern of the additional noise this will bring been addressed. What impact will this have on both vehicle and cleaning noise outside of the acceptable noise limitation hours?</li> </ul>	The issue of cleaners attending the childcare centre after closing or right before close, is not generally considered material in the noise emissions reporting. This is because typically for a service of this size, it will be only 1 - 2 maximum cleaners attending after hours and all cleaning activity will be undertaken inside which will not adversely impact any of the surrounding residents.
<ul style="list-style-type: none"> <li>The planning report notes in section 2.1 that this is "an established residential area" yet fails to make a connection between the residents and the impact that this commercial operation will have.</li> </ul>	The proposed development is consistent with Policy Statement 4.1 'Location' outlined in the City's <i>Local Planning Policy 3.3.5 - Child Care Premises</i> because it is appropriately located to provide additional child care places/services required in the Safety Bay/Shoalwater catchment area. Refer page 4 in our submission lodged with the

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	City on 29 November 2023 for further information.
<ul style="list-style-type: none"> <li>A proposal which has been received for a child care premises as part of a mixed commercial development at Lot 100 (across the road from this proposal) is more fitting with the interests and community acceptance to approve a childcare premises in this location. We do not need two childcare centres across the road from each other. The commercial zoning is a more appropriate location.</li> </ul>	Refer above.
<ul style="list-style-type: none"> <li>This is already a very busy road with traffic generated by schools and shopping centre at the other side of Malibu Road, mornings and afternoons, and the busy roundabout on Safety Bay Road, which already causes a lot of congestion and traffic slowdown in this area, and with these developments we would have a lot of traffic jam all around.</li> </ul>	<p>The conclusion outlined in the updated Traffic Impact Statement (TIS) states that the proposed child care premises will not be adversely impact the existing local road network. In making this conclusion, the TIS has considered the existing service station and the future development at Lot 100.</p> <p>Also refer the additional traffic advice provided by Shawmac which is outlined in our 29 November 2023 submission with the City.</p>
<ul style="list-style-type: none"> <li>The community of this area consists mostly of elderly residents, many retirees who enjoy this peaceful place, and not being woken by noise levels starting at 6.30am until 6.30pm, every day 5 days a week. This is a residential area, so why can't it stay a residential area.</li> </ul>	<p>The proposed development is consistent with Policy Statement 4.1 'Location' outlined in the City's <i>Local Planning Policy 3.3.5 - Child Care Premises</i> because it is appropriately located to provide additional child care places/services required in the Safety Bay/Shoalwater catchment area. Refer page 4 in our submission lodged with the City on 29 November 2023 for further information.</p>
<ul style="list-style-type: none"> <li>The existing north eastern colourbond fence together with the 300mm raised height will not limit the noise transfer from child care centre play area to adjoining neighbours. The noise will be transferred through the fence medium. Sound absorption medium is necessary for noise reduction, not metal fences.</li> </ul>	<p>The conclusions outlined in the EAA state that the proposed child care premises complies with all the relevant noise requirements. Therefore, the noise generated by the proposed development will not adversely impact the existing amenity of neighbouring properties. The proposed is compliant with the relevant noise requirements at all times of the day, as outlined within the EAA. Therefore, the proposed development</p>

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	will not adversely impact the existing amenity of neighbouring properties.
<ul style="list-style-type: none"> <li>The garrison security fence across the front SE street frontage and NE portion of open fence between front building line and boundary will allow the full force of child and staff noise will permit pedestrian on the footpath to be exposed to noise generated. The garrison fencing is more suited to industrial premises located in an industrial zoned area, not infill within an established residential zone. The garrison fence will present as a correctional facility within the neighbourhood. Not the view residents want to see in this area.</li> </ul>	Refer above.
<ul style="list-style-type: none"> <li>The relocated carpark appears to be open 365 days x 24 hr days. Unfortunately this will quickly be established as a hangout for others without homes. The Rockingham beach suburbs have become popular with homeless (some with cars) people and tourists seeking free parking overnight. This could be an unwelcomed development in our neighbourhood.</li> </ul>	CCTV will be installed as part of the proposed development. The locations of the CCTV infrastructure will be confirmed at detailed design stage.
<ul style="list-style-type: none"> <li>The proposed time restricted car parking will be ineffective. What staff will police this? The restriction on the delivery bay for client turnaround is too small for any vehicle effective turn around.</li> </ul>	<p>The conclusion outlined in the updated Traffic Impact Statement (TIS) states that the proposed child care premises will not be adversely impact the existing local road network. In making this conclusion, the TIS has considered the existing service station and the future development at Lot 100.</p> <p>Also refer the additional traffic advice provided by Shawmac which is outlined in our 29 November 2023 submission with the City.</p>
<ul style="list-style-type: none"> <li>Elevation 1 (South East elevation) of the proposed building, at first glance appears to be an industrial style small office. All houses in Safety Bay and Malibu Roads are of conventional modern day residential appearance. The drawing "Child Care Centre Perspective" should include the garrison fence viewed at street level. This industrial style behind the garrison security fence provides an unattractive view along Malibu Road.</li> </ul>	The proposed design of the child care premises is consistent and harmonious with the surrounding residential development.
<ul style="list-style-type: none"> <li>As noted in the initial proposal documents "noted that vehicles approaching from the</li> </ul>	The conclusion outlined in the updated Traffic Impact Statement (TIS) states



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<p>SW will be travelling well below 60Km/Hr as they have just turned from Safety Bay Road". How do you measure "well below" when the legal speed limit is 60Km/Hr! Personally having crossed this intersection / round about many times a day, drivers are in a hurry. There is no tolerance or margin given by drivers entering or leaving this round about. Hence the SW minimum sight distance is not available to child care patrons especially during peak traffic periods.</p>	<p>that the proposed child care premises will not be adversely impact the existing local road network. In making this conclusion, the TIS has considered the existing service station and the future development at Lot 100.</p> <p>Also refer the additional traffic advice provided by Shawmac which is outlined in our 29 November 2023 submission with the City.</p>
<ul style="list-style-type: none"> <li>• The NE sight distance will be obscured on rubbish collection days especially with 8 rubbish bins stacked along Malibu Road. Please review sight distances as we believe this to be the source of much driver frustrations.</li> </ul>	<p>Refer above.</p>
<ul style="list-style-type: none"> <li>• Using the delivery bay to facilitate patron's car turn around needs further consideration. To expect patrons to turn their car around when car park is full using the end bay is impossible unless you do a 33 point turn! To ask patrons to reverse from car park onto Malibu Road would cause traffic frustrations to boil over.</li> </ul>	<p>Refer above.</p>
<ul style="list-style-type: none"> <li>• The proposed car parking time restrictions will be impossible to police by centre staff. The acoustic report based on this implied restriction will need reviewing.</li> </ul>	<p>The conclusion outlined in the updated Traffic Impact Statement (TIS) states that the proposed child care premises will not be adversely impact the existing local road network. In making this conclusion, the TIS has considered the existing service station and the future development at Lot 100.</p> <p>Also refer the additional traffic advice provided by Shawmac which is outlined in our 29 November 2023 submission with the City.</p>
<ul style="list-style-type: none"> <li>• The traffic report appears to candy coat the importance of how critical this aspect of depositing child at the centre during the daily peak traffic periods.</li> </ul>	<p>Refer above.</p>
<ul style="list-style-type: none"> <li>• The reference to times neighbouring residents will be exposed is incorrect. The centre opens 6.30am to 6.30pm, not a casual reference to "before 7am". The child care centre staff to be ready for 6.30am opening and children recieval would</li> </ul>	<p>The conclusions outlined in the EAA state that the proposed child care premises complies with all the relevant noise requirements. Therefore, the noise generated by the proposed development</p>

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necessitate opening and readying the centre earlier than 6.30am. This needs to be clarified and reconsidered in reporting.	will not adversely impact the existing amenity of neighbouring properties. The proposed is compliant with the relevant noise requirements at all times of the day, as outlined within the EAA. Therefore, the proposed development will not adversely impact the existing amenity of neighbouring properties.
<ul style="list-style-type: none"> <li>Estimated waste generated is based on 273m<sup>2</sup> child care centre. The building footprint stated throughout the proposal documents is 418m<sup>2</sup>. Please review and provide explanation regarding the different areas.</li> </ul>	As outlined in the WMP, the anticipated volume of refuse and recyclables is based on the floor area (m <sup>2</sup> ) of the Activity Rooms, Cot Room, Kitchen, Reception and Staff Room at the Childcare Centre – 273m <sup>2</sup> (the portion of the building which generates waste). The entire building area is approximately 418m <sup>2</sup> .
<ul style="list-style-type: none"> <li>Quote ex Proposal documents “The proposed child care centre will satisfy the guide line separation distance of 50m”. EPA Guidance for the Assessment of Environmental Factors, Separation Distances between Industrial and Sensitive land users, provides the definition of separation distance is quote “the shortest distance between the boundary of the area that may potentially be used by an industrial land use, and the boundary of the area that may be used by a sensitive land use”. The Table referenced for Buffer distance states 50m. The actual distance between boundaries is 30.79m. Non- compliance of such a delicate commodity as children should be avoided. This alone precludes the permission to operate the proposed child care centre.</li> </ul>	Refer additional advice provided by EAQ Consulting which is contained in Attachment One of our 29 November 2023 submission to the City.
<ul style="list-style-type: none"> <li>The building and car park storm water controls are important and need to be provided.</li> </ul>	A Stormwater Management Plan will be prepared by a suitable qualified consultant at detailed design stage. Refer above and page 1 of our 29 November 2023 submission with the City.
<ul style="list-style-type: none"> <li>The car park is far too close to the congested one lane round-a-bout of both Malibu and Safety Bay Road. The proposed construction is opposite the established BP garage driveway and car wash driveway exiting onto Malibu Road.</li> </ul>	The conclusion outlined in the updated Traffic Impact Statement (TIS) states that the proposed child care premises will not be adversely impact the existing local road network. In making this conclusion, the TIS has considered the existing service station and the future development at Lot 100.

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<ul style="list-style-type: none"> <li>There are already plans for construction of a tavern and shops behind the service station which will further endanger and worsen the problems as mentioned above.</li> </ul>	Refer additional traffic advice provided by Shawmac which is outlined in our 29 November 2023 submission with the City.
<ul style="list-style-type: none"> <li>Once cars attempt to enter the driveway of the said, up to 60 children,] child care centre, there will be a total traffic jam around the round-a-bout without any side roads to solve the problem.</li> </ul>	Refer above.
<ul style="list-style-type: none"> <li>Please be aware that the Navy personal use the Safety Bay Road extensively to get to the Garden Island Base.</li> </ul>	Refer above.
<ul style="list-style-type: none"> <li>Another childcare centre, if you include the proposal for the opposite development, this will cause traffic issues, with the access and egress of the current BP service centre and the roundabout . Many cars go down safety bay road at peak times servicing garden island and beyond. Side streets will become a rat run. What traffic mitigation is proposed so this and other developments don't affect the current residential amenity and local streets?</li> </ul>	<p>The conclusion outlined in the updated Traffic Impact Statement (TIS) states that the proposed child care premises will not be adversely impact the existing local road network. In making this conclusion, the TIS has considered the existing service station and the future development at Lot 100.</p> <p>Refer additional traffic advice provided by Shawmac which is outlined in our 29 November 2023 submission with the City.</p>
<ul style="list-style-type: none"> <li>The local traffic on Safety Bay Road and Malibu Rd have increased exponentially over the past couple years. This is a residential area, and placing a commercial operation such as a child care centre right in the middle of residence is unfair to the folk that both live in the immediate proximity and around the area.</li> </ul>	The proposed development is consistent with Policy Statement 4.1 'Location' outlined in the City's <i>Local Planning Policy 3.3.5 - Child Care Premises</i> because it is appropriately located to provide additional child care places/services required in the Safety Bay/Shoalwater catchment area. Refer page 4 in our submission lodged with the City on 29 November 2023 for further information.
<ul style="list-style-type: none"> <li>The proposed fence along the boundary is a height of 2.1 meters or 7 feet which is 300 mm (1foot) higher than the standard fencing in the area. If it is this high to rebound noise it will fail because its construction is colourbond steel and most likely amplify the noise. The height of the fence will have the effect on residents being "hemmed in".</li> </ul>	<p>The proposed fence in this location is compliant with the R-Codes.</p> <p>Furthermore, the conclusions outlined in the EAA clearly state that the proposed child care premises complies with all the relevant noise requirements. Therefore, the noise generated by the proposed child care premises will not adversely</p>

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	impact any existing neighbouring properties.
<ul style="list-style-type: none"> <li>The noise impacts from cars, children, and associated noises on or before 6-30 am to 6-30 pm 52 weeks a year will affect the living amenity</li> </ul>	Refer above.
<ul style="list-style-type: none"> <li>The garrison fence on Malibu Road, (Not in the elevation) is an industrial fence and would not stop noise it will look awful in a residential area</li> </ul>	The proposed design of the child care premises is consistent and harmonious with the surrounding residential development.
<ul style="list-style-type: none"> <li>The car park has not changed, 19 parking spaces 11 staff, van, leaves 7 bays to drop off up to 60 children and no turning area, does not tally up. Parents dropping off children will be verge parking at risk.</li> </ul>	The conclusions outlined in the TIS clearly state that the proposed child care premises complies with all the relevant traffic and parking requirements. Therefore, the proposed child care premises will not be adversely impacted by (or adversely impact) the existing local road network.
<ul style="list-style-type: none"> <li>A commercial 2 way crossover to a open car park can only invite homeless and free parkers not what is wanted or needed in a residential area and may cause trouble for close residents.</li> </ul>	CCTV will be installed as part of the proposed development. The locations of the CCTV infrastructure will be confirmed at detailed design stage.
<ul style="list-style-type: none"> <li>The EPA has set a distance of 50 meters from boundary to boundary because the fumes from the petrol/diesel are cancer causing and can have fatal outcomes. The boundary's between the petrol station and the proposed child care centre is only 31 meters.</li> </ul>	Refer additional advice provided by EAQ Consulting which is contained in Attachment One of our 29 November 2023 submission to the City.



**Applicant responses to APPENDIX A: Additional points in direct response to the items contained within the submission.**

Document	Applicant Response
Development Application Report	<ul style="list-style-type: none"> <li>- The proposed child care centre is a discretionary use.</li> <li>- The setbacks have been assessed as per the R-Codes and are compliant.</li> <li>- The proposed development is a single storey building and is compliant with the relevant setback and solar access requirements of the R-Codes. Therefore, the proposed development will not prohibit solar access onto the neighbouring properties.</li> <li>- Our responses to all the other comments in Appendix A are outlined in the 'summary of submissions' document.</li> </ul>
Environmental Acoustic Assessment	<ul style="list-style-type: none"> <li>- All typing errors have been amended.</li> <li>- Department of Water and Environmental Regulation (DWER) did not raise any issues with the bitumen carpark.</li> <li>- The updated Environmental Acoustic Assessment (EAA) has considered all the requirements/provisions that are outlined in the Environmental Protection (Noise) Regulations 1997.</li> <li>- The conclusions outlined in the updated EAA clearly state that the proposed child care premises complies with all the relevant noise requirements. Therefore, the noise generated by the proposed child care premises will not adversely impact the existing neighbouring properties.</li> <li>- Our responses to all the other comments in Appendix A are outlined in the 'summary of submissions' document.</li> </ul>
Emissions Impact Assessment	<ul style="list-style-type: none"> <li>- The conclusions outlined in the Emissions Impact Assessment (EIA) and the additional advice contained in our 29 November 2023 submission with the City clearly state that the pollutant emissions predicted at the proposed child care premises are less than the exposure limits in ambient air. Therefore, the risk of exposure at this sensitive receptor location is low.</li> </ul>
Transport Impact Assessment	<ul style="list-style-type: none"> <li>- The conclusions outlined in the updated Transport Impact Statement (TIS) clearly state that the proposed child care premises complies with all the relevant traffic and parking requirements. Therefore, the proposed child care premises will not be adversely impacted by (or adversely impact) the existing local road network.</li> </ul>

**Applicant responses to APPENDIX A: Additional points in direct response to the items contained within the submission.**

	<ul style="list-style-type: none"> <li>- The proposed development is estimated to generate 47 vehicle movements during the peak hour. According to Austroads Guidelines, the theoretical capacity of an urban road with no kerbside parking is 900 vehicles per hour (vph) in each direction or 1,800vph for a two-lane, two-way road. 47vph is less than 3% of the theoretical mid-block capacity of the road.</li> <li>- Safety Bay Road is a Distributor A road and Malibu Road is a Distributor B road. Both of these roads are designed to carry relatively high volumes of traffic and some congestion at intersections during peak hours is to be expected during peak periods.</li> <li>- Regarding the proposed development at Lot 100 across the road, the updated TIS concludes the following: <ul style="list-style-type: none"> <li>o The southern crossover opposite the child care access is an exit only crossover from the service station car wash. According to the BP site, the car wash cycle takes approximately 6 minutes and so this crossover will generate minimal traffic.</li> <li>o The northern crossover opposite the child care access will be retained/modified for exit movements from the adjoining service area with a loading bay and 6 staff bays.</li> <li>o The Transport Impact Assessment for the development of Lot 100 prepared by Transcore estimates that this exit crossover will generate 9 movements during the morning peak hour and 16 movements during the afternoon peak hour. This estimate is considered to be high as there are only 6 staff bays along this carriageway and drivers in other parking areas are unlikely to choose this crossover over the main access points. Even if this amount of traffic was correct, it is low and unlikely to create a major safety issue along with the child care crossover and car wash crossover.</li> <li>o The alternative/original location would have the child care crossover opposite one of the main access points to Lot 100 which would be less safe compared to the current location.</li> <li>o The main service station crossovers do not coincide with the child care access and there are also two crossovers to the service station on Safety Bay Road.</li> </ul> </li> </ul>
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**Applicant responses to APPENDIX A: Additional points in direct response to the items contained within the submission.**

	<ul style="list-style-type: none"> <li>○ The proposed child care centre at 4-6 Malibu Road only has approximately 40m of frontage to locate the access. By comparison, Lot 100 Safety Bay Road has approximately 95m of frontage along Malibu Road as well as frontage to Safety Bay Road and therefore the developer of Lot 100 has much more room to coordinate their access points around other sites.</li> <li>○ The proximity to the roundabout also means that vehicles along Malibu Road are likely to be travelling below the speed limit as they will be slowing down towards the roundabout, still gaining speed after leaving the roundabout or slowed down if there is queueing at the roundabout. The lower speeds will reduce the risk of conflicts at the various crossovers.</li> </ul>
Conflicts of Interest	<ul style="list-style-type: none"> <li>- The current landowner sought approval for a subdivision of at the subject site, which was subsequently approved.</li> <li>- The subdivision approval has not been implemented.</li> <li>- The approval of the subdivision will not impact on the potential for a development approval for the proposed development to be issued.</li> </ul>

17 January 2024

SLR Ref No.: 640.031093.00001-L01-v1.0-20240117.docx

Attention: Casey Gillespie  
City of Rockingham  
Civic Boulevard  
Rockingham WA

SLR Project No.: 640.031093.00001

**RE: Proposed Child Care Centre, Malibu Road, Safety Bay  
Service Station Air Quality Impact Assessment Peer Review**

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## **Introduction**

SLR was engaged by City of Rockingham to conduct a peer review of an air quality impact assessment report of the potential impacts from an existing service station on a proposed child care premises (CCP). In particular, the peer review was required to assess whether the modelling data presented was acceptable to justify the CCP being located within the generic separation distance for service stations as outlined in “*Separation Distances between Industrial and Sensitive Land Uses*” (GS3) (WA EPA, 2005). To do so, this review considers the appropriateness of the assessment methodology (in the context of relevant WA legislation and guidelines), its correct execution, and whether the impact assessment indicates that relevant air quality criteria are likely to be met at the proposed CCP as a result of the existing service station.

## **Review Methodology**

SLR has reviewed EAQ Consulting Pty Ltd “*Emissions Impact Assessment of BP Service Station adjacent to Proposed Child Care Centre*”, reference number EAQ-23016, dated December 2023 (the Assessment), which presents an impact assessment of an existing service station (the Service Station) on a CCP proposed for to be developed at 4 & 6 Malibu Road, Safety Bay, WA. The Assessment includes:

- consideration of relevant legislation and guidelines
- identification of relevant air quality indicators and corresponding appropriate air quality criteria
- 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 Service Station at the proposed CCP
- assessment of GLCs against criteria and conclusion as to whether there is a risk of adverse health impacts for the proposed CCP resulting from emissions to air from the existing service station.

These elements of the Assessment are reviewed and discussed below.

## **Consideration of Relevant Legislation and Guidelines**

GS3 nominates separation distances for three types of service stations as follows:

- premises operation during normal operating hours, i.e. Monday to Saturday, 7:00am to 7:00pm – 50 m



- freeway service centre (24-hour operations) – 100 m
- all other 24-hour operations – 200 m.

SLR understand that the Service Station operates seven days a week, 6:00am to 10:00pm, and therefore does not strictly meet the GS3 normal operating hours of the first type of service station. However, as the Assessment indicates, business operating hours are now different to those of nearly 20 years ago when GS3 was issued, and indeed the proposed CCP operating hours are to be Monday to Friday 6:00 am to 6:00 pm, effectively limiting its exposure as a sensitive receptor to the Service Station to within the GS3 hours. SLR therefore agree that the 50 m separation distance is appropriate in this instance.

The Assessment asserts that the proposed CCP is to be located greater than 50 m from the Service Station's nearest refuelling bowser. GS3 is silent on exactly how to measure the distance between industrial and sensitive premises, however, corresponding Victorian and South Australian separation distance guidance directs that the distance should be measured from the industry's activity boundary (in this case the nearest bowser or tank vent) to the property boundary or the sensitive receptor. The Assessments assertion that the separation distance is met in this way is therefore reasonable.

As the separation distance is met, strictly speaking GS3 does not require further assessment, however, the Assessment reasonably proceeds to conduct a site-specific assessment "*for the purposes of proper and orderly planning*".

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.

SLR notes that 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 "*Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*" (NSW EPA, 2022) and "*Guideline For Assessing and Minimising Air Pollution in Victoria*" (EPAV, 2022) each include a 1-hour average benzene criterion, which SLR considers more appropriate in the context of the proposed CCP.

The NSW EPA (2016) criterion of 29  $\mu\text{g}/\text{m}^3$  is sourced 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), equivalent to 580  $\mu\text{g}/\text{m}^3$ . 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 would benefit from adopting the EPA Victoria 1-hour criterion of  $580 \mu\text{g}/\text{m}^3$  and the 24-hour criterion of  $29 \mu\text{g}/\text{m}^3$  to permit an assessment of the predicted short-term impacts of benzene on the proposed CCP. SLR consider these potential short-term impacts to be relevant, and necessary, to enable the risk of adverse health impacts for the proposed CCP to be evaluated.

## Existing Conditions

Existing conditions that may affect air quality, including nearby industry, meteorological conditions (diurnal and/or seasonal prevailing wind directions) and topography are not discussed. SLR would expect this information to be included an air quality impact assessment of this nature, especially for a situation on the coast like this, where presumably there is likely will be on-shore/off-shore diurnal winds that would influence the transport of Service Station emissions.

Existing background concentrations of the pollutants are not discussed or included in the assessment. Existing road traffic is likely to contribute to background, however, SLR would consider it appropriate to assume that these concentrations are unlikely to be significant relative to the potential impacts from the existing service station.

## Emissions Estimation

The Assessment assumes the throughput of the Service Station is comparable to typical 3-bowser service stations and use a recognised methodology for estimating emissions of VOCs from various fuel related activities at the Service Station including filling of underground storage tanks (UST) and vehicle refuelling. The Assessment assumes that vapour recovery VR2 is absent from the Service Station, which SLR considers to be an appropriate conservative element of the emissions estimation.

SLR consider 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 of fuel to the UST, which may occur anytime between 6:00 am and 5:00 pm, Monday to Friday is handled by incrementally changing the hour at which a delivery occurs day by day. SLR notes that the resulting number of meteorological condition under which this emission is modelled ( $2.4\text{h} \times 5\text{d} \times 52\text{w} \times 2\text{y} = 1,248\text{h}$ ) will be significantly less than the possible  $11\text{h} \times 5\text{d} \times 52\text{w} \times 2\text{y} = 5,720$  combinations. Appendix A of the Assessment indicates that the hourly emission rate from the UST vent stack is less than 10% of the peak hourly bowser emissions rate and therefore potentially not critical. However, while the consideration of the UST filling is likely to be conservative with respect to the resulting predicted annual average and 24-hour average GLCs, the maximum 1-hour average GLCs may be under represented.

The Assessment indicates that a separate model run was assessed assuming that the UST is filled every hour between 6:00 am and 5:00 pm to assess the maximum 1-hour average GLCs, however it is not clear whether this model run also included the bowser emissions, as it should, to provide the cumulative impacts.

The Assessment assumes vapour recovery levels VR1 (control equipment which aims to capture petrol vapours before they enter the atmosphere) are implemented on the storage and bowser refuelling points, but does not state what numerical level of control (e.g. percentage) of vapour emissions this supposes. Additionally, the emissions estimation presented in Appendix A refers to VR2 for bowser (and "10% losses") and VR1 for UST (and "10% losses"). It is not clear that the emission rates have been calculated correctly.



## 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 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 provides a brief summary of the values used to describe the surface characteristics (albedo, Bowen ratio and surface roughness length) used in the model. The source of the values for “Open Water” and “Urban Developed” is not stated, however SLR assume they may be software default values. The choice of surface roughness length in particular can strongly affect the degree of dispersion and resulting predicted GLCs and is therefore an important consideration. SLR understand that there is only one Australian guidance document for the construction of meteorological files for AERMOD, EPA Victoria’s “Construction of input meteorological data files for EPA Victoria’s regulatory air pollution model (AERMOD)” (EPAV, 2013). This guidance document attributes a surface roughness length of 1 m to “high-density residential”. SLR would consider the area around the proposed CCP to be “low-density residential”, for which the document provides a surface roughness length of 0.4 m. While there is room for interpretation here, SLR would recommend that a surface roughness length of 0.4 m would be more suitable, and certainly more conservative. However, because it is only the surface roughness length upwind of the source that affects the downwind dispersion in AERMOD, the impacts at the proposed CCP will be mostly unaffected by this change. That is, the land cover surface roughness length upwind of the Service Station in this instance is that of “Open Water” (0.0001 m). The effect of the different surface roughness lengths chosen can clearly be seen in the model output in Figure 4-2 of the Assessment, in particular, the lop-sided shape of the 0.2 µg/m<sup>3</sup> isopleth.

SLR note that according to EPAV (2013) and US EPA’s “AERMOD Implementation Guide” (US EPA, 2015), the albedo and Bowen ratio should not be sector dependent as calculated in the Assessment, but should instead be based on a simple arithmetic mean on a 10 x 10 km domain. It is unlikely that this would make any significant difference to the model outcomes, however.

## Assessment and Conclusions

Maximum 1-hour, 24-hour and annual average GLCs are provided at each receptor location for each pollutant according to their assessment criteria averaging periods. Section 4 refers to the 1-hour average benzene result and exposure limit but neglects to say what this is, or present it in preceding sections. SLR assume that this refers to the NSW EPA (2016) criterion of 29 µg/m<sup>3</sup>, and would be better assessed against the EPAV (2022) criterion of 580 µg/m<sup>3</sup>, as discussed above, with the 24-hour benzene GLC assessed against 29 µg/m<sup>3</sup> instead.

SLR suggests that the Assessment’s maximum reported 1-hour n-hexane result of 397 µg/m<sup>3</sup> scaled by the benzene to n-hexane petrol vapour percentage (Assessment Table 2-2) ratio of (0.347/1.73 =) 0.22 indicates that a maximum 1-hour average benzene concentration of 86 µg/m<sup>3</sup> would be predicted. Similarly, the 24-hour toluene result of



24.5  $\mu\text{g}/\text{m}^3$  scaled by the benzene to toluene petrol vapour percentage ratio of (0.347/1.08 =) 0.35 indicates that a maximum 24-hour average benzene concentration of 8.5  $\mu\text{g}/\text{m}^3$  would be predicted. These values are well below the criteria recommended by SLR of 580  $\mu\text{g}/\text{m}^3$  and 29  $\mu\text{g}/\text{m}^3$ , respectively, discussed above.

SLR agrees with the Assessment's conclusion that the proposed CCP meets the GS3 separation distance of 50 m from service station (activity boundary) and the risk of exposure at this sensitive receptor location is low because relevant air quality criteria are likely to be met at the proposed CCP.

## SLR Conclusions and Recommendations

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.

In particular, however, SLR recommends the following:

- the surface characteristics used in the model are revisited, especially the surface roughness
- the Assessment is updated to assess maximum 1-hour and 24-hour benzene concentrations such that these short-term potential impacts at the proposed CCP can be assessed against appropriate criteria
- the bowser and UST filling emissions calculation presented in Appendix A are checked to confirm that the appropriate percentage control (e.g. for VR1) is used and that this level of control is clearly stated in the main body of the report.

Assuming that there are no significant changes/corrections to the model outputs following consideration of these recommendations above, SLR would find the Assessment to reasonably demonstrate that emissions of VOCs from the Service Station are unlikely to pose an unacceptable risk to human health at the proposed CCP.

## SLR Consulting Australia



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## References

- ATSDR. (2007). *Toxicological Profile for Benzene*. Atlanta, Georgia: Agency for Toxic Substances and Disease Registry.
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- TCEQ. (2022, March 16). *Air Monitoring Comparison Values*. Retrieved from Texas Commission on Environmental Quality: [https://www.tceq.texas.gov/cgi-bin/compliance/monops/agc\\_amcvs.pl](https://www.tceq.texas.gov/cgi-bin/compliance/monops/agc_amcvs.pl)
- US EPA. (2015). *AERMOD Implementation Guide*. North Carolina: U.S. Environmental Protection Agency.
- WA EPA. (2005). *Guidance Statement No.3 for the Assessment of Environmental Factors: Separation Distances between Industrial and Sensitive Land Uses*. Western Australia Environmental Protection Authority .



**LOT 622 (No.2) AUREA BOULEVARD, GOLDEN BAY –  
PROPOSED MIXED COMMERCIAL DEVELOPMENT (GOLDEN  
BAY NEIGHBOURHOOD CENTRE) -  
SECTION 31 RECONSIDERATION**

**Form 1 – Responsible Authority Report**  
(Regulation 12)

<b>DAP Name:</b>	Metro Outer Development Assessment Panel	
<b>Local Government Area:</b>	City of Rockingham	
<b>Applicant:</b>	Apex Planning	
<b>Owner:</b>	Golden Bay Village Pty Ltd	
<b>Value of Development:</b>	\$11 million <input checked="" type="checkbox"/> Mandatory (Regulation 5) <input type="checkbox"/> Opt In (Regulation 6)	
<b>Responsible Authority:</b>	City of Rockingham	
<b>Authorising Officer:</b>	Mr Peter Ricci, Director Planning and Development Services	
<b>LG Reference:</b>	DD020.2023.00000035	
<b>DAP File No:</b>	DAP/23/02447, DR135/2023	
<b>Application Received Date:</b>	11 August 2023	
<b>Report Due Date:</b>	29 February 2024	
<b>Application Statutory Process Timeframe:</b>	NA	
<b>Attachment(s):</b>	1. Additional Information Submitted by Applicant: (a) Response to Reasons for Refusal (b) Revised Site Plan and Ground Floor Plan (c) Revised Emissions Impact Assessment (d) Traffic Engineering Technical Note 2. Previous Council Report (Item PD026-23, June 2023) 3. Council Report - Section 31 Reconsideration - February 2024 4. SLR Technical Memorandum - Air Quality Assessment Summary 5. Schedule of Submissions (January 2024)	
<b>Is the Responsible Authority Recommendation the same as the Officer Recommendation?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	Complete Responsible Authority Recommendation section
	X No	Complete Responsible Authority and Officer Recommendation sections

## Responsible Authority Recommendation

That the Metro Outer Development Assessment Panel, pursuant to section 31 of the *State Administrative Tribunal Act 2004* in respect of SAT application DR135/23, resolves to:

1. Reconsider its decision dated 10 July 2023; and
2. **REFUSE** DAP Application reference DR135/2023 and accompanying revised plans and supporting information received on 22 December 2023:
  - DA001 - DA003 - Perspective
  - DA100 - Location and Survey Plan
  - DA101 - Site Plan - Rev K, Dated 16.11.2023
  - DA102 - Demolition Plan
  - DA200 - Proposed Ground Floor Plan – Rev L, Dated 16.11.2023
  - 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), including Technical Note No.1 (Dated 30.11.2023)
  - Environmental Noise Assessment (Acoustic Report) (Dated 28.4.2023)
  - Emissions Impact Assessment (EIA) (Dated December 2023)

in accordance with Clause 68(2)(c) of the *Planning and Development (Local Planning Schemes) Regulations 2015* and the Metropolitan Region Scheme, for the following reasons:

1. The proposed development is not compatible with sensitive land uses in the locality, in particular, to the two operating Child Care Centres located in immediate proximity to the proposed Service Station, where the proposal presents an unacceptable health risk and amenity impact to children from benzene exposure.
2. The proposal will likely result in unacceptable traffic impacts given the proximity of the crossover to the Warnbro Sound Avenue/Aurea Boulevard signalised intersection its location immediately adjacent to the start of the slip lane on Aurea Boulevard.

**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:**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).

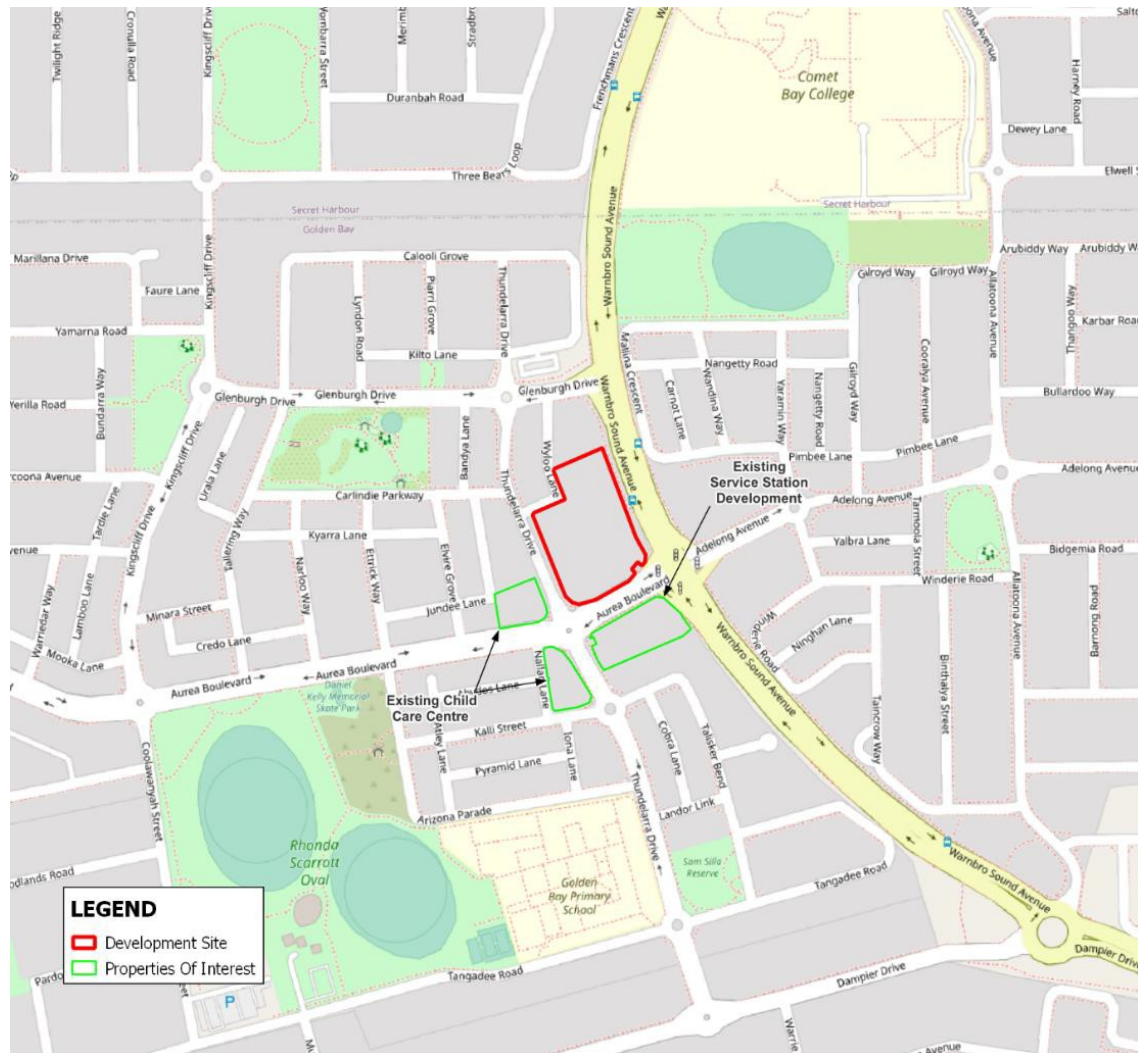
The site is located centrally to the Golden Bay Structure Plan area, and to the Neighbourhood Centre itself, and is bounded by Warnbro Sound Avenue to the east, Thundelarra Drive to the west (as the 'Main Street' for the Centre), and Aurea Boulevard to the south.

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, and a Primary School is located 200m further to the south-west. 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.

Other land surrounding the Neighbourhood Centre has largely been developed for residential purposes.



1. Location Plan



2. Aerial Plan



Figure 3 provides photos illustrating the site context.



View south along Thundelarra Drive showing Child Care Centre opposite the subject site



View north along Aurea Boulevard, at the intersection of Thundelarra Drive, with the Service Station site to the right





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

### 3. Site Context Photos



## Development Proposal

The revised application seeks Development Approval for the following:

- 1,165m<sup>2</sup> Supermarket fronting Thundelarra Drive.
- 3 x 'specialty retail' Shops with total 263m<sup>2</sup> floorspace fronting a 'mall', which links Thundelarra Drive and the carpark behind the Supermarket.
- 2 x freestanding Fast Food Outlets (260m and 265m<sup>2</sup>), with drive-through facilities adjacent to Warnbro Sound Avenue.
- 230m<sup>2</sup> freestanding Liquor Store, with back-of-house and drive-through fronting Warnbro Sound Avenue.
- 305m<sup>2</sup> 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 147 car parking bays with the following breakdown:
  - 95 bays in the main carpark (including 7 disabled parking bays) (*accounting for the loss of 1 additional bay in the main carpark subject to the revised plans, and addressed below*).
  - 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 within the subject site, and to the bus stop (and footpath) on Warnbro Sound Avenue.

The Site Plan (Ground Floor Plan) refused by MOJDAP in July 2023 is depicted in Figure 4.

The revised Site Plan (Ground Floor Plan) submitted by the Applicant in December 2023, and subject to public advertising in January 2024, is depicted in Figure 5, with the proposed modifications identified.

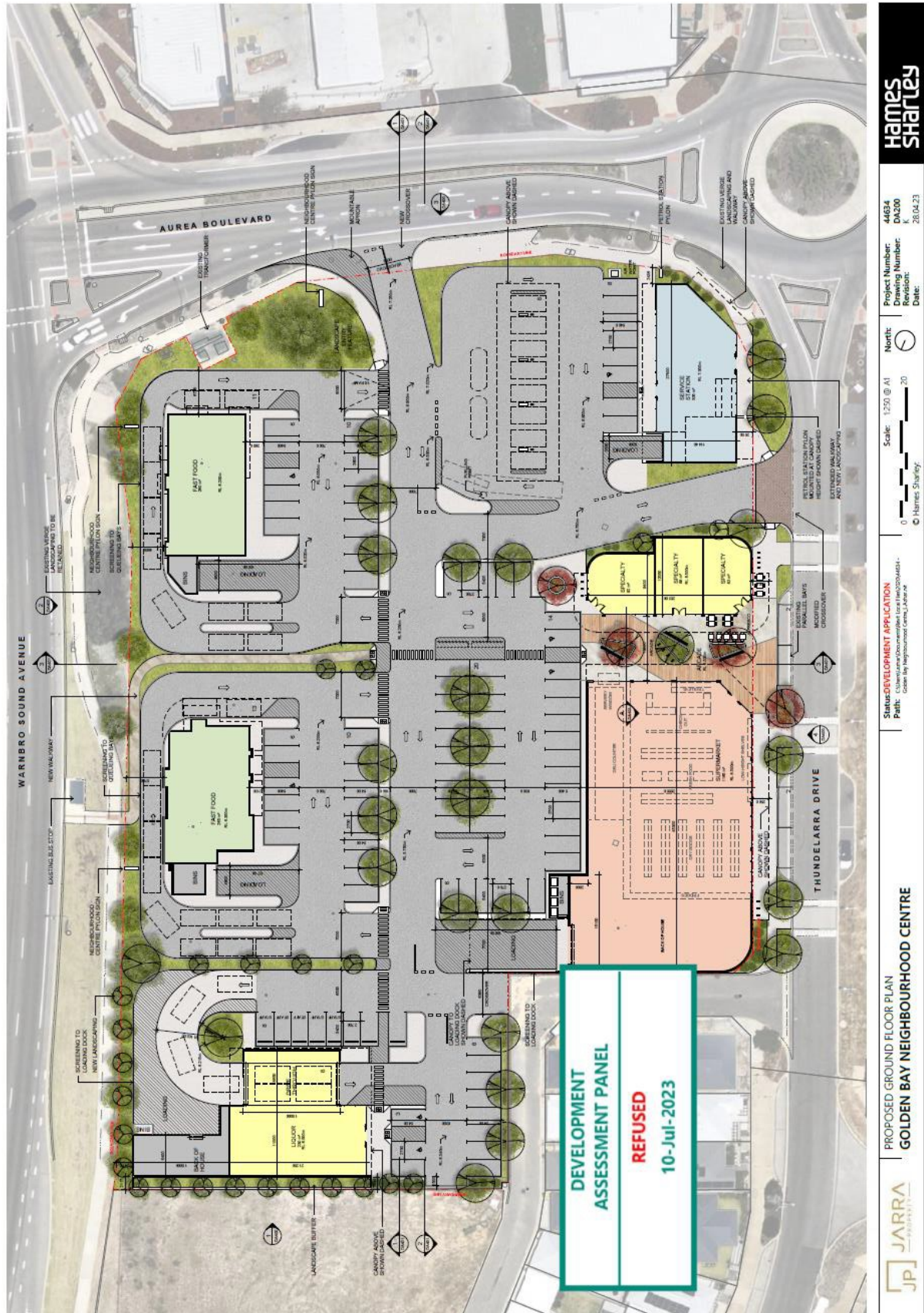
Additional Information Provided by Applicant:

As set out in the SAT Orders, the Applicant has provided revised and additional information in order to address the MOJDAP's Reasons for Refusal in its decision of July 2023. These Reasons for Refusal are also reflected this Responsible Authority Report.

The additional information has been provided as follows:

- Covering Letter addressing the MOJDAP's Reasons for Refusal (discussed below) (Attachment 1a);
- Amended Site Plan and Ground Floor Plan which reflect changes addressed in the Traffic Engineering Technical Note (below) (Attachment 1b);
- Revised Emissions Impact Assessment (EIA) which addresses the possible impacts of fuel vapour (Benzene) from the proposed development (Attachment 1c); and
- Traffic Engineering Technical Note which proposes various modifications to the Site Plan and Ground Floor Plan (Attachment 1d).

The revised application now being considered, remains the same in all other aspects as previously considered by MOJDAP in June 2023.









Elevations, perspectives, and the Mall Concept have not changed between the original and revised proposals, and have not been replicated in this report.

## Background:

The following section summarises the history of the site and its immediate surrounds, providing context for the current proposal:

### Golden Bay Structure Plan

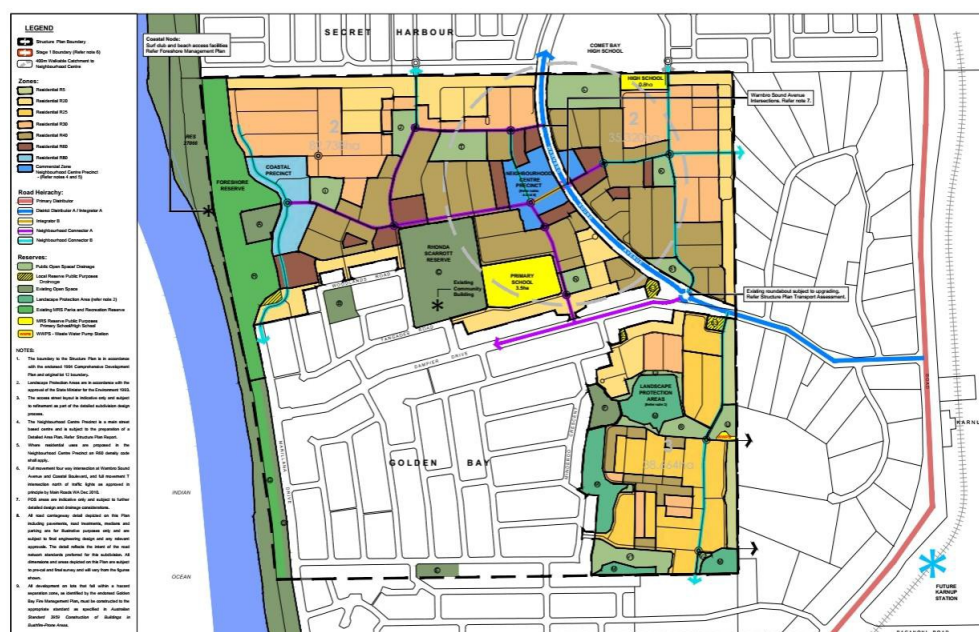
In March 2021, the Western Australian Planning Commission (WAPC) approved the latest amendment to the Golden Bay Structure Plan ('the Structure Plan') to guide the future development of the undeveloped portions of Golden Bay. The Structure Plan provides for a 2.6ha Neighbourhood Centre, zoned 'Commercial', located mainly on the western side of Warnbro Sound Avenue, at the intersection of Aurea Boulevard and Thundelarra Drive, for which the subject site forms part (refer Figure 6).

### Previous Development Approval (2016)

In June 2016, the City of Rockingham (City), under delegated authority, approved a proposal for a Shopping Centre on the subject site (refer Figure 7). 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 proposed a total retail floorspace of 3,240m<sup>2</sup> 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 a 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.



6. Golden Bay Structure Plan



## 7. 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 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 it is understood the site is now under contract to purchase by another party.

### Other Development within the Neighbourhood Centre

Other 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, but has not proceeded.

### *Service Station - Lot 1523 Aurea Boulevard*

A Mixed Commercial Development (including a Service Station) on Lot 1523 Aurea Boulevard, to the immediate south of the subject site, was approved by MOJDAP 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 proposal (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."*

Later in May 2021, the Applicant lodged an Application for Review (Appeal) with the State Administrative Tribunal (SAT) on the refusal of the application by MOJDAP. Following the receipt of additional information, Orders were issued by SAT inviting 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 (specifically Benzene), 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 in the modelling as being significantly below the prescribed acceptable national air quality level, providing VR1 and VR2 fuel vapour recovery systems were installed.

*Note: 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 to not support the proposal was, at the time, based on Department of Health (DoH) and Department of Water and Environmental 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). This matter is discussed in further detail, later in 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 8), which are addressed later in this Report.

This DAP has been approved under delegated authority by the City pursuant to Clause 4.23.1(c)(i) of Town Planning Scheme No. 2

Manager Statutory Planning  
City of Rockingham

6/12/2022  
Date:

**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.

**DISCLAIMER**  
Information shown herein is generated from data obtained from various sources. The City of Rockingham cannot guarantee the currency, accuracy or completeness of any data and will not accept any responsibility for any errors or omissions incurred as a result of the use of this information.

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**CLE Town Planning + Design**

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2187-340L

## Development Proposal 2023

### Outcomes from Comment Period (2023)

The application was advertised for public comment for a period of 21 days between March and April 2023 and a number of Government agencies were also made aware of the proposal and invited to comment.



A total of 76 submissions were received at the conclusion of the advertising period, including 71 objecting to the proposal, with 11 objections received from those within 200m of the subject site. A range of concerns were raised, including proliferation of uses and need for the development; health impact from the Service Station and Fast Food Outlets; scale and impact; access to the local road network; supermarket servicing, design and inconsistency with the approved LDP; rubbish generation and disposal and anti-social behaviour concerns.

Responses were also received from a number of Government Agencies including Department of Planning Lands and Heritage (DPLH), Main Roads WA (MRWA), Department of Education (EDWA), DoH, DWER, Water Corporation and Department of Mines Industry Regulation and Safety (DMIRS).

#### *Peer Review*

As part of its consideration of the application, the City also engaged SLR Consulting ('SLR') to undertake a Peer Review of the EIA. The review considered the appropriateness of the assessment methodology in the context of WA legislation and guidelines, and whether the EIA indicated that National Environment Protection Measure (NEPM) criteria was likely to be met at the Child Care Centres and other nearby adjacent residential properties.

The 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 indicated two (2) – three (3) bulk fuel deliveries per week would 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 was concluded that the EIA modelling outcomes could be relied upon for its intended purpose.

The City's concern was that no air monitoring had been undertaken to validate or verify the previous modelling assumptions for the currently operating Service Station (Lot 1523) (that the City did not support), rather, the Report had just used the previously reported modelling data.

#### *Council Decision on Responsible Authority Report (RAR)*

Following consideration of the proposal and the outcomes of the consultation process, the Council resolved to adopt the Responsible Authority Report (RAR), and recommend that MODAP refuse the application 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."

Refer Attachment 2 for copy of previous Council Report (Item PD026-23, June 2023).

#### *MOJDAP Decision on Application*

The Application was considered by MOJDAP on 10 July 2023 when it resolved to refuse the application for the following reasons:

*"Whilst the development of the fast food outlets and other retail outlets were generally consistent with the planning framework and the locality, and matters concerning built form and parking had been generally resolved, the service station proposal was regarded as incompatible with the locality for the following reasons:*

- (i) *Within 50m of sensitive child care development, in some measure less than 30m which was concerning due to the vulnerability of the children at the centre and the lack of categoric evidence that there would be no exposure to harmful Benzene vapours noting there is no safe level of Benzene exposure*
- (ii) *The vehicular access arrangements for the service station were unresolved and had the potential to impact pedestrian safety*
- (iii) *Community objections within proximity of the proposed service station including the child care centre*
- (iv) *It had not been fully demonstrated that other locations in the site, at a greater distance from the child care centres, were unsuitable locations for the service station"*

#### *Application for Review*

In September 2023, the Applicant lodged an application for review with SAT for the refusal of the JDAP application. An initial Mediation was held in October 2023 as part of the SAT proceedings, followed by a secondary Mediation in late December 2023.

The City participated in both Mediations, along with its Emissions expert, Dr Jason Shepherd, Principal - Air Quality of SLR, who provided the initial Peer Review of the EIA in relation to the Service Station component of the Proposal, addressed above. Dr Shepherd was engaged by the City to attend Mediation and to provide expert advice on the proposal to the MOJDAP, SAT and the City, and to provide further advice to the City to assist the Council's decision making, as detailed below.

The Presiding Member of the MOJDAP (the Respondent in the Application for Review), along with an Officer of the State Solicitor's Office (SSO) and staff representing DPLH were in attendance during Mediation. In addition, the Applicant, Proponent, its emissions and traffic experts, along with the Proponent's legal representative, attended the Mediation(s). More recent advice received by the MOJDAP from DWER and DoH in November and December 2023 was also sought to inform the process.

On 22 December 2023, in response to the outcome of the first Mediation, the Applicant provided additional information in support of the proposal. This comprised the outcomes of a (limited) emissions monitoring exercise undertaken in respect to the existing (7-Eleven) Service Station (Lot 1523) to determine the level, if any, of Benzene fuel vapour recorded at the Child Care Centres, along with additional traffic related information.

Following the second Mediation, Orders were issued pursuant to section 31 of the *State Administrative Tribunal Act 2004* (SAT Act), inviting the Respondent to reconsider its decision on or before 22 March 2024. This timing was to allow the revised application package to be re-advertised by the City, and for Council to be able to consider the revised application at its February 2024 meeting. A copy of the Council Report (Item PD005-24, February 2024) forms Attachment 3 to this report.

The SAT matter is currently adjourned to a Directions Hearing on 5 April 2024.

### **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) Regulations 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)

## Response to Reasons for Refusal

The Applicant's response to the MOJDAP's Reasons for Refusal, and the City's comments, are provided below:

### **MOJDAP Reason for Refusal No.1: Compatibility of Service Station**

***“Within 50m of sensitive child care development, in some measure less than 30m which was concerning due to the vulnerability of the children at the centre and the lack of categoric evidence that there would be no harmful Benzene vapours noting there is no safe level of Benzene exposure”***

#### Applicant's Response (Summarised):

The development proposal was originally supported by an EIA which considered the potential impacts of airborne pollutants from the proposed service station (including cumulative impacts, noting the existence of a 24 hour service station on the opposite side of Aurea Boulevard). A revised EIA has been submitted which addresses items raised by the Responsible Authority and its nominated expert (SLR) during the mediation process.

The EIA used industry accepted standards for estimated pollutant emissions rates of 'primary airborne pollutants', including Benzene, and demonstrated all airborne pollutants would be within the acceptable/compliant range, with the incorporation of VR1 and VR2 vapour recovery systems.

During the DA assessment phase, the City of Rockingham engaged an expert (SLR) to undertake a peer review of the EIA which concluded that the assessment was appropriate for the intended purpose, though some recommendations were made which were determined not to materially change the outcomes of the EIA.

A range of over-estimations and conservatisms were built into the EIA (and compliant/acceptable levels were still achieved). These included:

- An assumption that all fuel dispensed from the site is unleaded petrol, which would not be the case. Approximately 22% of fuel dispensed from the site would also be diesel. The high boiling point of diesel fuel used in vehicles in Australia largely eliminates the presence of Benzene in that type of fuel.
- A daily refuelling volume of 26,610L which was almost double that of the adjacent 7-Eleven service station (13,800L), and three times the industry average for suburban fuel retailing sites (9,000L).
- The percentage (%) composition of Benzene in fuel used in the modelling was 2.9% which is almost 3 times higher than the 1% maximum of Benzene allowed in fuel sold in Australia under the relevant legislation.
- The modelled fuel delivery schedule, which assumed up to 180,000L of fuel delivered per day (4.5 times more than the actual amount) and 960,000L of fuel deliveries per week (more than 8 times higher than the actual amount).

To further explore the outcomes of the EIA, the Applicant agreed to undertake on-site sampling of Benzene levels (noting the existence of a 24 hour service station (7-Eleven) on land adjacent to the development site). The sampling program was undertaken based on parameters agreed upon with the City's nominated expert.



Having regard to the above, it is reasonable to conclude that the proposed 24 hour service station is compatible with its surroundings. The first refusal reason is considered to be resolved.

Following SLR's Peer Review advice on the original application, and input during the Mediation process, the City also engaged SLR to provide a Technical Memorandum. The purpose was to explain the air quality assessment outcomes relating to the proposal, and how the modelling and monitoring results relate to the standards and public health risk profile, in particular, to the Child Care Centres opposite the subject site.

A full copy of the SLR Memorandum is included as Attachment 4 to this report.

- In consultation with SLR on the methodology for a (limited) monitoring analysis, the Applicant's emissions consultant, EAQ, collected samples of ambient air at location(s) approximately 40m from the existing Service Station to reflect the distance from the Proposal to the adjacent existing Child Care Centre (refer Figure 9).

(Existing 7-Eleven Service Station shown to south of Aurea Boulevard)

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Notwithstanding, the laboratory analysis results indicated that the concentrations recorded were negligible, with all Benzene concentrations being less than the limit of detection (i.e. very low, such that the laboratory could not determine the actual concentration) being 6.4 µg/m<sup>3</sup> (micrograms per cubic metre), being 1.1% of the standards criterion.

In this regard, the applicable Air Pollution Assessment Criteria (APAC) standard applied by the City's expert is derived from the *EPA Victoria Publication 1961: Guideline for Assessing and Minimising Air Pollution*, being maximum 580 µg/m<sup>3</sup>.

SLR also undertook a conservative extrapolation of the results, resulting in a level of 64 µg/m<sup>3</sup>. This is approximately 11% of the standards criterion of 580 µg/m<sup>3</sup>.

- The maximum cumulative concentration (i.e. the Proposal *plus* the existing Service Station) of Benzene expected to occur at the Child Care Centre was predicted to be 27 µg/m<sup>3</sup>, still well within the standards criterion.

As a result, the worst-case cumulative concentrations at the childcare centre or nearby residences are equivalent to less than 5% of the maximum standards criterion.

- The proposal complies with both NEPM and APAC maximum standards criterion.
- The Modelling Assessment indicates that emissions from the Proposal are unlikely to pose an unacceptable risk to human health at the Child Care Centre or nearby residences.

The City accepts the Applicant's response to Reason for Refusal No.1 above.

Having regard to:

- The modelling and monitoring outcomes detailed in the EIA;
- The conservative assumptions applied through the modelling and monitoring analyses;
- The expert advice provided by SLR (City's consultant) through the assessment process; and
- The use of both VR1 and VR2 vapour recovery systems.

The proposal has been demonstrated to comply with the accepted NEPM standards and criteria which provides a common National goal to best protect human health and wellbeing from adverse impacts of pollution; and the more specific Victorian APAC standard for benzene which permits the assessment of short term 1 hour impacts.

The City considers that, based on the expert air quality advice from SLR, upon review, that the proposed Service Station is unlikely to present an unacceptable risk to public health in the vicinity of the subject site.

**MOJDAP Reason for Refusal No.2 and No.3: Aurea Boulevard Crossover and Onsite Design Matters (combined by Applicant in response)**

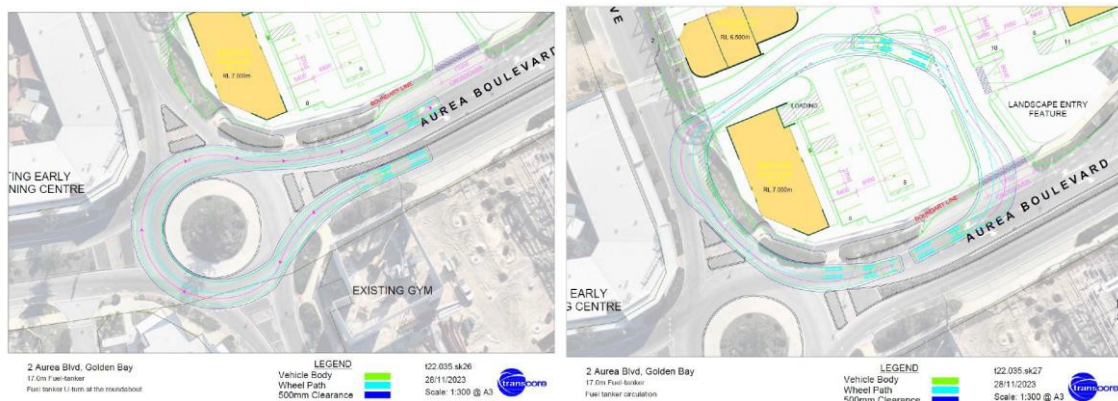
***“the vehicular access arrangements for the service station were unresolved and had the potential to impact pedestrian safety***

***Community objections within proximity of the proposed service station including the child care centre”***

#### Applicant's Response (Summarised):

A revised Site Plan and Ground Floor Plan have been submitted, along with a Traffic Engineering Technical Note which have resulted in the following modifications to the plan:

- Convert existing on-street parking spaces along Aurea Boulevard into a left turning pocket for the Aurea Boulevard crossover, which will improve the relationship of the crossover with the adjacent road network.
- Provide a turnaround bay within the blind aisle at the western side of the liquor store.
- Adjust the configuration of the service station forecourt, by shifting the refuelling spaces closer to the retail building and introducing a one-way circulation system where vehicles enter the refuelling area. This has increased stacking capacity of the forecourt and improved the functionality of the refuelling area. Reduce tanker size to 17m to service the Service Station.
- Reversing fuel tanker movements (now entering via Aurea Boulevard and leaving via Thundelarra Drive) (refer Figure 10), to enable the provision of a pedestrian refuge within the Thundelarra Drive crossover.
- Provide a mountable apron at the Thundelarra Drive crossover, to regularise the egress movements of fuel tankers.
- Provide pedestrian path and pram ramps at the Aurea Boulevard crossover (which may be subject to further alteration at detailed design stage).
- Swept path plans have demonstrated satisfactory movements of fuel tankers based on the revised arrangements. Note: fuel deliveries would only occur 2-3 times per week (therefore very infrequent) and bulk refuelling is only proposed to occur during off-peak traffic periods.



10. Revised Fuel Tanker Movements

#### City's Response:

The City generally supports the changes to vehicle access/egress and movement proposed in the revised plans, as follows:

- The small left turning pocket off Aurea Boulevard (where on-street parking bays are currently provided) will provide a small refuge to queuing vehicles when attempting to enter the site.
- The turnaround bay at the end of the blind aisle near the proposed Liquor Store will avoid vehicles needing to reverse out of this area if all bays are full. The introduction of the turnaround bay will result in the loss of one (1) additional bay, which is considered acceptable for reasons detailed in this Report.
- Whilst minor modifications may be required at detailed design stage for the Service Station to assist vehicle manoeuvrability, the modifications to the bowser locations and circulation system, and the use of a reduced tanker size will assist the functionality of the site.

- The reversing of the fuel tanker movements, to enter from Aurea Boulevard and exit via Thundelarra Drive, is supported. This will also assist in providing an improved pedestrian environment along the Main Street by narrowing the crossover previously proposed, and introducing a pedestrian refuge.
- It will, however, also result in a wider crossover at Aurea Boulevard. A pedestrian refuge with mountable kerb to accommodate tanker movements should also be installed at the Aurea Boulevard entry (as it is on Thundelarra Drive) to assist with safe pedestrian and cyclist movement along this street to the intersection of Warnbro Sound Avenue and the bus stop.
- Whilst internal pedestrian movement is also provided, this should not replace the provision of safe and convenient pedestrian and cyclist routes along the adjoining streets. An appropriate condition is recommended in the case that the application is approved.
- Where a tanker enters the site from Aurea Boulevard and exits via Thundelarra Drive, it will temporarily need to cross over the other side of the road/driveway (ie. not lane correct). As only 2-3 tankers are expected to service the Service Station each week, during off-peak hours, and the slow speed nature of the road environment in this location, this arrangement is accepted.
- During the morning and afternoon peak periods, there could be some queuing at the intersection of Warnbro Sound Avenue, however, this is not expected to cause significant issues.

Other matters raised by the City have been resolved by the revised plans; and are considered to be suitably addressed, or can be addressed at the detailed design stage, subject to a suitable condition of development approval in the event the application is approved.

The traffic issues relating to the proposal are considered to be resolved on this basis.

#### **MOJDAP Reason for Refusal No.4: Possible Alternate Location**

***"It had not been fully demonstrated that other locations in the site, at a greater distance from the child care centres, were unsuitable locations for the service station"***

#### Applicant's Response:

The applicant has not provided a written response in relation to this Reason for Refusal.

#### City's Response:

The possibility of relocating the Service Station to another location on site (possibly the corner of Warnbro Sound Avenue and Aurea Boulevard) was verbally raised with the Applicant during the assessment and Mediation processes, with a view to exploring the option of locating the Service Station further away from the Child Care Centres.

The Applicant has verbally advised that due to the dimension, configuration, and limited access to surrounding roads, this is not a viable option.

Relocation of the Service Station could result in an additional setback from the fuel bowsers to the Child Care Centres of 35-40m which would mean the use would still be within the 200m separation distance set out in GS3 (refer below).

Whilst an increased separation distance would be of benefit, as environmental impacts reduce the greater the separation distance, the City accepts that the outcomes of the fuel vapour advice detailed above indicate that the fuel vapour levels for the current proposal are within the acceptable range; and the operational challenges an alternate location would present.



## Consultation:

### Public Consultation

#### Consultation with the Community

The revised proposal was advertised for public comment over a period of 21 days, commencing on 3 January 2024 and concluding on 24 January 2024, in accordance with Clause 64 of the Deemed Provisions of the City's Town Planning Scheme No.2 (TPS2), and Local Planning Policy No.3.3.27 - Community Consultation for Development Applications. In this regard, the Application is considered to be a 'Complex Application' as it includes a Service Station.

Advertising was carried out in the same manner as the original advertising period, as follows:

The owners and occupiers identified in the Consultation Plan in Figure 11, located within 200m of the subject site, were notified in writing of the revised proposal, along with submissioners on the July 2023 refusal, and given 21 days to respond. Due to the reporting timeframes, it was not possible to advertise the proposal for 28 days.



11. Consultation Map (January 2024)

- The revised application package was referred to DoH, DWER and EDWA for review and comment.
- Signage was erected on site for the duration of the advertising period.
- The revised application documents were made available for public inspection at the City's Administration Offices and placed on the City's website.

At the close of the public consultation period, a total of 23 public submissions were received, comprising one (1) submission in support of the revised proposal, one (1) neutral submission, and 21 submissions objecting to the proposal.

The locations from where the nearby submissions originated are shown on Figure 11. Of the owners and occupiers located within 200m of the subject site, a total of seven (7) submissions were received, with one (1) of these submissions being neutral, and six (6) objecting, in addition to an objection received from EDWA.

The key matters raised were public health concerns related to the proposed Service Station proximity to the two (2) nearby operating Child Care Centres, and concern about the proliferation of Service Station, Fast Food and Liquor Store uses.

### Summary of Submissions

Matters raised in respect to the revised proposal are summarised in the Summary of Submissions table below, along with the City's responses to the submission concerns. All submissions are included in the Schedule of Submissions contained within Attachment 5 to this report.

<b>1. Uses Proposed and Proliferation of Uses/Need</b>
<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 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.</i></p> <p><i>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.</i></p> <p><i>The subject land represents a major proportion of an identified neighbourhood activity centre and the range of uses forming this proposal will provide for the daily to weekly household shopping needs and other convenience services for the community."</i></p>
<p><u>City's Response:</u></p> <p>The Commercial uses proposed are all able to be considered under the City's TPS2 within the 'Commercial' Zone, which 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 valid planning consideration in relation to this proposal.</p>
<b>2. Health Impact</b>
<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"> <li>• odour from Service Station and Fast Food uses, particularly in close proximity to two childcare centres and residences;</li> </ul>

- impacts resulting from two fast food outlets in close proximity to a school and childcare centres;
- noise generated by vehicles/traffic and customers;
- light spill; and
- public health concerns about the number of liquor outlets in the area.

Applicant's Response (summarised):

- Odours/fumes associated with the service station has been the subject of detailed/comprehensive assessment and onsite monitoring in a format/manner agreed upon with an independent expert engaged by the City. The results have been captured in a revised EIA which demonstrates the service station will be compatible with its surroundings.
- There are no buffer or setback distances contained in either the State or local planning framework which specify a minimum distance between sensitive land uses 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 is likely to be imposed, should the application be approved.
- An Acoustic Assessment has been prepared which demonstrates compliant/acceptable noise levels generated by the proposed development. The subject land is zoned for commercial purposes and represents a major proportion of an identified neighbourhood activity centre, hence the creation of noise associated with non-residential land use is to be expected.
- The development will be required to comply with the relevant Australian Standard for the *Control of the obtrusive effects of outdoor lighting*.

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.

City's Response:

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 (refer to Response to Reasons for Refusal No.1: Compatibility of Service Station section above).

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, Schools and Fast Food Outlets, and therefore this is not a matter which can be taken into account when considering a planning application.

Conditions requiring an Odour Management Plan and lighting design to minimise light spill will be requested in the event the application is 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.

A condition of approval regarding the management of light spill will be required should the application be approved.

The Liquor Store - Small 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.

Submission:

Concerns were raised about potential adverse health impacts arising from the proposed Service Station in relation to emissions and the impact of Benzene, and the revised EIA, including:

- concern about Benzene emission impact on the health of children at the two adjacent Child Care Centres and Primary School;
- apparent discrepancies and overestimations in the assumptions made in the EIA eg. fuel composition, refuelling volumes and fuel delivery schedules, which do not represent the realistic scenario;
- cumulative effects of Benzene exposure from all sources (e.g. internal fit out, toys etc), and cumulative impact of total Volatile Organic Compounds (VOC's);
- effectiveness of VR2 in preventing Benzene emissions is not addressed or mandated;
- a lack of information on the AERMOD modelling undertaken eg. parameters and sensitivity analysis;
- concern about impact of incidental spills;
- EIA does not address buffer distances set by EPA Guidance Statement No.3;
- cumulative impact of having two fuel stations in close proximity;
- absence of information on any proposed risk mitigation to reduce emissions;
- incompatibility of proposed and existing sensitive land uses (Service Station and Child Care);
- no mention of any plan for decommissioning of fuel station in case of failure of the business;
- concern about increased emissions and its effect on the environment; and
- independent experts may need to be consulted to review EIA.

Applicant's Response:

*"The compatibility of the service station with its surroundings has been the subject of detailed/comprehensive assessment and onsite monitoring in a format/manner agreed upon with an independent expert engaged by the City of Rockingham.*

*The results have been captured in a revised EIA which demonstrates the service station will be compatible with its surroundings, based on the most current and appropriate assessment criteria available."*

City's Response:

This Report (refer Response to Reasons for Refusal No.1: Compatibility of Service Station section above) addresses potential health impacts from the service station given its proximity to the operating Child Care Centres opposite the subject site. It also contains information from the revised EIA, along with the outcomes of the City's independent expert advice on the proposal which has concluded that having considered all of the available information, the Service Station is unlikely to present an unacceptable risk to public health in the vicinity of the subject site.



It is to be noted that the modelling was based on a 'conservative approach' i.e. 'worst case' which means that the assumptions are more restrictive than the actual development proposed. The EIA and expert advice also considers cumulative effects and the additional benefit of a VR2 system, which will be required as a condition should the application be approved.

It is not necessary for the EIA to address decommissioning – this is a licensing matter managed by DMIRS in the event the Service Station ceases to operate.

### 3. Traffic

#### Submission:

Traffic concerns were raised as follows:

- adverse impacts on the local road network, and an increase in traffic in the area.
- pedestrian and cyclist safety and lack of legible movement around the service station.
- crossover to Thundelarra Drive is not safe in context of service vehicles using it.
- Thundelarra Drive is a suburban street and not designed for heavy vehicles, which may impact safety of road users.
- the roundabout will become too busy with the other commercial uses in the area.
- Wyloo Lane is too narrow, dangerous and inappropriate to provide access to the development, and particularly for service vehicles.
- the slip lane/Aurea Boulevard crossover is too close to the Warnbro Sound Avenue intersection, and will result in the loss of parking bays.
- concern raised in the context of original TIA not addressing issues such as swept path, blind aisle and stacking distances, and the lack of detail on these aspects and suggested pedestrian refuges, slip lane and changes to fuel station layout that do not make it possible to assess if changes are beneficial.
- the need for conditions on planning approval relating to traffic movement indicate unresolved traffic related concerns.
- inadequate response in amended TIA to address onsite design issues (swept path, blind aisle, tanker movement, stacking distances).
- insufficient justification for smaller fuel tankers, potential implications on fuel delivery frequency and efficiency.
- lack of evidence to demonstrate that the revised development plan will result in more efficient traffic circulation.

#### Applicant's Response:

*"The revised development proposal has addressed the original traffic related issues through modifications to the site plan (with updated swept path plans demonstrating acceptable movement through the site) and a traffic engineering technical note which demonstrates an improved and more efficient access system for the development."*

#### City's Response:

The TIA submitted with the original application addresses the operation of the intersection(s) and impact on the local road network.

This Report (refer Response to Reasons for Refusal No.2: Aurea Boulevard Crossover and Onsite Design Matters above) addresses traffic considerations following receipt of the revised Traffic Technical Note submitted with the revised application. In summary, the changes proposed to access and manoeuvrability on site are considered acceptable, and will not result in unacceptable impacts on traffic movement within the locality.

The access to the site via Wyloo Lane is consistent with the approved LDP, and formed part of the previous approval for the site. The Supermarket will be serviced via Wyloo Lane. A condition of approval will be requested to limit the times of delivery vehicles via Wyloo Lane, should the application be approved. 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 proposed slip lane, whilst short, is expected to assist in providing safe access to the site. The loss of the 2 carbays as a result is addressed in this Report and is not expected to adversely impact parking provision for this development. The bays would have been required to be removed to avoid sight line issues in the event the Aurea Boulevard access is approved.

Detailed design considerations will be addressed via conditions on the Development Approval in the event the application is approved. It is a normal part of the Development Approval process to apply conditions to development.

Submission:

Insufficient detail on the discussions or compromises made during the negotiation process, and a more comprehensive overview of the mediation outcomes would enhance transparency.

Applicant Response:

*"In accordance with Section 54 of the State Administrative Tribunal Act 2004, a mediation is to be held in private. Discussions during a mediation conference are required to be kept confidential and are subject to legal privilege."*

City's Response:

The Mediation process is not a matters of public record. This Report provides information on the Revised application required to be submitted by the Applicant to the MOJDAP by SAT, as part of the Section 31 Reconsideration process determined at the conclusion of Mediation.

#### **4. Rubbish Generation and Disposal**

Submission:

Concerns were raised about increased levels of rubbish generated by the Fast Food and Service Station uses, and the lack of rubbish bins in the locality.

Applicant's Response:

*"Each land use component of the proposed development has dedicated waste storage areas, as depicted on the proposed development plan. A Waste Management Plan can be required as a condition of planning approval which outlines how waste will be collected and managed during the operation of the development."*

City's Response:

A Waste Management Plan, including a requirement for adequate bins and rubbish collection patrols, will be requested as a condition should the application be approved.

#### **5. Anti-social Behaviour**

Submission:

Concerns were raised that the Service Station, Fast Food and Liquor Store uses on site would result in anti-social behaviour, violence and social issues in the surrounding area, including loitering, hoon driving and crime, particularly at night time, and domestic and family violence. A permanent security presence on site is required.

Applicant's Response:

*"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.*

*The application materials have clarified that CCTV will be installed, and 24 hour uses will provide passive surveillance, which will assist in managing behaviour on-site."*

City's Response:

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.

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.

Operators will also be required to collect rubbish daily as a condition of approval.

## **6. Community Benefit**

Submission:

Concern was raised that the proposal does not result in an overall community benefit, and is incompatible with the character of the area.

Applicant's Response:

*"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 and were formulated by experienced architectural experts, and will create positive outcomes for the locality. The City's assessment of these elements has demonstrated consistency with the intent of the Golden Bay Neighbourhood Centre Local Development Plan."*

City's Response:

Clause 67(2)(v) *Schedule 2: Deemed Provisions - Planning and Development (Local Planning Schemes) Regulations 2015* enables the local government to have regard to a range of matters in determining development applications including *"the potential loss of any community service or benefit resulting from the development..."*.

In this regard, 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.

The proposal is consistent with the Planning Framework which identifies the subject site as a Neighbourhood Centre and allows the proposed uses to be considered within the site's 'Commercial' Zone. This Report addresses the design considerations of the proposal.

<b>7. Other</b>
<p><u>Submission:</u></p> <p>Concern was raised about the feasibility of the Supermarket and whether it has/will have tenants, given some other Shops in the area are empty.</p>
<p><u>Applicant's Response:</u></p> <p><i>"Commercial viability is not a relevant planning consideration."</i></p>
<p><u>City's Response:</u></p> <p>Commercial viability is not a valid planning consideration.</p>
<p><u>Submission:</u></p> <p>Concern was raised that there was no EV charging bays as part of the proposed Service Station development and that the Proponent and/or City should be planning for these.</p>
<p><u>Applicant's Response:</u></p> <p><i>"There is no requirement under the planning framework to provide EV charging bays. Notwithstanding this, there is capability for EV charging bays to be provided at some stage in the future at the discretion of the operator."</i></p>
<p><u>City's Response:</u></p> <p>Currently there is no requirement under the Planning Framework to require the provision of EV charging bays through the planning process. An EV charging bay is not currently included in the proposal for the Service Station, however, could be retrofitted in the future.</p>
<b>8. Alternative Land Uses</b>
<p><u>Submission:</u></p> <p>Preferred alternative landuses/tenancies for the site were suggested, which included medical/dental, playground, pharmacy, laundromat and the like.</p>
<p><u>Applicant's Response:</u></p> <p><i>"Whilst this is noted, an assessment can only be made on the application which has been submitted. It is not a relevant planning consideration to consider an alternative proposal."</i></p>
<p><u>City's Response:</u></p> <p>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.</p>

### Consultation with Government Agencies

The revised proposal was referred to the EDWA, DoH and DWER for comment.

Comments were received from each agency, as detailed below:

<b>Department of Health (DoH) - Summarised</b>
<p><u>Submission:</u></p> <ul style="list-style-type: none"> <li>If the addendum sampling represents true worst-case conditions and was truly representative of the concentrations that may build up across a service station over still days, then the sampling suggests that Benzene will not travel at significant concentrations to a ground sampling location 40 metres from the source.</li> </ul>



- However, the information presented does not confirm the actual conditions of the sampling events, making it hard to conclude that Benzene will not ever reach concentrations sufficient to be inhaled by very young children and babies, at nearby childcare centres.
- Similarly, the EAQ modelling report does not appear to consider topography, or other surface characteristics that may alter plume diffusion. Hence given the higher predicted 1-hour average results, more certainty is warranted.
- When assessing risks to sensitive receptors, such as babies and children who are aged under 4 years, and are growing at maximal rates, their sensitivity to carcinogenic agents is significantly greater than older children and adults that do not double in size as quickly. At this age, there are many many cell divisions, which is critical in cancer development.
- Further, when assessing risks, where there are collections or gatherings of such sensitive receptors in a single location, such as near a service station, the risk rating of childhood cancer increases purely from the additional numbers, or clusters.
- The DOH applies a lens that is precautionary, sustainable, proportional and considers inter-generational equity, therefore our view is that if it is possible to prevent negative outcomes, and there are alternative solutions, alternative solutions are recommended, and are our preference.
- Based on the information presented, the potential risk remains marginal, rather than certain.

Given the additional information and based on the modelling and limited monitoring, and the uncertainty in the epidemiological evidence (which is based on proximity and not Benzene concentration), the DoH cannot definitively conclude there is negligible risk.

#### Applicant's Response:

*"The DoH comments note that based on a review of the revised emissions impact assessment, the potential risk is 'marginal'. This, together with the SLR review of the monitoring outcomes and revised emissions assessment, is considered to satisfactorily demonstrate that the likelihood of potential impact is so low, that the proposed service station warrants support and approval."*

#### City's Response:

This Report (refer Response to Reasons for Refusal No.1: Compatibility of Service Station section above) addresses potential health impacts from the service station given its proximity to the operating Child Care Centres opposite the subject site.

It also contains information from the revised EIA, along with the outcomes of the City's independent expert advice on the proposal which has concluded that having considered all of the available information, including compliance with both NEPM and APAC standards, the Service Station is unlikely to present an unacceptable risk to public health in the vicinity of the subject site.

The outcomes of the modelling and monitoring indicate that Benzene emissions will not exceed 5% of the accepted standard (NEPM and APAC) when the cumulative impacts of the two Service Stations are considered.

### **Department of Water and Environmental Regulation (DWER) - Summarised**

#### Submission:

- The use of technical studies, such as modelling and monitoring of air pollutants, can inform possible incompatibility between land uses but should not be used as the only input for planning decision-making as there can be significant uncertainty in the accuracy of such studies and they cannot determine whether impacts will or will not occur.

- With regard to the above, the information gathered over a limited sampling period is not considered to alter the risk profile associated with the proposal, given the numerous factors that can influence emission impacts upon sensitive receptors, and the lack of post development regulation for this land use. As such, the Department's position would remain unchanged.
- Air quality studies, especially those involving modelling, rarely explicitly take into account the uncertainty associated with the estimated risk. It is up to the decision-making authority to consider whether to accept the assessment at face-value. It is DWER's recommendation that the decision-making authority takes into account the uncertainty associated with these technical studies when deciding whether or not to approve, for example by utilising the precautionary principle or through a proposed plan for managing residual risk.
- Technical assessments such as modelling have a high uncertainty (whether stated or not), especially when many factors are involved. Modelling may sometimes be useful in assessing the optimum design of a facility, but it cannot determine the 'safe' distance or definitively establish the risk of exposure.
- In the case of Service Stations, the emissions to air of concern are odour and Volatile Organic Compounds (VOCs). In previous advice, the major focus was on odour where the residual risk may possibly be addressed with post-implementation of additional controls or reduction of emissions until the impacts no longer occur.  
More recently, new information and planning decisions have given further consideration to Benzene emissions and longer-term chronic health impacts such as cancer. Consequently, while the position of the Department has remained consistent, that is, the proposed management of residual risk is an essential element for consideration in the decision-making process, the post-implementation of controls is more complicated when chronic health impacts are being considered. It is generally recognised that there are few options or regulatory mechanisms available to resolve land-use conflicts post-approval and liabilities associated with the resolution of later revealed land use incompatibilities generally default to the State.
- Consequently, it is our advice that adherence to separation distances within Guidance Statement 3 - Separation Distances between Industrial and Sensitive Land Uses (GS 3) (EPA, 2005), is generally recommended to inform planning decisions. Stage 1 and Stage 2 vapour recovery systems (VR1 and VR2) are likely to reduce the emissions, however, owing to the uncertainties in emission estimations there is limited ability to assess if these additional emissions controls are required or, if installed, would result in acceptable risk of impacts.
- The use of technical studies, such as modelling and monitoring of air pollutants, can inform possible incompatibility between land uses but should not be used as the only input for planning decision-making as there can be significant uncertainty in the accuracy of such studies and they cannot determine whether impacts will or will not occur.

This advice is compatible with the regulatory framework employed elsewhere in Australia, in which proponents may choose to prepare a modelling report, however the comments regarding their limitations and uncertainties remain valid.

Applicant's Response:

- *"GS3 states that where a reduced separation distance is proposed, a site specific scientific assessment should be undertaken."*

- *The subject land is near two child care premises located on the western side of Thundelarra Crescent, which are the closest (and most important) sensitive land uses. Both of these centres operate 6:30am-6:30pm Mon-Fri and not on weekends.*
- *A site specific emissions impact assessment was prepared in consultation with the local authority and an independent emissions expert commissioned by the local authority, to address issues raised associated with gaseous emissions. This involved onsite monitoring under the most appropriate and realistic worst-case conditions possible within the timeframe to optimise the conservatism of the assessment.*
- *It is evident from the referral comments provided by DWER, that the specifics of the scientific assessment have not been considered or commented on. Advice which was provided to the local authority on 20<sup>th</sup> October 2023 was simply reiterated (well before the revised assessment with onsite monitoring was prepared), which discusses the suitability of such studies at a high level. From the applicant's point of view, it is disappointing that DWER has chosen not to take this opportunity to assess and comment on the veracity of the site-specific scientific assessment and instead reiterate previous comments.*
- *GS3 focuses on amenity impacts where industrial, commercial, and rural uses are proposed near 'sensitive' land uses. Amenity is defined under Section 7 Definitions of GS3.*
- *Where service stations are considered, the relevant impacts are gaseous, dust, noise and odorous emissions, as well as risk.*
- *Under Appendix 1 of GS3, the recommended buffer distances are as follows:*
  - *Premises operating during normal hours (ie Mon-Sat 0700-1900 hours) – 50 metres*
  - *Freeway service centre (24 hour operation) – 100 metres*
  - *All other 24 hour operations – 200 metres*
- *It is unclear how the difference between a 24 hour operation and an operation 7am-7pm equates to increased impact from gaseous emissions to the extent that an additional 150 metres of separation would be warranted. The emissions impact assessment indicates meteorological conditions are the defining feature for odour dispersion, rather than the time of day.*  
*For example, if the proposed service station were to operate 7am-7pm, the distance measured from the bowsters would exceed 50 metres (compliant) at one of the centres and would achieve approximately 49 metres at the other (ie marginally compliant).*  
*Whilst this would be a 'compliant' scenario under GS3 (hence complying with DWER's recommendation), the service station would only be pumping fuel while the adjacent child care centres are occupied. This example provides an important insight as to whether GS3 should be employed as the core indicator of "safe distance", and whether it is appropriate to dismiss site-specific technical assessments based on "uncertainty" and "residual risk".*

City's Response:

This Report (refer Response to Reasons for Refusal No.1: Compatibility of Service Station section above) addresses potential health impacts from the Service Station given its proximity to the operating Child Care Centres opposite the subject site. It also contains information from the revised EIA which includes consideration of (limited) modelling outcomes; along with the outcomes of the City's independent expert advice on the proposal.

This advice has concluded that having considered all of the available information, including compliance with both NEPM and APAC standards, the Service Station is unlikely to present an unacceptable risk to public health in the vicinity of the subject site.

#### **Department of Education (EDWA) - Summarised**

##### Submission:

- 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.

##### Applicant's Response:

*"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. There is no guidance or provisions within the State or Local Planning Framework which identify or specify separation distances between Schools and Fast Food Outlets. As noted by DoE, the School site is outside the 200m generic buffer identified in GS3 for the service station."*

##### City's Response:

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. 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. As noted by DoE, the School site is outside the 200m generic buffer identified in GS3.

#### Design Review Panel Advice

No design review process was undertaken for this application.

#### **Planning Assessment:**

The revised proposal has been assessed against all relevant requirements of the State and Local Planning Framework. The City's previous comments from the Council report of 27 June 2023 (PD026-23) still apply, with the minor variations proposed being supported.



### State Government Policies

The revised application is generally compliant with the relevant State Planning Policies as follows:

- State Planning Policy 4.1 – Industrial Interface (SPP4.1)
- State Planning Policy 4.2 – Activity Centres for Perth and Peel (SPP4.2)
- State Planning Policy 7.0 – Design of the Built Environment (SPP7.0)
- Draft Position Statement: Child Care Premises

Discussion in relation to GS3 is provided below:

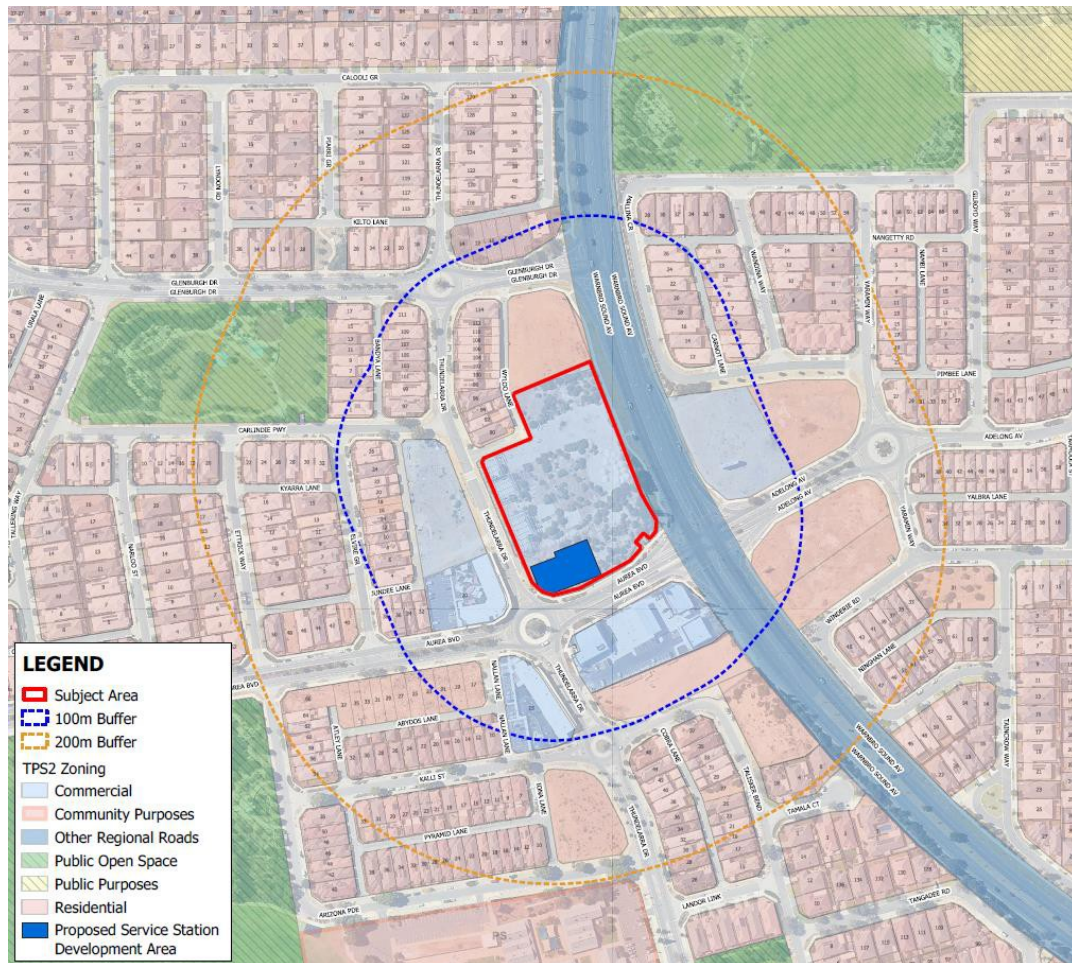
### Environmental Protection Authority (EPA) Guidance Statement No.3 (GS3)

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. Separation distances are generally measured between land uses on respective sites. Where proposals vary from this separation distance, site specific technical analysis is required. The Applicant has addressed this requirement by providing an EIA for the proposal.

A map showing the 200m separation distance (from the boundary of the subject site) is shown in Figure 12. The Service Station site forms a smaller portion of the subject site. It includes all land within the Neighbourhood Centre including the Child Care Centres to the west. The Child Care Centres are located approximately 21m and 47m between property boundaries, and 50m to 70m between the Child Care Centre buildings and bowsters of the Service Station. The play areas of the Child Care Centres are located behind the buildings, further away from the bowsters.

The separation distance touches the northern boundary of the Golden Bay Primary School, however, the School itself is not located within the 200m.



## 12. EPA Guidance Statement No.3 - Separation Distance

Concerns have been raised through the application process 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 bowsers, fuel spills and opening fuel caps on vehicles.

The revised EIA addresses the compliance of primarily modelled emissions against standards, utilising industry standard 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 (Lot 1523). Following discussion at SAT Mediation, the revised EIA also contains consideration of (limited) monitoring outcomes in respect to the existing Service Station.

As detailed above, following consideration of all of the technical considerations through the SAT Mediation process and within the revised EIA, the commitment to use both VR1 and VR2 emissions reduction systems by the Proponent, and the advice of the City's emissions expert, the City accepts that the proposed Service Station is unlikely to present an unacceptable risk to public health in the vicinity of the subject site.

### Local Government Policies

The revised proposal is generally compliant with the following Local Government Policies:

- Planning Policy No.3.1.2 – Local Commercial and Activity Centres Strategy (LCACS)
- Planning Policy No.3.3.1 – Control of Advertisements (PP3.3.1)
- Planning Policy No.3.3.9 – Fast Food Outlets (PP3.3.9)
- Planning Policy No.3.3.14 – Bicycle Parking and End-of-Trip Facilities (PP3.3.14)
- Planning Policy No.3.3.19 – Licensed Premises (PP3.3.19); and
- Planning Policy No.3.3.25 – Percent for Public Art – Developer Contributions (PP2.2.25)

Where applicable, appropriate conditions will be requested in the event the proposal is approved.

Further, the revised proposal is considered to be generally compliant with TPS2 and the LDP applying to the subject site.

Appropriate conditions to ensure compliance with the *Environmental Protection (Noise) Regulations 1997* ('the Regulations') will be requested 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; the City's internal Teams, and its emissions expert, during the process of assessing, advertising and considering the application.

Variations to the LDP and other standards such as land use, general distribution of uses around the site, design of the Thundelarra Drive Main Street and mall, and the parking shortfall proposed, are considered to be acceptable. In addition, the access/egress and associated traffic concerns are now considered to have been satisfactorily resolved, subject to suitable conditions in the event the application is approved.

The primary issue of concern relating to public health risk resulting from the development of a Service Station immediately opposite the two (2) Child Care Centres, is considered have been thoroughly investigated.

Having regard to:

- The modelling and recent monitoring outcomes detailed in the revised EIA which demonstrate the proposal's compliance with both NEPM and APAC (these providing a contemporary and common standard to best protect human health and wellbeing from the adverse impacts of air pollution, based on epidemiological studies);
- The conservative assumptions applied through the modelling and monitoring analyses, which have been clarified through the revised proposal in the revised EIA;
- The expert advice provided by the City's emissions expert (SLR) that:

- the proposal complies with the National NEPM standards for benzene (and Toluene and Xylenes)
- based on contemporary accepted Victorian APAC standards, the proposal's worst-case cumulative concentrations of Benzene at the Child Care Centre or nearby residences are equivalent to less than 5% of the maximum standards criterion;
- The use of both VR1 and VR2 vapour recovery systems, as proposed by the Applicant, which will comprise a condition should the application be approved; and
- The conclusion by SLR that the emissions from the Proposal are unlikely to pose an unacceptable risk to human health at the Child Care Centre or nearby residences.

The proposal has been demonstrated to comply with the accepted air quality standards and criteria.

The Applicant has provided a sufficiently robust, site specific assessment to support a variation to the generic separation distances in GS3. The City therefore accepts that the proposed Service Station is unlikely to present an unacceptable risk to public health in the vicinity of the subject site.

It is recommended that the application is approved, subject to conditions.

### **Officer Recommendation**

It is recommended that the Metro Outer Development Assessment Panel, pursuant to section 31 of the *State Administrative Tribunal Act 2004* in respect of SAT application DR135/2023, resolves to:

1. Reconsider its decision dated 10 July 2023; and
2. **Approve** DAP Application reference DR135/2023 and accompanying revised plans and supporting information received on 22 December 2023:
  - DA001 - DA003 - Perspective
  - DA100 - Location and Survey Plan
  - DA101 - Site Plan - Rev K, Dated 16.11.2023
  - DA102 - Demolition Plan
  - DA200 - Proposed Ground Floor Plan – Rev L, Dated 16.11.2023
  - 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), including Technical Note No.1 (Dated 30.11.2023)
- Environmental Noise Assessment (Acoustic Report) (Dated 28.4.2023)
- Emissions Impact Assessment (EIA) (Dated December 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:

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 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 Proponent 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 all crossovers 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 147 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 seven (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/m<sup>2</sup>.
    - (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/m<sup>2</sup>, 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 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 City Approved 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.
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 and Aurea Boulevard crossovers 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.
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 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 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. The existing, redundant steel frame and slab on site being removed prior to commencement of development.
29. 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.

30. 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.
31. An Operational Management Plan being prepared for the Service Station for the approval of the City prior to the issue of a Building Permit, demonstrating required vehicle movement through bowsters, and contingency in the instance the VR2 system fails to operate.
32. During the operating hours of the Fast Food Outlets, all rubbish associated with the Fast Food Outlets must be collected daily from the associated carparking areas to the satisfaction of the City.

#### **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.
8. A site cannot store or sell fuel without first obtaining a licence from the Department of Mines Industry Regulation and Safety, 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*.

### **Reasons for Officer Recommendation**

1. The revised proposal has been the subject of a thorough assessment against the requirements of the City's Town Planning Scheme No.2, the approved Local Development Plan and the applicable state and local policy framework.

Given that the recommended generic (buffer) distance between the 'sensitive uses' (ie. child care centre) and the proposed service station is not achieved, the applicant prepared an Emissions Impact Statement (EIA) to demonstrate that the lesser distance will not result in unacceptable impacts. This avenue is available to justify a reduced buffer under the applicable Environmental Protection Authority policy (GS3).

The submitted EIA was assessed by an independent air quality expert (SLR) which agreed with the conclusions that the proposed Service Station meets the *National Environmental Protection Measure* (NEPM) long-term air quality criterion for benzene emissions and other short-term air quality criterion applied by other States, such as Victoria. The conclusion by SLR is that the emissions from the proposed service stations are unlikely to pose an unacceptable risk to human health to both adjacent Child Care Centres. The NEPM air quality standards are based on protecting human health and well-being from the adverse effects of air pollution and are based on epidemiological studies.

2. The applicant's Transport Impact Assessment submitted with the original application addresses the operation of the intersection(s) and impact on the local road network during peak hours of operation. The Aurea Boulevard crossover and on-site design matters, through a revised Traffic Technical Note submitted with the revised application with vehicle access/egress and movement changes proposed, demonstrates that there are no unacceptable impacts on traffic movement within the locality. In addition, the Aurea Boulevard access has been modified to include a short vehicle slip lane to maintain traffic flow at the traffic intersection of Warnbro Sound Avenue and Aurea Boulevard. Fuel tanker movements are low based on 2-3 each week, during off-peak hours, and are considered acceptable.



AP ref: 22-083  
SAT ref: DR 135/2023  
City ref: 20.2023.35.1  
DAP ref: DAP/23/02447

22 December 2023

City of Rockingham  
PO Box 2142  
Rockingham DC WA 6967

Attention: Michael Ross & Sally Birkhead, Planning Services

**GOLDEN BAY VILLAGE PTY LTD v PRESIDING MEMBER OF THE MOJDAP  
SECTION 31 RECONSIDERATION PACKAGE  
LOT 622 (2) AUREA BOULEVARD, GOLDEN BAY**

Apex Planning acts on behalf of Golden Bay Village Pty Ltd with respect to neighbourhood centre development proposed at Lot 622 (2) Aurea Boulevard, Golden Bay (**subject site**).

Further to orders issued by Member Rochelle Lavery of the State Administrative Tribunal (**SAT**) on 19 December 2023 in relation to the above matter, the following additional information package is provided to inform the Respondent's reconsideration of the development in accordance with section 31 of the *State Administrative Tribunal Act 2004*.

This additional information package consists of:

- A comprehensive submission responding to the reasons for refusal (in this letter)
- Determination letter and stamped plans (**Appendix 1**)
- Amended site plan and ground floor plan (**Appendix 2**)
- A revised emissions impact assessment (**Appendix 3**)
- A traffic engineering technical note (**Appendix 4**)

**1 REASONS FOR REFUSAL**

On 10 July 2023, the Metro Outer JDAP considered the proposed neighbourhood centre development at meeting MOJDAP/257 and resolved to refuse the proposal 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.*

The reasons for refusal were discussed in detail in two mediation sessions with the Respondent.

Through these discussions, amended plans and a range of additional technical information was prepared to resolve the issues stemming from the refusal reasons (as appended to this section 31 submission).

The following sections of this submission address the refusal reasons and explain the additional information.

## **2 COMPATIBILITY OF SERVICE STATION (REFUSAL REASON 1)**

The first refusal reason relates to the proximity of the proposed 24 hour service station land use to sensitive uses, in particular two child care facilities at the western side of Thundelarra Drive. The impact which relates to this refusal reason is the potential exposure to benzene.

The development proposal was originally supported by an Emissions Impact Assessment (EIA) which considered the potential impacts of airborne pollutants from the proposed service station (including cumulative impacts, noting the existence of a 24 hour service station on the opposite side of Aurea Boulevard).

**Appendix 3** contains a revised EIA which addresses items raised by the responsible authority and their nominated expert during the mediation process.

The EIA used industry accepted standards for estimated pollutant emissions rates of 'primary airborne pollutants', including benzene, and demonstrated all airborne pollutants would be within the acceptable/compliant range with the incorporation of vapour recovery systems known as VR1 (associated with bulk refuelling activity) and VR2 (associated with retail fuel delivery at the bowser).

During the DA assessment phase, the City of Rockingham engaged an expert to undertake a peer review of the EIA. The peer review arranged by the City determined the assessment was appropriate for the intended purpose, though some recommendations were made which were determined not to materially change the outcomes of the EIA.

It is important to note that a range of over-estimations and conservatisms were built into the EIA (and compliant/acceptable levels were still achieved). These included:

- An assumption that all fuel dispensed from the site is unleaded petrol, which would not be the case. Approximately 22% of fuel dispensed from the site would also be diesel. The high boiling point of diesel fuel used in vehicles in Australia largely eliminates the presence of benzene in that type of fuel.
- A daily refuelling volume of 26,610L which was almost double that of the adjacent 7Eleven service station (13,800L), and three times the industry average for suburban fuel retailing sites (9,000L).
- The percentage (%) composition of benzene in fuel used in the modelling was 2.9% which is almost 3 times higher than the 1% maximum of benzene allowed in fuel sold in Australia under the relevant legislation.

- The modelled fuel delivery schedule, which assumed up to 180,000L of fuel delivered per day (4.5 times more than the actual amount) and 960,000L of fuel deliveries per week (more than 8 times higher than the actual amount).

To further explore the outcomes of the EIA, the Applicant agreed to undertake on-site sampling of benzene levels (noting the existence of a 24 hour service station on land adjacent to the development site). The sampling program was undertaken based on parameters agreed upon with the City's nominated expert.

The outcomes of the benzene sampling showed that the risk of benzene exposure is negligible from a modern, best practice service station and importantly, it was determined by the responsible authority's nominated expert that the likelihood of benzene concentrations approaching non-compliant concentrations at the nearby sensitive receivers (child care centres) is negligible.

Having regard for the summary outlined above, the information presented in the revised EIA (**Appendix 3**), and the extent of collaboration with the responsible authority in formulating this additional information, it is reasonable to conclude that the proposed 24 hour service station is compatible with its surroundings. The first refusal reason is considered to be resolved.

### **3 AUREA BOULEVARD CROSSOVER AND ONSITE DESIGN MATTERS (REFUSAL REASONS 2 AND 3)**

Refer to **Appendix 2** for revised site plan and ground floor plan and **Appendix 4** for a traffic engineering technical note explaining the traffic engineering considerations of the modifications.

In order to resolve the issues underpinning refusal reasons 2 and 3, the site plan and ground floor plan were modified as follows:

- Convert existing on-street parking spaces along Aurea Boulevard into a left turning pocket for the Aurea Boulevard crossover, which will improve the relationship of the crossover with the adjacent road network.
- Provide a turnaround bay within the blind aisle at the western side of the liquor store.
- Adjust the configuration of the service station forecourt, by shifting the refuelling spaces closer to the retail building and introducing a one-way circulation system where vehicles enter the refuelling area. This has increased stacking capacity of the forecourt and improved the functionality of the refuelling area.
- Reversing fuel tanker movements (now ingressing via Aurea Boulevard and egressing via Thundelarra Drive), to enable the provision of a pedestrian refuge within the Thundelarra Drive crossover.
- Provide a mountable apron at the Thundelarra Drive crossover, to regularise the egress movements of fuel tankers.
- Provide pedestrian path and pram ramps at the Aurea Boulevard crossover (which may be subject to further alteration at detailed design stage).

Based on the traffic engineering technical note, some important elements to highlight include:

- A maximum 17m fuel tanker is recommended to be used for bulk refuelling activity. This can be addressed as a condition of planning approval.

- Swept path plans have demonstrated satisfactory movements of fuel tankers based on the revised arrangements. It is reiterated that fuel deliveries would only occur 2-3 times per week (therefore very infrequent) and bulk refuelling is only proposed to occur during off-peak traffic periods.
- The design of the Thundelarra Drive crossover facilitates satisfactory simultaneous turning movements of B99 vehicles (as demonstrated by the swept path plans in **Appendix 4**).

The alterations to plans and supporting traffic engineering information have demonstrated an improved and more efficient access system for the site. Pedestrian movements have been addressed as per the requirements of the City. An enhanced scenario has been achieved for the service station.

Refusal reasons 2 and 3 are considered to have been resolved.

#### **4 CONCLUSION**

This section 31 package contains amended plans and additional information which comprehensively address/resolve the Panel's reasons for refusal.

After very detailed discussion with the Respondent, responsible authority, and responsible authority's nominated expert, the potential emissions associated with the proposed 24 hour service station have been further examined (including on-site benzene sampling), and it has been determined that the likelihood of benzene concentrations approaching non-compliant concentrations at the nearby sensitive receivers (child care centres) is negligible.

A number of alterations have occurred to the car park, access points, service station forecourt, and pedestrian movement infrastructure forming part of the proposal, which have improved the traffic and access arrangements of the site (both for vehicles and pedestrians).

The information presented has comprehensively address the refusal reasons. The City's support is warranted and the MOJDAP's approval is respectfully requested.

Should you have any queries or wish to discuss the above in further detail, don't hesitate to contact the undersigned on 0416 672 501.

**ALESSANDRO STAGNO**  
**APEX PLANNING**



## **APPENDIX 2**

### **AMENDED SITE PLAN AND GROUND FLOOR PLAN**





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	96
QUEUEING BAY	40
ON-STREET PARKING	4
BICYCLE RACKS	15
ACROD BAYS	7
TOTAL BAYS	162







## **APPENDIX 3**

### **REVISED EMISSIONS IMPACT ASSESSMENT**



# 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

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**Prepared for: Golden Bay Neighbourhood Centre**

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**Project Ref: EAQ-22031**  
**December 2023**

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Environment | Air Quality



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Draft_1.1	Draft Report	14.03.2023	J. Hurley	Golden Bay Neighbourhood Centre
Final	Final Report	21.12.2023	J. Hurley	

### Approved for Release

Name	Position	File Reference
John Hurley	Principal Consultant	EAQ22031-GoldenBayServiceStation+EmissionsImpactAssessment-Final

### Signature

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*This document presents the outcomes of a Desktop Emissions Modelling Assessment. All emissions inputs into the model were sourced from previous site-specific measurements, from peer reviewed public domain data and/or industry specific emissions' factor publications except where detailed otherwise herein. EAQ has not attempted to verify externally sourced data beyond its use herein. The modelling assessment has been prepared using the best available information provided by the Client and in conjunction with regulatory guidance from the appropriate regulatory jurisdiction(s). EAQ has exercised its diligence and due-care in delivering the outcomes of the assessment according to accepted assessment practices and techniques. EAQ disclaims any and all liability and responsibilities for damages of any nature, to any party, which may be caused from misapplication or misinterpretation by third parties of this assessment*

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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 as they relate to existing and adjacent childcare centres within the locality.

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.

### **Primary Assessment Conservatism**

The primary Assessment conservatisms were:

- Estimated daily refuelling volume used 26,610 L, which is markedly above adjacent 7-Eleven average daily refuelling volume of 13,800 L, and the industry average for suburban sites of approx. 9,000L per day;
- The maximum volume of fuel delivered per hour utilised is 60,000 L, however; the maximum size of a semi-trailer that can deliver fuel to this site has a capacity of less than 40,000 L;
- The modelled fuel delivery schedule assumed up to 180,000 L of fuel deliveries per day (4.5 x higher than expected on a delivery day) and 960,000 L of fuel deliveries per week (more than 8x higher than expected per week). This was done to account for variability in daily and weekly hours where deliveries may be made to the Fuel Service Station;
- The percentage (%) composition of benzene used in the modelling Assessment was 2.9 % (Table 2-2) which was reflective of the NPI 1999 standard. However, the maximum % of benzene in fuel sold in Australia is limited to a maximum of 1% v/v by the *Fuel Standard (Petrol Determination) 2019* made under s.21 of the *Fuel Quality Standards Act 2000 (Cth)*;
- All fuel throughput in the model has been assumed to be ULP even though it is expected that 22% of storage and throughput will be diesel, where the high boiling point of diesel fuel used in vehicles in Australia (a necessary step in its refining) largely eliminates the presence of benzene in that type of fuel.

## **What is Benzene?**

Benzene is a common chemical that is a colorless or light yellow liquid at room temperature. It has a sweet odour and is highly flammable. It is formed from both natural processes and human activities.

The United States (US) Centre for Disease Control and Prevention (CDC) has determined that long-term exposure to high levels of benzene in the air can cause leukemia. While it is correct to say that there is no recognised 'safe' exposure level to benzene, this commentary needs to be put into perspective, as everyone is exposed to benzene on a daily basis.

There are recognised and accepted guidelines for ambient exposure to benzene and these have been utilised in this report. For example, the exposure guideline for 1-hour benzene concentrations at the nearest receptor is 580  $\mu\text{g}/\text{m}^3$ , whilst the modelled exposure value from this Assessment, using those conservatisms listed above, is only 8.93  $\mu\text{g}/\text{m}^3$ . The compliance factor percentage (CF%) is subsequently 1.54 %. As a result, the likelihood of unacceptable benzene exposure at the closest receptor is considered negligible and should not be of concern from a risk perspective.

## **Benzene relative Risk of Exposure**

It is likely that a person would be exposed to much greater benzene levels travelling on the Kwinana freeway or walking along St. Georges Terrace during peak hour.

Everyone is exposed to natural sources of benzene whenever there are bush fires within the region.

Benzene is widely used across the world, and it ranks in the top 20 chemicals for production volume worldwide.

Some industries use benzene to make other chemicals that are used to make plastics, resins, nylon and synthetic fibers. Benzene is also used to make some types of lubricants, rubbers, dyes, detergents, drugs, and pesticides.

Studies have found that Indoor air within childcare and educational settings generally contain levels of benzene higher than those in outdoor air. Benzene in indoor air within those settings comes from products that contain benzene such as glues, paints, furniture wax, detergents, pesticides, carpets, soft and hard plastic toys, especially when exposed to heat or sunlight. [reference: *A Review on the Exposure to Benzene among Children in Schools, Preschools and Daycare Centres* (2019)]  
<https://link.springer.com/article/10.5572/ajae.2019.13.3.151#:~:text=Benzene%2C%20has%20been%20measured%20in,exposed%20to%20indoor%20air%20pollutants.>

As noted above, benzene is a key component of a large range of plastics, including those used for toys. There is no regulated standard in Australia for the maximum level of benzene in children's toys, however; the European Union (EU) has a chemical safety requirement (2009/48/EC, ENX11, ITEM III Chemical Properties) that *"all toys shall be designed and manufactured in such a way that they present no risk of adverse health effects due to exposure to chemical substances/mixtures in toys during foreseeable use"*.

The directive is not restricted to toys but includes all products that can be used in a school or childcare setting and includes; paints, crayons, texters, pencils, plastic toys, teething aids, balloons, tents and play equipment, cosmetics, soap, and hand sanitizer.

The Benzene Directive [82/806/EEC] bans the use of benzene in toys placed on the market when the concentration of free form benzene exceeds 5 mg/kg or 5,000 parts per billion (ppb) of the weight of the toy or of part of the toy. To put this into perspective, a small ambient air BTEX sampling program undertaken by EAQ for the adjacent service station returned results below the level of reporting. Even if this was rounded up to the nearest whole number (being 2 ppb) it is still extremely below the EU toy chemical safety requirements.

Further, homes with attached garages (which include almost all homes within the locality) are expected to have mean benzene concentrations in indoor air which exceed the ambient air quality standards.

*"In the homes where a car was regularly parked in the garage, 18-month average benzene concentrations of up to 101.3 micrograms m<sup>-3</sup> were measured in the garage. Mean benzene values in all cars and most of the garages studied exceeded the benzene standard. In the study, the mean benzene concentration in the room above the garage in a home was nearly 2.5 times the ambient air standard".*

<https://pubmed.ncbi.nlm.nih.gov/11329696/#:~:text=The%20study%20demonstrates%20that%20there,to%20reduce%20risks%20to%20health>

### ***What is Vapor Recovery?***

Vapour recovery control equipment aims to capture petrol vapours before they enter the atmosphere. They are designed in two stages – VR1 and VR2.

VR1 captures displaced vapours from storage tanks when a tanker delivers petrol to a service station, while VR2 captures vapours at the bowser while a motorist refuels.

In order to be certified, a VR1 system must collect at least 95% of displaced vapours for return to the delivery truck while a VR2 system must collect at least 95% of the vapours resulting from refuelling vehicles.

The use of VR1 technology has been required in some Australian jurisdictions since the mid 1980. It has been a requirement to install VR1 systems at all petrol stations throughout Western Australia since 1998.

The use of both VR1 and VR2 technology is considered safe and industry best practice.

VR2 was developed in California in the 1980's and legislated as a requirement for all high flow stations within that jurisdiction by 1991. While there were publicised teething problems identified with vapor return line blockages, these initial design issues have been mitigated over time, with automated monitoring and regular servicing schedules now a standard part of the system.

The use of VR2 It is not mandated in any Australian jurisdiction, except for NSW, which has required VR1 and VR2 to be implemented for new stations within the Sydney metropolitan area since 2009 and the greater Sydney area (Wollongong – Blue Mountains – Newcastle regions) since 2017.

VR1 and VR2 is proposed as part of this development.

### ***Assessment Outcomes***

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 (proposed).

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, to include the adjacent child care facilities between their respective child care operational hours.

Finally, the small ambient air BTEX sampling program showed that when using the largest quantifiable value from the BTEX sampling program for benzene (2 ppbV), and then scaling up the measured ambient concentration of benzene to represent that winds were blowing toward the monitor all of the time ( $\times 10$ ), the final ambient value for benzene measured at the monitors was approximately 20 ppbV. Converting ppb to the exposure limit units of  $\mu\text{g}/\text{m}^3$ , the approximate value of ambient benzene was  $64 \mu\text{g}/\text{m}^3$ .

This  $64 \mu\text{g}/\text{m}^3$  is only 11 % of the accepted exposure limit standard of  $580 \mu\text{g}/\text{m}^3$ , and therefore likelihood of benzene concentrations approaching the ambient exposure criterion (human health) at the childcare centres due to emissions from the proposed Fuel Service Station is negligible.



## 1 Background & Scope

Environmental & Air Quality Consulting Pty Ltd (EAQ) was engaged by Golden Bay Neighbourhood Centre (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) <sup>[1]</sup> 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 Aermom and its supporting pre- and post- processors.

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<sup>1</sup> 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**

<b>50 m</b>	Operating during normal business hours of Monday – Saturday from 0700 – 1900 hours
<b>100 m</b>	Freeway service stations
<b>200 m</b>	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, with the VIC EPA 2002 1-hr benzene exposure value also adopted for short-term exposure of benzene.

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 <sup>3</sup> at 25°C
Benzene	1 hour	<a href="#">VIC EPA 2022</a>	0.18	580
		<a href="#">EPA NSW 2016</a>	0.009	29
Toluene	Annual	<a href="#">NEPM 2011</a>	0.003	9.6
	24 hour		1	3,770
Ethyl benzene	Annual	<a href="#">EPA NSW 2016</a>	0.1	377
	1 hour		1.8	8,000
Xylenes	Annual	Toxicos 2011		270
	24 hour	<a href="#">NEPM 2011</a>	0.25	1,080
Cyclohexane <i>n</i> -Hexane	Annual		0.2	870
	1 hour	<a href="#">EPA NSW 2016</a>	5	190
Styrene			0.9	3,200
	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 under construction.

The proposed Site is directly east of, and north-east of existing commercial sites to include a childcare Facility. There is also an additional childcare Facility to the south-west of the proposed Site, and directly west of the Adjacent service station site.

Importantly, both childcare Facility's have 5-day week operational hours between the maximal hours of 6AM-7PM inclusive. The childcare 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 childcare Facilities. The “red” crosses are those discrete receptor locations used to assess impacts at each of the childcare Facilities.



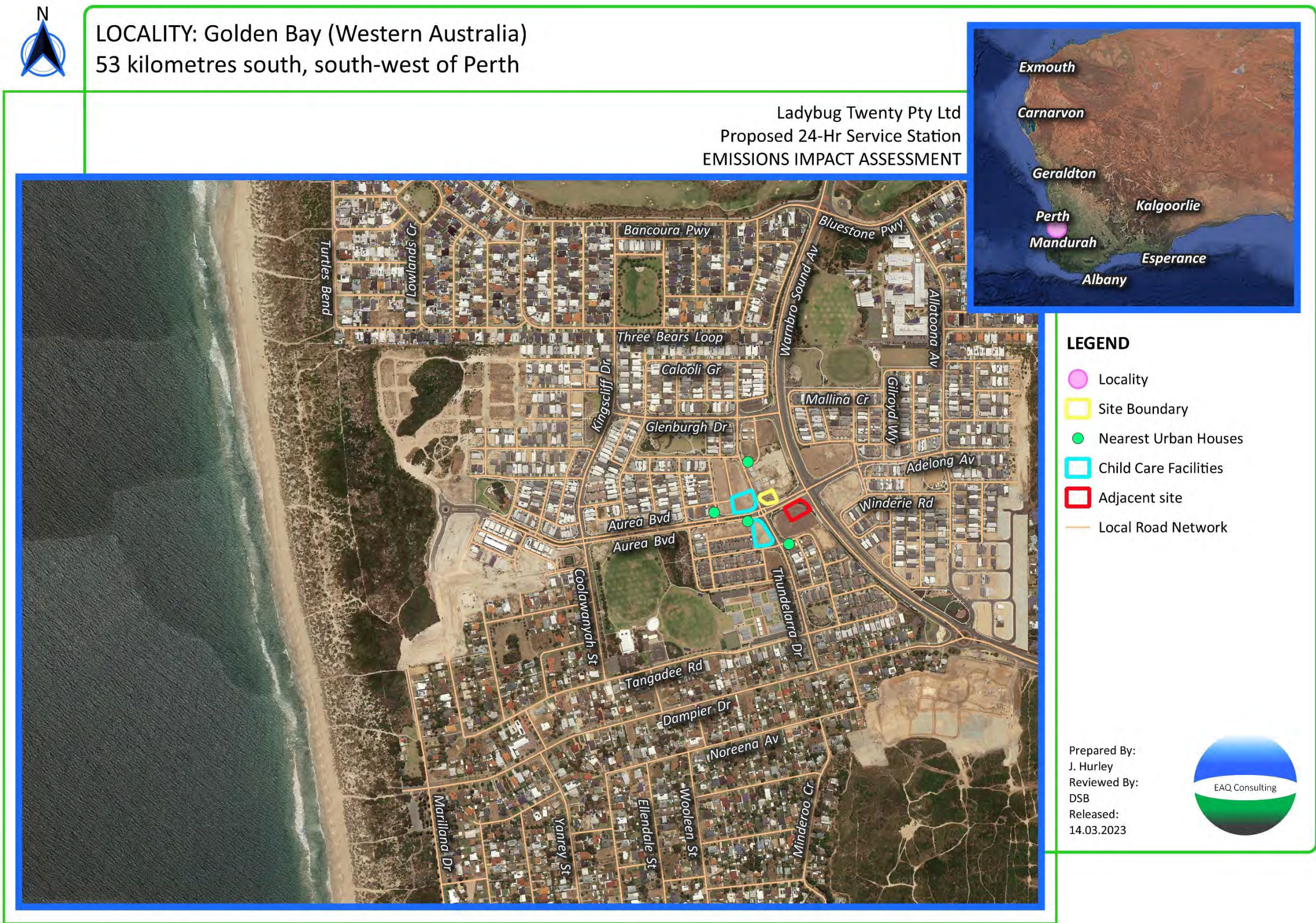


Figure 1-1: Proposed 24-hr Golden Bay Service Station (assessed)



# 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
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					

## 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**.

The composition of Benzene in fuel will be lower than the NPI, 1999 value of 2.9% weight, because the percentage of Benzene in fuel is now limited to a maximum of 1% by the [Fuel Standard \(Petrol Determination\) 2001](#). The NPI, 1999 figure is therefore conservative.

**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
<b>Average Daily Refuelling Volume</b>	<b>25,610 L</b>
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. Those values bolded in **Red** were used in deriving the emissions for Assessment.

**Table 2-4: Emissions Factors for Service Stations**

Emission Source	NPI, 1999 Mg / L throughput	CAPCOA, 1997 Lbs / 1000 Gallons throughput
<b><i>Underground Tank Filling</i></b>	-	-
Submerged Filling	880	8.4
Splash Filling	1380	-
Submerged filling with vapour balance	<b>40</b>	0.42
Underground tank breathing losses	<b>120</b>	0.84
<b><i>Vehicle Refuelling</i></b>	-	-
Displacement Losses (uncontrolled)	1320	8.4
Displacement Losses (90% controlled i.e., VR 2)	132	<b>0.74</b>
<b><i>Spillages</i></b>	-	-
Uncontrolled	80	<b>0.61</b>
Controlled	-	<b>0.41</b>
<b><i>"Whoosh" Emissions (fuel cap removal)</i></b>	-	0.26 - <b>0.66</b>

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	<b>6.15%</b>
17	<b>6.15%</b>
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 bowzers 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) – <b>VR1</b>	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)	-	-
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[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
<b>Average Daily Refuelling Volume</b>	<b>13,800 L</b>
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) – <b>VR1</b>	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 childcare 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  $5^\circ$  to  $10^\circ$  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 $\mu\text{g}/\text{m}^3$ at 25°C	Predicted GLC ( $\mu\text{g}/\text{m}^3$ )	% of CF	Pass/Fail	Averaging Period	Exposure Limit $\mu\text{g}/\text{m}^3$ at 25°C	Predicted GLC ( $\mu\text{g}/\text{m}^3$ )	% of CF	Pass/Fail
North	Benzene	1-hour	580	7.69	1.33%	Pass	Annual	9.6	0.17	1.79%	Pass
West				8.27	1.43%	Pass			0.15	1.58%	Pass
SW				8.94	1.54%	Pass			0.21	2.22%	Pass
SSE				4.84	0.84%	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	<i>n</i> -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 $\mu\text{g}/\text{m}^3$ at 25°C	Predicted GLC ( $\mu\text{g}/\text{m}^3$ )	% of CF	Pass/Fail	Averaging Period	Exposure Limit $\mu\text{g}/\text{m}^3$ at 25°C	Predicted GLC ( $\mu\text{g}/\text{m}^3$ )	% of CF	Pass/Fail
North	Benzene	1-hour	580	8.86	1.53%	Pass	Annual	9.6	0.19	2.02%	Pass
West				12.87	2.22%	Pass			0.18	1.83%	Pass
SW				10.98	1.89%	Pass			0.26	2.67%	Pass
SSE				9.43	1.63%	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) @ Childcare Facilities**

Receptor Location	Pollutant	Averaging Period	Exposure Limit $\mu\text{g}/\text{m}^3$ at 25°C	Predicted GLC ( $\mu\text{g}/\text{m}^3$ )	% of CF	Pass/Fail	Averaging Period	Exposure Limit $\mu\text{g}/\text{m}^3$ at 25°C	Predicted GLC ( $\mu\text{g}/\text{m}^3$ )	% of CF	Pass/Fail
CC1	Benzene	1-hour	580	21.93	3.78%	Pass	Annual	9.6	0.40	4.16%	Pass
CC2				26.98	4.65%	Pass			0.58	6.03%	Pass
CC3				17.00	2.93%	Pass			0.30	3.07%	Pass
CC4				13.61	2.35%	Pass			0.20	2.12%	Pass
CC5				15.19	2.62%	Pass			0.23	2.44%	Pass
CC6				10.88	1.88%	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 $\mu\text{g}/\text{m}^3$ at $25^\circ\text{C}$	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	n-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

## 5 Additional Information - Ambient BTEX Sampling

A small ambient air sampling program that targeted airborne BTEX chemistry from the adjacent existing service station was undertaken to determine if airborne benzene could be quantified in the locality.

The method included the deployment of SUMMA Cannisters, set for a 6-hour sampling 'run', that were located across the road from the existing service station approximately 40 metres from the nearest vehicle refuelling bowser.

40 metres was chosen to reflect the distance from the proposed Station to the adjacent existing childcare centre. In this way conclusions could be made as to whether BTEX emissions are likely to be quantified at the adjacent childcare centre and to what concentration. This information would provide greater insight into the risk of BTEX emissions having an adverse impact on the childcare centre and surrounding sensitive receptors.

To complement the SUMMA Cannisters, a Kestrel weather station was deployed adjacent to the SUMMA Cannisters location to record ground level wind speed, wind direction and temperature throughout the 6-hour sampling period. The aim was to target winds blowing from the existing service station in the direction of the SUMMA Cannisters.

The following Table lists the dates, times, BTEX concentrations measured and weather details for each sampling day.

Values for BTEX with a '<' represent the limit of reporting (i.e., detection) for that sample/analyte. In other words, the result is not positive.

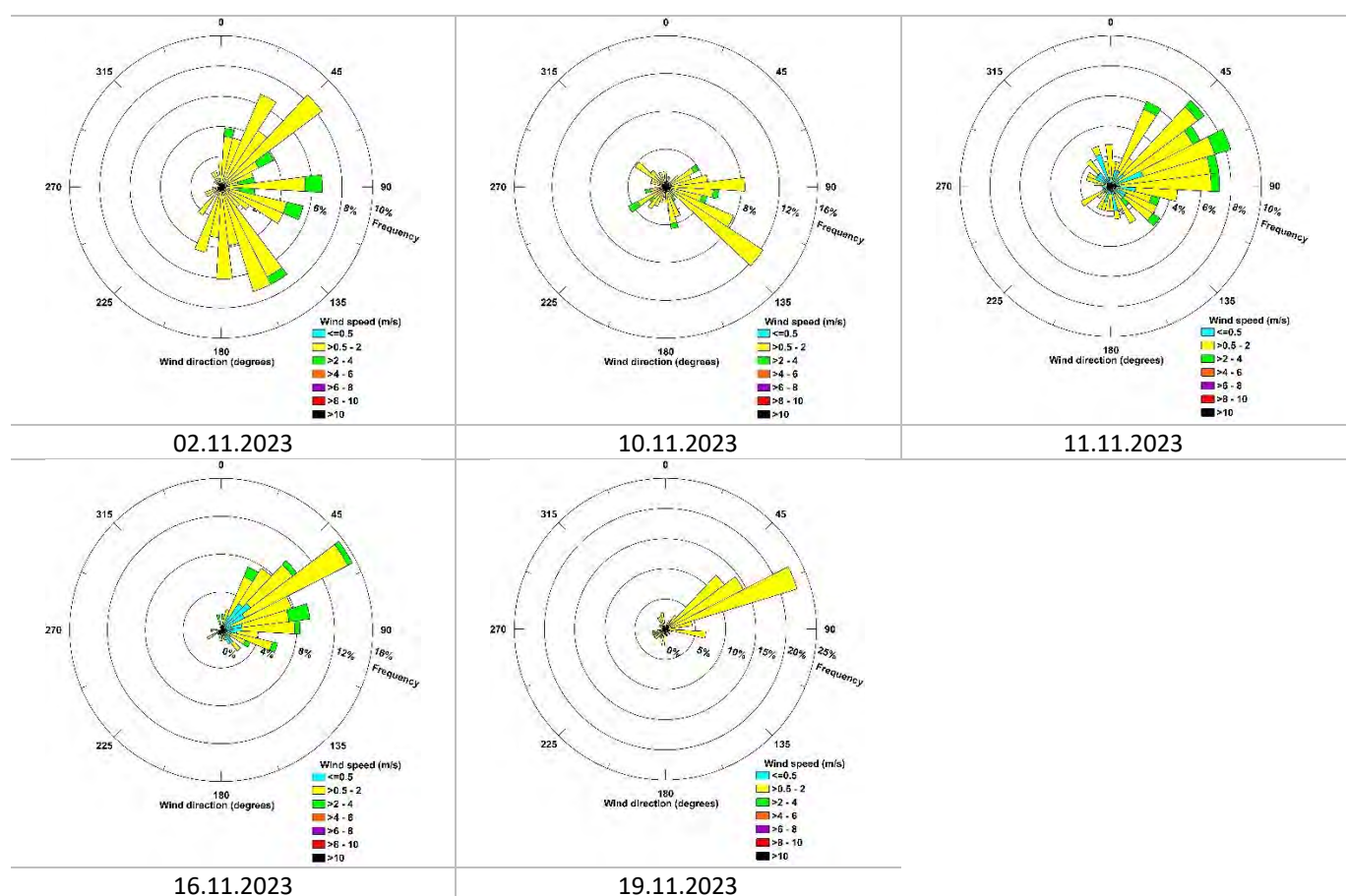
**Table 5-1: BTEX Sampling Results**

Sampling Date/Time ON	Average Wind Speed (m/s)	Average Wind Direction (degrees)	Average Wind Direction (Cardinal)	Average Temp. (°C)	Benzene ppb(V)	Ethylbenzene ppb(V)	Toluene ppb(V)	m- & p-Xylene ppb(V)	o-Xylene ppb(V)	Xylene ppb(V)
02/11/2023 @ 0540AM	1.45	125	SE	26.1	<1.5	<1.5	<1.5	<3.1	<1.5	<4.6
10/11/2023 @ 0520AM	1.37	158	SSE	19.2	<1.6	<1.6	<1.6	<3.2	<1.6	<4.8
11/11/2023 @ 0521AM	0.92	132	SE	20.8	<1.5	<1.5	2	<2.9	<1.5	<4.4
16/11/2023 @ 0522AM	0.93	88	E	21.6	<1.7	<1.7	<1.7	<3.4	<1.7	<5.0
19/11/2023 @ 0506AM	0.99	122	ESE	26.0	<1.4	<1.4	<1.4	<2.8	<1.4	<4.2

As was anticipated, it can be seen from **Table 5-1** that all ambient sampling results were below the limit of reporting for these BTEX analytes, with exception to Toluene on sampling day 3 (11.11.2023).

Although toluene was detected at extremely low concentration levels, BTEX vapours from the service station do not pose a high concentration risk to nearby receptors, in particular the childcare centre(s), due to (among others) daytime dispersive conditions, low volume passive emissions losses at the bowser resulting in low BTEX emissions, vapour recovery (VR1) at the bulk refuelling events, and length of dispersion pathway from emission source to receptor. Importantly, ambient pollutants from traffic vehicle emissions and other anthropological activities would always exist in ambient conditions.

**Figure 5-1** below illustrates the wind direction and wind speed during SUMMA Cannister sampling. Although the winds fluctuate (as expected) the average wind vector (**Table 5-1**) is suited to the sampling design across the first three (3) sampling events. Importantly, the ambient concentration of BTEX attributed to vehicles and other anthropological sources would continue to exist under all weather conditions.



**Figure 5-1: Wind Characteristics during SUMMA Cannister Sampling.**

Referring to **Figure 5-1**, the average wind direction that was aimed for was from the southeast. Of the 3 sampling events where southeast winds prevailed, the percentage of the sampling period in which the winds were *actually* blowing from approx. 135° (+/-15°, or +/- 1 wind rose petal) were as follows:



- 02/11/2023 – 11%
- 10/11/2023 – 21%
- 11/11/2023 – 8%

As a result, these 3 sampling events are estimated to have been influenced by winds outside of the preferred southeast direction for approx., 90%, 80% and 90% of the total 6-hour sampling run.

If the benzene concentrations quantified in **Table 5-1** were actual (i.e., above limit of detection), the largest quantified value for benzene would be 2 ppbV. Accounting for the winds prevailing from the southeast for approx., 10% of the sampling runs, the 2 ppbV can be multiplied by 10 to assume that winds were 100% of the time prevailing from the southeast. Converting ppbV to  $\mu\text{g}/\text{m}^3$  at 25°C, the derived ambient benzene concentrations are as follows:

**Table 5-2: Derived Ambient Benzene Concentrations**

Event	Benzene (ppbV)	Multiplied by 10	Benzene ( $\mu\text{g}/\text{m}^3$ )	Benzene 1-hr Criteria
2/11/2023	2	20	<b>64</b>	580
10/11/2023	2	20	<b>64</b>	580
11/11/2023	2	20	<b>64</b>	580

## 5.1 Ambient BTEX Sampling Conclusions

The ambient BTEX sampling program undertaken by EAQ was designed to capture winds from the SE to ensure capture of airborne BTEX in the direction of the proposed Station. In doing so this would allow a ‘transposition’ of the quantitative data collected to reflect the proposed Station and its potential risk of BTEX impacts on the adjacent childcare centre.

The SUMMA Cannister sampling data showed that BTEX vapours are negligible in ambient air within 40 metres downwind of the adjacent and existing service station. Where winds deviated from the preferred SE vector, the ambient concentrations of BTEX were still negligible. Under these conditions the emission vapours from vehicles and other anthropological contributions continue to emit a plethora of chemical vapours within the locality, although BTEX vapours were not readily detectable at 40 metres from the primary service station odour source.

Whilst the sampling program was small, the data supports that benzene in ambient air is at low concentrations. Moreover, when considering the VIC EPA 1-hr benzene exposure limit and subsequently derived low compliance factor percentages (CF%) for benzene at the nearest receptors, the risk of benzene exposure is negligible from a modern, best-practice service station which utilises VR1, and importantly VR2 vapour recovery technology.

The understanding of that risk informs stakeholders of “what is likely”, and in this case, the likelihood of BTEX chemistry exposure from the proposed Station is negligible at the nearest sensitive receptor.



## **Appendix A:** Emissions Calculations

Bowser VR2	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 mg/L throughput	CAPCOA Lbs/1000 Gallons throughput	CAPCOA mg/L throughput
	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	Underground Tank Filling			
	CAPCOA (Lbs/1000gallons to mg/L)	2,320 mg/L	2	0.80%	205	13.01%	205	0.057	0.132	0.132	0.033				
	CAPCOA (Lbs/1000gallons to g/L)	2.320 g/L	3	0.60%	154	9.76%	154	0.043	0.099	0.099	0.025		Submerged Filling	880	1007
	Losses (g/L)	2.320 g/L/hr	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 g/L/hr	5	1.90%	487	30.89%	487	0.135	0.314	0.314	0.078		Submerged filling with vapour balance	40	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	101
			7	5.50%	1,409	89.43%	1,409	0.391	0.908	0.908	0.227		Vehicle Refuelling		
	E10 Volatilisation	1.5	8	5.70%	1,460	92.68%	1,460	0.405	0.941	0.941	0.235		Displacement Losses (uncontrolled)	1320	1007
	E10 % of T-Volumes	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 71	132	89
	E10 Fuel Ratio Factor	0	10	5.70%	1,460	92.68%	1,460	0.405	0.941	0.941	0.235	Spillages			
Storage Tanks VR 1	% of Other Fuels	100%	11	6.00%	1,537	97.56%	1,537	0.427	0.990	0.990	0.248		Uncontrolled	80	73
	Fuel Ratio Factor	1.000	12	6.00%	1,537	97.56%	1,537	0.427	0.990	0.990	0.248		Controlled		49
			13	5.70%	1,460	92.68%	1,460	0.405	0.941	0.941	0.235		"Whoosh" Emissions		79
	Time to Fill Tank	40 minutes	14	5.60%	1,434	91.06%	1,434	0.398	0.924	0.924	0.231		"Whoosh" Emissions (averaged)	0.46	79
	Total Volume/hr	60000 L/hr	15	5.90%	1,511	95.93%	1,511	0.420	0.974	0.974	0.243		Diesel	176	
	NPI 1999	160 mg/L	16	6.15%	1,575	100.00%	1,575	0.438	1.015	1.015	0.254		LPG	0.04	
		9600000 mg/hr	17	6.15%	1,575	100.00%	1,575	0.438	1.015	1.015	0.254				
		9600.000 g/hr	18	5.80%	1,485	94.31%	1,485	0.413	0.957	0.957	0.239				
	4.5m High Vent Rate	0.00079 m3/s	19	5.10%	1,306	82.93%	1,306	0.363	0.842	0.842	0.210				
	VR1 10% losses	0.267 g/s	20	4.00%	1,024	65.04%	1,024	0.285	0.660	0.660	0.165				
	Final Value	0.267 g/s	21	3.50%	896	56.91%	896	0.249	0.578	0.578	0.144				
	Annually	8410666.667 grams	22	3.40%	871	55.28%	871	0.242	0.561	0.561	0.140				
		8410.666667 kgs	23	2.60%	666	42.28%	666	0.185	0.429	0.429	0.107				
		23.04292237 kgs/day	24	1.80%	461	29.27%	461	0.128	0.297	0.297	0.074				
	Deliveries weekly	2.869 kgs		100.0%	25610			Max	1.015		0.254				
	Per delivery	0.960 kg/hr						SUM	16.5029		4.1257				
		0.267 g/s						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												
		ULP 91	80												
		ULP 95	30												
		ULP 98	30												
	Daily Sales	25610													
	Annual Sales	9,347,561													
	Tanker Volume	90000													
	Deliveries per week	3.0													



## **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
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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
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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
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128	YBADJ	STCK2	0.00	0.00	0.00	0.00	0.00	0.00
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135								
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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
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147	EMISFACT	BOWS3	HROFDY	0.227	0.235	0.227	0.235	0.248	0.248
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168	EMISFACT	VENT	HRDOW7	0.267	0.0	0.0	0.0	0.0	0.0
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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
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220 SO FINISHED
221 **
222 *****
223 ** AERMOD Receptor Pathway
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269 *****
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271 ** DESCPTN   UTM: Universal Transverse Mercator
272 ** DATUM     World Geodetic System 1984
273 ** DTMRGN    Global Definition
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```



## **APPENDIX 4**

### **TRAFFIC ENGINEERING TECHNICAL NOTE**

**Technical Note:** No. 1**Date:** 30/11/2023**Project No:** t23.035**Project:** Lot 622 (No. 2) Aurea Boulevard, Golden Bay**Subject:** Proposed Neighbourhood Centre - Revised Plan

## 1. Introduction

The proposed development at the above-mentioned site was refused by JDAP on July 10, 2023. Subsequently, the application was referred to the State Administrative Tribunal (SAT). Currently, the matter is in mediation, and the first mediation session took place on Monday, October 23, 2023.

Following the first mediation, several actions were agreed upon, which subsequently lead to a revised development plan. Accordingly, Transcore has been requested to prepare an Addendum Report (to the Revised Transport Impact Assessment dated May 2023) with respect to these actions and the revised development plan. The identified actions are as follows:

1. Provide pedestrian refuge within Thundelarra Drive crossover, to be constructed of rollover kerb to prevent interference with service vehicles;
2. Convert existing on-street bays along Aurea Boulevard to a left turn pocket;
3. Show pedestrian path and pram ramps along Aurea Boulevard crossover.
4. Provide blind aisle turning bay for Liquor Store parking area;
5. Move fuel bowsers closer to the convenience store building to the extent possible; and,
6. Change configuration of refuelling area to one way.

This technical note serves as an addendum to the original Revised TIA prepared by Transcore in May 2023.

## 2. Revised Development Plan

**Appendix A** illustrates the revised development plan. The revised plan indicates the following modifications to the proposed Aurea Blvd and Thundelarra Drive crossovers:

- Amendment of Thundelarra Drive crossover and provision of a pedestrian refuge;
- Provision of a mountable apron on the southern side of the Thundelarra Drive crossover;
- Removal of the mountable apron from the east side of the Aurea Blvd crossover;

- Removal of the on-street parking bays and provision of a left turn pocket on Aurea Blvd crossover; and,
- Provision of pedestrian path and pram ramps along Aurea Boulevard crossover.

In addition to the above modifications, the following changes have been made to the internal site layout:

- Provision of a turnaround bay within the blind aisle adjacent to the proposed liquor store;
- Shifting the service station canopy and bowzers further west to create more stacking spaces at the bowzers; and,
- Introducing southbound one-way system within the eastern area of the service station forecourt.

As a result of the above modifications, it is recommended that a smaller 17m fuel tankers should be used to service the proposed service station.

With the revised crossover designs, the fuel tanker will enter the site via the Aurea Blvd crossover and exit the site via Thundelarra Drive crossover. Turn path analysis undertaken included in **Appendix B** of this technical note indicates satisfactory movement of the fuel tanker. The turn path analysis also shows satisfactory navigation of the roundabout intersection of Thundelarra Drive/Aurea Blvd by the fuel tanker. To facilitate the left turn, exit of the fuel tanker, a mountable apron is proposed at the Thundelarra Drive crossover.

The Thundelarra Drive crossover now entails a pedestrian refuse. The design of the crossover accommodates left turn outs by the fuel tanker and right and left turn ins by a B99 vehicles as evident from the turn paths in Appendix B.

The turn around bay provided within the blind aisle adjacent to the liquor store will remove the risk of traffic conflicts and congestion within this parking area.

The revised development plan now entails more stacking space behind the fuel bowzers of the proposed service station. This is achieved by shifting the bowzers and the canopy further west yest achieving a 6.5m wide circulation aisle between the parking bays fronting the shop and the bowzers. To further reduce the risk of traffic conflicts, it is recommended that the eastern service station forecourt should be one-way in the southbound direction, but the western forecourt remains as two-way.

### 3. Conclusions

Following the SAT Mediation, several actions related to development site plan have been actioned resulting in a revised development plan. The revised development plan will result in more efficient traffic circulation within the development reducing the risk of traffic conflicts, queue backs and congestion within the site.

Based on the assessments undertaken by Transcore, it is evident that the revised development plan has successfully addressed all the actions raised and agreed in the mediation. The modifications and adjustments made to the development plan, as guided by the mediation outcomes, have effectively resolved the items discussed during the mediation process.



# APPENDIX A

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## REVISED DEVELOPMENT PLAN



OVERALL AREA (GLAR)	
TENANCY	AREA
FAST FOOD	450 m²
LIQUOR	200 m²
SERVICE STATION	80 m²
SPECIALTY	150 m²
SUPERMARKET	1100 m²
TOTAL GLAR	2080 m²

CAR PARKING PROVIDED - OVERALL	
TYPE	COUNT
STANDARD CAR BAY	96
QUEUING BAY	4
ON-STREET PARKING	4
BICYCLE RACKS	15
BUS/DOCK BAYS	15
TOTAL BAYS	160



SITE PLAN  
GOLDEN BAY NEIGHBOURHOOD CENTRE

Status: DEVELOPMENT APPLICATION  
Path: C:\Users\jashar\Documents\Bowl Local Files\2015\44634 - Golden Bay Neighbourhood Centre\_L\Jarra.rvt

Scale: 1:500 @ A1  
© Hames Sharley



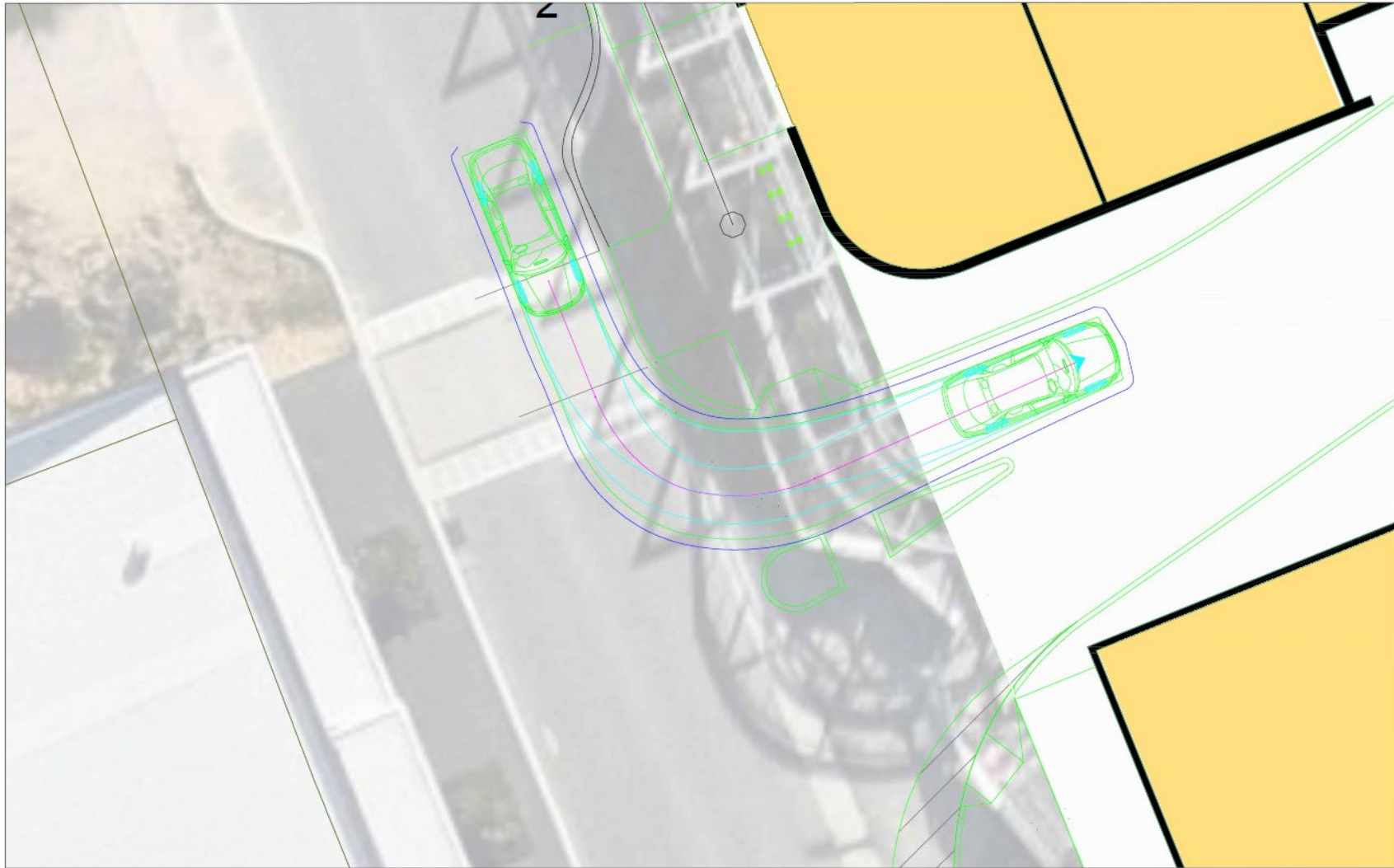
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Drawing Number: DA101  
Revision: K  
Date: 16.11.23

**Hames Sharley**

# APPENDIX B

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## TURN PATHS



2 Aurea Blvd, Golden Bay  
 Austrorads 2013: B99 Passenger Car  
 B99 left-in

**LEGEND**  
 Vehicle Body  
 Wheel Path  
 300mm Clearance



t22.035.sk24a  
 28/11/2023  
 Scale: 1:100 @ A3







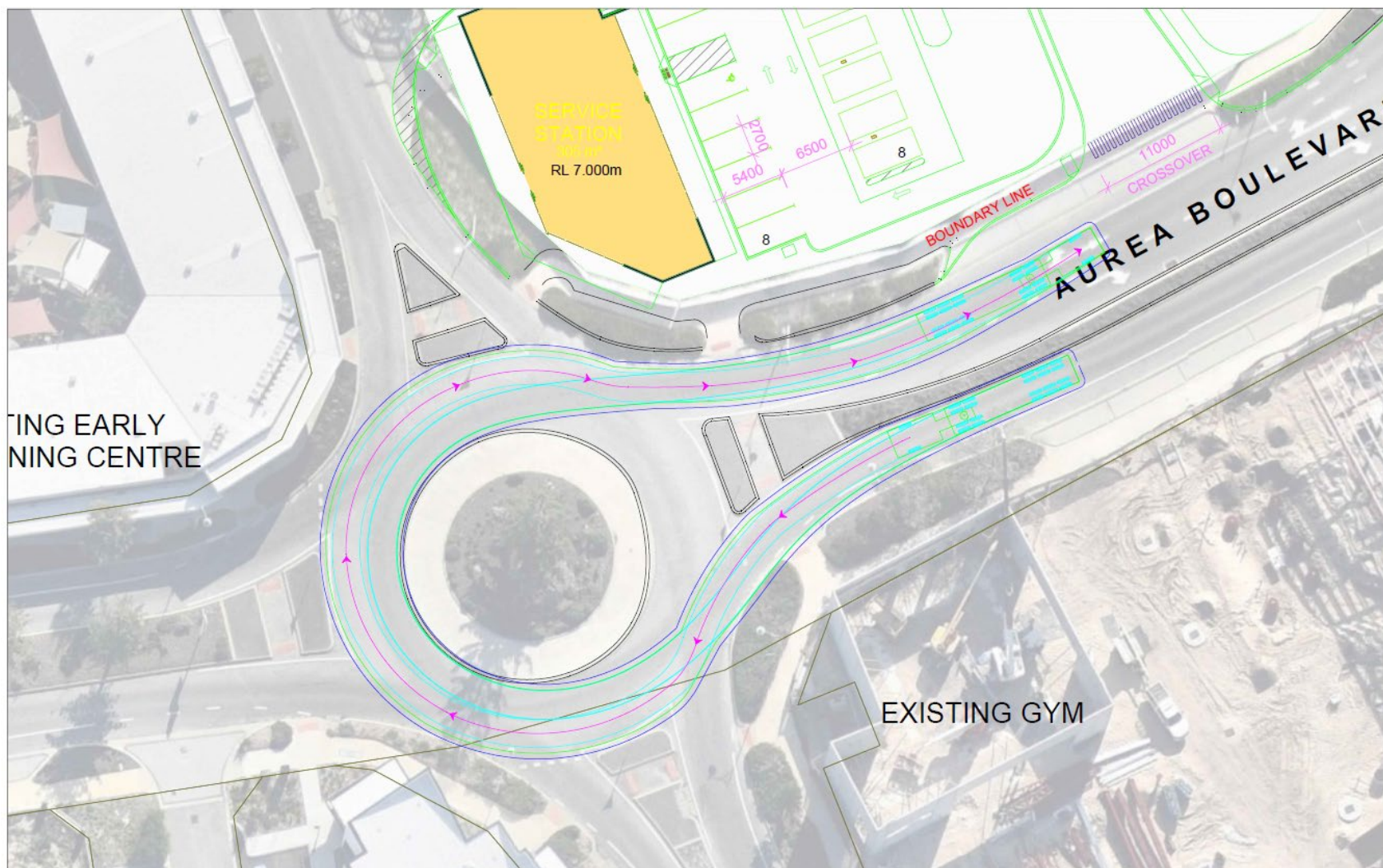
2 Aurea Blvd, Golden Bay  
Austroads 2013: B99 Passenger Car  
B99 right-in

**LEGEND**  
Vehicle Body  
Wheel Path  
300mm Clearance



t22.035.sk25a  
28/11/2023  
Scale: 1:100 @ A3





2 Aurea Blvd, Golden Bay  
17.0m Fuel-tanker  
Fuel tanker U-turn at the roundabout

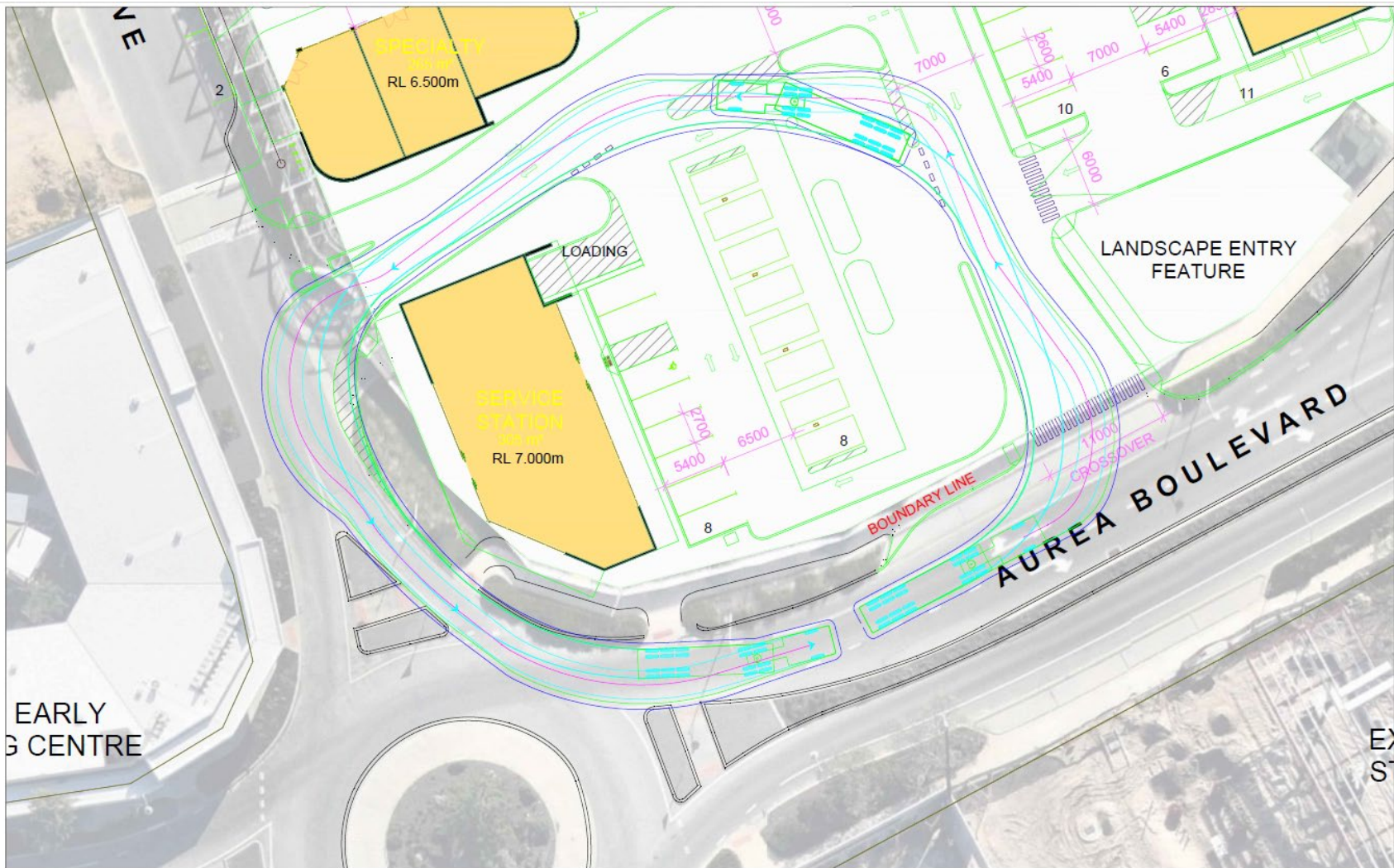
**LEGEND**  
Vehicle Body  
Wheel Path  
500mm Clearance



t22.035.sk26  
28/11/2023  
Scale: 1:300 @ A3







2 Aurea Blvd, Golden Bay  
 17.0m Fuel-tanker  
 Fuel tanker circulation

**LEGEND**  
 Vehicle Body  
 Wheel Path  
 500mm Clearance



t22.035.sk27  
 28/11/2023  
 Scale: 1:300 @ A3



## Planning and Development Services Statutory Planning Services



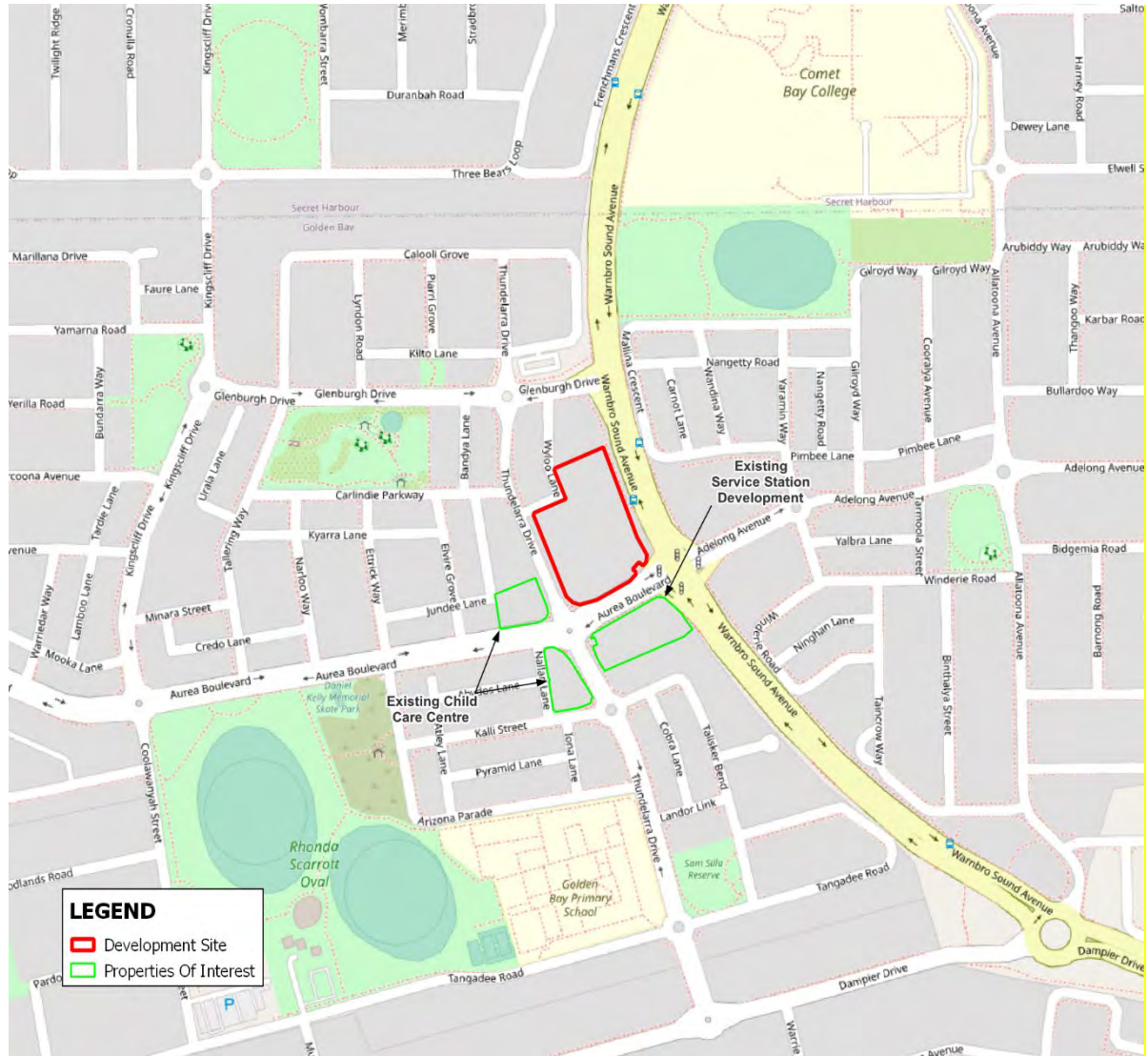
<b>Reference No &amp; Subject:</b>	<b>PD-026/23</b>	<b>Joint Development Assessment Panel Application - Proposed Mixed Commercial Development (Golden Bay Neighbourhood Centre)</b>
File No:	DD020.2023.00000035	
Applicant:	Apex Planning	
Owner:	Golden Bay Village Pty Ltd, under contract to Jarra Dev Pty 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"> <li>1. Responsible Authority Report</li> <li>2. Schedule of Submissions</li> </ol>	
Maps/Diagrams:	<ol style="list-style-type: none"> <li>1. Location Plan</li> <li>2. Aerial Plan</li> <li>3. Golden Bay Structure Plan (2021)</li> <li>4. Previous Development Approval (June 2016)</li> <li>5. Golden Bay Neighbourhood Centre LDP (2022)</li> <li>6. Photographs Showing Site Context</li> <li>7. Proposed Site Plan</li> <li>8. Elevation Plans</li> <li>9-10. Perspectives</li> <li>11. Landscape Concept</li> <li>12. Mall Concept</li> <li>13. Submission Response Map</li> <li>14. Location of Acoustic Wall along Wyloo Lane</li> <li>15. EPA Guidance Statement No.3 - Separation Distance</li> <li>16. Golden Bay Neighbourhood Centre LDP (Extract)</li> <li>17. Mall Design (Extract)</li> <li>18. Proposed Aurea Boulevard Access (Extract)</li> </ol>	



## 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 3,240m<sup>2</sup> 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.

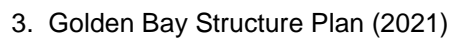
Included in the additional information submitted by the Applicant, was an Emissions Impact Assessment (EIA) addressing modelling for fuel vapour emissions from the proposed Service Station, which was independently peer reviewed.

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.

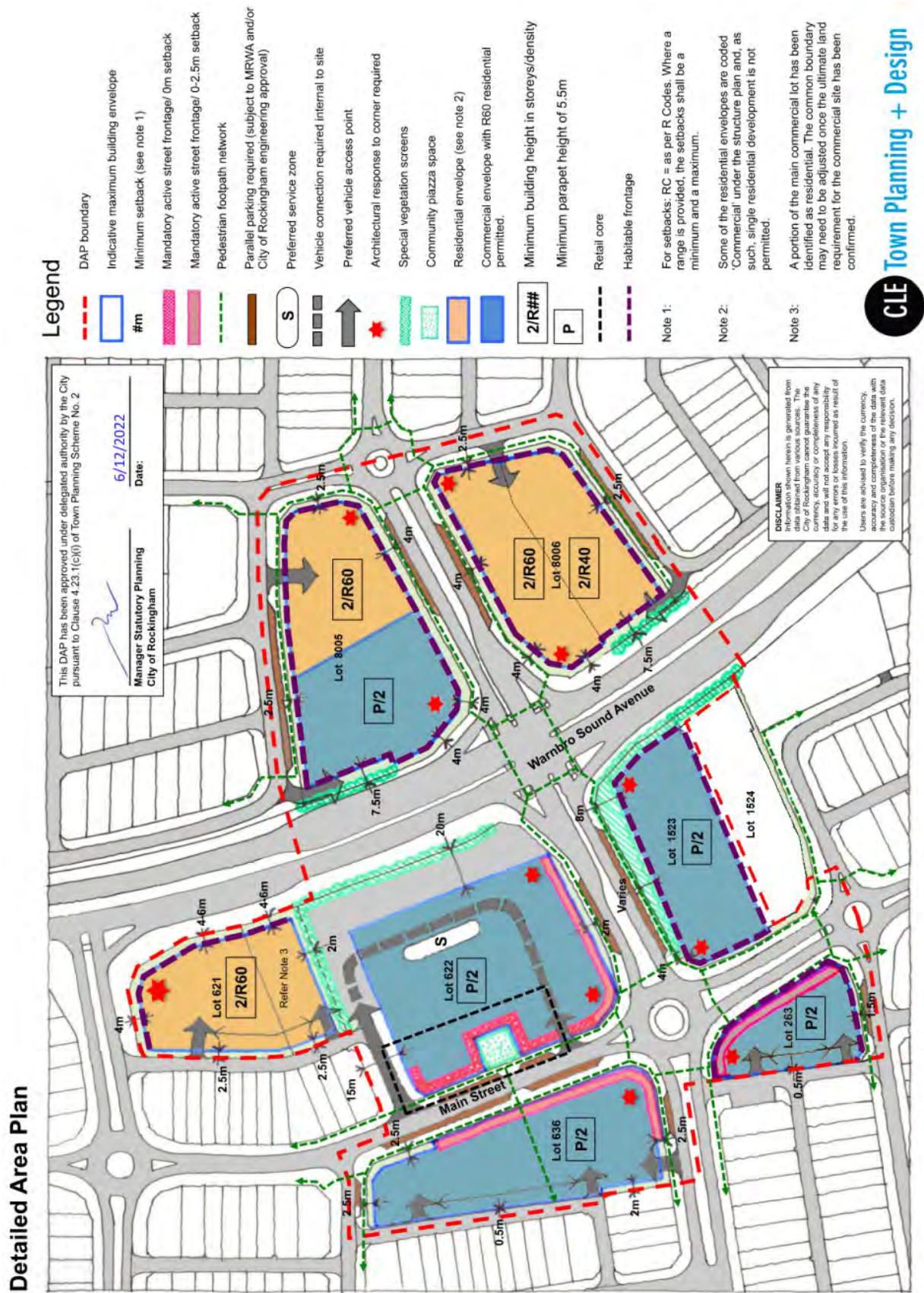
The Council's position at the time was based on Department of Health (DoH) and Department of Water Environment and Regulation (DWER) advice which recommended applying a 200m separation distance between the Service Station and adjacent sensitive development (ie. Child Care Centres) in accordance with *Environmental Protection Authority Guidance Statement No.3 – Separation Distances between Industrial and Sensitive Uses (GS3)*.



- 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.







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:

- 1,165m<sup>2</sup> Supermarket fronting Thundelarra Drive.
- 3 x 'specialty retail' Shops with total 263m<sup>2</sup> floorspace fronting a 'mall', which links Thundelarra Drive and the carpark behind the Supermarket.
- 2 x freestanding Fast Food Outlets (260m<sup>2</sup> and 265m<sup>2</sup>), with drive-through facilities adjacent to Warnbro Sound Avenue.
- 230m<sup>2</sup> freestanding Liquor Store, with back-of-house and drive-through fronting Warnbro Sound Avenue.
- 305m<sup>2</sup> 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).

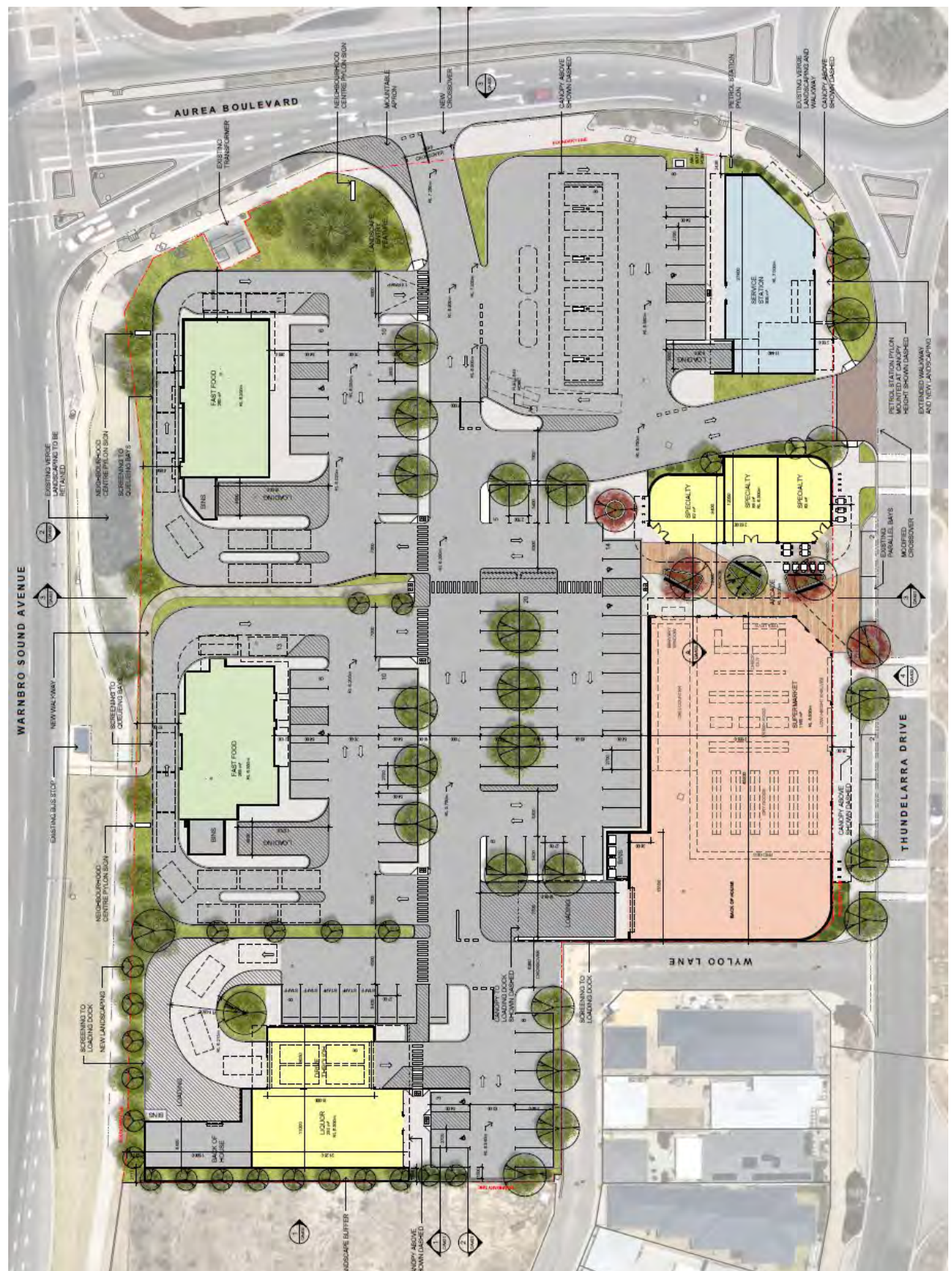
Pre and Post Lodgement Engagement with Applicant:

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:

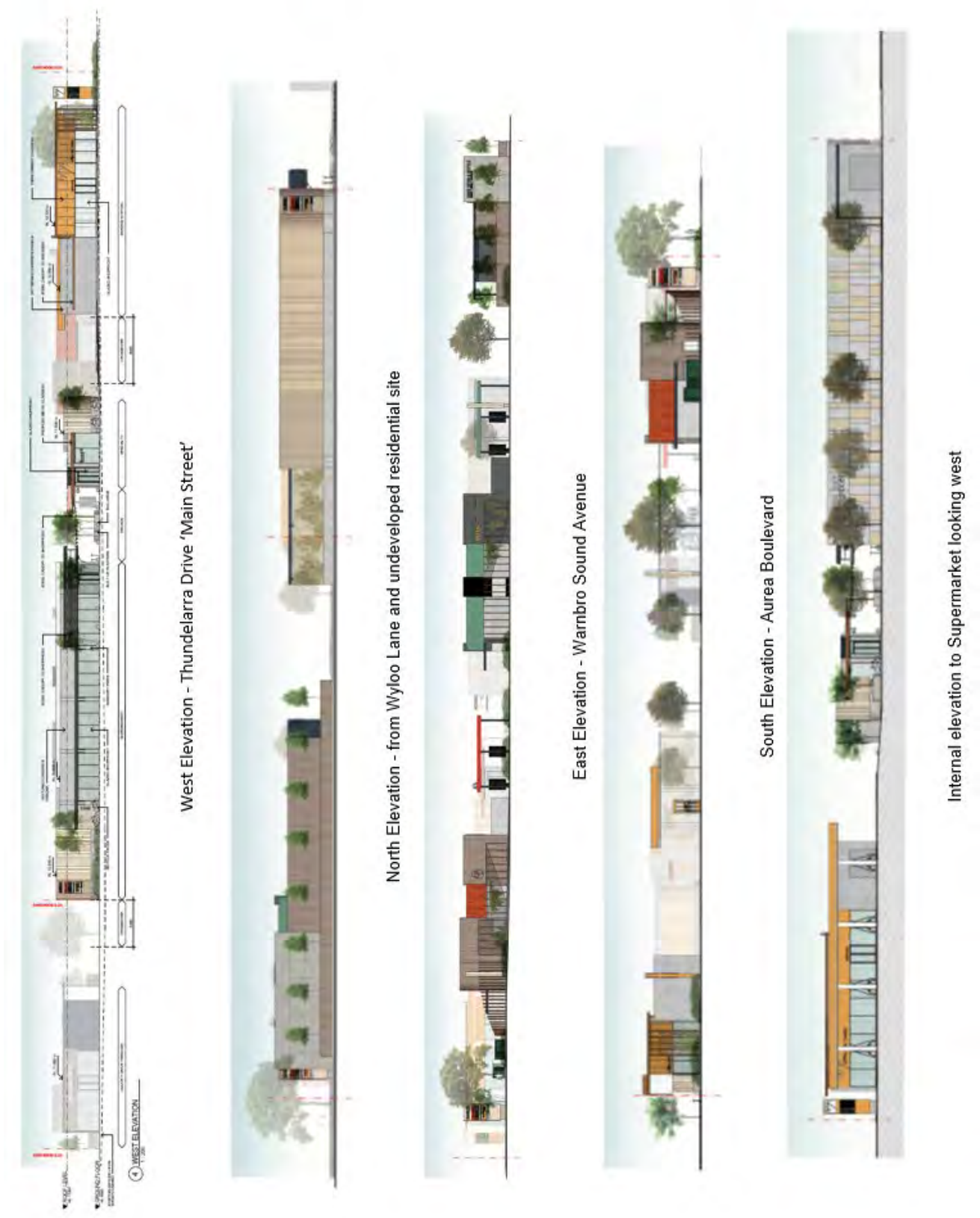
- Consider providing a wider mall (originally proposed at 7.6m), and cross section, to facilitate greater level of use and activity, light penetration and landscaping.
- Provide an internal layout for the Supermarket and notation on plans to ensure windows remain unscreened by advertising, shutters or 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





8. Elevation Plans



## 9. Perspectives





IMAGES ARE INDICATIVE ONLY

5 - VIEW OF LIQUOR STORE AND ENTRY TO DRIVE THROUGH



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

## 10. Perspectives



11. Landscape Concept





12. Mall 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.

<b>Proliferation of Uses/Need</b>
<p><b><u>Submission:</u></b></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><b><u>Applicant's Response:</u></b></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><b><u>City's Response:</u></b></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>
<b>Health Impact</b>
<p><b><u>Submission:</u></b></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"><li>• 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.</li><li>• Concerns about odour from the Fast Food Outlets.</li><li>• Concerns about the potential health impacts resulting from two Fast Food Outlets in close proximity to a School and Child Care Centres.</li><li>• Concerns about the number of liquor outlets in the area.</li></ul>
<p><b><u>Applicant's Response:</u></b></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...)
<p><b><u>City's Response:</u></b></p> <p>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.</p> <p>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.</p> <p>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.</p>
Scale and Impact
<p><b><u>Submission:</u></b></p> <p>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.</p>
<p><b><u>Applicant's Response:</u></b></p> <p><i>"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."</i></p>
<p><b><u>City's Response:</u></b></p> <p>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 (2499m<sup>2</sup> NLA as opposed to 3240m<sup>2</sup> NLA previously). The uses proposed, and the general form of development, is consistent with the intended development outcome for the site.</p> <p>Parking and traffic considerations are discussed in the Policy section of this Report.</p>
Access and Local Road Network
<p><b><u>Submission:</u></b></p> <p>Concerns were raised about the Warnbro Sound Avenue/Aurea Boulevard intersection and impacts on the local road network.</p> <p>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.</p>
<p><b><u>Applicant's Response:</u></b></p> <p><i>"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."</i></p>

#### **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."*

<b>Design and Inconsistency with LDP (cont...)</b>
<p><b><u>City's Response:</u></b></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>
<b>Insufficient Parking</b>
<p><b><u>Submission:</u></b></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><b><u>Applicant's Response:</u></b></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><b><u>City's Response:</u></b></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>
<b>Rubbish Generation and Disposal</b>
<p><b><u>Submission:</u></b></p> <p>Concerns were raised about increased levels of rubbish generated by the Fast Food and Service Station uses.</p>
<p><b><u>Applicant's Response:</u></b></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><b><u>City's Response:</u></b></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>
<b>Anti-social Behaviour</b>
<p><b><u>Submission:</u></b></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><b><u>Applicant's Response:</u></b></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><b><u>City's Response:</u></b></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>



<b>Anti-social Behaviour (cont...)</b>
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.
<b>Light-spill</b>
<b><u>Submission:</u></b> Concern was raised about light spill, and operational and customer noise impacting on the amenity of nearby residents as a result of the proposal.
<b><u>Applicant's Response:</u></b> <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>
<b><u>City's Response:</u></b> 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.
<b>Community Benefit</b>
<b><u>Submission:</u></b> Concern was raised that the proposal does not result in an overall community benefit.
<b><u>Applicant's Response:</u></b> <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>
<b><u>City's Response:</u></b> 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.
<b>Alternative Land Uses</b>
<b><u>Submission:</u></b> 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.
<b><u>Applicant's Response:</u></b> <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."*

<b>Main Roads WA (MRWA) (cont...)</b>
<b><u>Applicant's Response:</u></b> Nil
<b><u>City's Response:</u></b> 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.
<b>Department of Education (EDWA)</b>
<b><u>Submission:</u></b> <ul style="list-style-type: none"><li>• 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.</li><li>• 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.</li><li>• 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).</li><li>• The Liquor Store is unlikely to adversely impact the occupants of the School site.</li><li>• 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.</li></ul>
<b><u>Applicant's Response:</u></b> Nil
<b><u>City's Response:</u></b> 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. 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. As noted by DoE, the School site is outside the 200m generic buffer identified in GS3.
<b>Department of Health (DoH)</b>
<b><u>Submission:</u></b> <ul style="list-style-type: none"><li>• The development is required to be connected to Scheme water and reticulated sewerage.</li><li>• Concerned about short distance between the proposed Service Station and two existing child-care centres (&lt;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:</li></ul>

**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 5,000m<sup>2</sup> 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.

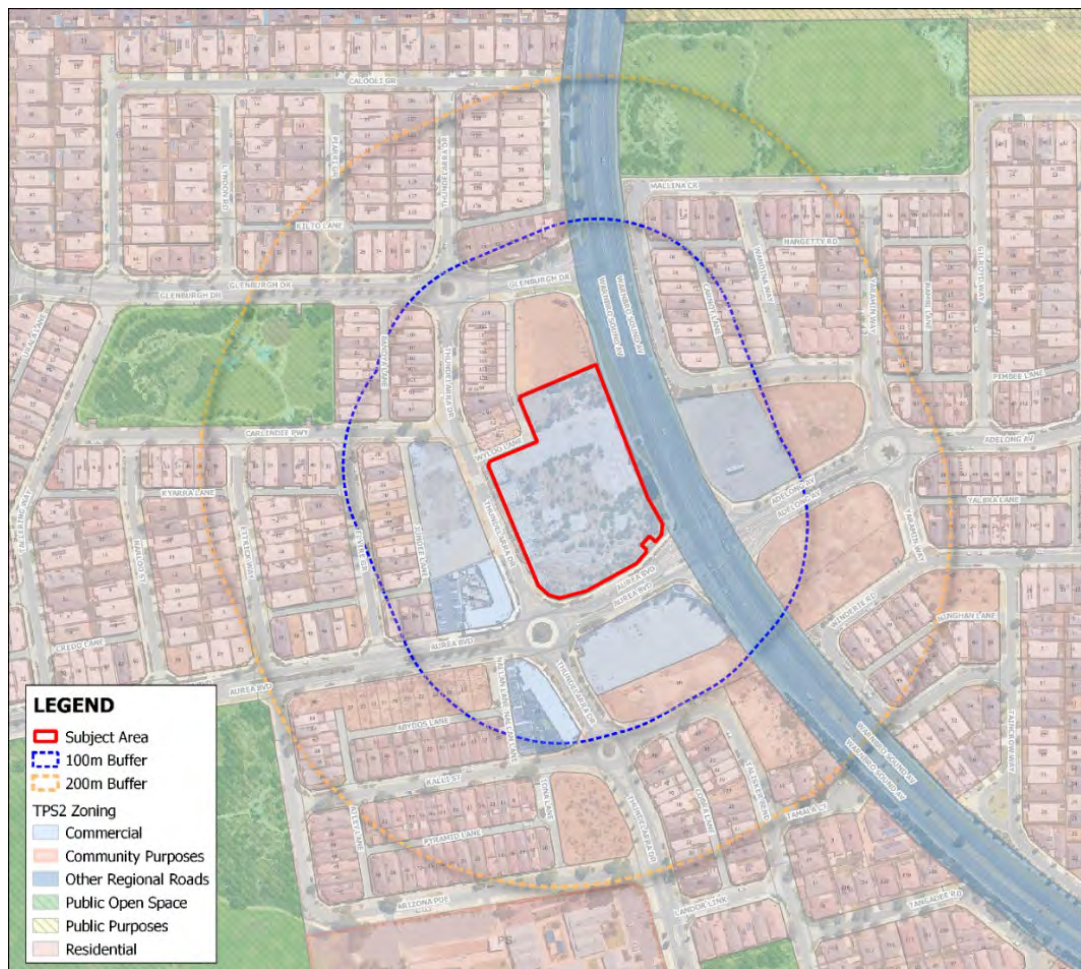
Environmental Protection Authority (EPA) Guidance Statement No.3 (GS3)

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 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. 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 3,240m<sup>2</sup>. The NLA of the proposed development is lower at 2,488m<sup>2</sup>.

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.

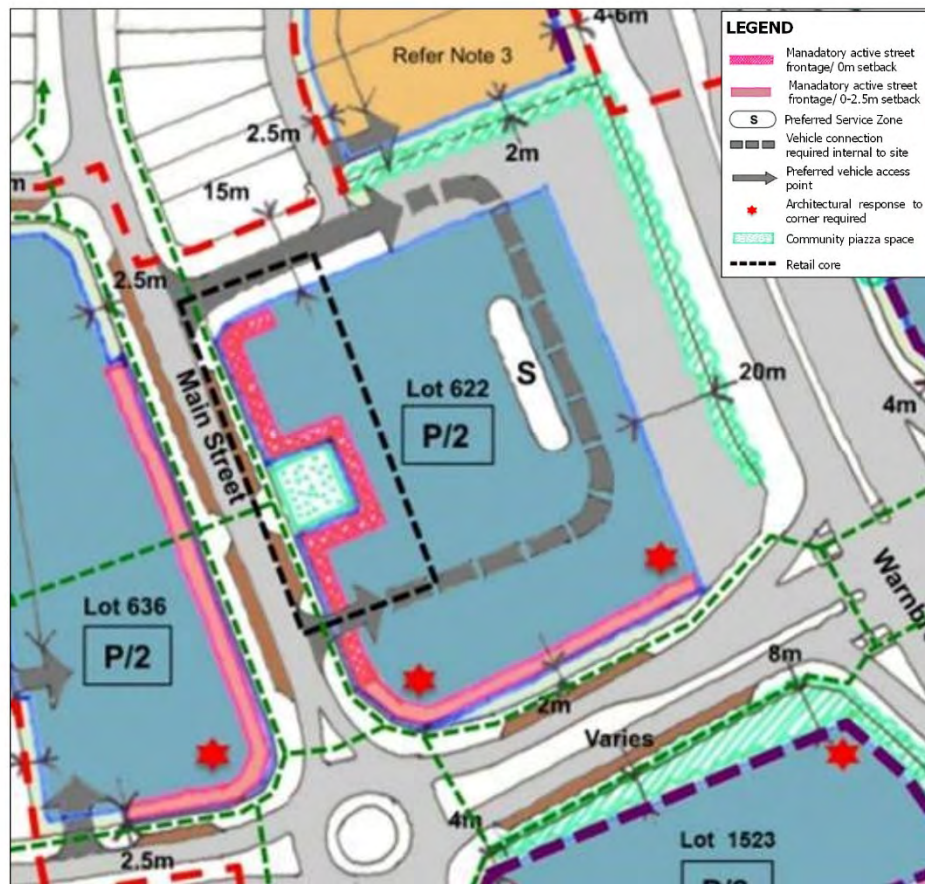
**d. Financial**

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.



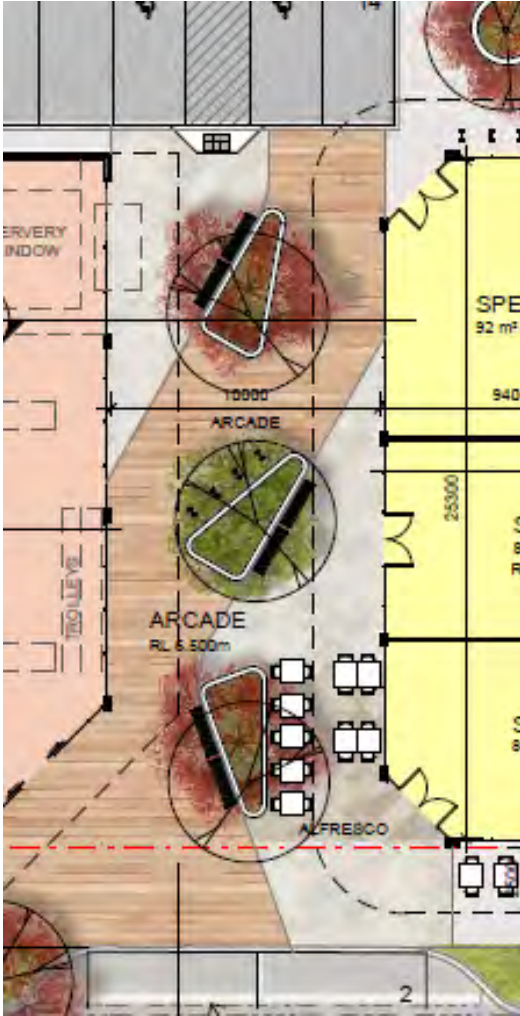
16. Golden Bay Neighbourhood Centre LDP (Extract)

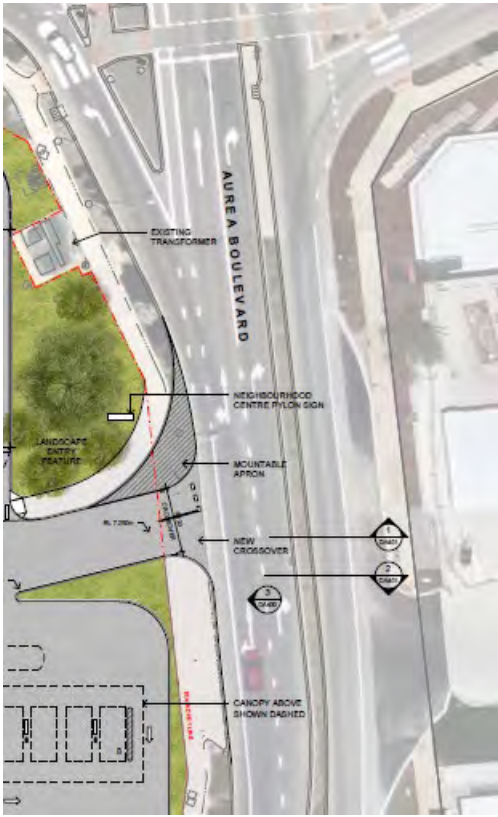
The following Table sets out only those aspects of the proposal which are inconsistent with the elements of the LDP:

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"> <li>• 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;</li> <li>• 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;</li> <li>• Swept path analysis has identified concerns in a number of locations throughout the development;</li> <li>• Design of blind aisles and inadequate turnaround in the vicinity of the Liquor Store has been identified;</li> <li>• The need for a pedestrian refuge within the Thundelarra Drive crossover given its 9m width; and</li> <li>• General concerns about the accuracy of the modelling and associated assumptions, resulting in the TIA outcomes being considered unreliable.</li> </ul> <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 <sup>2</sup>	6/100m <sup>2</sup> NLA	99.48 bays
Fast Food	525m <sup>2</sup>	1/11m <sup>2</sup> NLA	47.7 bays
Service Station	305m <sup>2</sup> + 8 service bays and 2 employees	6/100m <sup>2</sup> NLA 1/service bay 1/employee	28.3 bays
Total Proposed NLA	2,488m <sup>2</sup>		
Total Required			175.48 bays
Provided			148 bays
<b>Parking balance</b>			<b>-27.48 bays (shortfall)</b>

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/100m<sup>2</sup> 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 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/m<sup>2</sup>. 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/m<sup>2</sup> 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:

- 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 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:

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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

### Council Resolution

#### Moved Cr Buchan, seconded Cr Schmidt:

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:

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3. The amended Transport Impact Assessment does not adequately address on-site design issues including swept path, blind aisles and Service Station stacking distances.

**Carried – 11/0**

<b>The Council's Reason for Varying the Committee's Recommendation</b>
--

Not Applicable

## Planning and Development Services Statutory Planning Services



**Report number / title:**

**PD-005/24**

**Joint Development Assessment  
Application - Section 31 Reconsideration  
- Proposed Mixed Commercial  
Development (Golden Bay  
Neighbourhood Centre)**

File number:

DD020.2023.00000035

Applicant:

Apex Planning

Owner:

Golden Bay Village Pty Ltd

Author:

Ms Sally Birkhead, Strategic Planning Consultant

Other Contributors:

Mr Mike Ross, Manager Statutory Planning

Date of Committee meeting:

19 February 2024

Previously before Council:

27 June 2023 (PD-026/23)

Disclosure of Interest:

Nature of Council's role:

Tribunal

Attachments:

1. Responsible Authority Report
2. Revised Site Plan and Ground Floor Plan
3. Revised Emissions Impact Assessment – December 2023
4. Traffic Engineering Technical Note
5. SLR Technical Memorandum – Air Quality Assessment Summary
6. Schedule of Submissions (January 2024)

Maps/Diagrams:

1. Location Plan
2. Aerial Plan
3. Golden Bay Structure Plan (2021)
4. Previous Development Approval (June 2016)
5. Golden Bay Neighbourhood Centre Local Development Plan (2022)
6. Photographs Showing Site Context
7. Refused Site Plan (July 2023)
8. Revised Site Plan (November 2023)
9. Elevations of Proposed Development (Unchanged)
10. Perspectives (Unchanged)
11. Mall Concept (Unchanged)
12. Sampling Locations
13. Revised Fuel Tanker Movements
14. Consultation Map (January 2024)
15. EPA Guidance Statement No.3 - Separation Distance

Site:

Lot Area:

LA Zoning:

MRS Zoning:

16. Golden Bay Neighbourhood Centre LDP (Extract)

17. Mall Design (Unchanged)

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

1.24ha

Commercial

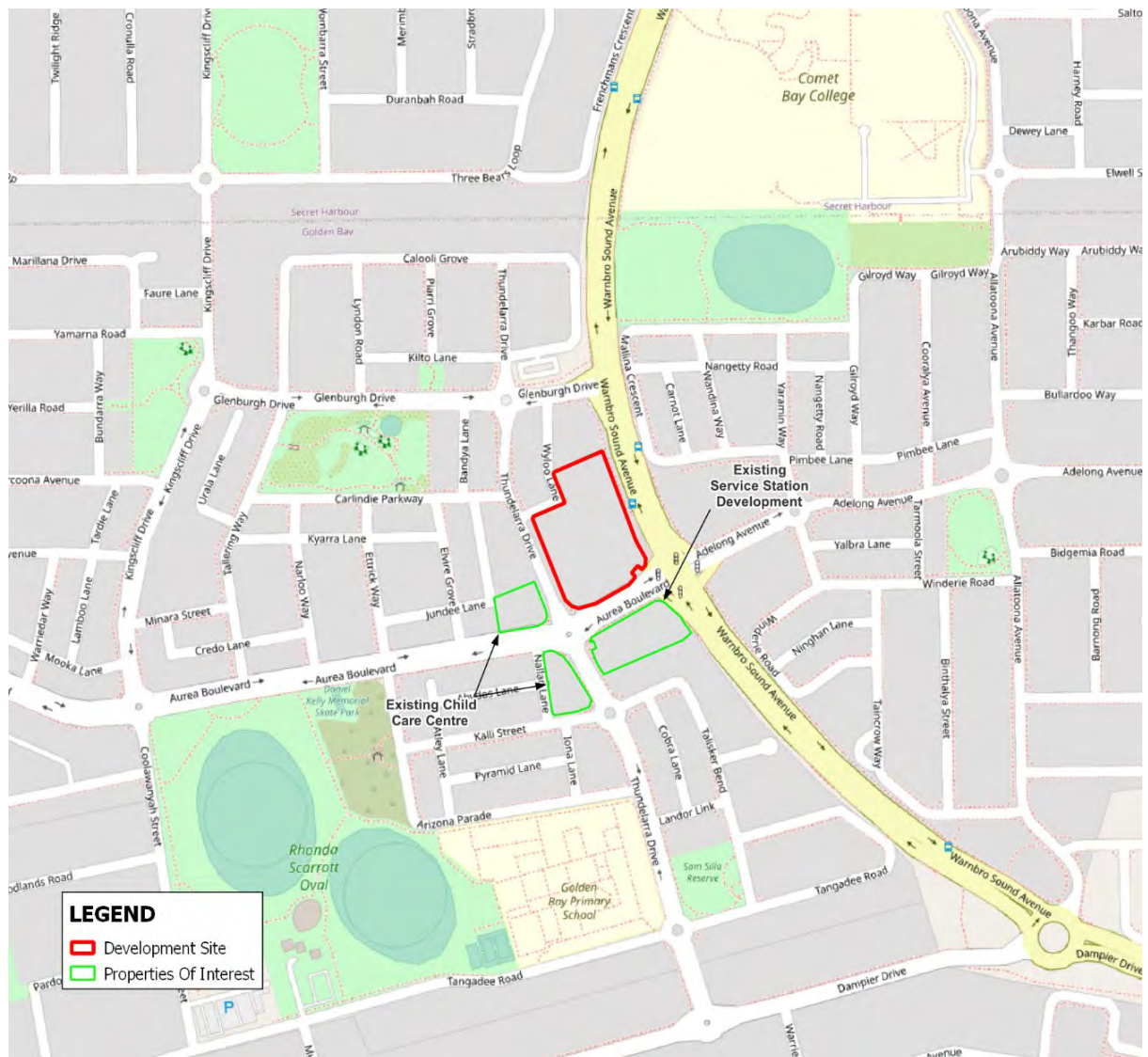
Urban

## Purpose of Report

To provide a recommendation to the Metro Outer Joint Development Assessment Panel (MOJDAP) in response to Orders from the State Administrative Tribunal (SAT), inviting reconsideration of a previous refusal issued for a proposed Mixed Commercial Development within the Golden Bay Neighbourhood Centre, on Lot 622 (No.2) Aurea Boulevard, Golden Bay ('subject site').

The City's Responsible Authority Report is contained within Attachment 1 to this Report.

The location of the proposed development is shown in Figures 1 and 2.



1. Location Plan





2. Aerial Plan

## Background

The following section summarises the background to the site and its immediate surrounds, providing context to the current proposal:

### Golden Bay Structure Plan

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, for which the subject site forms part (refer Figure 3).

### Previous Development Approval (2016)

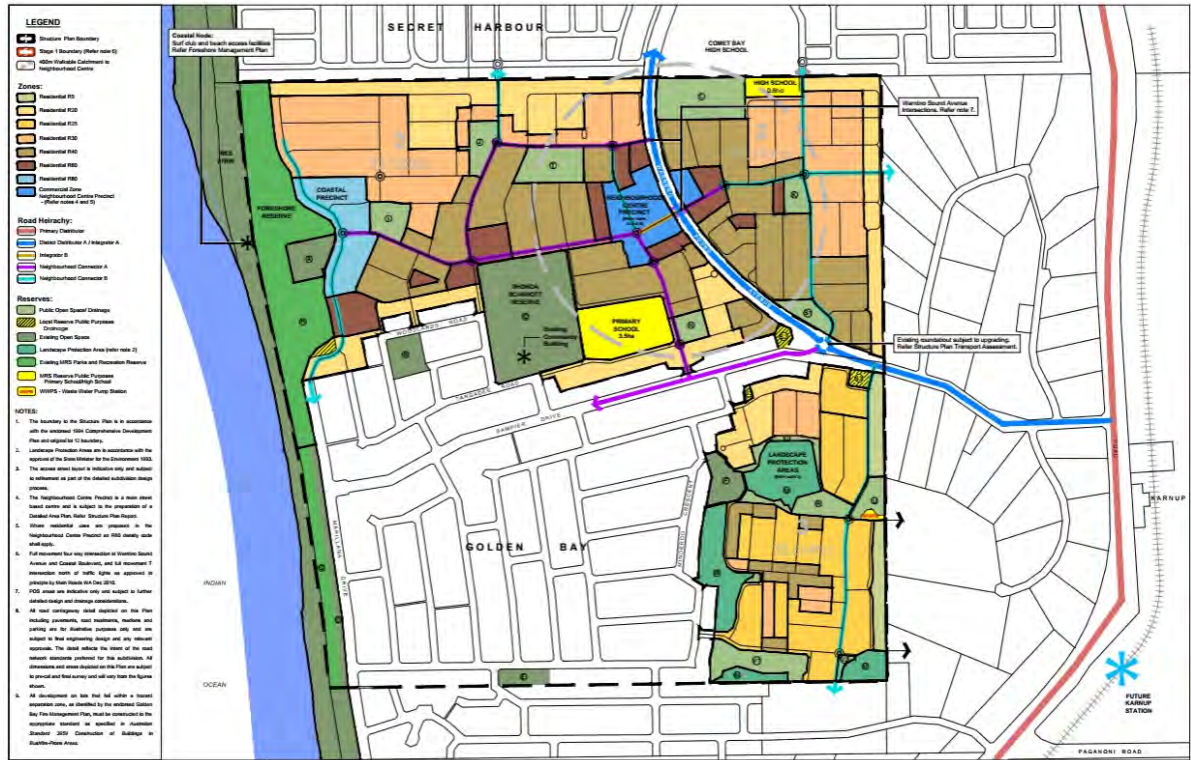
In June 2016, the City of Rockingham (City), under delegated authority, approved a proposal for a Shopping Centre on the subject site (refer Figure 4). The application comprised a supermarket, five (5) Restaurants, a Liquor Store, five (5) Shops, three (3) Commercial tenancies, a Medical Centre, 'public piazza' and parking.

The application proposed a total retail floorspace of 3,240m<sup>2</sup> 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 a 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, the (then) Proponent decided not to proceed and the site has remained vacant since. The approval period for the Development Application has now lapsed, and it is understood the site is now under contract to purchase by another party.



3. Golden Bay Structure Plan (2021)



#### 4. Previous Development Approval (June 2016)

##### Other Development within the Neighbourhood Centre

Other 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, but has not proceeded.

##### *Service Station - Lot 1523 Aurea Boulevard*

A Mixed Commercial Development (including a Service Station) on Lot 1523 Aurea Boulevard, to the immediate south of the subject site, was approved by MOJDAP 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 proposal (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."*

Later in May 2021, the Applicant lodged an Application for Review (Appeal) with the State Administrative Tribunal (SAT) on the refusal of the application by MOJDAP. Following the receipt of additional information, Orders were issued by SAT inviting 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 (specifically Benzene), 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 in the modelling as being significantly below the prescribed acceptable national air quality level, providing VR1 and VR2 fuel vapour recovery systems were installed.

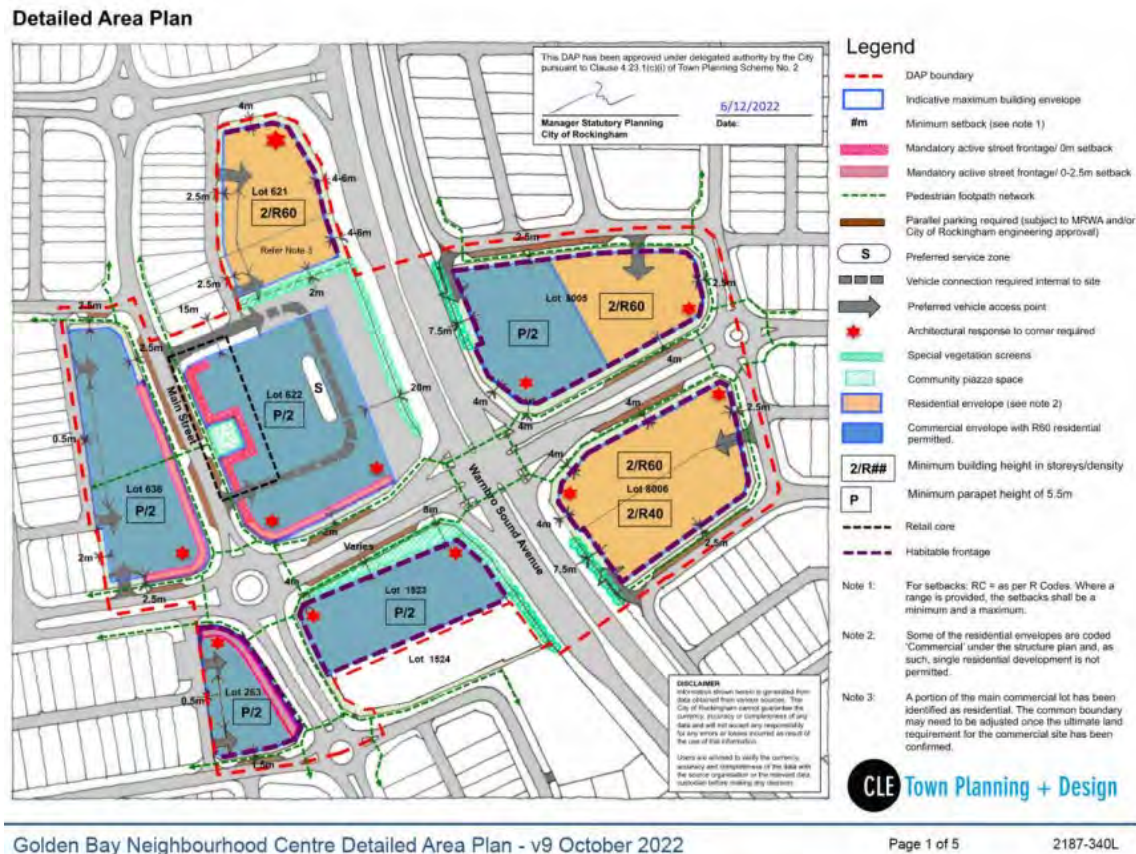
<i>Note: VR1 captures displaced vapours from storage tanks and associated infrastructure when a tanker delivers petrol to a service station, and VR2 captures displaced vapours at the bowser while a motorist refuels.</i>
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The Council's position to not support the proposal was, at the time, based on Department of Health (DoH) and Department of Water and Environmental 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). This matter is discussed in further detail, later in this Report.

#### (Updated) Detailed Area Plan

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.





## 5. Golden Bay Neighbourhood Centre Local Development Plan (2022)

### Development Proposal 2023

In February 2023, the Applicant submitted an application to the MOJDAP for a Commercial Development on the subject site. The application included a Supermarket, specialty retail Shops, Fast Food Outlets, Liquor Store and a Service Station, with access to Thundelarra Drive and Aurea Boulevard, and associated car parking and signage. The EIA submitted with the Application in response to the Service Station use, confirmed that both VR1 and VR2 fuel vapour reduction systems would be installed. Further details about the proposal are provided in this Report.

### Outcomes from Comment Period (2023)

The application was advertised for public comment for a period of 21 days between March and April 2023 and a number of Government agencies were also made aware of the proposal and invited to comment.

A total of 76 submissions were received at the conclusion of the advertising period, including 71 objecting to the proposal, with 11 objections received from those within 200m of the subject site. A range of concerns were raised, including proliferation of uses and need for the development, health impact from the Service Station and Fast Food Outlets; scale and impact, access to the local road network; supermarket servicing, design and inconsistency with the approved LDP; rubbish generation and disposal and anti-social behaviour concerns.

Responses were also received from a number of Government Agencies including Department of Planning Lands and Heritage (DPLH), Main Roads WA (MRWA), Department of Education (EDWA), DoH, DWER, Water Corporation and Department of Mines industry Regulation and Safety (DMIRS).

### Peer Review

As part of its consideration of the application, the City also engaged SLR Consulting ('SLR') to undertake a Peer Review of the EIA. The review considered the appropriateness of the assessment methodology in the context of WA legislation and guidelines, and whether the EIA indicated that National Environment Protection Measure (NEPM), and Victorian Air Pollution Assessment Criteria (APAC) criterion was likely to be met at the Child Care Centres and other nearby adjacent residential properties.

The 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 indicated two (2) – three (3) bulk fuel deliveries per week would 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 was concluded that the EIA modelling outcomes could be relied upon for its intended purpose.

The City's concern was that no air monitoring had been undertaken to validate or verify the previous modelling assumptions for the currently operating Service Station (Lot 1523) (that the City did not support), rather the Report had just used the previously reported modelling data.

#### *Council Decision on Responsible Authority Report (RAR)*

Following consideration of the proposal and the outcomes of the consultation process, the Council resolved to adopt the Responsible Authority Report (RAR), and recommend that MOJDAP refuse the application 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."*

#### *MOJDAP Decision on Application*

The Application was considered by MOJDAP on 10 July 2023 when it resolved to refuse the application for the following reasons:

*"Whilst the development of the fast food outlets and other retail outlets were generally consistent with the planning framework and the locality, and matters concerning built form and parking had been generally resolved, the service station proposal was regarded as incompatible with the locality for the following reasons:*

- (i) Within 50m of sensitive child care development, in some measure less than 30m which was concerning due to the vulnerability of the children at the centre and the lack of categoric evidence that there would be no exposure to harmful Benzene vapours noting there is no safe level of Benzene exposure*
- (ii) The vehicular access arrangements for the service station were unresolved and had the potential to impact pedestrian safety*
- (iii) Community objections within proximity of the proposed service station including the child care centre*
- (iv) It had not been fully demonstrated that other locations in the site, at a greater distance from the child care centres, were unsuitable locations for the service station"*

#### *Application for Review*

In September 2023, the Applicant lodged an application for review with SAT for the refusal of the JDAP application. An initial Mediation was held in October 2023 as part of the SAT proceedings, followed by a secondary Mediation in late December 2023.

The City participated in both Mediations, along with its Emissions expert, Dr Jason Shepherd, Principal - Air Quality of SLR, who provided the initial Peer Review of the EIA in relation to the Service Station component of the Proposal, addressed above. Dr Shepherd was engaged by the City to attend Mediation and to provide expert advice on the proposal to the MOJDAP, SAT and the City, and to provide further advice to the City to assist the Council's decision making, as detailed below.

The Presiding Member of the MOJDAP (the Respondent in the Application for Review), along with an Officer of the State Solicitor's Office (SSO) and staff representing DPLH were in attendance during Mediation. In addition, the Applicant, Proponent, its emissions and traffic experts, along with the Proponent's legal representative, attended the Mediation(s). More recent advice received by the MOJDAP from DWER and DoH in November and December 2023 was also sought to inform the process.

On 22 December 2023, in response to the outcome of the first Mediation, the Applicant provided additional information in support of the proposal. This comprised the outcomes of a (limited) emissions monitoring exercise undertaken in respect to the existing (7-Eleven) Service Station (Lot 1523) to determine the level, if any, of Benzene fuel vapour recorded at the Child Care Centres, along with additional traffic related information.

Following the second Mediation, Orders were issued pursuant to section 31 of the *State Administrative Tribunal Act 2004* (SAT Act), inviting the Respondent to reconsider its decision on or before 22 March 2024. This timing was to allow the revised application package to be re-advertised by the City, and for Council to be able to consider the revised application at its February 2024 meeting.

The SAT matter is currently adjourned to a Directions Hearing on 5 April 2024.

## 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 (Figure 6) illustrate the site context:



View south along Thundelarra Drive showing Child Care Centre opposite the subject site



View north along Aurea Boulevard, at the intersection of Thundelarra Drive, with the Service Station site to the right





View west along Aurea Boulevard showing the Child Care Centres, and Service Station site to the right



View east showing existing Commercial development with a Service Station located immediately south of the subject site



View of Wyloo Lane from Thundelarra Drive

## 6. Photographs Showing Site Context

The Revised Application comprises the following:

- 1,165m<sup>2</sup> Supermarket fronting Thundelarra Drive.
- 3 x 'specialty retail' Shops with total 263m<sup>2</sup> floorspace fronting a 'mall', which links Thundelarra Drive and the carpark behind the Supermarket.
- 2 x freestanding Fast Food Outlets (260m<sup>2</sup> and 265m<sup>2</sup>), with drive-through facilities adjacent to Warnbro Sound Avenue.
- 230m<sup>2</sup> freestanding Liquor Store, with back-of-house and drive-through fronting Warnbro Sound Avenue.
- 305m<sup>2</sup> 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 147 car parking bays with the following breakdown:
  - 95 bays in the main carpark (including 7 disabled parking bays) (*accounting for the loss of 1 additional bay in the main carpark subject to the revised plans, and addressed below*).
  - 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 within the subject site, and to the bus stop (and footpath) on Warnbro Sound Avenue.

As noted above, the EIA submitted with the original (and revised) application propose both VR1 and VR2 fuel vapour reduction systems for the Service Station.

#### Additional Information Provided by Applicant

As set out in the SAT Orders, the Applicant has provided additional information and revised site and ground floor plans in order to address the MOJDAP's 'Reasons for Refusal' in its decision of July 2023. These Reasons for Refusal are also reflected the concerns raised in the Council's RAR.

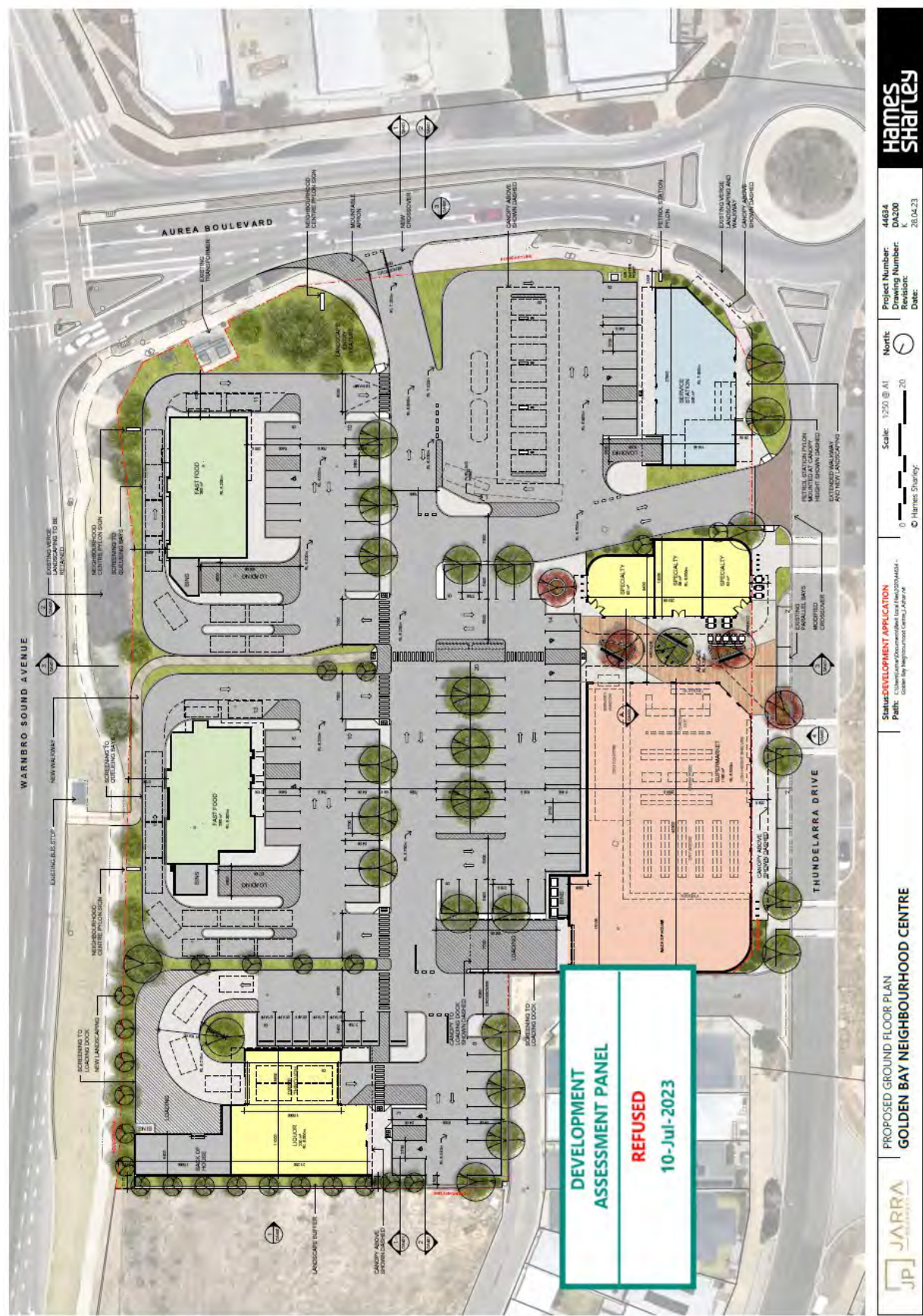
The additional information has been provided as follows:

- Covering letter addressing the MOJDAP's 'Reasons for Refusal' (discussed below);
- Amended site plan and ground floor plan which reflect changes addressed in the Traffic Engineering Technical Note (discussed below) (Attachment 2);
- Revised EIA which addresses the possible impacts of fuel vapour (Benzene) from the proposed development (Attachment 3); and
- Traffic Engineering Technical Note which proposes various modifications to the Site Plan and Ground Floor Plan (Attachment 4).

The revised application now being considered, remains the same in all other aspects as previously presented to Council in June 2023.

The site plan (ground floor plan) refused by MOJDAP in July 2023 is depicted in Figure 7. The revised site plan (ground floor plan) submitted by the Applicant in December 2023, and subject to public advertising in January 2024, is depicted in Figure 8, with the proposed modifications identified.



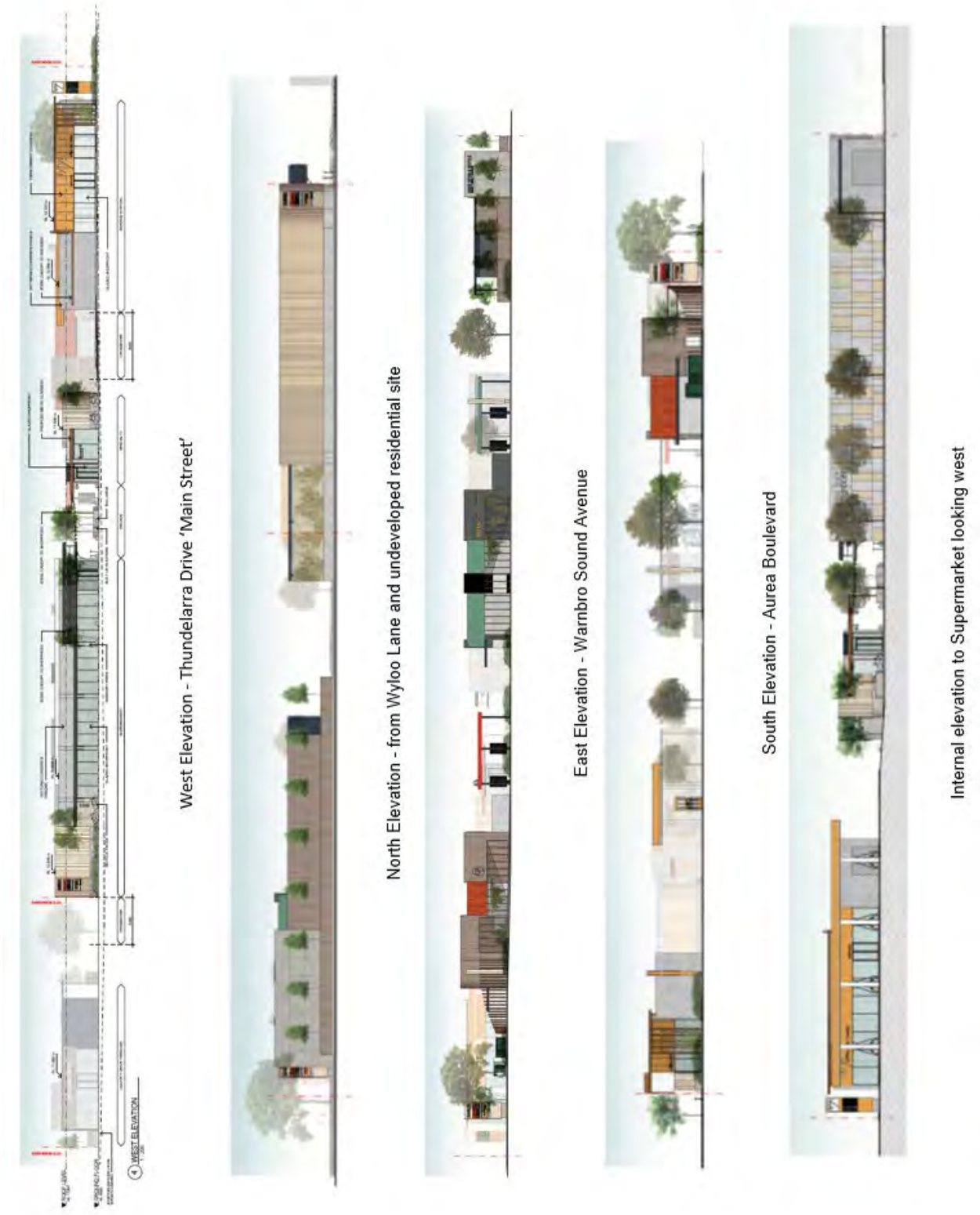


7. Refused Site Plan (July 2023)





Elevations of the development are shown in Figure 9, and perspectives are shown in Figure 10. The 'Mall Concept' is shown in Figure 11. These details have not changed between the proposal considered by Council at its June 2023 meeting, and the revised proposal, and are provided for information only.



9. Elevations of Proposed Development (Unchanged)





10. Perspectives (Unchanged)





IMAGES ARE INDICATIVE ONLY  
5 - VIEW OF LIQUOR STORE AND ENTRY TO DRIVE THROUGH



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

10. Perspectives (continued) (Unchanged)





11. Mall Concept (Unchanged)

Response to Reasons for Refusal

The Applicant's response to the MOJDAP's 'Reasons for Refusal', and the City's comments, are provided below:

**MOJDAP Reason for Refusal No.1: Compatibility of Service Station**

***"Within 50m of sensitive child care development, in some measure less than 30m which was concerning due to the vulnerability of the children at the centre and the lack of categoric evidence that there would be no harmful Benzene vapours noting there is no safe level of Benzene exposure"***

Applicant's Response (Summarised):

The development proposal was originally supported by an EIA which considered the potential impacts of airborne pollutants from the proposed service station (including cumulative impacts, noting the existence of a 24 hour service station on the opposite side of Aurea Boulevard). A revised EIA has been submitted which addresses items raised by the Responsible Authority and its nominated expert (SLR) during the mediation process.

The EIA used industry accepted standards for estimated pollutant emissions rates of 'primary airborne pollutants', including Benzene, and demonstrated all airborne pollutants would be within the acceptable/compliant range, with the incorporation of VR1 and VR2 vapour recovery systems.

During the DA assessment phase, the City engaged an expert (SLR) to undertake a peer review of the EIA which concluded that the assessment was appropriate for the intended purpose, though some recommendations were made which were determined not to materially change the outcomes of the EIA.

A range of over-estimations and conservatisms were built into the EIA (and compliant/acceptable levels were still achieved). These included:

- An assumption that all fuel dispensed from the site is unleaded petrol, which would not be the case. Approximately 22% of fuel dispensed from the site would also be diesel. The high boiling point of diesel fuel used in vehicles in Australia largely eliminates the presence of Benzene in that type of fuel.
- A daily refuelling volume of 26,610L which was almost double that of the adjacent 7-Eleven service station (13,800L), and three times the industry average for suburban fuel retailing sites (9,000L).
- The percentage (%) composition of Benzene in fuel used in the modelling was 2.9% which is almost 3 times higher than the 1% maximum of Benzene allowed in fuel sold in Australia under the relevant legislation.
- The modelled fuel delivery schedule, which assumed up to 180,000L of fuel delivered per day (4.5 times more than the actual amount) and 960,000L of fuel deliveries per week (more than 8 times higher than the actual amount).

To further explore the outcomes of the EIA, the Applicant agreed to undertake on-site sampling of Benzene levels (noting the existence of a 24 hour service station (7-Eleven) on land adjacent to the development site). The sampling program was undertaken based on parameters agreed upon with the City's nominated expert.

The outcomes of the Benzene sampling showed that the risk of Benzene exposure is negligible from a modern, best practice Service Station, and was determined by the City's expert that the likelihood of Benzene concentrations approaching non-compliant concentrations at the nearby sensitive receivers (Child Care Centres) is negligible.

Having regard to the above, it is reasonable to conclude that the proposed 24 hour service station is compatible with its surroundings. The first refusal reason is considered to be resolved.

City's Response:

Following SLR's Peer Review advice on the original application, and input during the Mediation process, the City also engaged SLR to provide a Technical Memorandum to explain the air quality assessment outcomes relating to the proposal, and how the modelling and monitoring results relate to the standards and public health risk profile, in particular, to the Child Care Centres opposite the subject site.

The relevant standards are the National NEPM standard, and Victorian APAC standard. The more specific APAC standard is applicable and relevant in that it assesses short-term one (1) hour impacts, whereas the NEPM Benzene standard is applicable to annual average concentrations only.

A full copy of the SLR Memorandum is included as Attachment 5.

The key (summarised) outcomes of the SLR advice are:

- In consultation with SLR on the methodology for a (limited) monitoring analysis, the Applicant's emissions consultant, EAQ, collected samples of ambient air at location(s) approximately 40m from the existing 7-11 Service Station on the southern side of Aurea Boulevard, to reflect the distance from the Proposal to the adjacent existing Child Care Centre (refer Figure 12).

*Note: 40m was considered to be a reasonable distance for testing by SLR, given the Child Care Centres are located 21m-47m (boundary to boundary) from the proposed Service Station, and 50m – 70m between the Child Care Centre buildings and the Service Station bowsters.*



12. Sampling Location

(Existing 7-11 Service Station shown to south of Aurea Boulevard)

The monitoring was conducted on five occasions, however, on review, SLR found that there were limitations on the monitoring undertaken due to the weather conditions at the time.

Notwithstanding, the laboratory analysis results indicated that the concentrations recorded were negligible, with all Benzene concentrations being less than the limit of detection (i.e. very low, such that the laboratory could not determine the actual concentration) being  $6.4 \mu\text{g}/\text{m}^3$  (micrograms per cubic metre), being 1.1% of the standards criterion.

In this regard, the applicable APAC standard applied by the City's expert is derived from the *EPA Victoria Publication 1961: Guideline for Assessing and Minimising Air Pollution*, being maximum  $580 \mu\text{g}/\text{m}^3$ .

SLR also undertook a conservative extrapolation of the results, resulting in a level of  $64 \mu\text{g}/\text{m}^3$ . This is approximately 11% of the standards criterion of  $580 \mu\text{g}/\text{m}^3$ .

- The maximum cumulative concentration (i.e. the Proposal *plus* the existing Service Station) of Benzene expected to occur at the Child Care Centre was predicted to be  $27 \mu\text{g}/\text{m}^3$ , still well within the APAC standards criterion.

As a result, the worst-case cumulative concentrations at the Child Care Centre or nearby residences are equivalent to less than 5% of the (maximum) standards criterion.

- The proposal complies with both NEPM and APAC maximum standards criterion.

- The Modelling Assessment indicates that emissions from the Proposal are unlikely to pose an unacceptable risk to human health at the Child Care Centre or nearby residences.

The City accepts the Applicant's response to Reason for Refusal No.1 above.

Having regard to:

- The modelling and monitoring outcomes detailed in the EIA;
- The conservative assumptions applied through the modelling and monitoring analyses;
- The expert advice provided by SLR (City's consultant) through the assessment process; and
- The use of both VR1 and VR2 vapour recovery systems.

The proposal has been demonstrated to comply with the accepted NEPM standards and criteria which provides a common National goal to best protect human health and wellbeing from adverse impacts of pollution; and the more specific Victorian APAC standard for Benzene which permits the assessment of short term 1 hour impacts.

The City considers that, based on the expert air quality advice from SLR, upon review, that the proposed Service Station is unlikely to present an unacceptable risk to public health in the vicinity of the subject site.

**MOJDAP Reason for Refusal No.2 and No.3: Aurea Boulevard Crossover and Onsite Design Matters (combined by Applicant in response)**

***"The vehicular access arrangements for the service station were unresolved and had the potential to impact pedestrian safety***

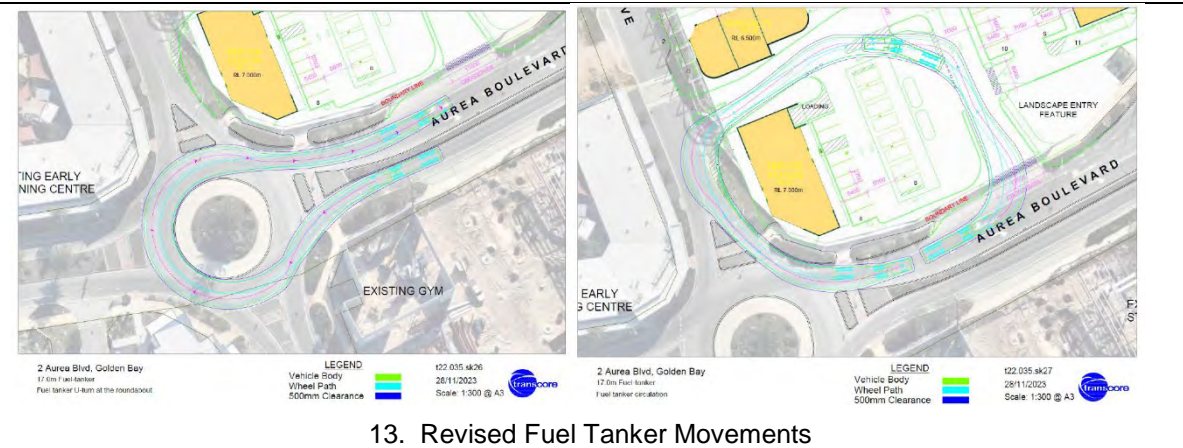
***Community objections within proximity of the proposed service station including the child care centre"***

Applicant's Response (Summarised):

A revised site plan and ground floor plan have been submitted, along with a Traffic Engineering Technical Note, which have resulted in the following modifications to the plan:

- Convert existing on-street parking spaces along Aurea Boulevard into a left turning pocket for the Aurea Boulevard crossover, which will improve the relationship of the crossover with the adjacent road network;
- Provide a turnaround bay within the blind aisle at the western side of the Liquor Store;
- Adjust the configuration of the service station forecourt, by shifting the refuelling spaces closer to the retail building and introducing a one-way circulation system where vehicles enter the refuelling area. This has increased stacking capacity of the forecourt and improved the functionality of the refuelling area. Reduce tanker size to 17m to service the Service Station;
- Reversing fuel tanker movements (now entering via Aurea Boulevard and leaving via Thundelarra Drive) (refer Figure 13), to enable the provision of a pedestrian refuge within the Thundelarra Drive crossover;
- Provide a mountable apron at the Thundelarra Drive crossover, to regularise the egress movements of fuel tankers;
- Provide pedestrian path and pram ramps at the Aurea Boulevard crossover (which may be subject to further alteration at detailed design stage); and
- Swept path plans have demonstrated satisfactory movements of fuel tankers based on the revised arrangements. Note fuel deliveries would only occur 2-3 times per week (therefore very infrequent) and bulk refuelling is only proposed to occur during off-peak traffic periods.





### City's Response:

The City generally supports the changes to vehicle access/egress and movement proposed in the revised plans, as follows:

- The small left turning pocket off Aurea Boulevard (where on-street parking bays are currently provided) will provide a small refuge to queuing vehicles when attempting to enter the site.
- The turnaround bay at the end of the blind aisle near the proposed Liquor Store will avoid vehicles needing to reverse out of this area if all bays are full. The introduction of the turnaround bay will result in the loss of one (1) additional bay, which is considered acceptable for reasons detailed in this Report.
- Whilst minor modifications may be required at detailed design stage for the Service Station to assist vehicle manoeuvrability, the modifications to the bowser locations and circulation system, and the use of a reduced tanker size will assist the functionality of the site.
- The reversing of the fuel tanker movements, to enter from Aurea Boulevard and exit via Thundelarra Drive, is supported. This will also assist in providing an improved pedestrian environment along the the Main Street by narrowing the crossover previously proposed, and introducing a pedestrian refuge.
- It will, however, also result in a wider crossover at Aurea Boulevard. A pedestrian refuge with mountable kerb to accommodate tanker movements should also be installed at the Aurea Boulevard entry (as it is on Thundelarra Drive) to assist with safe pedestrian and cyclist movement along this street to the intersection of Warnbro Sound Avenue and the bus stop.
- Whilst internal pedestrian movement is also provided, this should not replace the provision of safe and convenient pedestrian and cyclist routes along the adjoining streets. An appropriate condition is recommended in the case that the application is approved.
- Where a tanker enters the site from Aurea Boulevard and exits via Thundelarra Drive, it will temporarily need to cross over the other side of the road/driveway (ie. not lane correct). As only 2-3 tankers are expected to service the Service Station each week, during off-peak hours, and the slow speed nature of the road environment in this location, this arrangement is accepted.
- During the morning and afternoon peak periods, there could be some queuing at the intersection of Warnbro Sound Avenue, however, this is not expected to cause significant issues.

Other matters raised by the City have been resolved by the revised plans, and are considered to be suitably addressed (or can be addressed) at the detailed design stage, subject to a suitable condition of development approval in the event the application is approved.

The traffic issues relating to the proposal are considered to be resolved on this basis.

**MOJDAP Reason for Refusal No.4: Possible Alternate Location**

***“It had not been fully demonstrated that other locations in the site, at a greater distance from the child care centres, were unsuitable locations for the service station”***

Applicant’s Response:

The applicant has not provided a written response in relation to this ‘Reason for Refusal’.

City’s Response:

The possibility of relocating the Service Station to another location on site (possibly the corner of Warnbro Sound Avenue and Aurea Boulevard) was verbally raised with the Applicant during the assessment and Mediation processes, with a view to exploring the option of locating the Service Station further away from the Child Care Centres.

The Applicant has verbally advised that due to the dimension, configuration, and limited access to surrounding roads, this is not a viable option.

Relocation of the Service Station could result in an additional setback from the fuel bowsers to the Child Care Centres of 35-40m which would mean the use would still be within the 200m separation distance set out in GS3 (refer below).

Whilst an increased separation distance would be of benefit, as environmental impacts reduce the greater the separation distance, the City accepts that the outcomes of the fuel vapour advice detailed above indicate that the fuel vapour levels for the current proposal are within the acceptable range; and the operational challenges an alternate location would present.

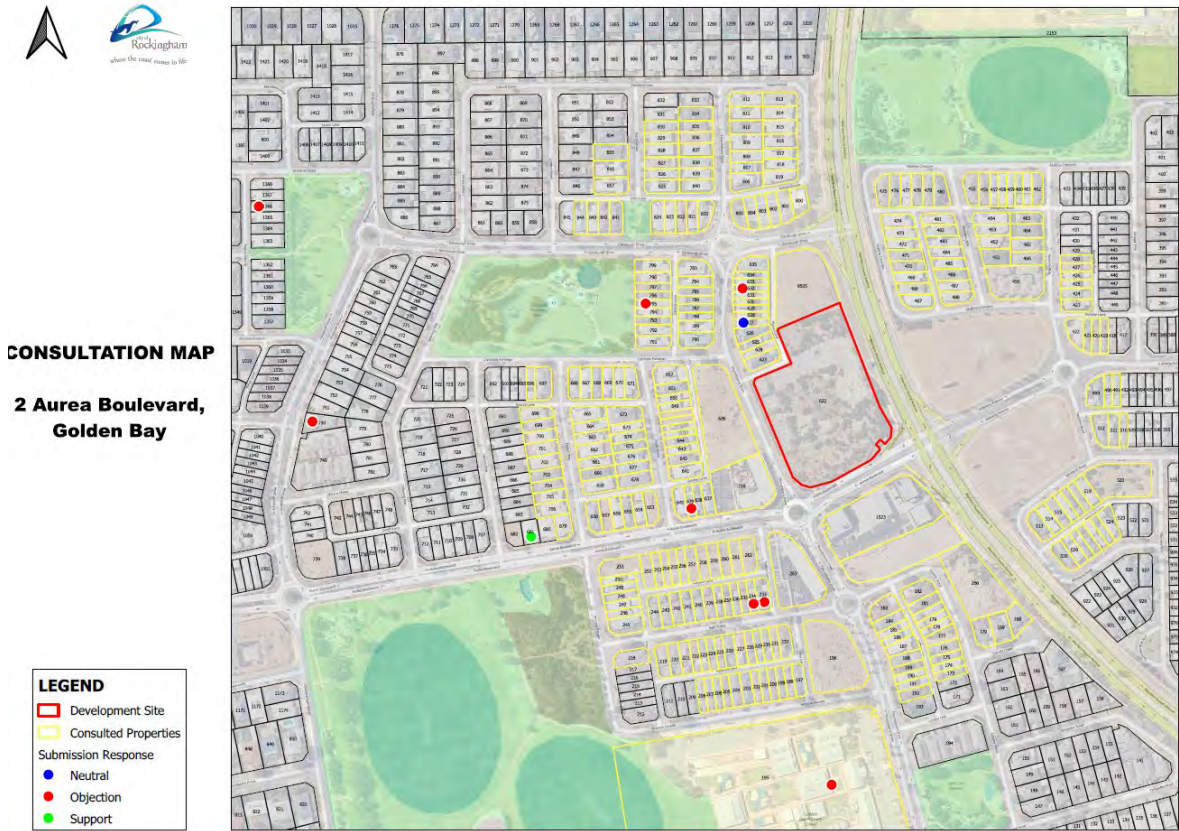
**Implications to Consider**

**a. Consultation with the Community**

The revised proposal was advertised for public comment over a period of 21 days, commencing on 3 January 2024 and concluding on 24 January 2024, in accordance with Clause 64 of the Deemed Provisions of the City’s Town Planning Scheme No.2 (TPS2), and Local Planning Policy No.3.3.27 - Community Consultation for Development Applications. In this regard, the Application is considered to be a ‘Complex Application’ as it includes a Service Station. Due to the reporting timeframes, it was not possible to advertise the proposal for 28 days.

Advertising was carried out in the same manner as the original advertising period, as follows:

- The owners and occupiers identified in the Consultation Plan in Figure 14, located within 200m of the subject site, were notified in writing of the revised proposal, along with submissioners on the July 2023 refusal, and given 21 days to respond.



14. Consultation Map (January 2024)

- The revised application package was referred to DoH, DWER and EDWA for review and comment.
- Signage was erected on-site for the duration of the advertising period.
- The revised application documents were made available for public inspection at the City's Administration Offices and placed on the City's website.

At the close of the public consultation period, a total of 23 public submissions were received, comprising one (1) submission in support of the revised proposal, one (1) neutral submission, and 21 submissions objecting to the proposal.

The locations from where the nearby submissions originated are shown on Figure 14. Of the owners and occupiers located within 200m of the subject site, a total of seven (7) submissions were received, with one (1) of these submissions being neutral, and six (6) objecting, in addition to an objection received from EDWA.

The key matters raised were public health concerns related to the proposed Service Station proximity to the two (2) nearby operating Child Care Centres and concern about the proliferation of Service Station, Fast Food and Liquor Store uses.

Matters raised in respect to the revised proposal are summarised in the Summary of Submissions table below, along with the City's responses to submission concerns.

All submissions are included in the Schedule of Submissions contained within Attachment 6.

1. Uses Proposed and 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>

Applicant's Response:

*"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.*

*The subject land represents a major proportion of an identified neighbourhood activity centre and the range of uses forming this proposal will provide for the daily to weekly household shopping needs and other convenience services for the community."*

City's Response:

The commercial uses proposed are all able to be considered under the City's TPS2 within the 'Commercial' Zone, which 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 valid planning consideration in relation to this proposal.

**2. Health Impact**

Submission:

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:

- 'odour' from Service Station and Fast Food uses, particularly in close proximity to two childcare centres and residences;
- impacts resulting from two fast food outlets in close proximity to a school and childcare centres;
- noise generated by vehicles/traffic and customers;
- light spill; and
- public health concerns about the number of liquor outlets in the area.

Applicant's Response (summarised):

- Odours/fumes associated with the service station has been the subject of detailed/comprehensive assessment and onsite monitoring in a format/manner agreed upon with an independent expert engaged by the City. The results have been captured in a revised EIA which demonstrates the service station will be compatible with its surroundings.
- There are no buffer or setback distances contained in either the State or local planning framework which specify a minimum distance between sensitive land uses 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 is likely to be imposed, should the application be approved.
- An Acoustic Assessment has been prepared which demonstrates compliant/acceptable noise levels generated by the proposed development. The subject land is zoned for commercial purposes and represents a major proportion of an identified neighbourhood activity centre, hence the creation of noise associated with non-residential land use is to be expected.
- The development will be required to comply with the relevant Australian Standard for the *Control of the obtrusive effects of outdoor lighting*.
- 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.



## 2. Health Impact (cont...)

### City's Response:

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 (refer to response to Reasons for Refusal No.1: Compatibility of Service Station section above).

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, Schools and Fast Food Outlets, and therefore this is not a matter which can be taken into account when considering a planning application.

Conditions requiring an Odour Management Plan and lighting design to minimise light spill will be requested in the event the application is 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.

A condition of approval regarding the management of light spill will be required should the application be approved.

The 'Liquor Store – Small' 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.

### Submission:

Concerns were raised about potential adverse health impacts arising from the proposed Service Station in relation to emissions and the impact of Benzene, and the revised EIA, including:

- concern about Benzene emission impact on the health of children at the two adjacent childcare centres and Primary School;
- apparent discrepancies and overestimations in the assumptions made in the EIA e.g. fuel composition, refuelling volumes and fuel delivery schedules, which do not represent the realistic scenario;
- cumulative effects of Benzene exposure from all sources (e.g. internal fit out, toys etc.), and cumulative impact of total Volatile Organic Compounds (VOC's);
- effectiveness of VR2 in preventing Benzene emissions is not addressed or mandated;
- a lack of information on the AERMOD modelling undertaken eg. parameters and sensitivity analysis;
- concern about impact of incidental spills;
- EIA does not address buffer distances set by EPA Guidance Statement No.3;
- cumulative impact of having two fuel stations in close proximity;
- absence of information on any proposed risk mitigation to reduce emissions;
- incompatibility of proposed and existing sensitive land uses (Service Station and Child Care);
- no mention of any plan for decommissioning of fuel station in case of failure of the business;
- concern about increased emissions and its effect on the environment; and
- independent experts may need to be consulted to review EIA.

## 2. Health Impact (cont...)

### Applicant's Response:

*"The compatibility of the service station with its surroundings has been the subject of detailed/comprehensive assessment and onsite monitoring in a format/manner agreed upon with an independent expert engaged by the City of Rockingham.*

*The results have been captured in a revised EIA which demonstrates the service station will be compatible with its surroundings, based on the most current and appropriate assessment criteria available. The revised EIA was included with the 'section 31' package and summarised as part of the 'section 31' submission prepared by Apex Planning."*

### City's Response:

This Report (refer Response to Reasons for Refusal No.1: Compatibility of Service Station section above) addresses potential health impacts from the service station given its proximity to the operating Child Care Centres opposite the subject site. It also contains information from the revised EIA, along with the outcomes of the City's independent expert advice on the proposal which has concluded that having considered all of the available information, the Service Station is unlikely to present an unacceptable risk to public health in the vicinity of the subject site.

It is to be noted that the modelling was based on a 'conservative approach' ie. 'worst case' which means that the assumptions are more restrictive than the actual development proposed. The EIA and expert advice also considers cumulative effects and the additional benefit of a VR2 system, which will be required as a condition should the application be approved.

It is not necessary for the EIA to address decommissioning – this is a licensing matter managed by DMIRS in the event the Service Station ceases to operate.

## 3. Traffic

### Submission:

Traffic concerns were raised as follows:

- adverse impacts on the local road network, and an increase in traffic in the area;
- pedestrian and cyclist safety and lack of legible movement around the service station; and
- crossover to Thundelarra Drive is not safe in context of service vehicles using it.
- Thundelarra Drive is a suburban street and not designed for heavy vehicles, which may impact safety of road users;
- the roundabout will become too busy with the other commercial uses in the area;
- Wyloo Lane is too narrow, dangerous and inappropriate to provide access to the development, and particularly for service vehicles;
- the slip lane/Aurea Boulevard crossover is too close to the Warnbro Sound Avenue intersection, and will result in the loss of parking bays;
- concern raised in the context of original TIA not addressing issues such as swept path, blind aisle and stacking distances, and the lack of detail on these aspects and suggested pedestrian refuges, slip lane and changes to fuel station layout that do not make it possible to assess if changes are beneficial;
- the need for conditions on planning approval relating to traffic movement indicate unresolved traffic related concerns;
- inadequate response in amended TIA to address onsite design issues (swept path, blind aisle, tanker movement, stacking distances);
- insufficient justification for smaller fuel tankers, potential implications on fuel delivery frequency and efficiency; and
- lack of evidence to demonstrate that the revised development plan will result in more efficient traffic circulation.

<b>3. Traffic (cont...)</b>
<p><u>Applicant's Response:</u>  <i>"The revised development proposal has addressed the original traffic related issues through modifications to the site plan (with updated swept path plans demonstrating acceptable movement through the site) and a traffic engineering technical note which demonstrates an improved and more efficient access system for the development."</i></p>
<p><u>City's Response:</u>  The TIA submitted with the original application addresses the operation of the intersection(s) and impact on the local road network.  This Report (refer Response to Reasons for Refusal No.2: Aurea Boulevard Crossover and Onsite Design Matters above) addresses traffic considerations following receipt of the revised Traffic Technical Note submitted with the revised application. In summary, the changes proposed to access and manoeuvrability on site are considered acceptable, and will not result in unacceptable impacts on traffic movement within the locality.  The access to the site via Wyloo Lane is consistent with the approved LDP, and formed part of the previous approval for the site. The Supermarket will be serviced via Wyloo Lane. A condition of approval will be requested to limit the times of delivery vehicles via Wyloo Lane, should the application be approved. 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.</p>
<p><u>Submission:</u>  Insufficient detail on the discussions or compromises made during the negotiation process, and a more comprehensive overview of the mediation outcomes would enhance transparency.</p>
<p><u>Applicant Response:</u>  <i>"In accordance with Section 54 of the State Administrative Tribunal Act 2004, a mediation is to be held in private. Discussions during a mediation conference are required to be kept confidential and are subject to legal privilege."</i></p>
<p><u>City's Response:</u>  The Mediation process is not a matter of public record. This Report provides information on the Revised application required to be submitted by the Applicant to the MOJDAP by SAT, as part of the Section 31 Reconsideration process determined at the conclusion of Mediation.</p>
<b>4. Rubbish Generation and Disposal</b>
<p><u>Submission:</u>  Concerns were raised about increased levels of rubbish generated by the Fast Food and Service Station uses, and the lack of rubbish bins in the locality.</p>
<p><u>Applicant's Response:</u>  <i>"Each land use component of the proposed development has dedicated waste storage areas, as depicted on the proposed development plan. A Waste Management Plan can be required as a condition of planning approval which outlines how waste will be collected and managed during the operation of the development."</i></p>
<p><u>City's Response:</u>  A Waste Management Plan, including a requirement for adequate bins and rubbish collection patrols, will be requested as a condition should the application be approved. Fast Food operators will also be required to collect rubbish daily as a condition of approval.</p>
<b>5. Anti-social Behaviour</b>
<p><u>Submission:</u>  Concerns were raised that the Service Station, Fast Food and Liquor Store uses on site would result in anti-social behaviour, violence and social issues in the surrounding area, including loitering, hoon driving and crime, particularly at night time, and domestic and family violence. A permanent security presence on site is required.</p>

<b>5. Anti-social Behaviour (cont...)</b>
<p><u>Applicant's Response:</u></p> <p><i>"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.</i></p> <p><i>The application materials have clarified that CCTV will be installed, and 24 hour uses will provide passive surveillance, which will assist in managing behaviour on-site."</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>
<b>6. Community Benefit</b>
<p><u>Submission:</u></p> <p>Concern was raised that the proposal does not result in an overall community benefit, and is incompatible with the character of the area.</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 and were formulated by experienced architectural experts, and will create positive outcomes for the locality. The City's assessment of these elements has demonstrated consistency with the intent of the Golden Bay Neighbourhood Centre Local Development Plan."</i></p>
<p><u>City's Response:</u></p> <p>Clause 67(2)(v) <i>Schedule 2: Deemed Provisions - Planning and Development (Local Planning Schemes) Regulations 2015</i> enables the local government to have regard to a range of matters in determining development applications including <i>"the potential loss of any community service or benefit resulting from the development..."</i>.</p> <p>In this regard, 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.</p> <p>The proposal is consistent with the Planning Framework which identifies the subject site as a Neighbourhood Centre and allows the proposed uses to be considered within the site's 'Commercial' Zone. This Report addresses the design considerations of the proposal.</p>
<b>7. Other</b>
<p><u>Submission:</u></p> <p>Concern was raised about the feasibility of the Supermarket and whether it has/will have tenants, given some other Shops in the area are empty.</p>
<p><u>Applicant's Response:</u></p> <p><i>"Commercial viability is not a relevant planning consideration."</i></p>
<p><u>City's Response:</u></p> <p>Commercial viability is not a valid planning consideration.</p>



<b>7. Other (cont...)</b>
<p><u>Submission:</u></p> <p>Concern was raised that there was no EV charging bays as part of the proposed Service Station development and that the Proponent and/or City should be planning for these.</p>
<p><u>Applicant's Response:</u></p> <p><i>"There is no requirement under the planning framework to provide EV charging bays. Notwithstanding this, there is capability for EV charging bays to be provided at some stage in the future at the discretion of the operator."</i></p>
<p><u>City's Response:</u></p> <p>Currently there is no requirement under the Planning Framework to require the provision of EV charging bays through the planning process. An EV charging bay is not currently included in the proposal for the Service Station, however, could be retrofitted in the future..</p>
<b>8. Alternative Land Uses</b>
<p><u>Submission:</u></p> <p>Preferred alternative landuses/tenancies for the site were suggested, which included medical/dental, playground, pharmacy, laundromat and the like.</p>
<p><u>Applicant's Response:</u></p> <p><i>"Whilst this is noted, an assessment can only be made on the application which has been submitted. It is not a relevant planning consideration to consider an alternative proposal."</i></p>
<p><u>City's Response:</u></p> <p>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.</p>

**b. Consultation with Government Agencies**

The revised proposal was referred to the EDWA, DoH and DWER for comment. Comments were received from each agency, as detailed below:

<b>Department of Health (DoH) - Summarised</b>
<p><u>Submission:</u></p> <ul style="list-style-type: none"> <li>• If the addendum sampling represents true worst-case conditions and was truly representative of the concentrations that may build up across a service station over still days, then the sampling suggests that Benzene will not travel at significant concentrations to a ground sampling location 40 metres from the source.</li> <li>• However, the information presented does not confirm the actual conditions of the sampling events, making it hard to conclude that Benzene will not ever reach concentrations sufficient to be inhaled by very young children and babies, at nearby childcare centres.</li> <li>• Similarly, the EAQ modelling report does not appear to consider topography, or other surface characteristics that may alter plume diffusion. Hence given the higher predicted 1-hour average results, more certainty is warranted.</li> <li>• When assessing risks to sensitive receptors, such as babies and children who are aged under 4 years, and are growing at maximal rates, their sensitivity to carcinogenic agents is significantly greater than older children and adults, that do not double in size as quickly. At this age, there are many many cell divisions, which is critical in cancer development.</li> <li>• Further, when assessing risks, where there are collections or gatherings of such sensitive receptors in a single location, such as near a service station, the risk rating of childhood cancer increases purely from the additional numbers, or clusters.</li> </ul>

**Department of Health (DoH) - Summarised (cont...)**

- The DoH applies a lens that is precautionary, sustainable, proportional and considers inter-generational equity, therefore our view is that if it is possible to prevent negative outcomes, and there are alternative solutions, alternative solutions are recommended, and are our preference.
- Based on the information presented, the potential risk remains marginal, rather than certain.

Given the additional information and based on the modelling and limited monitoring, and the uncertainty in the epidemiological evidence (which is based on proximity and not BTEX concentration), the DoH cannot definitively conclude there is negligible risk.

Applicant's Response:

*"The DoH comments note that based on a review of the revised emissions impact assessment, the potential risk is 'marginal'. This, together with the SLR review of the monitoring outcomes and revised emissions assessment, is considered to satisfactorily demonstrate that the likelihood of potential impact is so low, that the proposed service station warrants support and approval."*

City's Response:

This Report (refer Response to Reasons for Refusal No.1: Compatibility of Service Station section above) addresses potential health impacts from the service station given its proximity to the operating Child Care Centres opposite the subject site.

It also contains information from the revised EIA, along with the outcomes of the City's independent expert advice on the proposal which has concluded that having considered all of the available information, including compliance with both NEPM and APAC standards, the Service Station is unlikely to present an unacceptable risk to public health in the vicinity of the subject site.

The outcomes of the modelling and monitoring indicate that Benzene emissions will not exceed 5% of the accepted standard (APAC) when the cumulative impacts of the two Service Stations are considered.

**Department of Water and Environmental Regulation (DWER) - Summarised**

Submission:

- The use of technical studies, such as modelling and monitoring of air pollutants, can inform possible incompatibility between land uses but should not be used as the only input for planning decision-making as there can be significant uncertainty in the accuracy of such studies and they cannot determine whether impacts will or will not occur.
- With regard to the above, the information gathered over a limited sampling period is not considered to alter the risk profile associated with the proposal, given the numerous factors that can influence emission impacts upon sensitive receptors, and the lack of post development regulation for this land use. As such, the Department's position would remain unchanged.
- Air quality studies, especially those involving modelling, rarely explicitly take into account the uncertainty associated with the estimated risk. It is up to the decision-making authority to consider whether to accept the assessment at face-value. It is DWER's recommendation that the decision-making authority takes into account the uncertainty associated with these technical studies when deciding whether or not to approve, for example by utilising the precautionary principle or through a proposed plan for managing residual risk.
- Technical assessments such as modelling have a high uncertainty (whether stated or not), especially when many factors are involved. Modelling may sometimes be useful in assessing the optimum design of a facility, but it cannot determine the 'safe' distance or definitively establish the risk of exposure.

**Department of Water and Environmental Regulation (DWER) (cont...)**

- In the case of service stations, the emissions to air of concern are odour and Volatile Organic Compounds (VOCs). In previous advice, the major focus was on odour where the residual risk may possibly be addressed with post-implementation of additional controls or reduction of emissions until the impacts no longer occur. More recently, new information and planning decisions have given further consideration to Benzene emissions and longer-term chronic health impacts such as cancer. Consequently, while the position of the Department has remained consistent, that is, the proposed management of residual risk is an essential element for consideration in the decision-making process, the post-implementation of controls is more complicated when chronic health impacts are being considered. It is generally recognised that there are few options or regulatory mechanisms available to resolve land-use conflicts post-approval and liabilities associated with the resolution of later revealed land use incompatibilities generally default to the State.
- Consequently, it is our advice that adherence to separation distances within Guidance Statement 3 - Separation Distances between Industrial and Sensitive Land Uses (GS 3) (EPA, 2005), is generally recommended to inform planning decisions. Stage 1 and Stage 2 vapour recovery systems (VR1 and VR2) are likely to reduce the emissions, however, owing to the uncertainties in emission estimations there is limited ability to assess if these additional emissions controls are required or, if installed, would result in acceptable risk of impacts.
- The use of technical studies, such as modelling and monitoring of air pollutants, can inform possible incompatibility between land uses but should not be used as the only input for planning decision-making as there can be significant uncertainty in the accuracy of such studies and they cannot determine whether impacts will or will not occur.

This advice is compatible with the regulatory framework employed elsewhere in Australia, in which proponents may choose to prepare a modelling report, however the comments regarding their limitations and uncertainties remain valid.

Applicant's Response:

- *"GS3 states that where a reduced separation distance is proposed, a site specific scientific assessment should be undertaken.*
- *The subject land is near two child care premises located on the western side of Thundelarra Crescent, which are the closest (and most important) sensitive land uses. Both of these centres operate 6:30am-6:30pm Mon-Fri and not on weekends.*
- *A site specific emissions impact assessment was prepared in consultation with the local authority and an independent emissions expert commissioned by the local authority, to address issues raised associated with gaseous emissions. This involved onsite monitoring under the most appropriate and realistic worst-case conditions possible within the timeframe to optimise the conservatism of the assessment.*
- *It is evident from the referral comments provided by DWER, that the specifics of the scientific assessment have not been considered or commented on. Advice which was provided to the local authority on 20<sup>th</sup> October 2023 was simply reiterated (well before the revised assessment with onsite monitoring was prepared), which discusses the suitability of such studies at a high level. From the applicant's point of view, it is disappointing that DWER has chosen not to take this opportunity to assess and comment on the veracity of the site-specific scientific assessment and instead reiterate previous comments.*
- *GS3 focuses on amenity impacts where industrial, commercial, and rural uses are proposed near 'sensitive' land uses. Amenity is defined under Section 7 Definitions of GS3.*
- *Where service stations are considered, the relevant impacts are gaseous, dust, noise and odorous emissions, as well as risk.*
- *Under Appendix 1 of GS3, the recommended buffer distances are as follows:*

- Premises operating during normal hours (ie Mon-Sat 0700-1900 hours) – 50 metres
- Freeway service centre (24 hour operation) – 100 metres
- All other 24 hour operations – 200 metres
- *It is unclear how the difference between a 24 hour operation and an operation 7am-7pm equates to increased impact from gaseous emissions to the extent that an additional 150 metres of separation would be warranted. The emissions impact assessment indicates meteorological conditions are the defining feature for odour dispersion, rather than the time of day.*

*For example, if the proposed service station were to operate 7am-7pm, the distance measured from the bowsters would exceed 50 metres (compliant) at one of the centres and would achieve approximately 49 metres at the other (ie. marginally compliant). Whilst this would be a 'compliant' scenario under GS3 (hence complying with DWER's recommendation), the service station would only be pumping fuel while the adjacent child care centres are occupied. This example provides an important insight as to whether GS3 should be employed as the core indicator of "safe distance", and whether it is appropriate to dismiss site-specific technical assessments based on "uncertainty" and "residual risk".*

City's Response:

This Report (refer Response to Reasons for Refusal No.1: Compatibility of Service Station section above) addresses potential health impacts from the service station given its proximity to the operating Child Care Centres opposite the subject site.

It also contains information from the revised EIA, along with the outcomes of the City's independent expert advice on the proposal which has concluded that having considered all of the available information, including compliance with both NEPM and APAC standards, the Service Station is unlikely to present an unacceptable risk to public health in the vicinity of the subject site.

The outcomes of the modelling and monitoring indicate that Benzene emissions will not exceed 5% of the accepted standard (APAC) when the cumulative impacts of the two Service Stations are considered.

**Department of Education (EDWA) - Summarised**

Submission:

- 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.

Applicant's Response:

*"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.*

*There is no guidance or provisions within the State or Local Planning Framework which identify or specify separation distances between Schools and Fast Food Outlets.*

*As noted by DoE, the School site is outside the 200m generic buffer identified in GS3 for the service station."*



City's Response:

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.

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.

As noted by DoE, the School site is outside the 200m generic buffer identified in GS3.

**c. Strategic**

Community Plan

This item addresses the Community's Vision for the future and specifically the following Aspirations and Strategic Objectives contained in the Strategic Community Plan 2023-2033:

**Aspiration:**                      **3. Built Environment - A built environment carefully planned for today and tomorrow**

**Outcome/Objective:**    *Plan for sustainable growth - Create safe community places to live, recreate and work*

**Aspiration:**                      **4. Economic - A vibrant economy creating opportunities**

**Outcome/Objective:**    *Growing the business economy - Attract and promote new businesses and investment opportunities*

**d. Policy**

Assessment of the revised proposal has been limited to areas where discretion is sought to vary a Policy Requirement.

**State Government Policies**

The proposal is generally consistent with the following relevant State Planning Policies as discussed in the Officer Report to the June 2023 Council meeting:

- State Planning Policy No.4.1 - Industrial Interface (SPP4.1)
- State Planning Policy No.4.2 - Activity Centres for Perth and Peel (SPP4.2)
- State Planning Policy 7.0 - Design of the Built Environment (SPP7.0)
- Draft Position Statement: Child Care Premises

Discussion in relation to GS3 is provided 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. Separation distances are generally measured between land uses on respective sites. Where proposals vary from this separation distance, site specific technical analysis is required. The Applicant has addressed this requirement by providing an EIA for the proposal.

A map showing the 200m separation distance (from the boundary of the subject site) is shown in Figure 15. The Service Station development site forms a smaller portion of the subject site. It includes all land within the Neighbourhood Centre including the Child Care Centres to the west. The Child Care Centres are located approximately 21m and 47m between property boundaries, and 50m to 70m between the Child Care Centre buildings and bowsters of the Service Station. The play areas of the Child Care Centres are located behind the buildings, further away from the bowsters.

The separation distance touches the northern boundary of the Golden Bay Primary School, however, the School itself is not located within the 200m.



### 15. EPA Guidance Statement No.3 - Separation Distance

Concerns have been raised through the application process 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 bowsers, fuel spills and opening fuel caps on vehicles.

The revised EIA addresses the compliance of primarily modelled emissions against standards, utilising industry standard 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 (Lot 1523). Following discussion at SAT Mediation, the revised EIA also contains consideration of (limited) monitoring outcomes in respect to the existing Service Station.

As detailed above, following consideration of all of the technical considerations through the SAT Mediation process and within the revised EIA, the commitment to use both VR1 and VR2 emissions reduction systems by the Proponent, and the advice of the City's emissions expert, the City accepts that the proposed Service Station is unlikely to present an unacceptable risk to public health in the vicinity of the subject site.

### Local Government Policies

The revised proposal is generally compliant with the following City Local Planning Policies:

- Planning Policy No.3.1.2 - Local Commercial and Activity Centres Strategy (LCACS) (PP3.1.2);
- Planning Policy No.3.3.1 - Control of Advertisements (PP3.3.1);

- Planning Policy No.3.3.9 - Fast Food Outlets (PP3.3.9);
- Planning Policy No.3.3.14 - Bicycle Parking and End-of-Trip Facilities (PP3.3.14);
- Planning Policy No.3.3.19 - Licenced Premises (PP3.3.19); and
- Planning Policy No.3.3.25 - Percent for Public Art - Developer Contributions (PP3.3.25)

Where applicable, appropriate conditions will be requested in the event the proposal is approved.

**e. Financial**

Nil

**f. Legal and Statutory**

The Revised application is generally consistent with the following documents as discussed in the Officer Report to the June 2023 Council meeting:

- Local Development Plan 2022;
- City of Rockingham Town Planning Scheme No.2; and
- *Environmental Protection (Noise) Regulations 1997.*

**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; the City's internal Teams, and its emissions expert, during the process of assessing, advertising and considering the application.

Variations to the LDP and other standards such as land use, general distribution of uses around the site, design of the Thundelarra Drive Main Street and mall, and the parking shortfall proposed, are considered to be acceptable. In addition, the access/egress and associated traffic concerns are now considered to have been satisfactorily resolved, subject to suitable conditions in the event the application is approved.

The primary issue of concern relating to public health risk resulting from the development of a Service Station immediately opposite the two (2) Child Care Centres, is considered have been thoroughly investigated.

Having regard to:

- The modelling and recent monitoring outcomes detailed in the revised EIA which demonstrate the proposal's compliance with both NEPM and APAC (these providing a contemporary and common standard to best protect human health and wellbeing from the adverse impacts of air pollution, based on epidemiological studies);
- The conservative assumptions applied through the modelling and monitoring analyses, which have been clarified through the revised proposal in the revised EIA;
- The expert advice provided by the City's emissions expert (SLR) that:
  - the proposal complies with the National NEPM standards for Benzene (and Toluene and Xylenes)

- based on contemporary accepted Victorian APAC standards, the proposal's worst-case cumulative concentrations of Benzene at the Child Care Centre or nearby residences are equivalent to less than 5% of the maximum standards criterion;
- The use of both VR1 and VR2 vapour recovery systems, as proposed by the Applicant which will comprise a condition should the application be approved; and
- The conclusion by SLR that the emissions from the Proposal are unlikely to pose an unacceptable risk to human health at the Child Care Centre or nearby residences.

The proposal has been demonstrated to comply with the accepted air quality standards and criteria.

The City considers that, based on the expert air quality advice from SLR, upon review, that the proposed Service Station is unlikely to present an unacceptable risk to public health in the vicinity of the subject site.

It is recommended that the Council adopt the Responsible Authority Report which recommends that the MOJDAP approve the application subject to appropriate conditions.

### Voting Requirements

Absolute Majority

### Officer Recommendation

That Council **ADOPTS** the Responsible Authority Report for the application for the revised Mixed Commercial Development at Lot 622 (No.2) Aura Boulevard, Golden Bay, contained as Attachment 1, 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, pursuant to section 31 of the *State Administrative Tribunal Act 2004* in respect of SAT application DR135/2023, resolves to:

1. Reconsider its decision dated 10 July 2023; and
2. **Approve** DAP Application reference DR135/2023 and accompanying revised plans and supporting information received on 22 December 2023:
  - DA001 - DA003 - Perspective
  - DA100 - Location and Survey Plan
  - DA101 - Site Plan - Rev K, Dated 16.11.2023
  - DA102 - Demolition Plan
  - DA200 - Proposed Ground Floor Plan – Rev L, Dated 16.11.2023
  - 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), including Technical Note No.1 (Dated 30.11.2023)
  - Environmental Noise Assessment (Acoustic Report) (Dated 28.4.2023)
  - Emissions Impact Assessment (EIA) (Dated December 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:



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 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 Proponent 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 engineering 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 be carried across all crossovers 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 147 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 seven (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/m<sup>2</sup>.
    - (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/m<sup>2</sup>, 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 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.
- (iii) For the Fast Food Outlets, daily patrols being undertaken for waste collection within the subject site and within streets immediately abutting the subject site.

All works must be carried out in accordance with the City Approved 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.
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 and Aurea Boulevard crossovers to assist pedestrian safety.
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..
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 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 which are to be installed and functioning 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. The existing, redundant steel frame and slab on site being removed prior to commencement of development.
29. 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.
30. 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.
31. An Operational Management Plan being prepared for the Service Station for the approval of the City, prior to the issue of a Building Permit, demonstrating required vehicle movement through bowsters, and contingency in the instance the VR2 system fails to operate.
32. During the operating hours of the Fast Food Outlets, all rubbish associated with the Fast Food Outlets must be collected daily from the associated carparking areas to the satisfaction of the City.

**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.
8. A site cannot store or sell fuel without first obtaining a licence from the Department of Mines Industry Regulation and Safety, 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*.

### Alternate Motion

Cr Buchan proposed the following Alternate Motion, on behalf of Cr Schmidt:

That Council **ADOPTS** a recommendation on the application for the revised Mixed Commercial Development at Lot 622 (No.2) Aurea Boulevard, Golden Bay, in a Responsible Authority 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, pursuant to section 31 of the *State Administrative Tribunal Act 2004* in respect of SAT application DR135/2023, resolves to:

1. Reconsider its decision dated 10 July 2023; and
2. **REFUSE** DAP Application reference DR135/2023 and accompanying revised plans and supporting information received on 22 December 2023:
  - DA001 - DA003 - Perspective
  - DA100 - Location and Survey Plan
  - DA101 - Site Plan - Rev K, Dated 16.11.2023
  - DA102 - Demolition Plan
  - DA200 - Proposed Ground Floor Plan – Rev L, Dated 16.11.2023
  - 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), including Technical Note No.1 (Dated 30.11.2023)
  - Environmental Noise Assessment (Acoustic Report) (Dated 28.4.2023)
  - Emissions Impact Assessment (EIA) (Dated December 2023)

in accordance with Clause 68(2)(c) of the *Planning and Development (Local Planning Schemes) Regulations 2015* and the Metropolitan Region Scheme, for the following reasons:

1. The proposed development is not compatible with sensitive land uses in the locality, in particular, to the two operating Child Care Centres located in immediate proximity to the proposed Service Station, where the proposal presents an unacceptable health risk and amenity impact to children from benzene exposure.
2. The proposal will likely result in unacceptable traffic impacts given the proximity of the crossover to the Warnbro Sound Avenue/Aurea Boulevard signalised intersection its location immediately adjacent to the start of the slip lane on Aurea Boulevard.

### Reason for Alternate Motion

The amenity of Golden Bay is at significant risk with this development, first from the emission of the proposed Service Station to the surrounding houses and the nearby childcare centres. Additionally, the significant increase in traffic accessing the area to utilise this development will significantly affect the area's liveability. Therefore on those grounds I move this alternate motion of refusal on the grounds of amenity.

### Committee Recommendation

#### Moved Deputy Mayor Buchan, seconded Mayor Hamblin:

That Council **ADOPTS** a recommendation on the application for the revised Mixed Commercial Development at Lot 622 (No.2) Aurea Boulevard, Golden Bay, in a Responsible Authority 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, pursuant to section 31 of the *State Administrative Tribunal Act 2004* in respect of SAT application DR135/2023, resolves to:

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in accordance with Clause 68(2)(c) of the *Planning and Development (Local Planning Schemes) Regulations 2015* and the Metropolitan Region Scheme, for the following reasons:

1. The proposed development is not compatible with sensitive land uses in the locality, in particular, to the two operating Child Care Centres located in immediate proximity to the proposed Service Station, where the proposal presents an unacceptable health risk and amenity impact to children from benzene exposure.
2. The proposal will likely result in unacceptable traffic impacts given the proximity of the crossover to the Warnbro Sound Avenue/Aurea Boulevard signalised intersection its location immediately adjacent to the start of the slip lane on Aurea Boulevard.

Committee Voting (Carried) - 6/0

### **The Committee's Reason for Varying the Officer's Recommendation**

The amenity of Golden Bay is at significant risk with this development, first from the emission of the proposed Service Station to the surrounding houses and the nearby childcare centres. Additionally, the significant increase in traffic accessing the area to utilise this development will significantly affect the area's liveability.

### **Implications of the Changes to the Officer's Recommendation**

Not Applicable



# Technical Memorandum



**To:** Sally Birkhead

**From:** Jason Shepherd

**Company:** City of Rockingham

**SLR Consulting Australia**

**Date:** 15 January 2024

**Project No.** 675.V30246.00001

**RE: LOT 622 (2) Aurea Boulevard, Golden Bay  
Proposed Service Station Air Quality Assessment Summary**

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## 1.0 Introduction

SLR Consulting Australia Pty Ltd (SLR) was engaged by City of Rockingham (City) to prepare this brief summary explanation of the air quality assessment outcomes relating to the operation of a proposed service station at Lot 622 (2) Aurea Boulevard, Golden Bay (the Proposal). Specifically, how the modelling and monitoring results relate to the standards and public health risk profile, in particular, how this risk relates to the two operating childcare centres located immediately to the west of the Proposal, on Lots 716 and 263 Thundelarra Drive, Golden Bay.

SLR previously prepared peer reviews of the modelling assessment and monitoring assessment discussed below, presented in letter 675.30246-L01-v1.0-20230317 dated 17 March 2023, and email dated 19 December 2023, respectively, and attended two mediation sessions on behalf of the City and the Respondent in respect to the proposal.

## 2.0 How the Proposal was Assessed

The Environmental Protection Authority's (EPA) generic separation distances ("*Separation Distances between Industrial and Sensitive Land Uses (GS 3)*", June 2005) are *buffers* between industrial (e.g. a service station) and sensitive land (e.g. a residence or childcare centre) used to avoid conflicts between incompatible land uses. Where the separation distance between an industry and a sensitive land use 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 to air quality at the sensitive land.

Such a study for a proposed industry generally incorporates plume dispersion modelling to predict the worst-case pollutant concentrations in air at the sensitive land resulting from emissions from the industry. This model accounts for site specific characteristics such as local meteorology (primarily wind speed and direction), background air quality and terrain, and predicts the concentration of pollutants emitted from a source at some downwind distance. These predicted concentrations can then be compared with human health air quality criteria to understand the potential risks to human health.

The generic separation distance for a 24-hour service station under GS3 is 200 m and because the Proposal is less than this distance from residences and an existing childcare centre, a site-specific plume dispersion modelling assessment was warranted. Such an assessment was prepared by air quality consultants EAQ Consulting Pty Ltd (EAQ): "*Emissions Impact Assessment of Proposed 24Hr Fuel Service Station*", dated 14 March 2023 (herein, the Modelling Assessment) on behalf of the proponent. SLR reviewed this assessment and found it to be generally consistent with what one would expect in assessing an industry/sensitive land use situation of this type and indeed generally consistent with the

Department of Water and Environmental Regulation (DWER) draft document “*Guideline: Air Emissions*”.<sup>a</sup>

In situations where there is an existing industry, air quality monitoring (actual measurements of air pollutant concentrations) at sensitive land use locations may be undertaken to somewhat *ground-truth* the modelling predictions. Following discussion/mediation between the proponent and City, and with input from SLR, EAQ undertook a short air quality monitoring campaign to quantify impacts from a nearby *existing* service station at a similar distance (40 m) to that which the Proposal would be separated from the existing childcare centre. The results of this monitoring were summarised in EAQ’s “*Emissions Report ADDENDUM*”, dated 7 December 2023 (herein, the Monitoring Assessment).

The results and implications of the modelling and monitoring are summarised below.

### 3.0 Modelling Assessment

The assessment used the US EPA’s regulatory plume dispersion model, AERMOD, which is recognised throughout Australia, and considered appropriate for this application.

AERMOD was used to predict the resulting maximum concentrations of various pollutants (primarily volatile organic compounds (VOCs)) associated with the vaporisation of unleaded petrol (ULP) from bowsers and storage tank vents at locations downwind of the Proposal for ever hour of the year. In doing so, the model accounts for the thousands of different meteorological conditions predicted to occur during a year.

ULP is more volatile (more VOCs are emitted into the air) than diesel, therefore although diesel is to be included as part of the Proposal, the assessment assumes all emissions are from ULP to give a conservative, or *worst-case*, assessment. Conservative elements in a modelling assessment are encouraged such that the *results* can be considered conservative (i.e. actual outcomes can be expected to be *better* than modelled outcomes) providing confidence for decision makers.

Of those pollutants modelled, the only pollutant concentration at nearby residences and the childcare centre predicted to approach the nominated air quality criteria, was the 1-hour average concentration of benzene, a carcinogenic VOC. All other pollutants were found to be insignificant relative to their respective criteria (i.e., less than 2% of the criterion).

The maximum cumulative concentration (i.e., due to the Proposal *plus* the existing service station) of benzene predicted to occur at the childcare centre was predicted to be 27 micrograms per cubic metre ( $\mu\text{g}/\text{m}^3$ ) compared to a criterion of 29  $\mu\text{g}/\text{m}^3$ .

The Modelling Assessment adopted the NSW EPA 1-hour benzene air quality criterion of 29  $\mu\text{g}/\text{m}^3$ , itself adopted from the now rescinded Victorian “*State Environment Protection Policy (Air Quality Management)*”, gazetted in 2001. This resulted in an outcome that SLR would consider to be uncomfortably close to the criterion. However, SLR can advise that

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<sup>a</sup> This document has been in draft status for several years. On review, the Modelling Assessment does not deviate significantly from the draft document’s prescribed methodology.



since 2021, EPA Victoria now adopt a more appropriate<sup>b</sup> 1-hour average criterion of 580  $\mu\text{g}/\text{m}^3$ . When compared to this criterion, the worst-case cumulative concentrations at the childcare centre or nearby residences are equivalent to less than 5% of the criterion.

## 4.0 Monitoring Assessment

In consultation with SLR, EAQ collected samples of ambient air over a period of six hours at a location approximately 40 m from the existing service station to reflect the distance from the Proposal to the adjacent existing childcare centre. The monitoring was conducted on five occasions, however on review, SLR found that the monitoring location was only downwind of the existing service station on three of those occasions, and for approximately 10% of the time each on each of those. This means emissions from the service station would be dispersed in directions other than the monitoring location for most of the time and limits what can reasonably be demonstrated from this monitoring campaign. Nevertheless, the laboratory analysis results indicate that the concentrations of VOCs were negligible, with all benzene concentrations being less than the limit of detection (i.e., very low, such that the laboratory can not determine the actual concentration) of 6.4  $\mu\text{g}/\text{m}^3$ . SLR presented a conservative extrapolation, assuming a result equal to the limit of detection and multiplying this by a factor of 10 to account for the wind direction only blowing towards the monitoring location for 10% of the time, giving 64  $\mu\text{g}/\text{m}^3$ . This is approximately 11% of the criterion of 580  $\mu\text{g}/\text{m}^3$ .

## 5.0 Conclusions

Ambient air quality criteria are considered benchmarks to understand the potential risks to human health and incorporate a level of conservatism such that all members of the community are protected, including children, adults and the elderly. For additional context, workplace air quality criteria may be many orders of magnitude greater than ambient air quality criteria. The Safe Work Australia workplace exposure standard for benzene, for which a worker can be exposed to for 8-hours per day, five days a week, is 3,200  $\mu\text{g}/\text{m}^3$ .

The Modelling Assessment in particular indicates that emissions of VOCs from the Proposal are unlikely to pose an unacceptable risk to human health at the childcare centre or nearby residences.

### SLR Consulting Australia



**Jason Shepherd, CAQP, PhD**  
Principal – Air Quality

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<sup>b</sup> The criterion of 29  $\mu\text{g}/\text{m}^3$  originates from the US Agency for Toxic Substance and Disease Registry (ATSDR) acute minimal risk level (MRL), which was derived for acute-duration inhalation exposure periods of less than or equal to 14 days and is therefore excessively conservative to be used as a 1-hour average criterion. In their "Guideline for Assessing and Minimising Air Pollution in Victoria", EPA Victoria now assign this criterion of 29  $\mu\text{g}/\text{m}^3$  less conservatively to a 24-hour averaging period, 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 (AMCV) equivalent to 580  $\mu\text{g}/\text{m}^3$ . Furthermore, it is worth noting that the AMCVs 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."



PUBLIC SCHEDULE OF SUBMISSIONS Golden Bay Neighbourhood Centre - Lot 622 (No.2) Aurea Boulevard, Golden Bay							
Submission Number	Content Manager File No.	Name	Address	Suburb	Email	Support / Object / Other	Comment
1	D24/1969	Xavier Nelson	15 Tillery Way	SECRET HARBOUR WA 6173	<a href="mailto:xaviernelson@live.com.au">xaviernelson@live.com.au</a>	Object	No to more fast food outlets. No to petrol stations. No to another bottle shop. Put in an IGA Supermarket
2	D24/1972	Peter Magini	56 Aurea Boulevard	GOLDEN BAY WA 6174	<a href="mailto:peter.magini@nrw.com.au">peter.magini@nrw.com.au</a>	Support	In regards to the Neighbourhood Centre for Golden Bay. I really like the layout and proposed shops / businesses for the area. Will take pressure off the Secret Harbour precinct and is well overdue addition to Golden Bay. Give it the tick of approval.
3	D24/2285	Ms Merri Pedler	25 Maroonah Road	GOLDEN BAY WA 6174	<a href="mailto:meripedler1@gmail.com">meripedler1@gmail.com</a>	Object	I am completely against the proposed development of the Neighbourhood Centre in Golden Bay. The reason why I purchased and in this town is because it had an old fashioned vibe, safe, quiet streets and strong community values. This proposed development will literally destroy the community hub of the town, promote obesity via fast food and increase traffic in a residential area.
4	D24/3165	Mr Alex Breen	108 Thundelarra Drive	GOLDEN BAY WA 6174	<a href="mailto:alexbreen2@hotmail.com">alexbreen2@hotmail.com</a>	Object	Stop forcing more fast food and petrol stations in Golden Bay. There is zero need for more, the petrol station was the main reason for refusal and now you are requesting it again. It's just disgusting behaviour from developers. Do better for the community.
5	D24/3567	Mr Mark Skeels	21 Kingsbridge Road	WARNBRO WA 6169	<a href="mailto:markskeels@hotmail.com">markskeels@hotmail.com</a>	Other	There is no requirement for a service station on the NE corner of Thundelarra Drive and Aurea Boulevard. I have no comment or objection to any other part of the proposal.
6	D24/2573	Mr Ian MacDonald	6 Peregrine Court	SINGELTON WA 6175	<a href="mailto:ian.macdonald4@outlook.com">ian.macdonald4@outlook.com</a>	Other	No need for more fast food or a service station within this area. Besides the fact that there is already a number of them located across the road and further towards Secret Harbour and the proposed ones already approved for Stage 2 at Singleton. The supermarket great idea though, however still waiting to fill further stores with the area do we need to build more to sit empty?
7	D24/3583	Ms Lara Sappl	18 Strelley Road	GOLDEN BAY WA 6174	<a href="mailto:larasappl@hotmail.com">larasappl@hotmail.com</a>	Object	Golden Bay does not need another petrol station, fast food outlet or supermarket. It will have negative impacts on the community. There are children close by at the day care who will be negatively impacted. I hold concerns for the physical health of locals with another fast food outlet. The state government needs to consider about how this will impact the physical health of local residents.
8	D24/3589	Mrs Amy Baker	77 Kingscliff Drive	GOLDEN BAY WA 6174	<a href="mailto:matthewsa1991@gmail.com">matthewsa1991@gmail.com</a>	Object	We don't need more fast food, alcohol or fuel. We do need healthy lifestyle options.
9	D24/5845	Mr Paul Robinson	10 Clearwater Way	SINGELTON WA 6175	<a href="mailto:robbieinoz@gmail.com">robbieinoz@gmail.com</a>	Other	Regardless of the makeup to retail spaces/design there is no mention of supporting the inevitable EV future rollout. Shouldn't the shire be mandating the inclusion of EV charging bays as part of the plans. A google search lists 7 for the shire. We should be leading the obvious future requirement and not playing catchup.
10	D24/6113	Ms Samantha Fraser	98 Thundelarra Drive	GOLDEN BAY WA 6174	<a href="mailto:sammiejo.fraser@gmail.com">sammiejo.fraser@gmail.com</a>	Other	It would be lovely to have something very similar to the Baldivis Square! We need things that help and support our community. IGA good grocer, family friendly cafes/casual dining, medical and dental services, kids zone (adventure park), pharmacy open everyday & open late, laundromat. We don't need any more fast food outlets, fuel stations or bottle shops in this area!
11	D24/12768	Ms Kate Williams	36 Aurea Boulevard	GOLDEN BAY WA 6174	<a href="mailto:katewilliams62@bigpond.com">katewilliams62@bigpond.com</a>	Object	I oppose this development application. 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 childcare centres is not acceptable. Residents want appropriate development and amenity - shops and cafes are fine - not a service station. While the proponents have indicated they can manage the emissions - I believe that this is still an unsatisfactory situation for our neighbourhood. We DO NOT NEED a second service station. To me, this is an incompatible development and not what is desired for our suburb. 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 Organiser 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. 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. Again, this is a litter situation that the council refuses to even acknowledge. This litter is turning the area into a ghetto - nobody wants to live around all the rubbish that is discarded - it is both an environmental hazard and visually displeasing. 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 as add to the litter issue. The issue of a supermarket being included in the development application is to appease the residents only. There is no evidence that they have secured a tenant and highly unlikely that they will due to the proximity of Woolworths, Coles and Aldi all at Secret Harbour Square. The competition for a newcomer would be extremely high and make such a business decision highly risky. Other concerns include: There is no safe level of Benzene so even a small increase in BTEX, even if negligible, poses a significant adverse health outcome for children and residents. A second service station increases the risk to an even further level. Noise (a higher lever of 24-hour traffic). I believe that the increase volume of traffic will as increase the noise level in the area from hotter up vehicles. We already have an issue with beep drivers speeding down Aurea Blvd to and from the beach area and having the



11 Con'td							<p>Additional comments - I oppose this development application. Rejection reasons:</p> <p>Rejection reasons for <a href="https://rockingham.wa.gov.au/forms-and-publications/planning-and-building/local-planning/town-planning-advertising-1/golden-bay-neighbourhood-centre-apex-planning-lett">https://rockingham.wa.gov.au/forms-and-publications/planning-and-building/local-planning/town-planning-advertising-1/golden-bay-neighbourhood-centre-apex-planning-lett</a></p> <p><b>Proximity to Sensitive Land Uses:</b> The initial refusal by the Metro Outer JDAP highlighted concerns about the proposed neighbourhood center's incompatibility with sensitive land uses, particularly the two Child Care Centres in close proximity. The potential health risk to children from benzene exposure due to the proposed service station is a significant reason for rejection.</p> <p><b>Inconsistency with Approved Local Development Plan (LDP):</b> The proposed Aurea Boulevard crossover was deemed inconsistent with the approved Local Development Plan for the Golden Bay Neighbourhood Centre. This inconsistency poses an unacceptable risk of traffic accidents, especially given its proximity to the Warnbro Sound Avenue/Aurea Boulevard signalized intersection. The concerns about the crossover being immediately adjacent to the start of the left-turn slip lane also raise traffic safety issues.</p> <p><b>Unresolved Onsite Design Issues:</b> The amended Transport Impact Assessment (TIA) did not adequately address onsite design issues, including swept path, blind aisle, and Service Station stacking distances. Failure to resolve these concerns indicates potential shortcomings in the overall design and safety considerations of the proposed development.</p> <p><b>Environmental Impact and Pollution Concerns:</b> While the letter attempts to address concerns about benzene exposure through an Emissions Impact Assessment (EIA), there are discrepancies and overestimations in the assumptions made. The concerns include assumptions about fuel composition, refueling volumes, and fuel delivery schedules. The potential for increase pollution and its impact on the environment remains a valid reason for rejection.</p> <p><b>Traffic Management and Access Issues:</b> The proposed alterations to the site plan and ground floor plan, including changes to parking spaces, turnaround bays, and fuel tanker movements, raise questions about the efficiency and safety of the traffic management and access system. The potential risks associated with fuel tanker movements and the need for conditions on planning approval indicate unresolved traffic-related concerns.</p> <p><b>Crime and Safety Issues:</b> The letter does not specifically address potential safety and security concerns related to the proposed development. Given its 24-hour service station nature and the potential for increased traffic, there could be concerns about an elevated risk of crime, especially during nighttime hours. These points highlight various aspects of the proposal that warrant rejection based on safety, environmental, and planning considerations.</p> <p>Reasons for rejecting <a href="https://rockingham.wa.gov.au/forms-and-publications/planning-and-building/local-planning/town-planning-advertising-1/golden-bay-neighbourhood-centre-revised-emission-i">https://rockingham.wa.gov.au/forms-and-publications/planning-and-building/local-planning/town-planning-advertising-1/golden-bay-neighbourhood-centre-revised-emission-i</a></p> <p><b>Fuel Delivery Estimates:</b> The estimated daily refuelling volume, maximum fuel delivery per hour, and the total fuel delivery per day and week seem to be excessively high, raising questions about the accuracy of the data. These values are significantly above industry averages and may not reflect realistic scenarios.</p> <p><b>Benzene Composition:</b> The percentage composition of benzene used in the modeling assessment (2.9%) exceeds the maximum allowed in fuel sold in Australia (1% v/v). This discrepancy could lead to inaccurate predictions of benzene emissions and their impact.</p> <p><b>Assumption of ULP for All Throughput:</b> Assuming that all fuel throughput is unleaded petrol (ULP) might not be representative, especially when it is expected that 22% of storage and throughput will be diesel. This oversight could affect the accuracy of the emissions assessment, particularly considering the different composition of diesel fuel.</p> <p><b>Benzene Exposure Comparison:</b> While the report compares the modelled exposure value of 8.93 µg/m3 to the recommended guideline of 580 µg/m3, the commentary does not address the potential cumulative effects of benzene exposure from various sources, both indoor and outdoor, which may contribute to higher overall exposure.</p> <p><b>Benzene Relative Risk of Exposure:</b> The report attempts to downplay the significance of benzene exposure by comparing it to exposure levels on busy roads and during bushfires. However, it does not thoroughly analyze the potential health risks associated with cumulative exposure from multiple sources in the proposed location.</p> <p><b>Indoor Benzene Sources:</b> The report mentions that indoor air in childcare settings contains benzene from various products. This information raises concerns about the cumulative exposure of children to benzene, but the report does not thoroughly address this issue in the context of the proposed Fuel Service Station.</p> <p><b>Lack of Regulation for Toys:</b> The report mentions EU regulations on benzene levels in toys but does not discuss the potential impact of benzene emissions on toys or play equipment in the vicinity of the proposed Fuel Service Station, especially in a childcare setting.</p>
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11 Cont'd						<p>Vapor Recovery Technology: While the report mentions the use of Vapor Recovery Phase 1 and 2 technologies, it does not discuss the effectiveness of these technologies in preventing benzene emissions, especially considering that VR2 is not mandated in most Australian jurisdictions.</p> <p>It's essential to thoroughly review the methodology, assumptions, and data sources used in the assessment to ensure the accuracy and reliability of the findings. Independent experts may be consulted to provide additional insights and validate or challenge the assessment's conclusions.</p> <p><b>Additionally:</b> <b>Cumulative Emissions from Adjacent Site:</b> The assessment relies on assumptions and emissions' sources presented by another consultant (LWC) for the adjacent site. The adoption of assumptions from a separate assessment raises questions about the consistency and accuracy of data across assessments.</p> <p>Model Choice and Parameters: The report mentions the use of Aermოდ for dispersion modeling but does not provide detailed information on the specific parameters chosen or any sensitivity analysis conducted. Lack of transparency in the modeling process could undermine the reliability of the predictions.</p> <p>Legislative Context and Buffer Distances: While the report mentions the recommended buffer separation distances according to WA EPA Guidance, it doesn't explicitly state whether the proposed Fuel Service Station complies with these recommendations. The absence of this information could be a potential gap in the assessment.</p> <p>Emission Sources and Incidental Spills: The report mentions that emission sources include the ventilation of sub-terrain fuel storage tanks, refuelling bowsters, and incidental spills. The significance of incidental spills as a source of vapour release is downplayed, and a more thorough evaluation of potential spill impacts could be warranted.</p> <p>Assessment Substances and VOCs: The list of principal chemical compounds (pollutants) emitted from service station activities is provided, but the report does not discuss the potential cumulative impact of Total Volatile Organic Compounds (VOCs) as a whole. This may lead to an incomplete understanding of the overall impact.</p> <p>Guidance for Assessing Impacts - Averaging Periods: The report uses different averaging periods for different pollutants, which may complicate the interpretation of results. A more consistent approach in the choice of averaging periods could improve clarity and comparability.</p> <p>Receptor Exposure Limits: The report uses various sources for receptor exposure limits without explaining the rationale behind the selection of specific values. A more detailed justification for the chosen exposure limits would enhance the credibility of the assessment.</p> <p>Lack of Discussion on Risk Mitigation Measures: The report does not provide information on any proposed risk mitigation measures or technologies, such as vapor recovery systems. Including details on these measures would help assess the effectiveness of the proposed solutions in reducing emissions.</p> <p>Proximity to Existing Fuel Station: The document mentions an existing 7-Eleven service station located on the opposite side of Aurea Boulevard. This raises concerns about the necessity and potential environmental impact of having two fuel stations in such close proximity.</p> <p>Lack of Decommissioning Plan: The document does not seem to provide information on a decommissioning plan for the fuel station in case of failure or closure. The absence of such a plan could be a significant oversight and a basis for rejection.</p> <p>Community Impact: The report should include an assessment of the potential impact on the local community, including noise pollution, increased traffic, and any other factors that may affect the quality of life for nearby residents.</p> <p>Reasons to Reject <a href="https://rockingham.wa.gov.au/forms-and-publications/planning-and-building/local-planning/town-planning-advertising-1/golden-bay-neighbourhood-centre-traffic-engineerin">https://rockingham.wa.gov.au/forms-and-publications/planning-and-building/local-planning/town-planning-advertising-1/golden-bay-neighbourhood-centre-traffic-engineerin</a></p> <p><b>Lack of Specific Details</b> The technical note mentions several modifications to the development plan, such as pedestrian refuges, left turn pockets, and changes to the fuel station layout. However, the document lacks specific details on dimensions, design specifics, and potential impacts of these changes, making it difficult to assess the thoroughness of the modifications.</p> <p>Limited Turn Path Analysis Information: The document refers to a turn path analysis included in Appendix B but does not provide detailed information on the analysis. A lack of transparency regarding the turn path analysis methodology, assumptions, and results could raise concerns about the accuracy of the assessment.</p> <p>Use of Mountable Apron: The introduction of a mountable apron at the Thundelarra Drive crossover for the fuel tanker's left turn exit is mentioned. The document does not elaborate on the potential impact or safety considerations associated with the use of a mountable apron, particularly in a pedestrian refuge area.</p>
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11 Cont'd								<p>Recommendation for Smaller Fuel Tankers: The recommendation for the use of smaller 17m fuel tankers is made without a detailed explanation of how this decision was reached. The implications of using smaller tankers, such as potential impacts on fuel delivery efficiency or frequency, should be discussed more thoroughly.</p> <p>One-way System in the Service Station Forecourt: The document recommends a southbound one-way system within the eastern area of the service station forecourt but does not provide detailed reasoning for this recommendation. The implications on traffic flow, safety, and potential conflicts should be addressed more explicitly.</p> <p>Efficiency Claims without Quantitative Data: While the document asserts that the revised development plan will result in more efficient traffic circulation, it lacks quantitative data or metrics to support this claim. Without specific measurements or comparisons, the level of improvement remains unclear.</p> <p>Limited Discussion on Potential Residual Impacts: The document states that the modifications effectively resolved the items discussed during mediation, but it does not discuss potential residual impacts or any compromises made during the negotiation process. A more comprehensive overview of the mediation outcomes would enhance transparency.</p> <p>Insufficient Detail on Traffic Conflict Resolution: The document mentions the resolution of traffic conflicts, but it does not provide specific details on the nature of conflicts, how they were addressed, or any residual risks. A more in-depth discussion on traffic conflict resolution would add clarity.</p> <p>It is important to consider these points critically and seek additional information or clarification on specific aspects to ensure a comprehensive understanding of the proposed modifications and their implications. Independent experts or stakeholders involved in the mediation process could provide valuable insights.</p> <p><b>Summary for Rejecting the Proposed Development:</b></p> <p>The provided documents related to the proposed development of a petrol station and fast-food outlet raise several concerns and inadequacies that collectively warrant the rejection of the proposal. Key issues include:</p> <p><b>Air Emissions Impact Assessment:</b></p> <p>Inconsistent Data and Assumptions: The Air Emissions Impact Assessment lacks transparency and consistency in data sources, relying on assumptions from another consultant for adjacent sites. This raises questions about the reliability and accuracy of the assessment.</p> <p>Modeling and Parameterization: The report lacks detailed information on dispersion modeling parameters and processes, undermining the credibility of the predictions. A more thorough discussion of the modeling approach is necessary for a comprehensive evaluation.</p> <p>Cumulative Emissions: The assessment fails to adequately address cumulative emissions from the adjacent service station, which may result in an incomplete understanding of the overall impact on air quality.</p> <p>Lack of Risk Mitigation Details: The report lacks information on proposed risk mitigation measures, such as vapor recovery systems, which are crucial for assessing the effectiveness of pollution control.</p> <p><b>Transport Impact Assessment Addendum:</b></p> <p>Incomplete Information on Modifications: The document detailing modifications to the development plan lacks specific details on dimensions, design specifics, and potential impacts. The lack of clarity makes it challenging to assess the thoroughness of the proposed changes.</p> <p>Limited Transparency in Turn Path Analysis: The document refers to turn path analysis without providing sufficient details on methodology, assumptions, or results. A transparent discussion of turn path analysis is essential for a thorough evaluation.</p> <p>Safety Concerns with Mountable Apron: The use of a mountable apron at the Thundelarra Drive crossover is mentioned without addressing potential safety concerns, particularly in a pedestrian refuge area.</p> <p>Insufficient Justification for Smaller Fuel Tankers: The recommendation for smaller fuel tankers lacks a detailed explanation, and the potential implications on fuel delivery efficiency or frequency are not thoroughly discussed.</p> <p>Unexplained One-way System Recommendation: The recommendation for a one-way system in the service station forecourt lacks detailed reasoning and fails to address potential impacts on traffic flow and safety adequately.</p> <p>Inadequate Evidence of Efficiency Improvements: The document asserts that the revised development plan will result in more efficient traffic circulation but lacks quantitative data or metrics to support this claim.</p>
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							Additionally, the reports lack any mention of a plan for the decommissioning or safe destruction of the fuel station in case of failure of the business, which is a crucial aspect to consider. Given these substantial concerns related to air quality, safety, and transparency in the assessment and modifications, it is recommended to reject the proposed development of the petrol station and fast-food outlet. Further consultation with independent experts and stakeholders is advised to ensure a comprehensive and informed decision-making process. CRM6988/2024.
12	D24/13923	Mr Ross Flavell	22 Bundarra Way	GOLDEN BAY WA 6174	<a href="mailto:bigshabang@ozemail.com.au">bigshabang@ozemail.com.au</a>	Object	<p>We wish to submit our objection to the proposed development at Lot 622 (No 2) Aurea Blvd in Golden Bay. As residents of Golden Bay, we moved from Melbourne in 2021 to get away from the service stations, fast food outlets and bottle shops on every other corner, for a more healthy life here in WA.</p> <p>The recent plans to develop the vacant site at Lot 622 Area Blvd in Golden Bay has let us completely dismayed at the rationale behind the decision to open another Petrol station, 2 more fast food outlets and a drive through bottle-shop in our suburb. We already have a 7 Eleven service station and convenience store and Dominoes fast food outlet on the opposite side of the street so why do we need more of these in the area. We have a BP and an Ampol service station (with convenience stores), McDonalds, Subway, Chicken Treat, various other takeaway outlets at Secret Harbour shopping centre, a Dan Muphys, Liquourland, Cellarbrations and BWS all within 2.5km of the location.</p> <p>We do not need any more fuel stations with convenience stores selling junk food and unhealthy drinks on top of other fast food outlets, especially in close proximity to Golden Bay Primary and Comet Bay College, where children often walk past to get from home to school and back. Given he most recent information from the WA Govt's own study 'Evidence brief: food, built environments and obesity' (attached) which clearly shows: <i>'Unhealthy diets, overweight, and obesity are the leading risk factors for death, disease and disability in Western Australia (WA), after tobacco use. Most WA adults (71 per cent) are overweight or obese and one in four WA children are overweight or obese. If current trends continue, hospitalisation costs linked to overweight and obesity in WA are set to rise by 80 per cent, to \$610 million by 2026.'</i></p> <p>In the WA state Govt's 'Factors contributing to alcohol related harm or ill health' (see link Factors contributing to alcohol related harm or ill health) it is stated that: <i>'Research shows that regular exposure to alcohol product advertising (e.g. on the way to and from school) can have a negative impact on children and young people.'</i></p> <p>This is yet another reason why we do not need a drive through or any other type of bottle shop in the area. The 2021 census also showed that heart disease, diabetes, stroke, kidney disease and other long term health issues in the local Golden Bay area exceeded 12%. See link and table below.</p>
13	D24/14481	Ms Helen Paterson	9 Bandya Lane	GOLDEN BAY WA 6174	<a href="mailto:helou_304@hotmail.com">helou_304@hotmail.com</a>	Object	<p>If this proposal was to go ahead we would have 2 service stations opposite each other with 2 childcare centres in close proximity. First, is there a need for another petrol station, with already 3 in the area. Proposed bottle shop. Golden Bay already has a bottle shop, plus 3 in the Secret Harbor shopping complex. Is this only encouraging unwelcome behaviour of drinking? Is there really a need for this. Shops opposite the proposed site are still empty, so is this going to be the case here. This shows me that there really is not a market for these type of shops in this area. Traffic on Thunerlara Drive. This street is not designed for heavy loads of traffic with impact on local residents a concern. Safety of road users on this road is paramount. I watch traffic exiting from the other shops on Aurea Blvd where they exit onto Thunerlara Drive then have to perform a U turn at the roundabout, to return to Aurea Blvd. If traffic with this proposal is to exit onto Thunerlara Drive and drive towards Aurea Blvd this is going to make this roundabout and childcare centres very busy. Rubbish discarded from the Seven 11 and Dominoes is already a concern and eyesore, so this will only increase with extra fast food outlets in the area. And the smell from fast food cooking is going to impact local residents. CRM 6616/2024 (duplicate) and CRM 6617/2024</p>
14	D24/14550	Mrs Jane Anderson	26 Marillana Drive	GOLDEN BAY WA 6174	<a href="mailto:jane.grlusich@bigpond.com">jane.grlusich@bigpond.com</a>	Neutral	<p>I was pleased to see the proposal was not approved but was amazed that it remained still an option for a second service station. This is not only unnecessary, but does not create an opportunity to enhance the space for family living with a community based centre instead - perhaps a GP clinic and combined medical centre or family centre restaurant. A second service station creates more difficulties and confusion for pedestrians and cyclists to use the space as increases traffic flow options for cars. CRM6760/2024</p>
15	D24/14553	Mrs Ann Fitzpatrick	33 Elm Way	BALDIVIS WA 6171	<a href="mailto:ann.fitzpatrick@rockingham.wa.gov.au">ann.fitzpatrick@rockingham.wa.gov.au</a>	Object	I'm opposed to more fast food outlets. CRM6748/2024
16	D24/16170	Mr Robert Tew	10 Kalli Street	GOLDEN BAY 6174	<a href="mailto:robtrew87@gmail.com">robtrew87@gmail.com</a>	Object	<p>Rejection reasons for <a href="https://rockingham.wa.gov.au/forms-and-publications/planning-and-building/local-planning/town-planning-advertising-1/golden-bay-neighbourhood-centre-apex-planning-lett">https://rockingham.wa.gov.au/forms-and-publications/planning-and-building/local-planning/town-planning-advertising-1/golden-bay-neighbourhood-centre-apex-planning-lett</a></p> <p>Based on the provided letter, here are potential reasons to reject the proposal for the Golden Bay Neighbourhood Centre development:</p> <p><u>Proximity to Sensitive Land Uses:</u></p> <p>The initial refusal by the Metro Outer JDAP highlighted concerns about the proposed neighbourhood center's incompatibility with sensitive land uses, particularly the two Child Care Centres in close proximity. The potential health risk to children from benzene exposure due to the proposed service station is a significant reason for rejection.</p> <p><u>Inconsistency with Approved Local Development Plan (LDP):</u></p>



16 Cont'd						<p>The proposed Aurea Boulevard crossover was deemed inconsistent with the approved Local Development Plan for the Golden Bay Neighbourhood Centre. This inconsistency poses an unacceptable risk of traffic accidents, especially given its proximity to the Warnbro Sound Avenue/Aurea Boulevard signalized intersection. The concerns about the crossover being immediately adjacent to the start of the left-turn slip lane also raise traffic safety issues.</p> <p><u>Unresolved Onsite Design Issues:</u></p> <p>The amended Transport Impact Assessment (TIA) did not adequately address onsite design issues, including swept path, blind aisle, and Service Station stacking distances. Failure to resolve these concerns indicates potential shortcomings in the overall design and safety considerations of the proposed development.</p> <p><u>Environmental Impact and Pollution Concerns:</u></p> <p>While the letter attempts to address concerns about benzene exposure through an Emissions Impact Assessment (EIA), there are discrepancies and overestimations in the assumptions made. The concerns include assumptions about fuel composition, refueling volumes, and fuel delivery schedules. The potential for increased pollution and its impact on the environment remains a valid reason for rejection.</p> <p><u>Traffic Management and Access Issues:</u></p> <p>The proposed alterations to the site plan and ground floor plan, including changes to parking spaces, turnaround bays, and fuel tanker movements, raise questions about the efficiency and safety of the traffic management and access system. The potential risks associated with fuel tanker movements and the need for conditions on planning approval indicate unresolved traffic-related concerns.</p> <p><u>Crime and Safety Issues:</u></p> <p>The letter does not specifically address potential safety and security concerns related to the proposed development. Given its 24-hour service station nature and the potential for increased traffic, there could be concerns about an elevated risk of crime, especially during nighttime hours. These points highlight various aspects of the proposal that may warrant rejection based on safety, environmental and planning considerations.</p> <p><u>Reasons for Rejection</u></p> <p><a href="https://rockingham.wa.gov.au/forms-and-publications/planning-and-building/local-planning/town-planning-advertising-1/golden-bay-neighbourhood-centre-revised-emission-i">https://rockingham.wa.gov.au/forms-and-publications/planning-and-building/local-planning/town-planning-advertising-1/golden-bay-neighbourhood-centre-revised-emission-i</a></p> <p><u>Fuel Delivery Estimates:</u></p> <p>The estimated daily refuelling volume, maximum fuel delivery per hour, and the total fuel delivery per day and week seem to be excessively high, raising questions about the accuracy of the data. These values are significantly above industry averages and may not reflect realistic scenarios.</p> <p><u>Benzene Composition:</u></p> <p>The percentage composition of benzene used in the modeling assessment (2.9%) exceeds the maximum allowed in fuel sold in Australia (1% v/v). This discrepancy could lead to inaccurate predictions of benzene emissions and their impact.</p> <p><u>Assumption of ULP for All Throughput:</u></p> <p>Assuming that all fuel throughput is unleaded petrol (ULP) might not be representative, especially when it is expected that 22% of storage and throughput will be diesel. This oversight could affect the accuracy of the emissions assessment, particularly considering the different composition of diesel fuel.</p> <p><u>Benzene Exposure Comparison:</u></p> <p>While the report compares the modelled exposure value of 8.93 µg/m3 to the recommended guideline of 580 µg/m3, the commentary does not address the potential cumulative effects of benzene exposure from various sources, both indoor and outdoor, which may contribute to higher overall exposure.</p> <p><u>Benzene Relative Risk of Exposure:</u></p> <p>The report attempts to downplay the significance of benzene exposure by comparing it to exposure levels on busy roads and during bushfires. However, it does not thoroughly analyze the potential health risks associated with cumulative exposure from multiple sources in the proposed location.</p> <p><u>Indoor Benzene Sources:</u></p> <p>The report mentions that indoor air in childcare settings contains benzene from various products. This information raises concerns about the cumulative exposure of children to benzene, but the report</p>	
17	D24/16585	Ms Nikki Lee			<a href="mailto:nikkileegoldenbay@gmail.com">nikkileegoldenbay@gmail.com</a>	Object	I would like to send in 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.

							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.
							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.
							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.
							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. Whilst the air quality report sent in by let the proponents is thorough, it does not address the issue that Benzene and BTEX combined AT ANY LEVEL, poses a significant health risk to people who live work and play within 200m of the service station. With the addition of another petrol station these people will be at increased risk of exposure and the potential of having ongoing lifelong adverse health outcomes. This proposal must be rejected. CRM8215/2024
18  18 Cont'd		Ms Rebecca Privilege	23 Berryessa Parkway	SECRET HARBOUR WA 6173	<a href="mailto:privilegerebecca@gmail.com">privilegerebecca@gmail.com</a>	Object	<p>I wish to submit my objection to the proposed development at Lot 622 (No. 2) Aurea Boulevard, Golden Bay.</p> <p>As a resident and ratepayer, residing in Secret Harbour, within the City of Rockingham for twenty three (23) years, my greatest concerns are based on health and safety. The known health risks, including the well known link to cancer, associated with the benzene in petrol, is also known to extend to those residing in close proximity to petrol stations.</p> <p>These concerns are highlighted as a result of having two (2) child care centres directly across the road from an existing petrol station and this proposed petrol station. We also have a primary school and a high school in close proximity too. Children, from a very young age, are being exposed to known carcinogens.</p> <p>It appears that the development does not address, sufficiently, the environmental Protection Agency (EPA) Separation Distances as identified in Part 5 of the Development Application Report by Planning Solutions, specifically relating to the planned Service Station use. The Department of Health (DoH) needs to be consulted in relation to ensuring health effects are adhered to.</p> <p>Whilst the EPA Guidance Statement No. 3 is a guide only, the two (2) childcare centres must be identified and addressed by a suitably qualified professional 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 (2) childcare facilities, I submit that this application should be refused and strenuously rejected.</p> <p>I request that the City of Rockingham offices make arrangements for their own air analysis to be conducted, and factor into account the current petrol station and the effectiveness of the VR systems. Whilst this will be helpful, it will not address the issues of Benzene and BTEX, which combined at any level, poses a more than significant risk to the health of the people living and working within 200 metres (200m) of the service station/s.</p> <p>The addition of two (2) fast junk food venues does not add to the health of the surrounding population. The toxic and putrid, dangerous seed oils used by these companies, have established, and negative health risks. These will be exacerbated by the 'sea breeze' blowing these toxic seed oil fumes over Golden Bay and Secret Harbour residents.</p> <p>The unsocial behaviour and increased littering known to occur wherever these junk food places exist, is not conducive to the reasonable enjoyment and expectation of quiet for the Golden Bay and Secret Harbour residents. One only has to look at the Police history of the Secret Harbour McDonalds store to know health and safety are at risk on a daily basis. This same behaviour and littering is noted where service stations exist.</p> <p>I implore the Council to reject this proposal as it is not based on safety, in any way, shape or form. CRM8296/2024</p>
19		Mrs Asher Buck	4 Blue Fin Drive	GOLDEN BAY WA 6174	<a href="mailto:asher.buck@icloud.com">asher.buck@icloud.com</a>	Object	<p>I would like to advise I'm against any development of another petrol station in Golden Bay.</p> <p>As a resident on the area I highly object due to the known health issues of the storage and fumes close to residents.</p> <p>As a survivor of brain cancer, I am appalled this is even being considered.</p> <p>I don't need to go into details as I'm sure the health department is aware of the problems.</p>

20		Ms Julia Masny	8 Yaringa Street	GOLDEN BAY WA 6174	<a href="mailto:juliam@aapt.net.au">juliam@aapt.net.au</a>	Object	<p>Firstly, it is great that this proposed development was rejected by our Council and the JDAP, but it is also concerning that the developer is appealing the decision.</p> <p>It is inconceivable that any responsible authority would approve this proposal in its present form. It is clearly unsuitable for the location, with the inclusion of yet another service station and yet another liquor outlet.</p> <p>There is already a largely unwanted new service station across the road from the development site, opposite two child care centres and there is a fast food outlet there. This proposed service station, unbelievably, is also to be located across the road from the child care centre.</p> <p>There is a service station and fast food available at Secret Harbour, less than 2 km away. There are already 4 liquor outlets at Secret Harbour and one in Golden Bay. It is hard to understand how this proposal could be considered reasonable, given all the reasons outlined in the Council's rejection.</p> <p>More fast food outlets in the area are not needed and cannot be justified, as it is well known that it has a detrimental effect on the health of the population, especially children. And especially considering the proximity to both a Primary and High School.</p> <p>We should also be concerned about the toxic effects of ever more benzene fumes on the developing brains and bodies of young children: it is a known carcinogen.</p>
							<p>Developers appear not to be concerned for the health of the general population, given their propensity to want to build more and more fast food outlets, as well as service stations, which seem to be popping up everywhere. How such developments can be considered acceptable by the SAT, contrary to the wishes of the community and Council, is hard to comprehend.</p> <p>I trust that, in this instance, the appeal for the proposed development will be denied.</p>
21		Skye-Anne Cooke	23 Tincombe Gardens	BALDIVIS WA 6171	<a href="mailto:skye-anne_96@hotmail.com">skye-anne_96@hotmail.com</a>	Object	<p>I am writing to voice my objection to the proposed second fuel station and drive through takeaway in Golden Bay. Currently, there is a service station directly opposite the proposed build-site which more than sufficiently serves its purpose. There is also an additional 2 service stations within walking distance of the proposed site and a third being built just a short drive away.</p> <p>The proposed site also faces 2 childcare centres and is meters away from a primary and high school. As a parent in the local community I find it appalling that our children are being exposed to such toxicity and potentially harmful fumes. A more children friendly amenity would be more suited given its sensitive position and clientele.</p> <p>As for the drive through, again with such a vulnerable population of children around I feel having fast food avenues to be a negative choice. We have multiple fast food options currently available and the newly built building across the street is struggling to find tenants as it (having never been occupied) suggesting more empty facilities.</p>
22		Mr Robert & Mrs Victoria Ganfield	12 Kalli Street	GOLDEN BAY WA 6174	<a href="mailto:v-pearson@hotmail.com">v-pearson@hotmail.com</a>	Object	<p>I would like to register my objection to the Golden Bay neighbourhood development.</p> <p>I've lodged letters before and all of my previous statements still stand. The fast food restaurants are not ideal. But of real concern is another petrol station.</p> <p>The benzene present around petrol stations is proven to be carcinogenic. There is high density housing, two daycares and a primary school in close proximity to the site.</p> <p>There is already a 7/11 practically a block away and multiple other petrol stations close by.</p> <p>The potential health risk to children and the surrounding residents from benzene exposure due to the proposed service station is a significant reason for rejection.</p> <p>I'd like this email to be counted as objections from both myself and my husband.</p>

23		Alisha Joynes	24 Swanson Way	SECRET HARBOUR WA 6173	<a href="mailto:alisha_w2@yahoo.com.au">alisha_w2@yahoo.com.au</a>	Object	<p>I would like to submit my objection to the proposed inclusion of service station, liquor store and fast food outlet(s) at the above mentioned address.</p> <p>To say I was flabbergasted when I found out about the intended proposal is an understatement. Market saturation point for all three types of services has surely been reached in this community, with multiples of each type of service within a 2 minute drive of the intended location. Three petrol stations, six liquor stores and too many fast food outlets to count, these stores are problematic for numerous reasons, some of which are highlighted below. Of greatest concern though is the proximity to the primary school and day care centres, and the impact the introduction of these businesses will have on our most vulnerable, impressionable and defenceless demographic.</p> <p>Service Stations:</p> <p>In an age where the world is transitioning away from fossil fuels and towards green energy, it boggles the mind that there are applications for new amenities. That being said, the proximity to community and in particular, day care centres and a primary school, is horrifying. Evidence that demonstrates the risks includes:</p> <p>* "Petrol stations emit benzene and other contaminants that have been associated with an increased risk of childhood leukemia." Residential proximity to petrol stations and risk of childhood leukemia <a href="https://link.springer.com/article/10.1007/s10654-023-01009-0">https://link.springer.com/article/10.1007/s10654-023-01009-0</a> 2023</p> <p>* "The research study shows that a "minimum" distance of 50 metres should be maintained between petrol stations and housing, and 100 metres for "especially vulnerable" facilities such as hospitals, health centres, schools and old people's homes. "Ideally, the 100 metre distance should be respected in plans for building new houses", says Doval." Petrol Stations Pollute Their Immediate Surroundings Petrol stations pollute their immediate surroundings 2011</p> <p>* "fuel dispensing facilities commonly present around the residential places, educational institutions, and various health care facilities. Fuel pollutants such as benzene, toluene, and xylenes (BTX) and its alkyl derivatives are harmful to human health because of their toxic, mutagenic, or carcinogenic properties." Risk Assessment of Ambient Air Pollutants and Health Impact around Fuel Stations in Urban Cities of KSA, Risk Assessment of Ambient Air Pollutants and Health Impact around Fuel Stations in Urban Cities of KSA 2021</p> <p>With an existing service station across the road from this proposed site, these risk factors would be doubled.</p>
							<p>There is extensive information and evidence in the Department of Health's evidence brief around food, built environments and obesity (WA Government, 2022, <a href="https://www.health.wa.gov.au/~media/Corp/Documents/Health-for/Healthy-eating/Evidence-brief-food-built-environments-and-obesity.pdf">https://www.health.wa.gov.au/~media/Corp/Documents/Health-for/Healthy-eating/Evidence-brief-food-built-environments-and-obesity.pdf</a>), highlighted in the following paragraph: "</p> <p>"WA policy context</p> <p>The Sustainable Health Review (SHR) is a 10 year blueprint for the WA health system that emphasises the importance of prevention. Recognising that rising rates of overweight and obesity are placing undue burden on the health system, recommendation 2a of the SHR is to halt the rise in obesity and increase the number of adults who have a healthy weight. A priority for implementation under recommendation 2a is "Changes to planning laws to limit unhealthy food outlets and to support access to healthy food options including near schools". Supporting this, the Western Australian Health Promotion Strategic Framework 2022-2026 includes a strategic direction to "Work across government and key sectors to influence urban planning to ensure urban design and infrastructure promotes and supports healthy eating patterns in line with the Australian Dietary Guidelines, increases local access to healthy food and drink, and reduces children's exposure to unhealthy food outlets."</p> <p>Additionally, the increase in rubbish, which has become a significant burden on the Secret Harbour community after McDonalds opened, is an environmental issue given the quantity of branded packaging and wrappers found throughout the community."</p> <p>Liquor Store:</p> <p>"Outlet density</p> <p>* It is well established that the density of pubs and bars in Australia is related to rates of violence. There is also evidence that off-premise (or packaged) outlet density is related to violence, although studies that use data on alcohol sales find that the volume of sales rather than the number of outlets is what matters for harm rates .</p>



							<p>* Most studies, including two longitudinal Australian studies , show that increases in alcohol outlet density are associated with poorer health outcomes. These include increased rates of alcohol-related chronic illnesses such as cirrhosis and alcoholic pancreatitis, and increased alcohol-related presentations to emergency departments. These poorer health outcomes increase as alcohol outlet density increases and the reverse is also true.</p> <p>* Intimate partner violence (IPV) refers specifically to violence between adult partners in a relationship – other kinds of family violence (in particular child abuse and maltreatment) have been studied separately. The only Australian longitudinal study of IPV found that packaged liquor outlet density was an important predictor of IPV rates. Several good-quality US studies do not replicate this finding, so more research is needed to resolve uncertainties in the literature.</p> <p>*There is strong Australian evidence that increased alcohol outlet density is associated with increased rates of assault and family violence. Overseas evidence also indicates that increasing alcohol outlet density can increase other social problems, e.g. the rates at which sexually transmitted diseases are spread and rates of self-harm (suicide and suicide attempts). Rates of child maltreatment also increase (As these studies were undertaken overseas, the conditions may not reflect Australian conditions)."</p> <p>NSW Government, 2015, <a href="https://www.saxinstitute.org.au/wp-content/uploads/Community-impact-of-liquor-licences-1.pdf">https://www.saxinstitute.org.au/wp-content/uploads/Community-impact-of-liquor-licences-1.pdf</a></p> <p>The information above has only briefly touched on the health implications of these three types of services, without exploring other potential issues such as traffic, antisocial behaviour and above and below-ground environmental pollution.</p> <p>I sincerely hope that these elements of the proposal are rejected, for the good of the community and in particular, our children.</p>
24		Department of Education	151 Royal Street	EAST PERTH WA 6004	<a href="mailto:jack.sirett@education.wa.gov.au">jack.sirett@education.wa.gov.au</a>	Object	<p>Thank you for your letter dated 3 January 2024 concerning the above proposed mixed commercial 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>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><b>Fast-food Outlets</b></p> <p>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><b>Service Station</b></p> <p>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.</p>
							<p>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><b>Liquor shop</b></p> <p>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.</p>
25		Department of Health	Level 3, A Block, 189 Royal Street	EAST PERTH WA 6004	<a href="mailto:lindy.nield@health.a.gov.au">lindy.nield@health.a.gov.au</a>		<p>Our initial response is provided below for ease.</p>

25 Cont'd						<p>Given the additional information and based on the modelling and limited monitoring, and the uncertainty in the epidemiological evidence (which is based on proximity and not BTEX concentration), the DOH cannot definitively conclude there is negligible risk.</p> <p><b>The EAQ Environmental report</b></p> <p>This reports emission from the site will be related to filling USTs, tank breathing losses, vehicle refuelling, “whoosh” emissions from removal of vehicle caps and fuel spills, typically at the bowser. Vapour recovery is proposed for UST and bowser refuelling points (VR1, VR2 respectively). Modelled on 90% efficiency.</p> <p>“The predicted ground level concentrations of these primary pollutants, utilising Vapour Recovery Phase 1 &amp; 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.”</p> <p><b>The SLR peer review report of the EAQ report</b></p> <p>This report notes that the EAQ models assumes the vapour recovery is 90% effective and overlooks potential for cumulative effects.</p> <p>SLR consider the AERMOD steady- state plume model is appropriate, noting that surface characteristics that may affect dispersion of a plume and resultant ground level concentrations was not examined.</p> <p>The output of concern relates to maximum 1-hour averaging periods for benzene, with results at the childcare centre (CC2) predicted to be 93% of the criterion. SLR believe the is sufficient conservatism built into the assessment for this not to be an issue.</p> <p>P4/4 - 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.</p> <p><b>The Emissions Report Addendum</b></p> <p>This sampling represents a single point, grab sample collected over six-hour periods, starting between 0500-0545 on five mornings in November 2023 (2, 6, 11, 16, 19). It did not describe the total volume collected into the SUMMA canisters, or flowrates employed.</p> <p>The SUMMA canisters were placed at ground level, approximately 40 metres downwind from the petrol station, during very light changeable, winds.</p> <p>It is unclear whether bulk deliveries and loading of the underground storage tanks (UST) was conducted during these sample events. Transfer volumes and general bowser activity levels during these sampling events wasn't recorded, therefore it is not possible to confirm that this sampling was representative of worst-case, common or best-case conditions.</p> <p>No sampling was conducted at the source of the emissions, to confirm that the sampling strategy was effective at capturing benzene gas near USTs, bowsers or vehicles using the station.</p> <p>The results indicate a single detection of toluene with no detection of benzene.</p> <p><b>DOH Conclusions</b></p> <p>If the addendum sampling represents true worst-case conditions and was truly representative of the concentrations that may build up across a service station over still days, then the sampling suggests that benzene will not travel at significant concentrations to a ground sampling location 40 metres from the source.</p> <p>However, the information presented does not confirm the actual conditions of the sampling events, making it hard to conclude that benzene will not ever reach concentrations sufficient to be inhaled by very young children and babies, at nearby childcare centres.</p> <p>Similarly, the EAQ modelling report does not appear to consider topography, or other surface characteristics that may alter plume diffusion. Hence given the higher predicted 1-hour average results, more certainty is warranted.</p> <p>When assessing risks to sensitive receptors, such as babies and children who are aged under 4 years, and are growing at maximal rates, their sensitivity to carcinogenic agents is significantly greater than older children and adults, that do not double in size as quickly. At this age, there are many many cell divisions, which is critical in cancer development.</p> <p>Further when assessing risks, where there are collections or gatherings of such sensitive receptors in a single location, such as near a service station, the risk rating of childhood cancer increases purely from the additional numbers, or clusters.</p> <p>It is a poor example, but if you had a box of 30 chickens and you exposed them to a low, but possibly harmful concentration of gas (that only harms chickens), then it is likely that at least one will be affected. Yet the relative risk in a box of mixed birds, with one or two chickens might mean that no chickens, or any other bird, show any signs of harm.</p> <p>The DOH applies a lens that is precautionary, sustainable, proportional and considers inter-generational equity, therefore our view is that if it is possible to prevent negative outcomes, and there are alternative solutions, alternative solutions are recommended, and are our preference.</p> <p>Based on the information presented, the potential risk remains marginal, rather than certain.</p>
26		Department of Water and Environmental Regulation			<a href="mailto:brett.dunn@dwer.wa.gov.au">brett.dunn@dwer.wa.gov.au</a>	<p>The report has been discussed with the Departments Air Quality Branch, and presents monitoring information from an existing service station taken from 5 sampling events in November 2023.</p>

						<p>This additional information is acknowledged, however the Departments position remains consistent with Peter Taylors (Senior Manager – Air Quality) e-mail of the 20 October 2023 with regard to the consideration of residual risk in decision-making. The intent associated with monitoring is recognised. However, the Departments aforementioned advice stated <i>the use of technical studies, such as modelling and monitoring of air pollutants, can inform possible incompatibility between land uses but should not be used as the only input for planning decision-making as there can be significant uncertainty in the accuracy of such studies and they cannot determine whether impacts will or will not occur</i>.</p> <p>With regard to the above, the information gathered over a limited sampling period does is not considered to alter the risk profile associated with the proposal, given the numerous factors that can influence emission impacts upon sensitive receptors, and the lack of post development regulation for this land use. As such, the Departments position would remain unchanged.</p>
27		Department of Education	151 Royal Street	EAST PERTH WA 6004	<a href="mailto:jack.sirett@education.wa.edu.au">jack.sirett@education.wa.edu.au</a>	<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>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><u>Fast-food Outlets</u></p> <p>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><u>Service Station</u></p> <p>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.</p> <p>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><u>Liquor shop</u></p> <p>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.</p>

# Golden Bay Neighbourhood Centre

Application for Planning Approval



Lot 622 (2) Aurea Boulevard, Golden Bay

February 2023

**apex**  
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 8<sup>th</sup> 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 3<sup>rd</sup> 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 31<sup>st</sup> 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 29<sup>th</sup> 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



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 exiting 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><b>4.6.1 Objective</b></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><b>4.6.2 Form of Development</b></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 <b>Appendix 5</b>.</p>
<p><b>4.6.3 Parking</b></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><b>4.6.4 Setbacks</b></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"> <li>• A setback of 1.88m-2.11m along the wall.</li> <li>• The wall divided into separate 'sections', which are treated with patterned concrete panels and cladded finish.</li> <li>• 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.</li> </ul> <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"> <li>• 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.</li> <li>• 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.</li> <li>• The key emphasis of the neighbourhood centre precinct is the establishment of a</li> </ul>

	<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"> <li>• 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.</li> <li>• 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.</li> </ul> <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**

<b>2. Standards</b>	
<b>a) Structure</b>	
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>b) Street interface</b>	
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"> <li>• The supermarket, arcade, speciality stores, and convenience retail building providing active frontage to Thundelarra Drive with windows and openings.</li> <li>• The liquor store's western façade and drive through containing openings directly facing Wyloo Lane.</li> <li>• 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.</li> </ul>
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"> <li>• 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.</li> <li>• Service station: internalise the service area to face eastward into the forecourt, with a small loading area not evident from the street.</li> <li>• Fast foods: siting the service yards at the northern side of both buildings, ensuring views are screened from most angles by both buildings.</li> <li>• 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.</li> </ul>

	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"> <li>• Pedestrian level windows and openings</li> <li>• Articulation and alternating textures</li> <li>• Colour tones and materials reflective of the coastal context of the site</li> <li>• Feature roof form for the service station and curved building returns for the supermarket and specialty stores.</li> </ul> <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.
<b>c) Landscape</b>	
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.

<b>d) Robustness</b>	
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.
<b>e) Fencing</b>	
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.
<b>f) On-street parking</b>	
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.
<b>g) Open space</b>	
<i>Not applicable</i>	
<b>3. Design principles for the retail core</b>	
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"> <li>• The supermarket's main entrance is provided at the corner facing Thundelarra Drive.</li> <li>• The specialty tenancies' entrances face the piazza/arcade and the corner fronting Thundelarra Drive.</li> <li>• The service station retail building includes an entrance facing Thundelarra Drive.</li> </ul>
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.
<b>4. Minimum building heights</b>	
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.

<b>Table 5: response to EPA separation guidelines</b>	
<b>Gaseous/Odour</b>	
<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 <b>Appendix 8</b>.</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"> <li>• Spill and leak containment</li> <li>• Segregation of dangerous goods</li> <li>• Control of ignition sources in hazardous areas</li> <li>• Control of hazardous substances that includes any gas, vapour, mist, fume or dust</li> <li>• 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</li> <li>• Underground storage or handling systems for petroleum products designed, installed, operated and maintained so they don't leak</li> </ul>	
<b>Noise</b>	
<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>	
<b>Risk</b>	
<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"> <li>• Identifies all hazards relating to the dangerous good proposed to be stored at the site;</li> <li>• 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</li> <li>• Identifies any required risk control measures.</li> </ul> <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/DP408508**DUPLICATE  
EDITION**N/A**

DATE DUPLICATE ISSUED

**N/A**VOLUME  
**2898**FOLIO  
**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)

- \*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



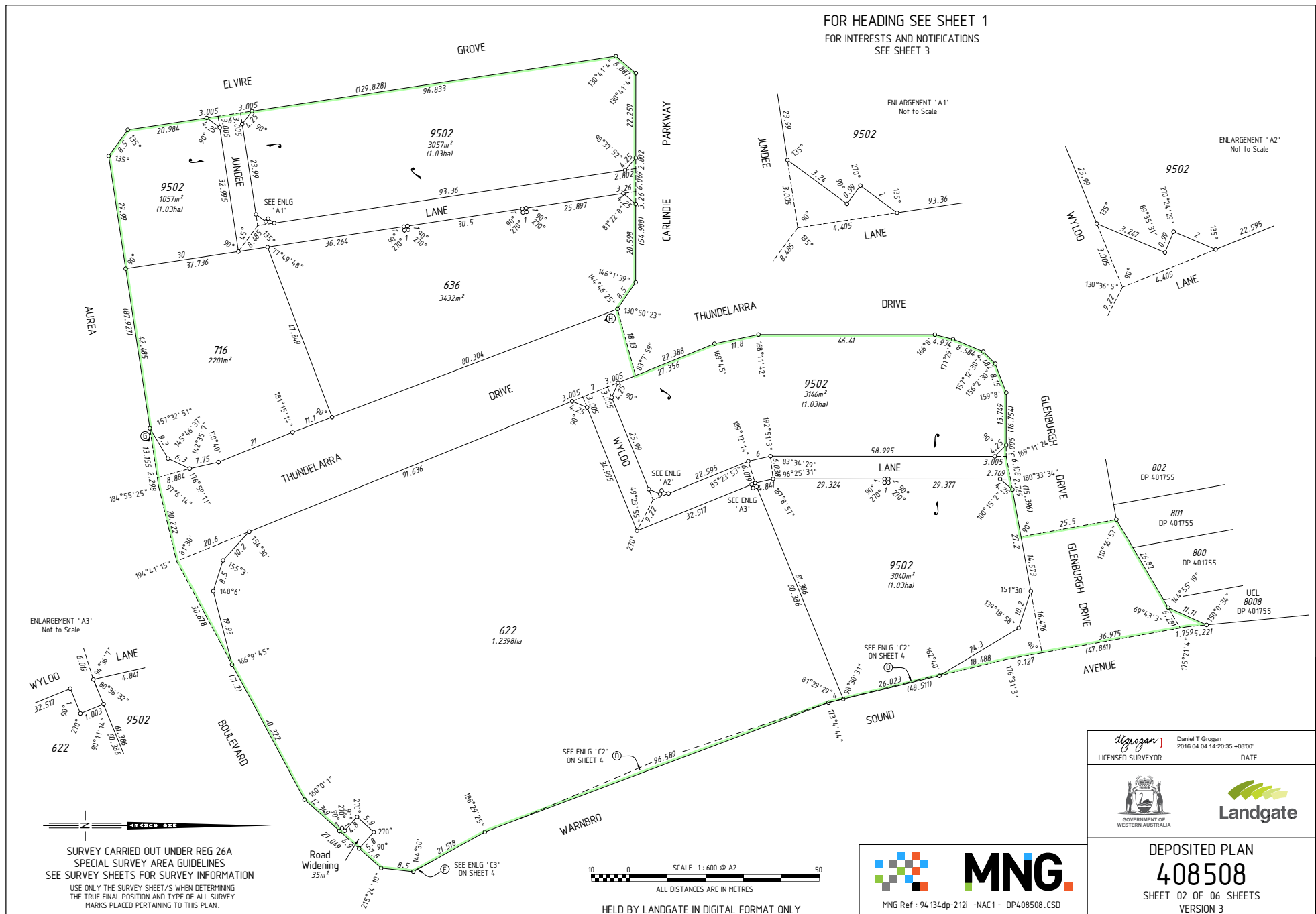
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ALL DISTANCES ARE IN METRES

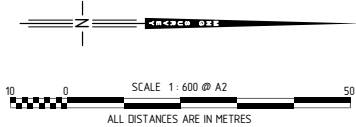


DEPOSITED PLAN  
408508  
SHEET 01 OF 06 SHEETS  
(PLUS SURVEY SHEET(S))  
VERSION 3



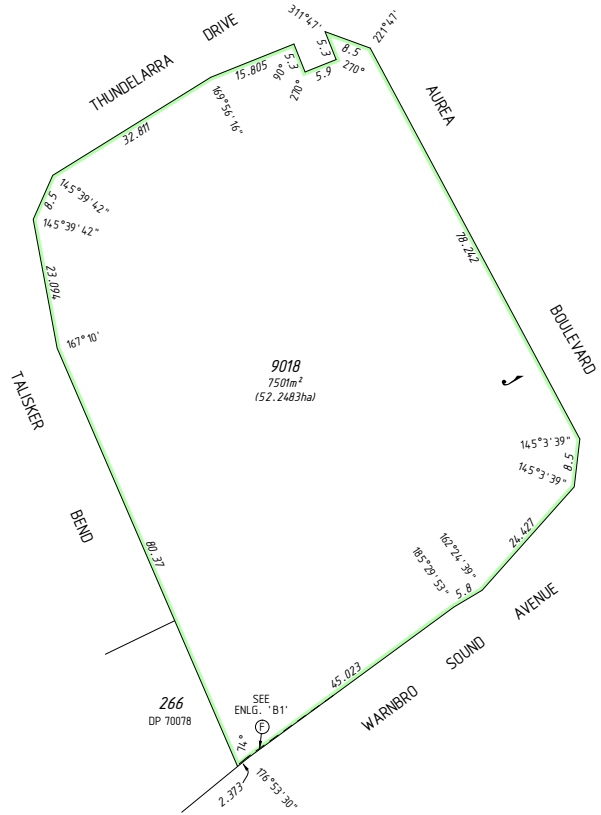


INTERESTS AND NOTIFICATIONS						
SUBJECT	PURPOSE	STATUTORY REFERENCE	ORIGIN	LAND BURDENED	BENEFIT TO	COMMENTS
(B)(C)	EASEMENT		DOC F714364	LOT 9018	SEE DOC	AS REDEFINED ON DP72062
(D)(E)	EASEMENT		DOC F714364	LOT 622	SEE DOC	AS REDEFINED ON DP72062
(I)	EASEMENT		DOC F714364	LOT 9502	SEE DOC	AS REDEFINED 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.

HELD BY LANDGATE IN DIGITAL FORMAT ONLY





GOVERNMENT OF  
WESTERN AUSTRALIA



Landgate

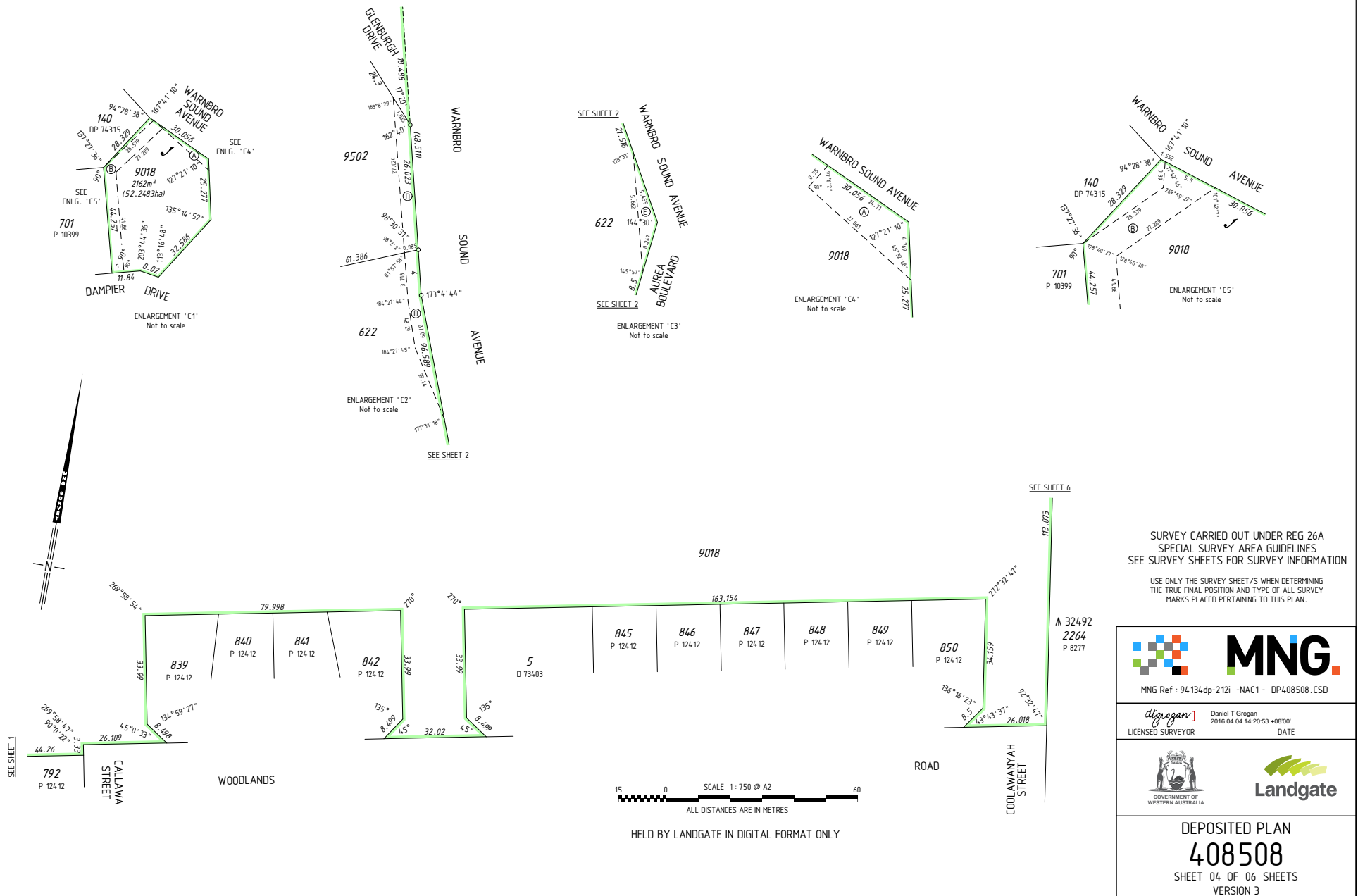
DEPOSITED PLAN  
**408508**  
SHEET 03 OF 06 SHEETS  
VERSION 3

Daniel T Grogan  
2016.04.04 14:20:44 +0800  
LICENSED SURVEYOR  
DATE



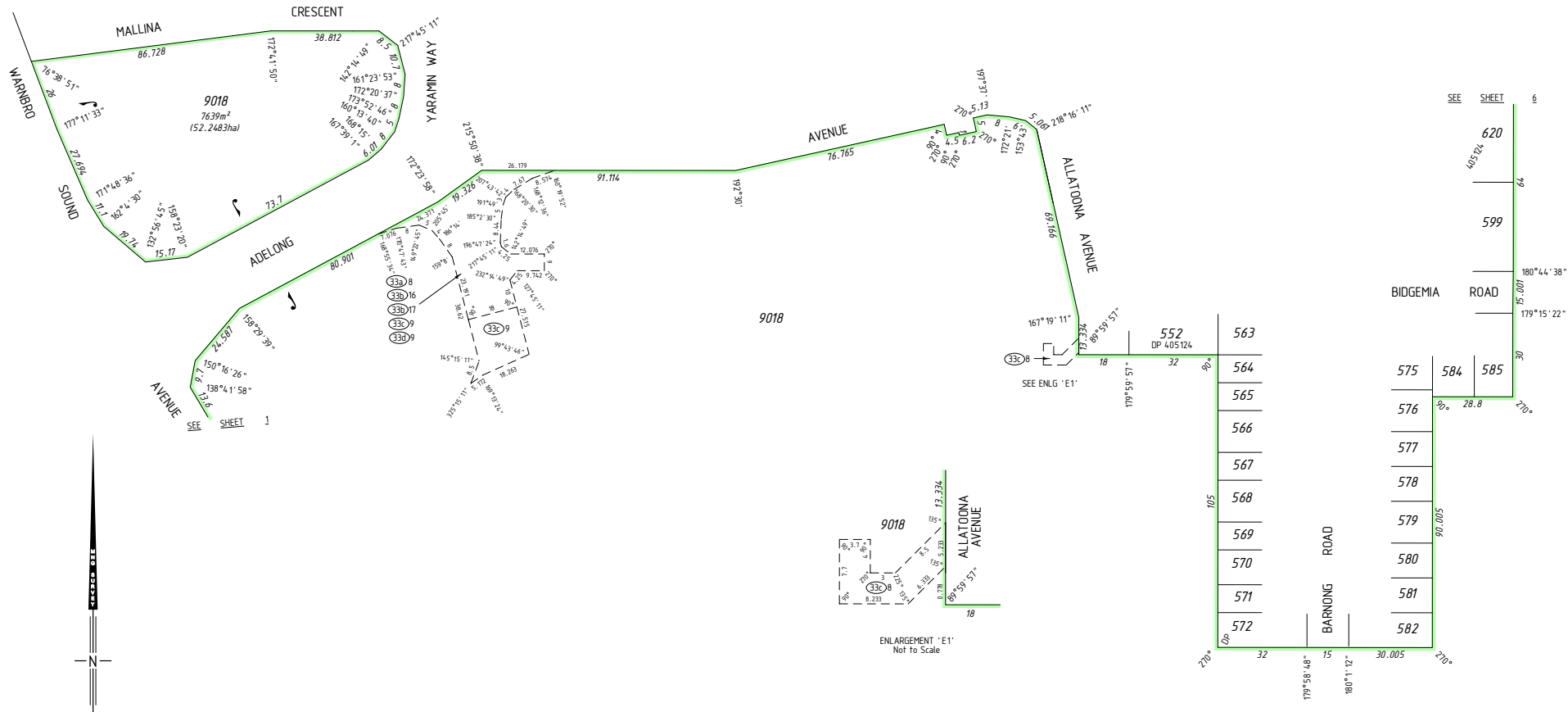
**MNG**

MNG Ref : 94.134dp-212i -NAC1 - DP408508.CSD






FOR HEADING SEE SHEET 1  
FOR INTERESTS AND NOTIFICATIONS  
SEE SHEET 3



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.

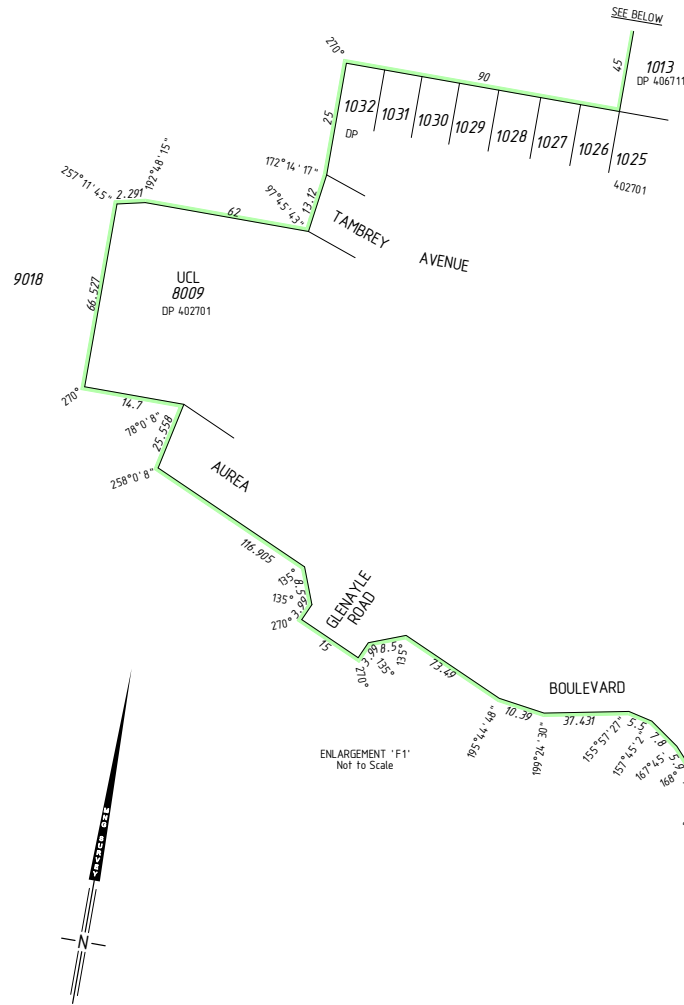
HELD BY LANDGATE IN DIGITAL FORMAT ONLY

  
MNG Ref : 94134dp-212i -NAC1 - DP405805.CSD  
Daniel T Grogan  
2016.04.04 14:21:01 +0800  
LICENSED SURVEYOR DATE

  
GOVERNMENT OF  
WESTERN AUSTRALIA

DEPOSITED PLAN  
**408508**  
SHEET 05 OF 06 SHEETS  
VERSION 3

FOR HEADING SEE SHEET 1  
FOR INTERESTS AND NOTIFICATIONS  
SEE SHEET 3



SURVEY CARRIED OUT UNDER REG 26A  
SPECIAL SURVEY AREA GUIDELINES  
SEE SURVEY SHEETS FOR SURVEY INFORMATION

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THE TRUE FINAL POSITION AND TYPE OF ALL SURVEY  
MARKS PLACED PERTAINING TO THIS PLAN.

HELD BY LANDGATE IN DIGITAL FORMAT ONLY

ENLARGEMENT 'F2'  
Not to Scale

SEE ABOVE

SEE SHEET 1

1037  
DP 39551  
502.551

1036  
DP 39551

1035  
DP 43589

MARILLANA DRIVE

9018

YAMARNA ROAD

1380

1373

YERILLA ROAD

1343

1354

ARCOONA AVENUE

1013

SEE SHEET 1

ENLARGEMENT 'F3'  
Not to Scale

SEE SHEET 5

584  
DP

585  
DP

28.8

170°

179°15'22"

180°44'38"

179°40'31"

179°26'31"

180°35'27"

179°59'37"

179°57'49"

321

324

343

405124

8°0'9"

89°59'51"

270°0'36"

8.719

1492

1493

1494

1495

47604

DP

23  
P 18327

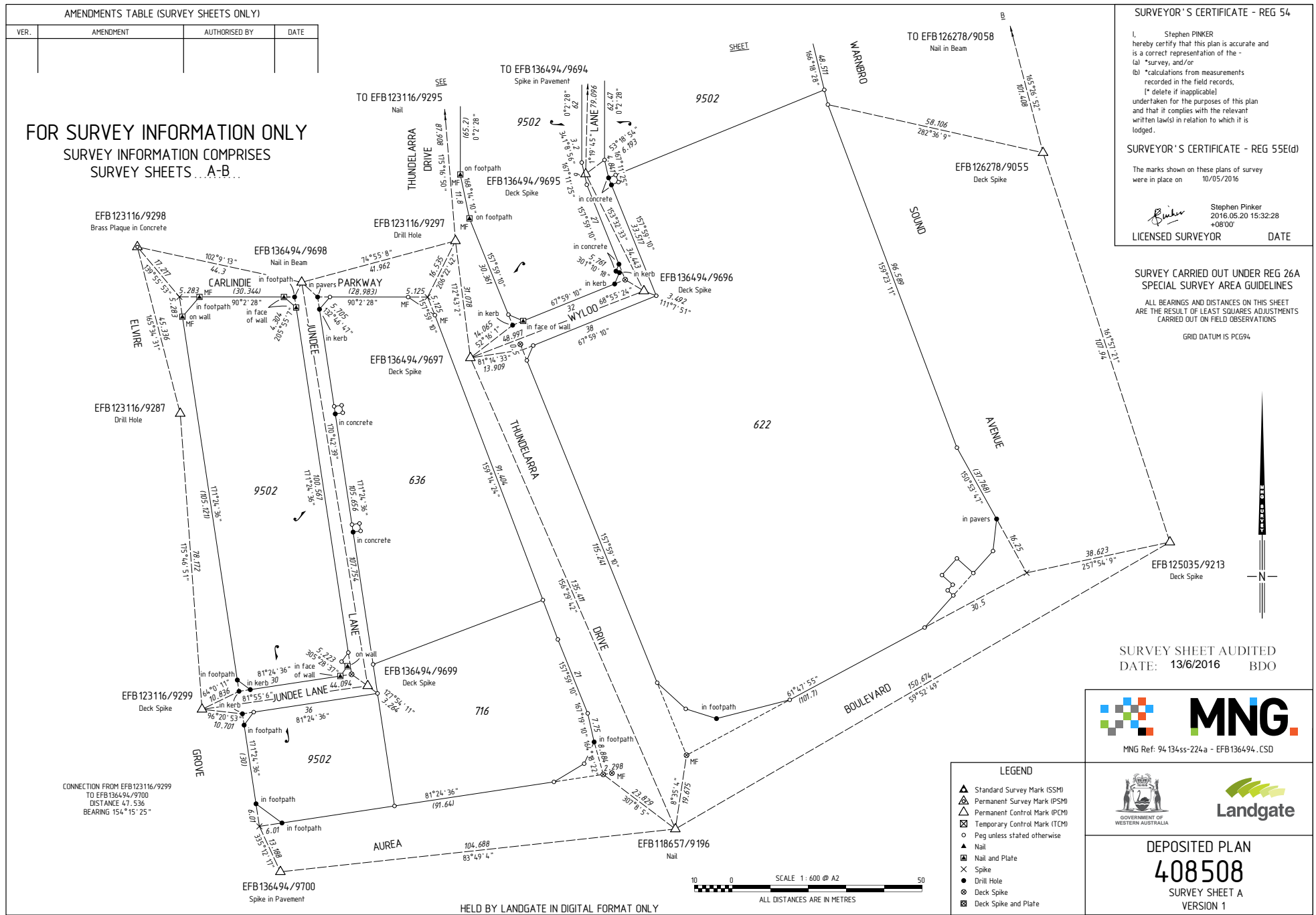
MNG  
MNG Ref : 94134dp-212i - NAC1 - DP408508.CSD

diagon Daniel T Grogan  
LICENSED SURVEYOR 2016.04.04 14:21:10 +0800  
DATE

GOVERNMENT OF  
WESTERN AUSTRALIA

Landgate

DEPOSITED PLAN  
408508  
SHEET 06 OF 06 SHEETS  
VERSION 3



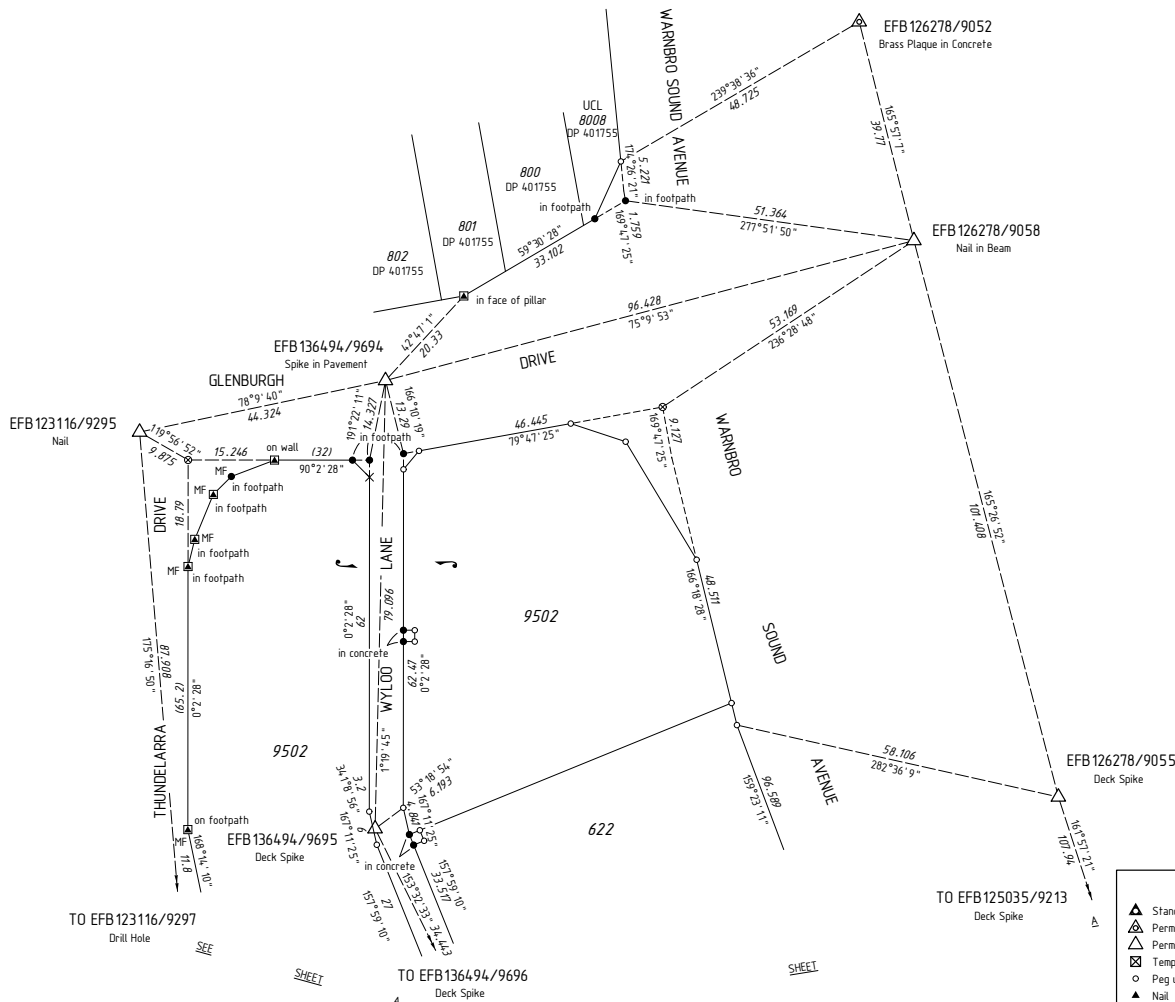
FOR SURVEY INFORMATION ONLY

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

Stephen Pinker  
2016.05.20 15:32:34  
+08'00'  
LICENSED SURVEYOR DATE



DEPOSITED PLAN  
408508  
SURVEY SHEET B  
VERSION 1

- LEGEND
- ▲ Standard Survey Mark (SSM)
  - △ 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  
Path: C:\Users\J.azhar\Documents\Revit Local Files\2020\44634 - Golden Bay Neighbourhood Centre\_L.Azhar.rvt

Scale: NTS

© Hames Sharley:

Project Number: 44634  
Drawing Number: DA000  
Revision: E  
Date: 28.04.23



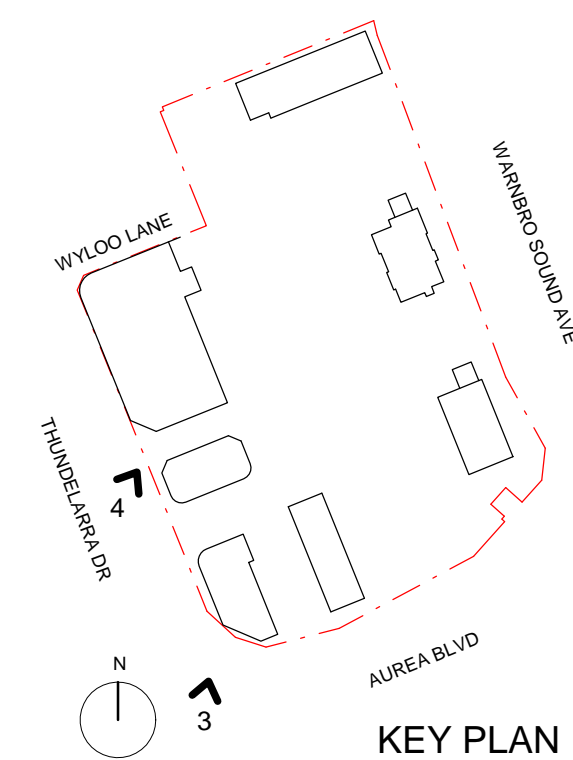




IMAGES ARE INDICATIVE ONLY

2 - AERIAL VIEW OF PROPOSED DEVELOPMENT





3 - VIEW OF CORNER OF THUNDELARRA DRIVE AND AUREA BOULEVARD



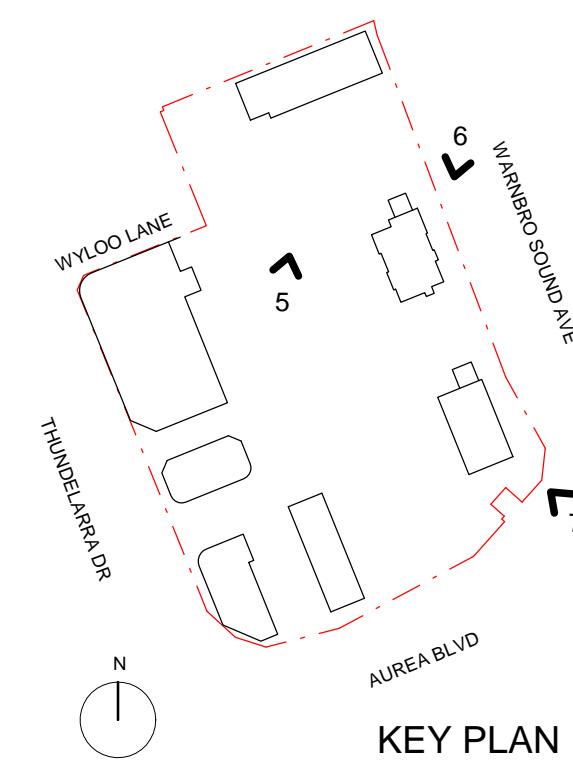
4 - VIEW OF ARCADE





IMAGES ARE INDICATIVE ONLY

5 - VIEW OF LIQUOR STORE AND ENTRY TO DRIVE THROUGH



IMAGES ARE INDICATIVE ONLY

6 - VIEW OF SCREENING TO DRIVE THROUGH



IMAGES ARE INDICATIVE ONLY

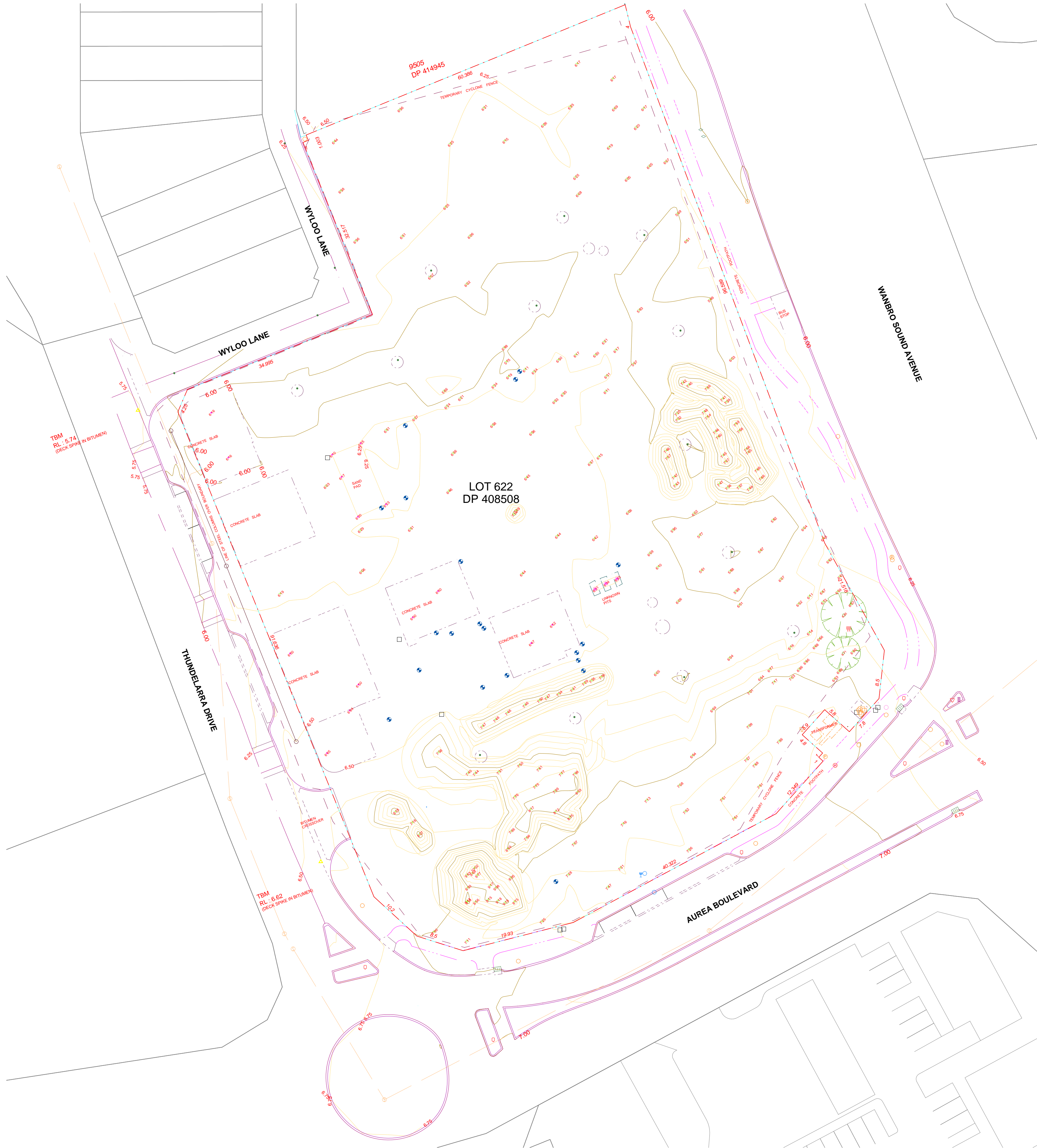
7 - VIEW OF CORNER OF WARNBRO SOUND AVENUE AND AUREA BOULEVARD





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



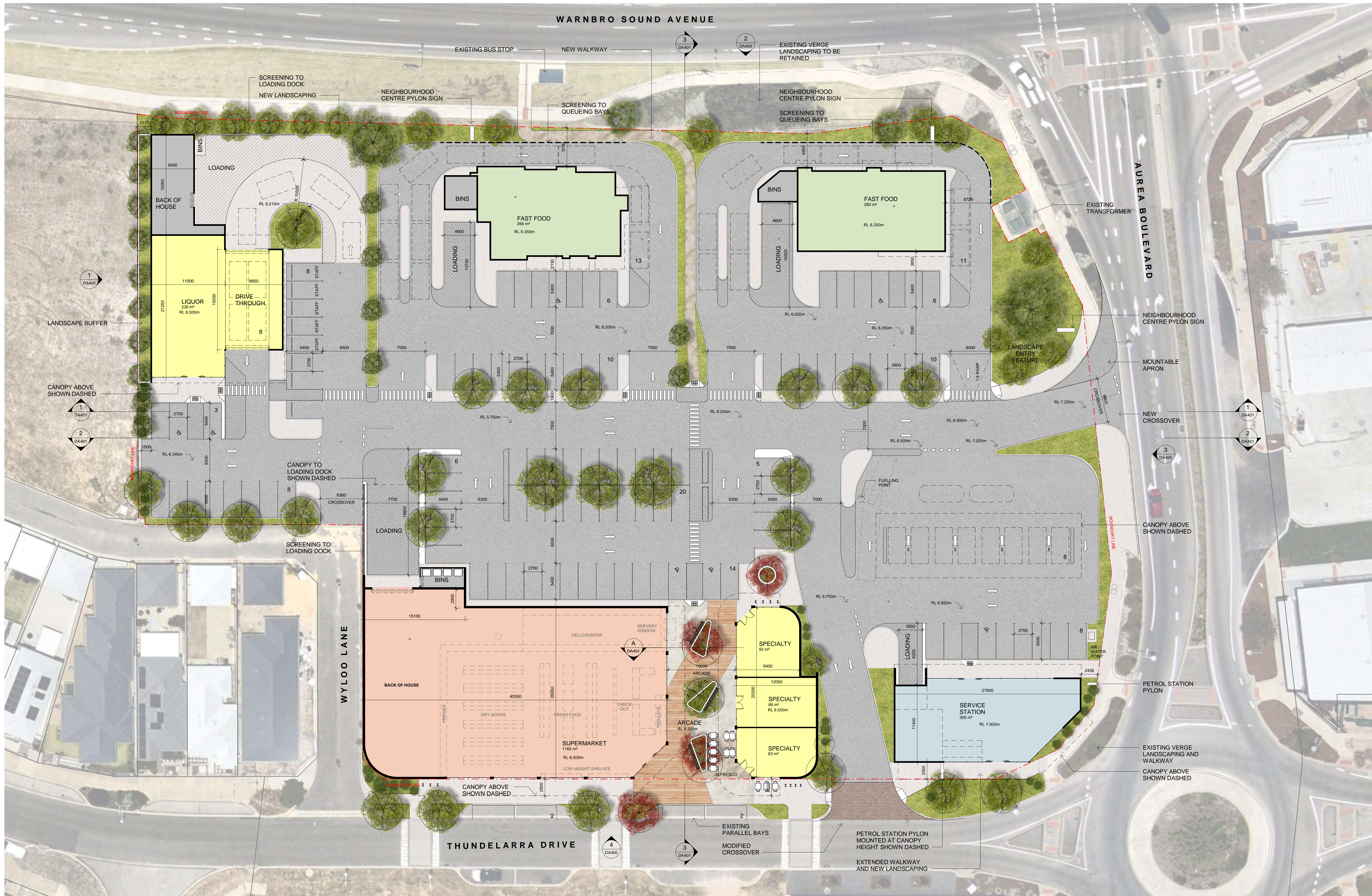


VIEW OF EXISTING STRUCTURE ALONG THUNDELARRA DRIVE

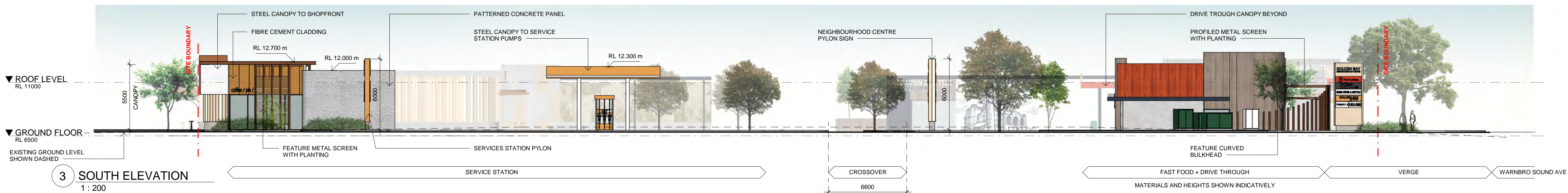
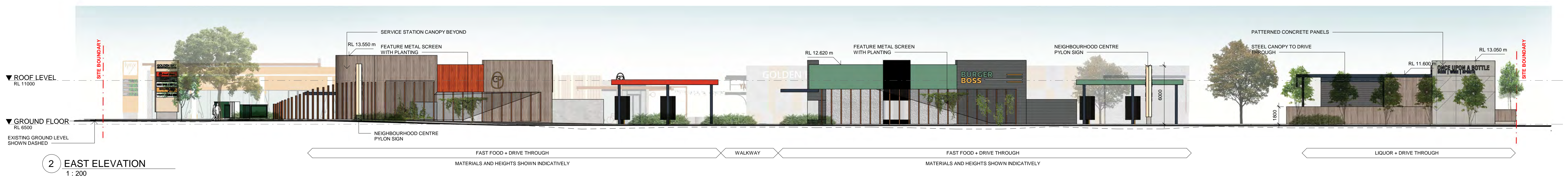
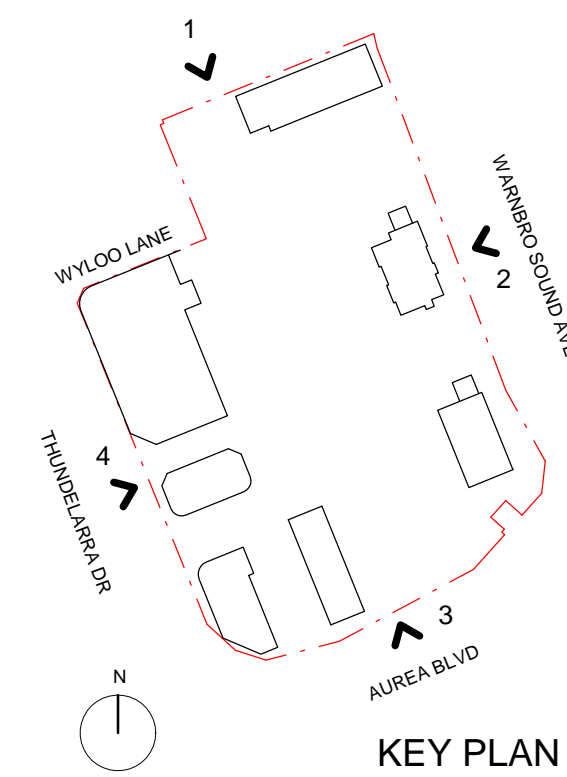
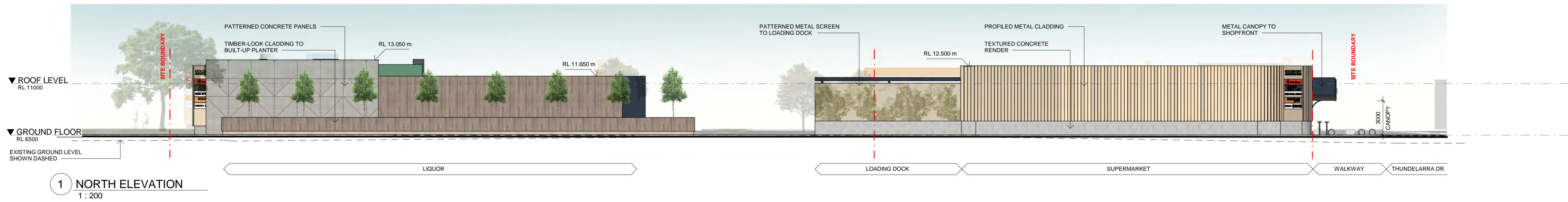


1 PROPOSED DEMOLITION PLAN  
1:400



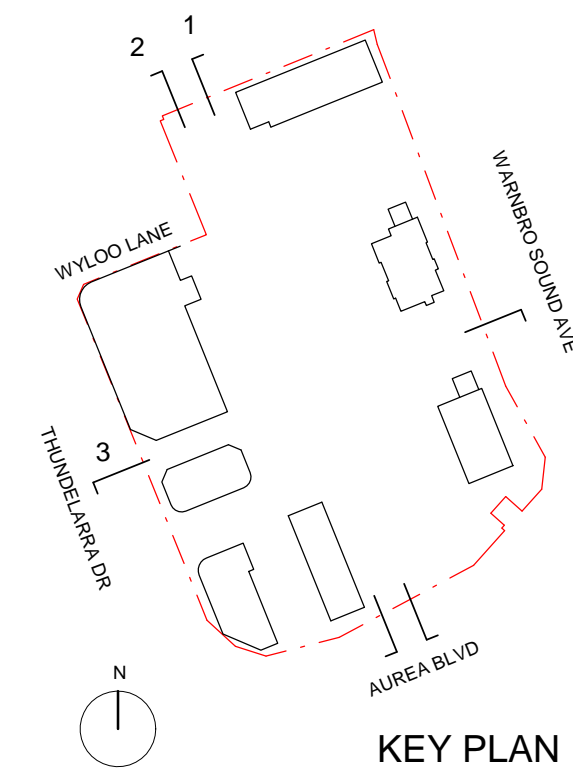
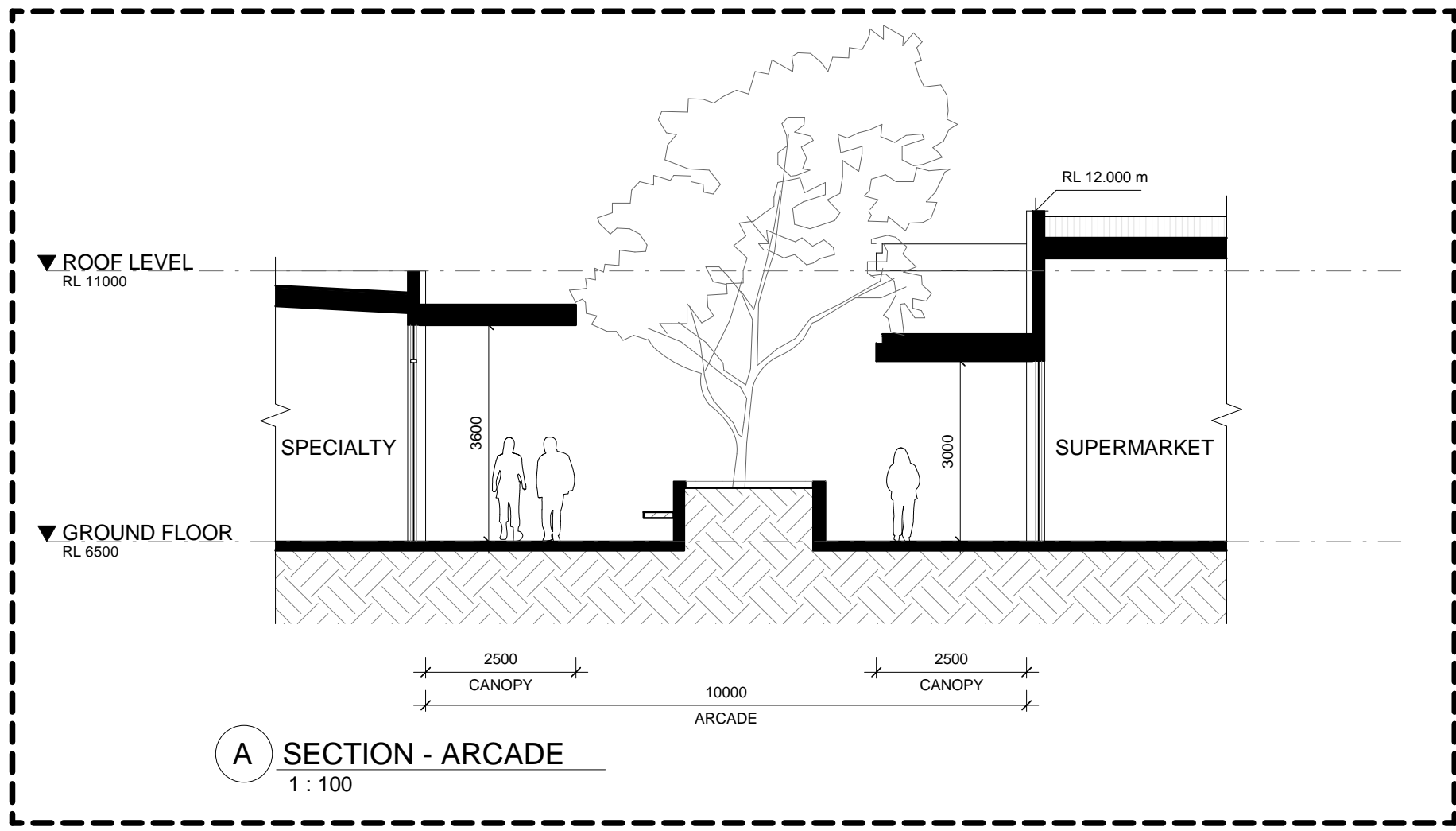






NOTE: ALL TENANT SIGNS SHOWN ARE INDICATIVE ONLY





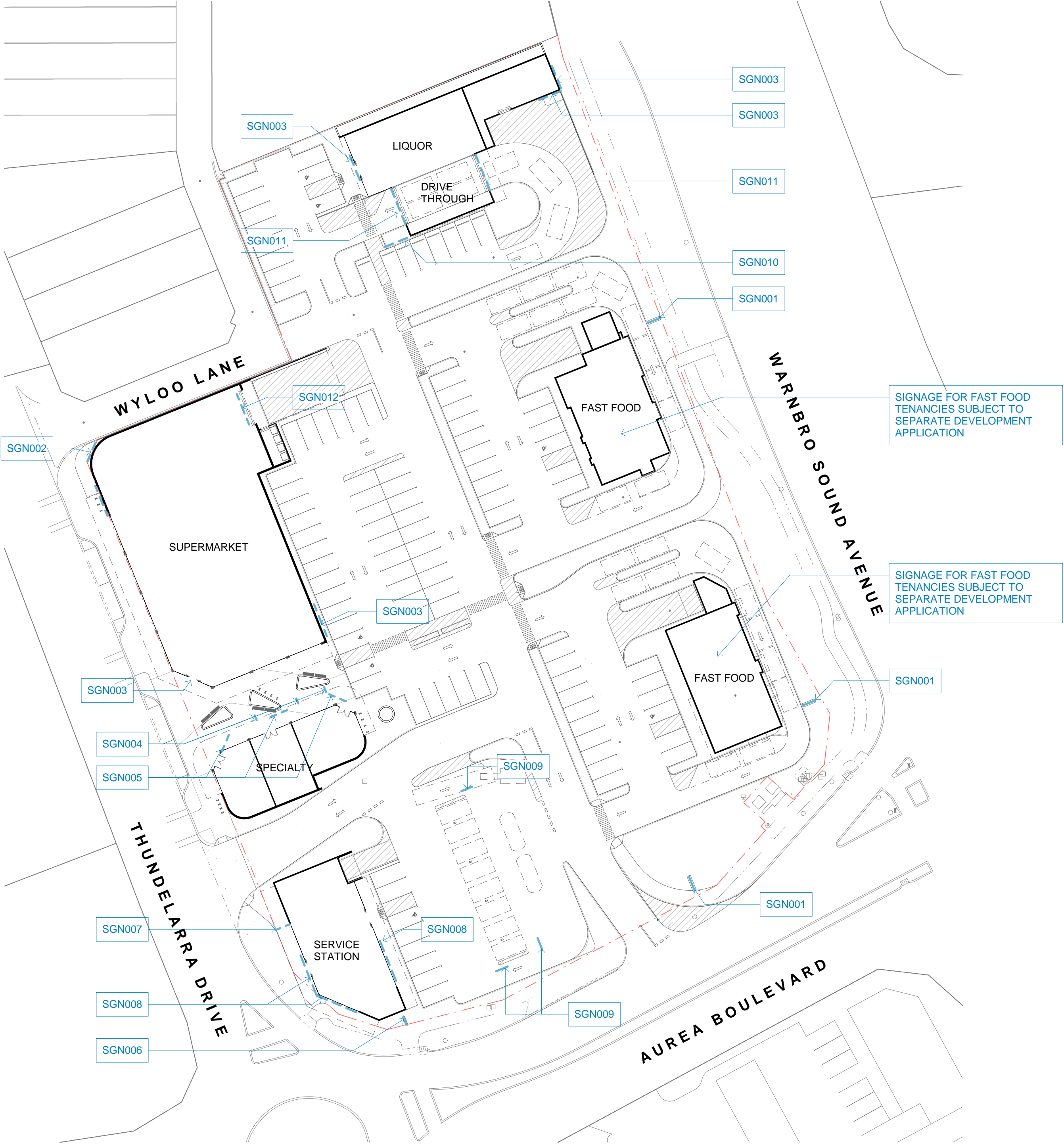
NOTE: ALL TENANT SIGNS SHOWN ARE INDICATIVE ONLY



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

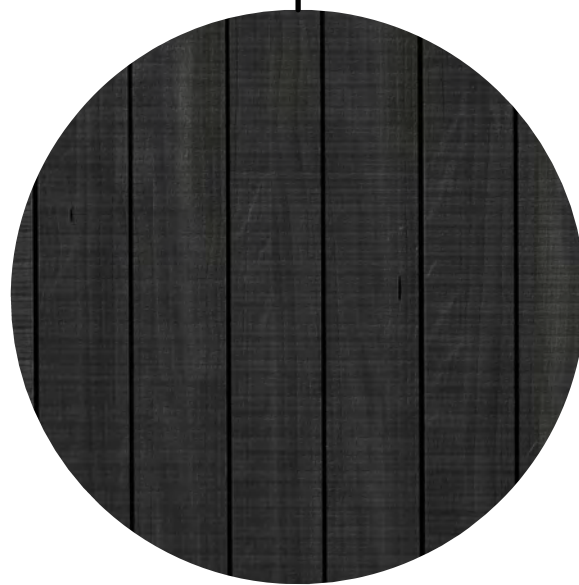


KEY PLAN - SIGNAGE  
1 : 500

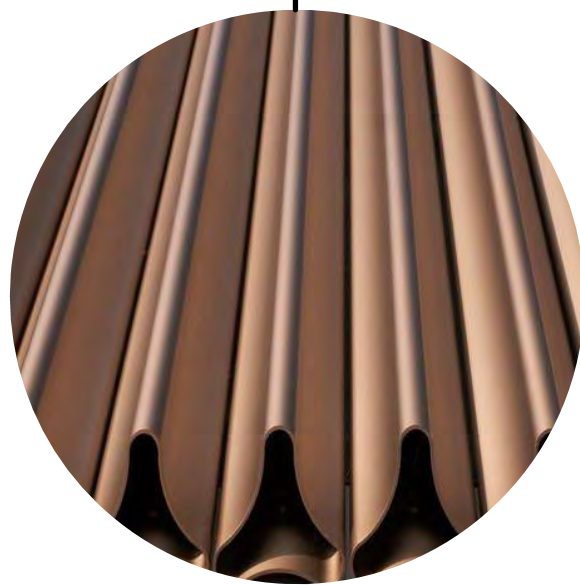




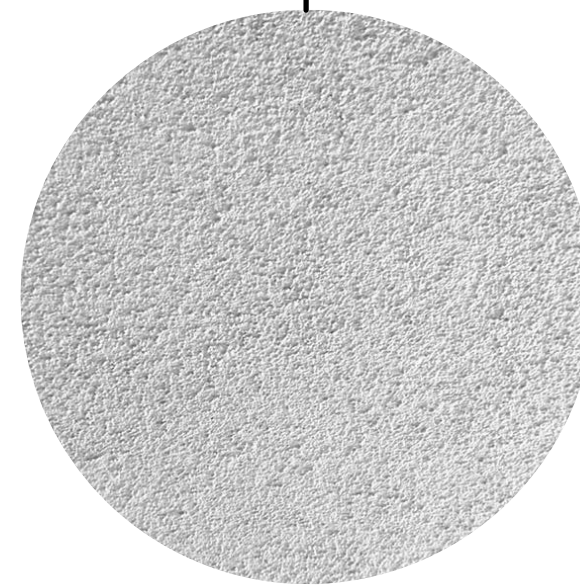
MASONRY-LOOK



TIMBER-LOOK CLADDING TO  
SHOPFRONT



PROFILED METAL CLADDING



TEXTURED CONCRETE RENDER



PATTERNED CONCRETE PANEL

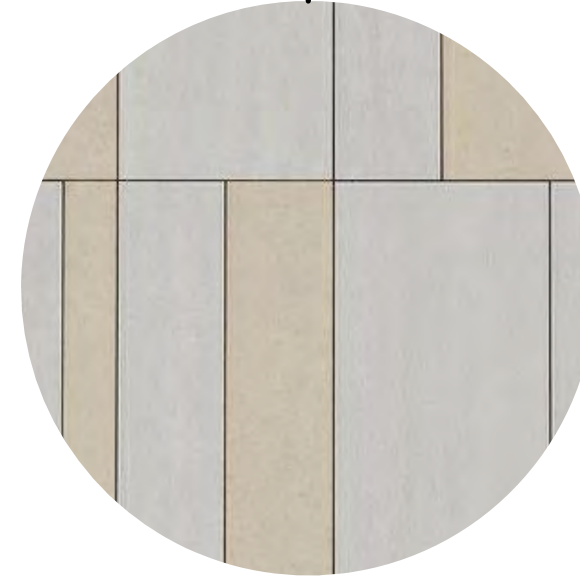


BRONZE FIBRE CEMENT  
CLADDING

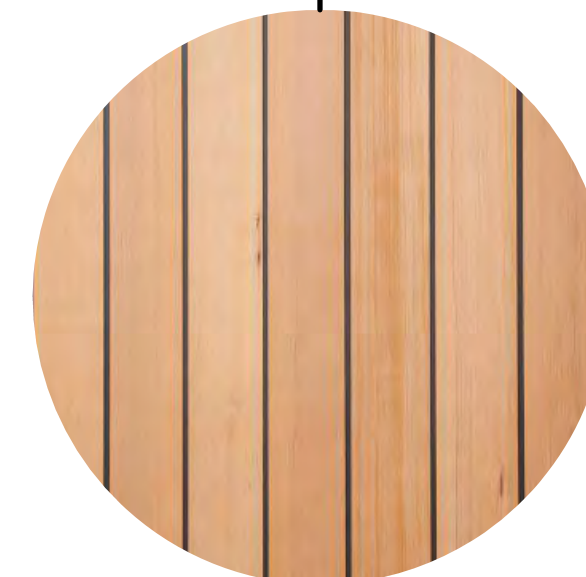




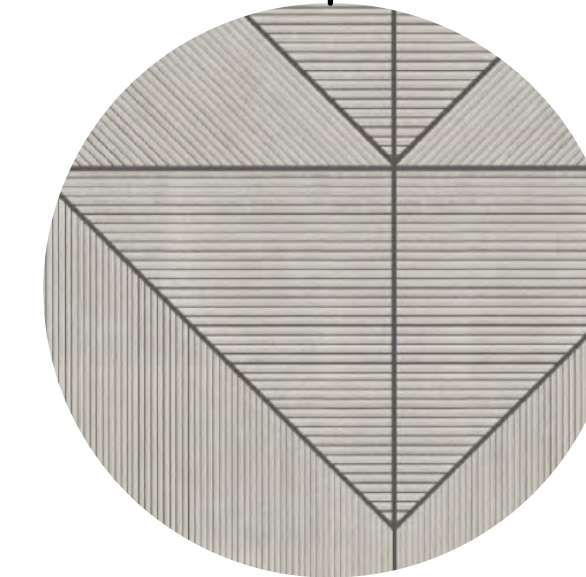
FEATURE METAL SCREEN  
& TRELLIS



TILT-UP CONCRETE PANELS



TIMBER-LOOK CLADDING

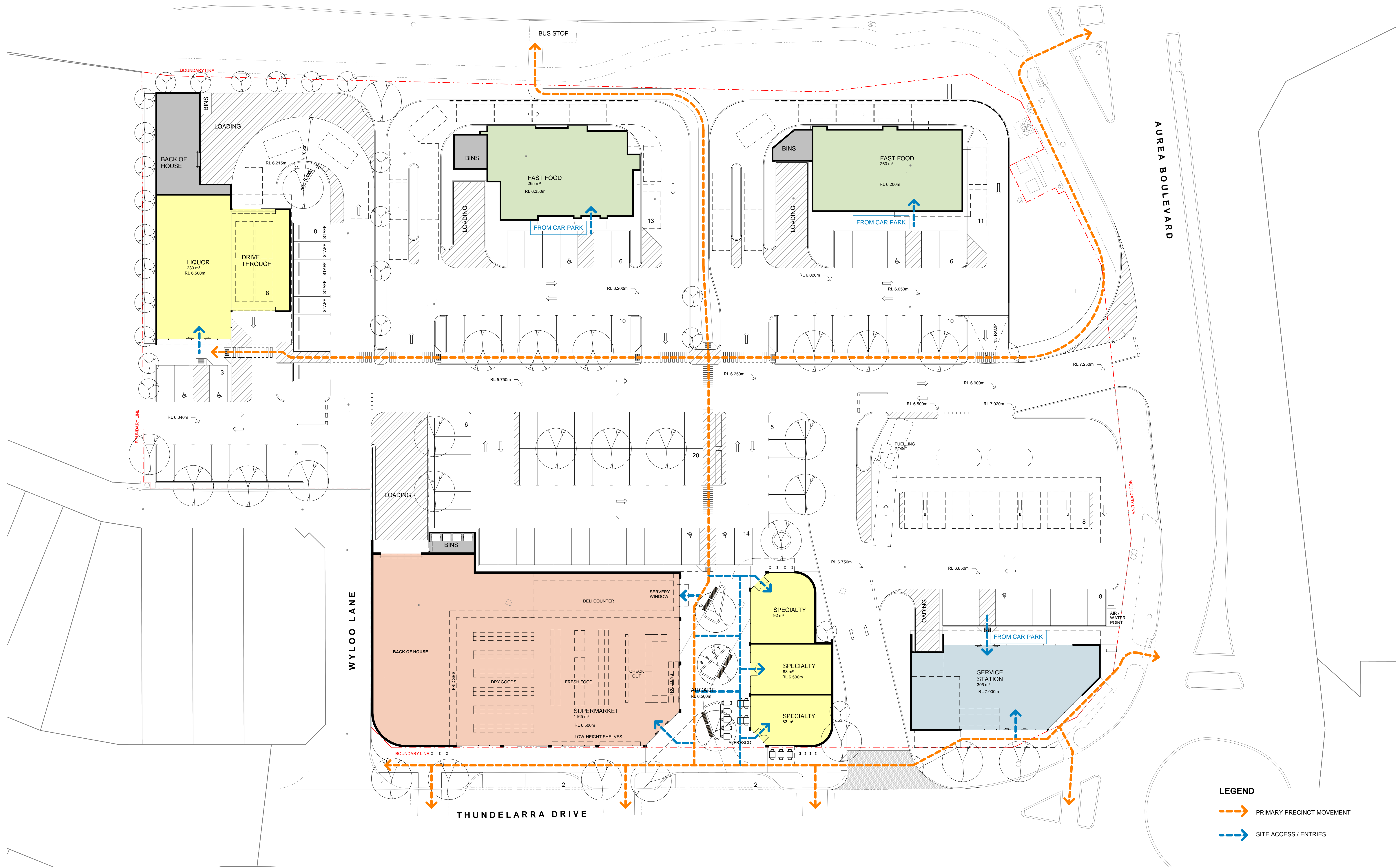


PATTERNED CONCRETE  
PANELS



METAL PERFORATED SCREEN





**LEGEND**

PRIMARY PRECINCT MOVEMENT

SITE ACCESS / ENTRIES



OVERALL LANDSCAPE SITE PLAN



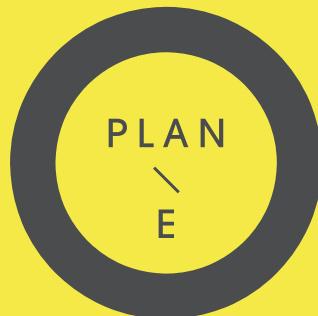
LOT 622(2) AUREA BOULEVARD, GOLDEN BAY

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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PLAN E



**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

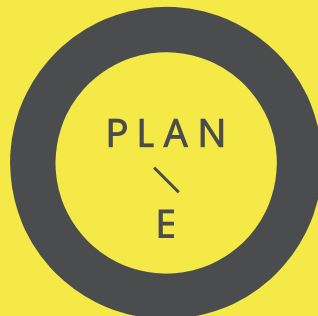
LOT 622(2) AUREA BOULEVARD, GOLDEN BAY

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



CAROBROTUS VIRESCENS



ANIGOZANTHOS SPP



WESTRINGIA MUNDI



SCAEVOLA AEMULA



ADENANTHOS SERICEUS COMPACT

LOT 622(2) AUREA BOULEVARD, GOLDEN BAY

LANDSCAPE CONCEPT PLAN  
APRIL 2023

JOB NO. 2215201

C1.103

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# GOLDEN BAY NEIGHBOURHOOD CENTRE

10 principles assessment

ISSUE: 16/02/2023

REVISION C

**apex**  
planning

**JARRA**  
PROPERTY



contents

- A
- B
- C
- D
- E
- F
- G
- H
- I
- J

- Context & Character
- Landscape Quality
- Built Form & Scale
- Functionality & Build Quality
- Sustainability
- Amenity
- Legibility
- Safety
- Community
- Aesthetics

10 DESIGN PRINCIPLES

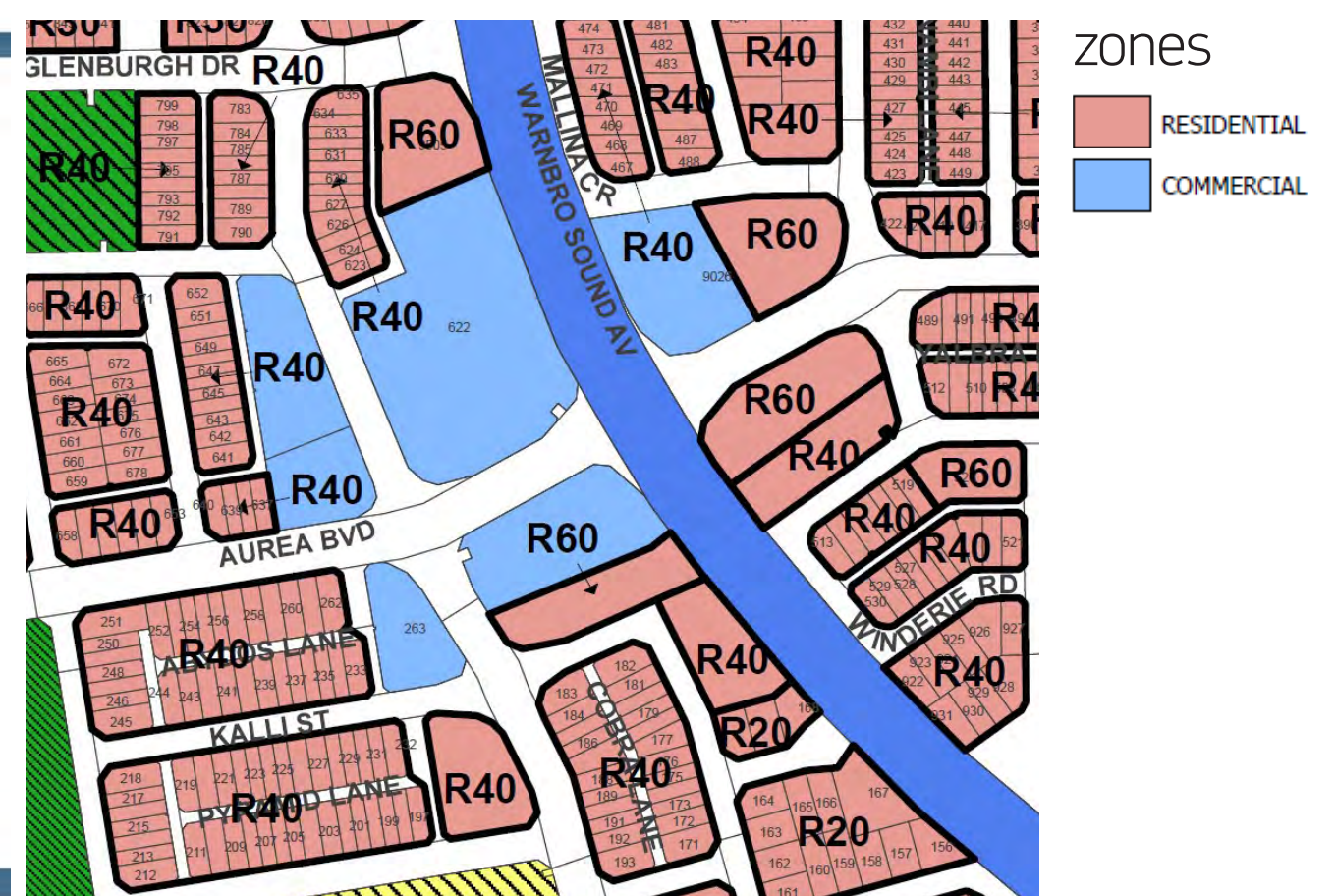
# A planning context

## 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

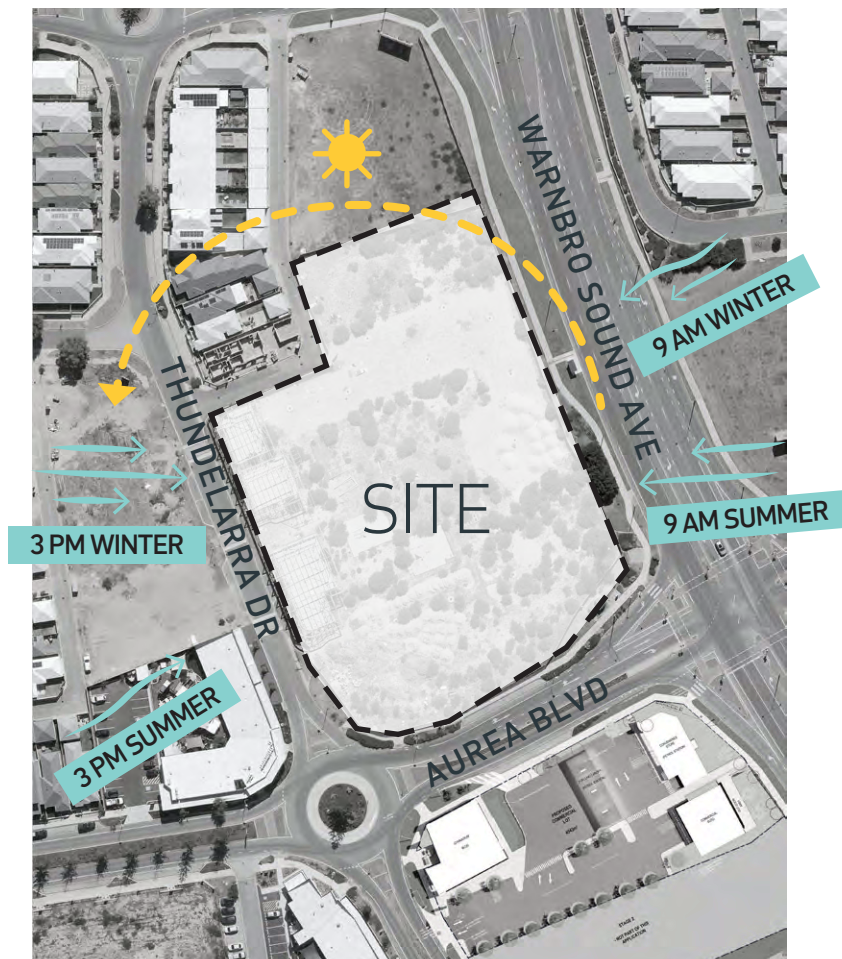




# A context

Context &  
Character

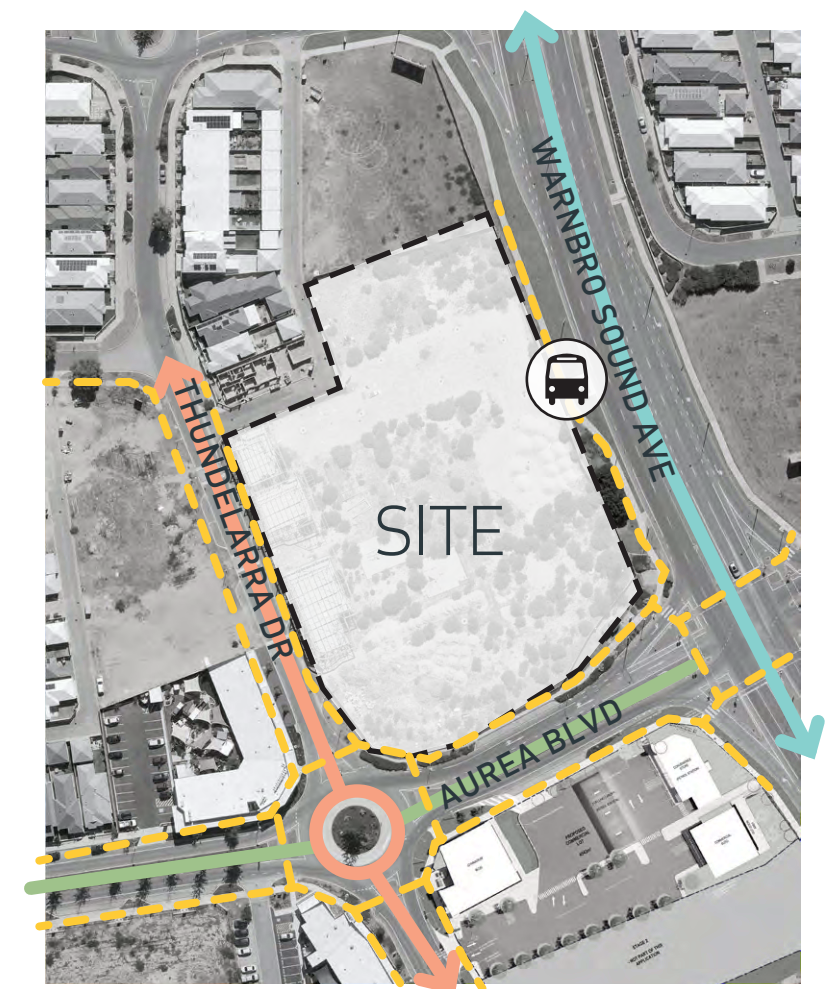
environment



views



movement



- regional road (9,700 VPD)
- main street
- local distributor (3,182 VPD)
- pedestrian walkways



# A context

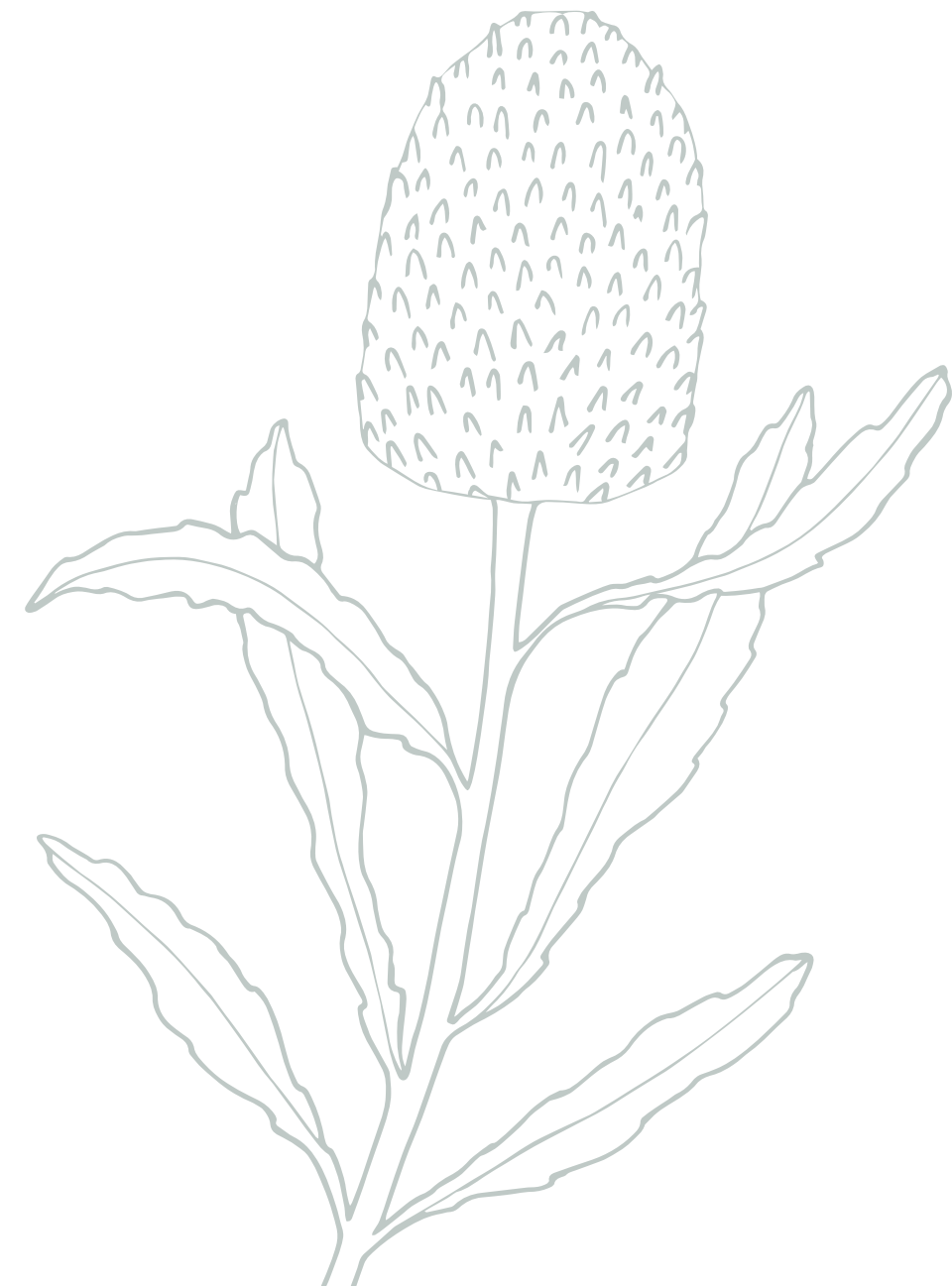
Context &  
Character

interfaces



- main street frontage (pedestrian friendly main street environment)
- local distributor frontage
- residential frontage
- - regional road frontage (high vehicle exposure)
- prominent corners

green edges

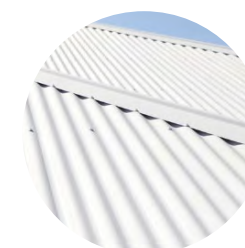
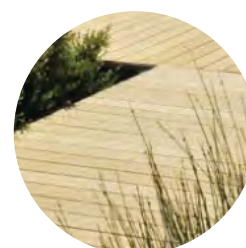
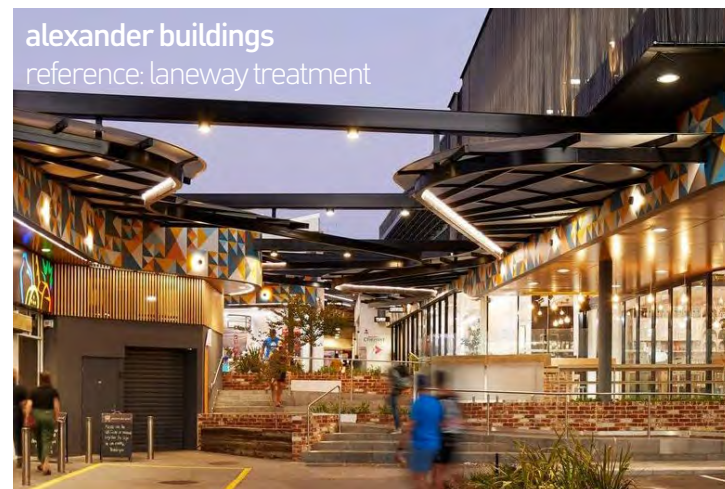
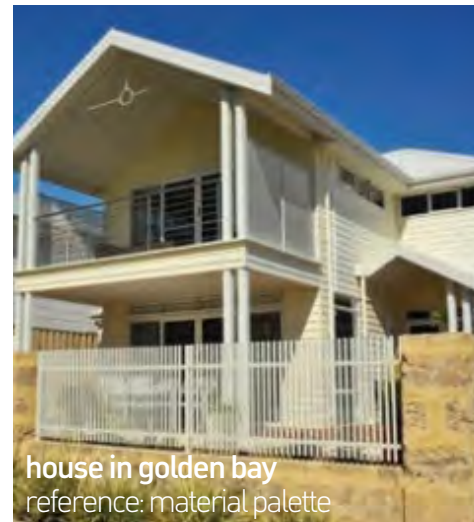




# A local character

## 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



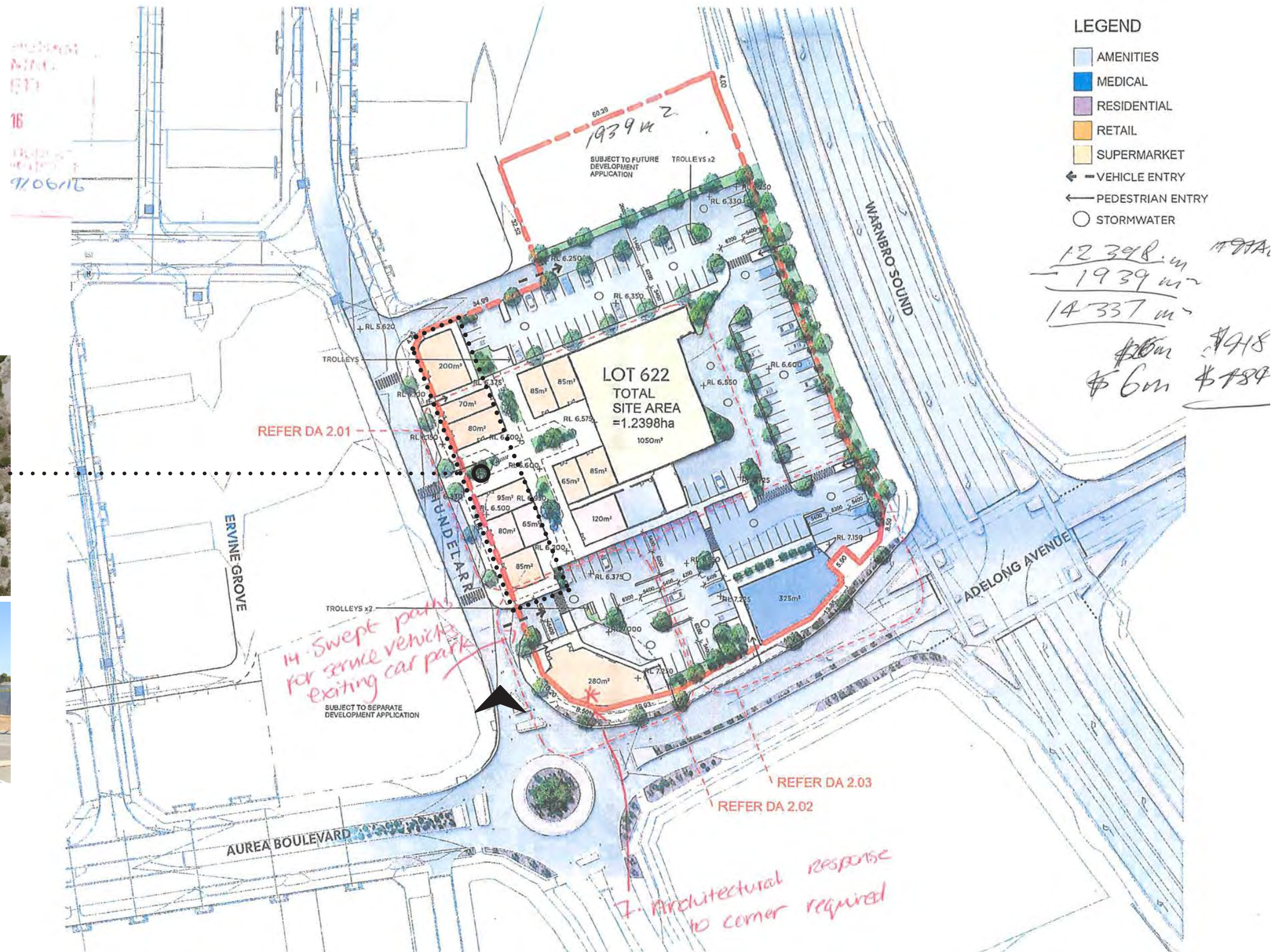


# A previous approval

## Context & Character

- + The previous development was approved June 2016
- + It has 2,444m<sup>2</sup> 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



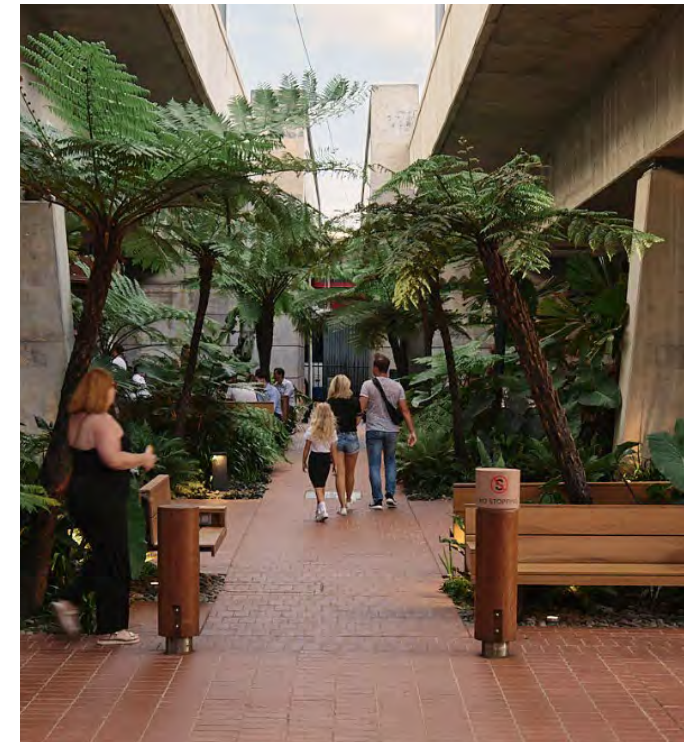
- + direct reference to **context**;
  - + creation of a **walkable spine** connecting Warnbro Sound Ave to Thundelarra Dr
  - + respond to the neighbouring **materiality**
  - + create a **specific identity** to Golden Bay, drawing on local coastal materials and colour palette
- + a new **neighbourhood 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

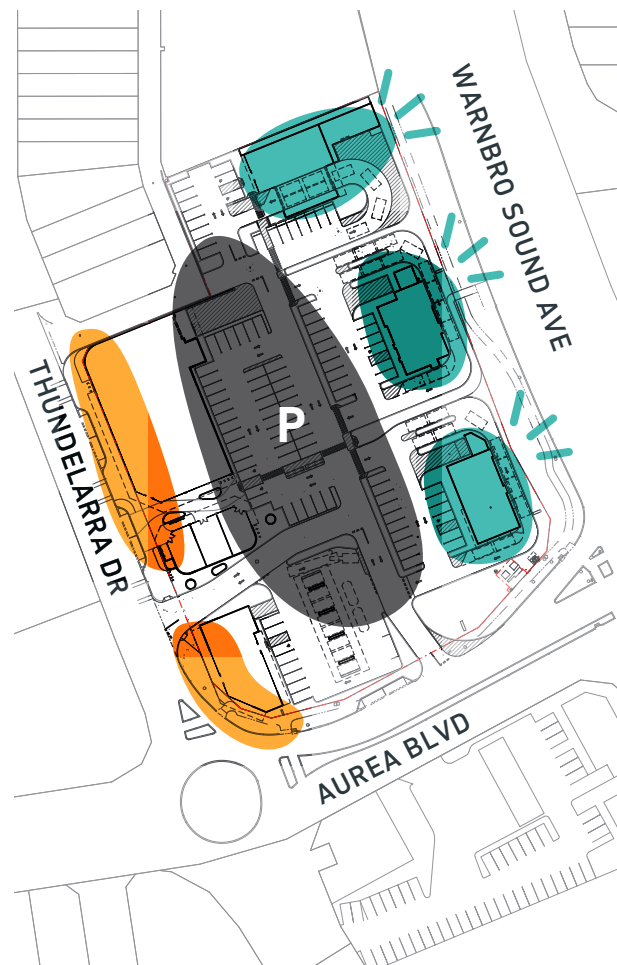


- + **warm materials** in key locations
- + **human scale** spaces
- + **integrated landscape**
- + **visible** and connected internal spaces






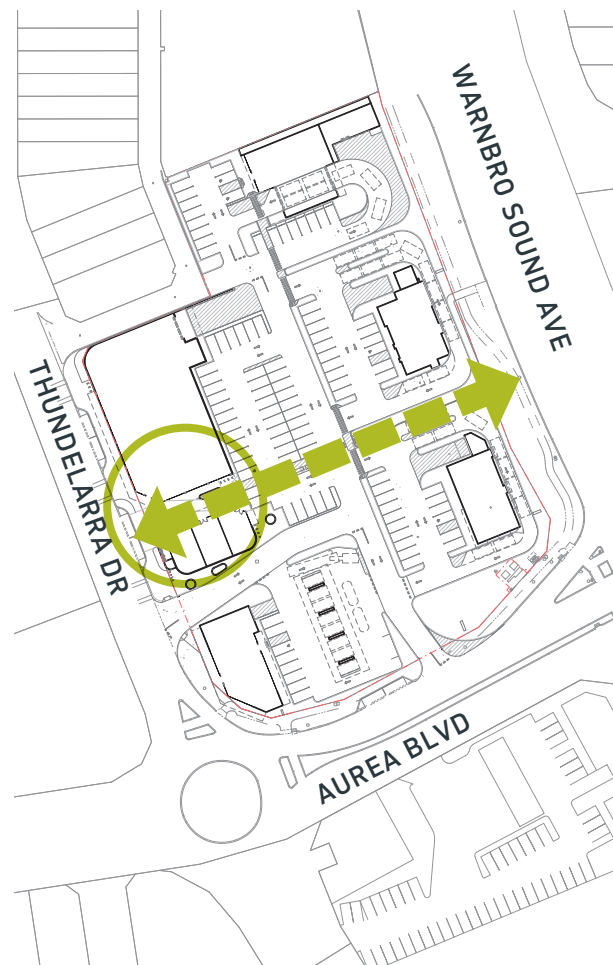
# C built form approach

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






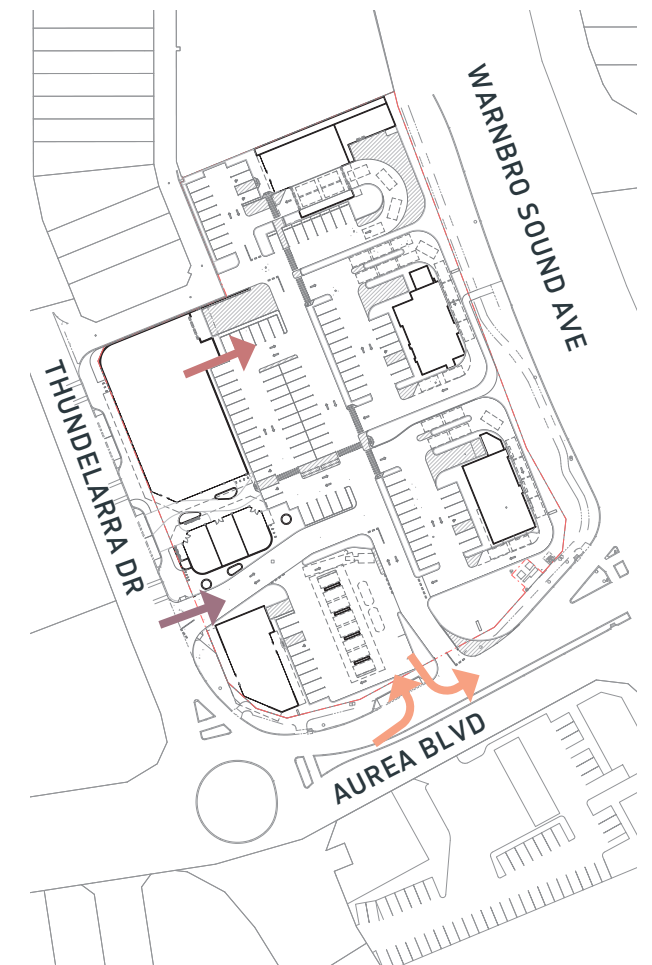
## PUBLIC AMENITY + CONNECTIONS

-  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



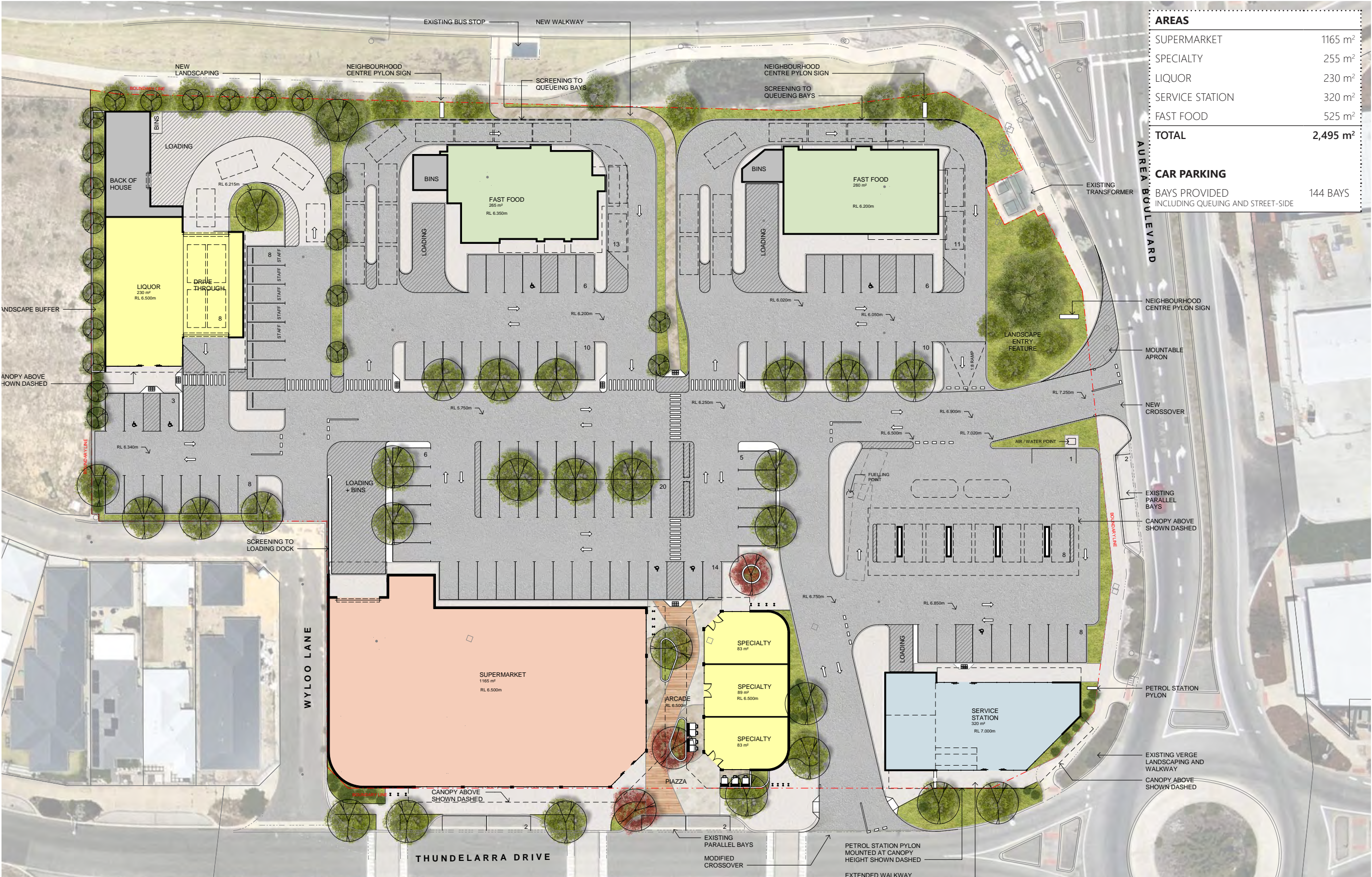
## CONVENIENT VEHICULAR ACCESS

-  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

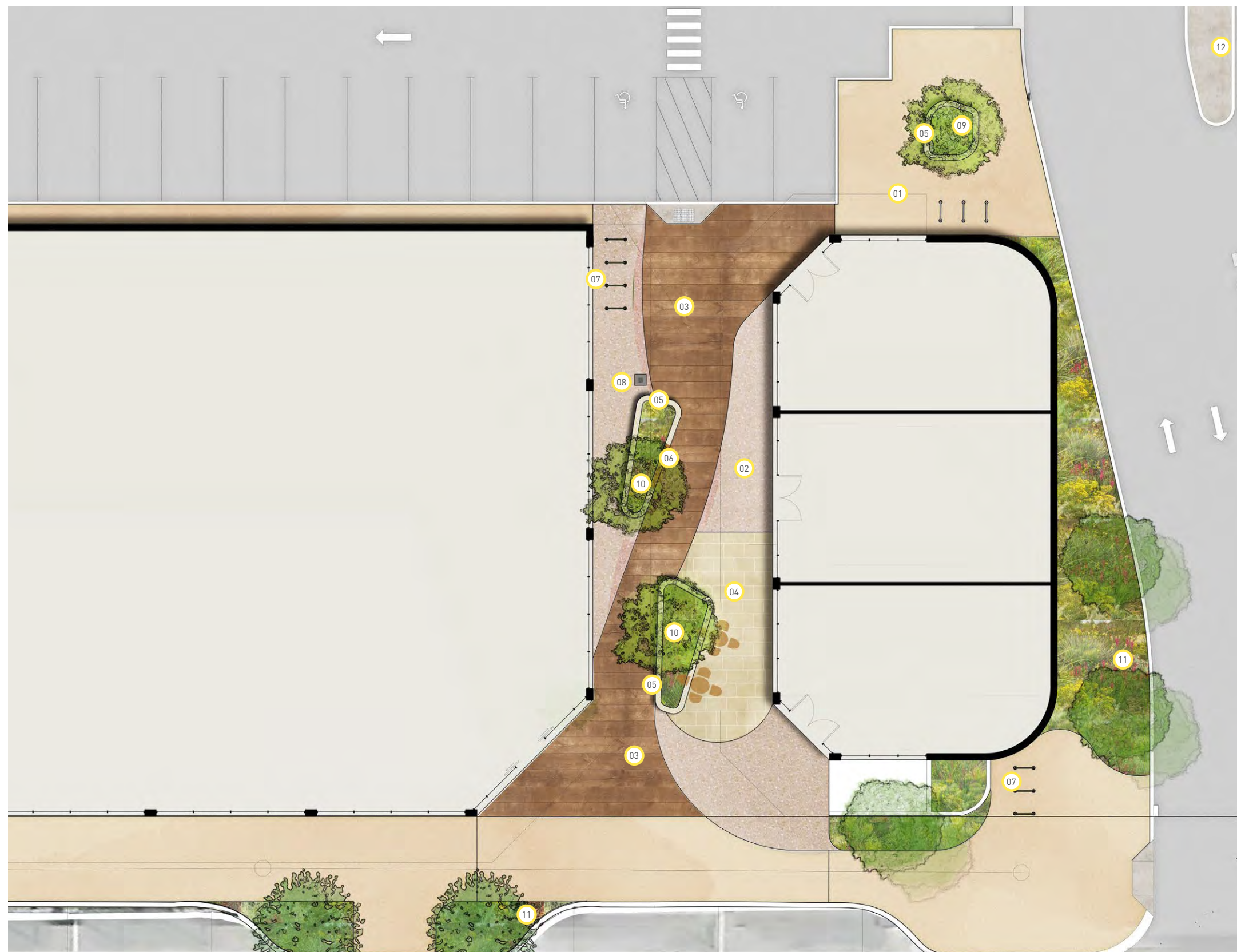
Landscape  
Quality





# 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**

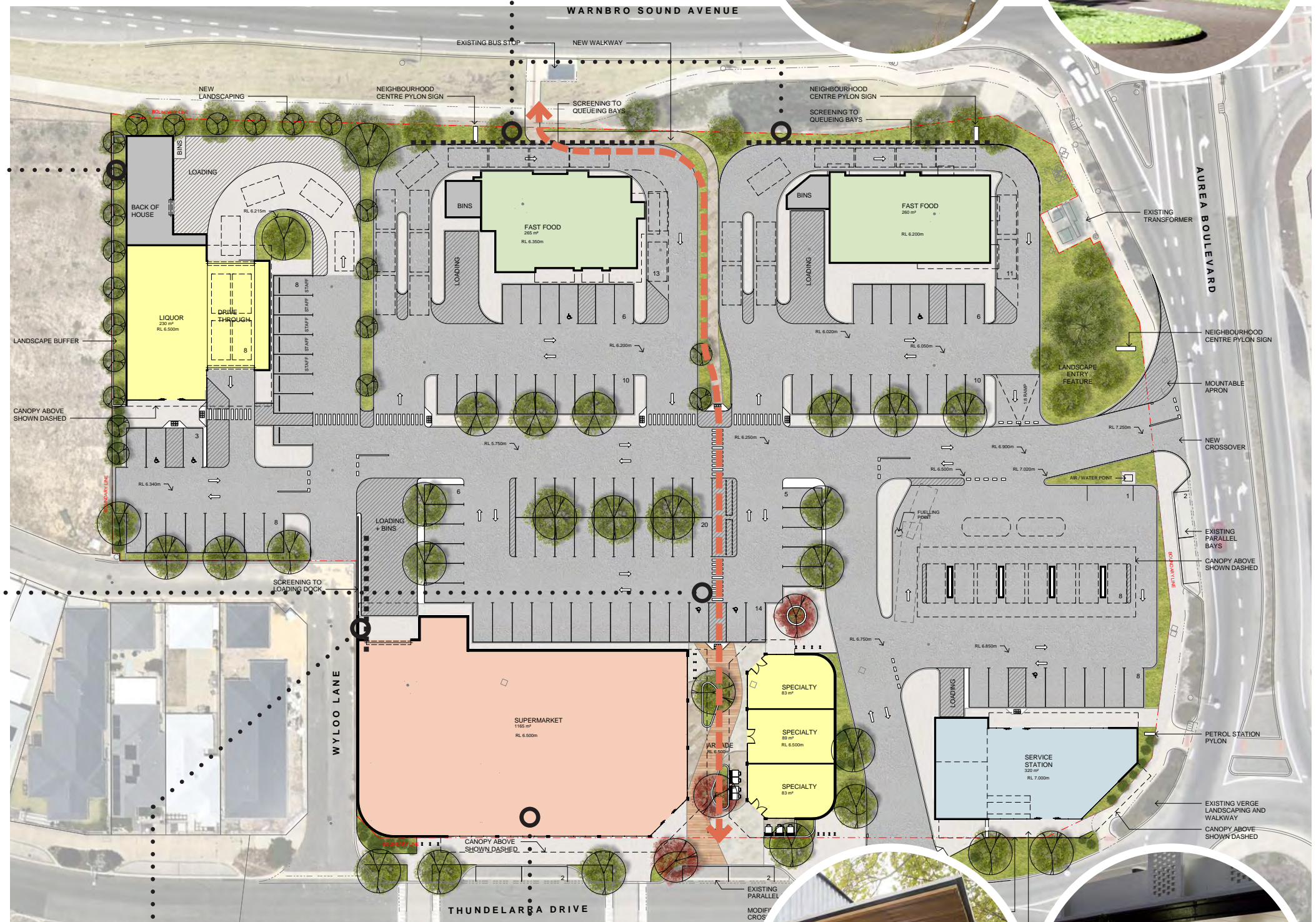


- + **Pedestrian walkway connection** from Warnbro Ave to Thundelarra Dr for enhanced accessibility to public transport

- + 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

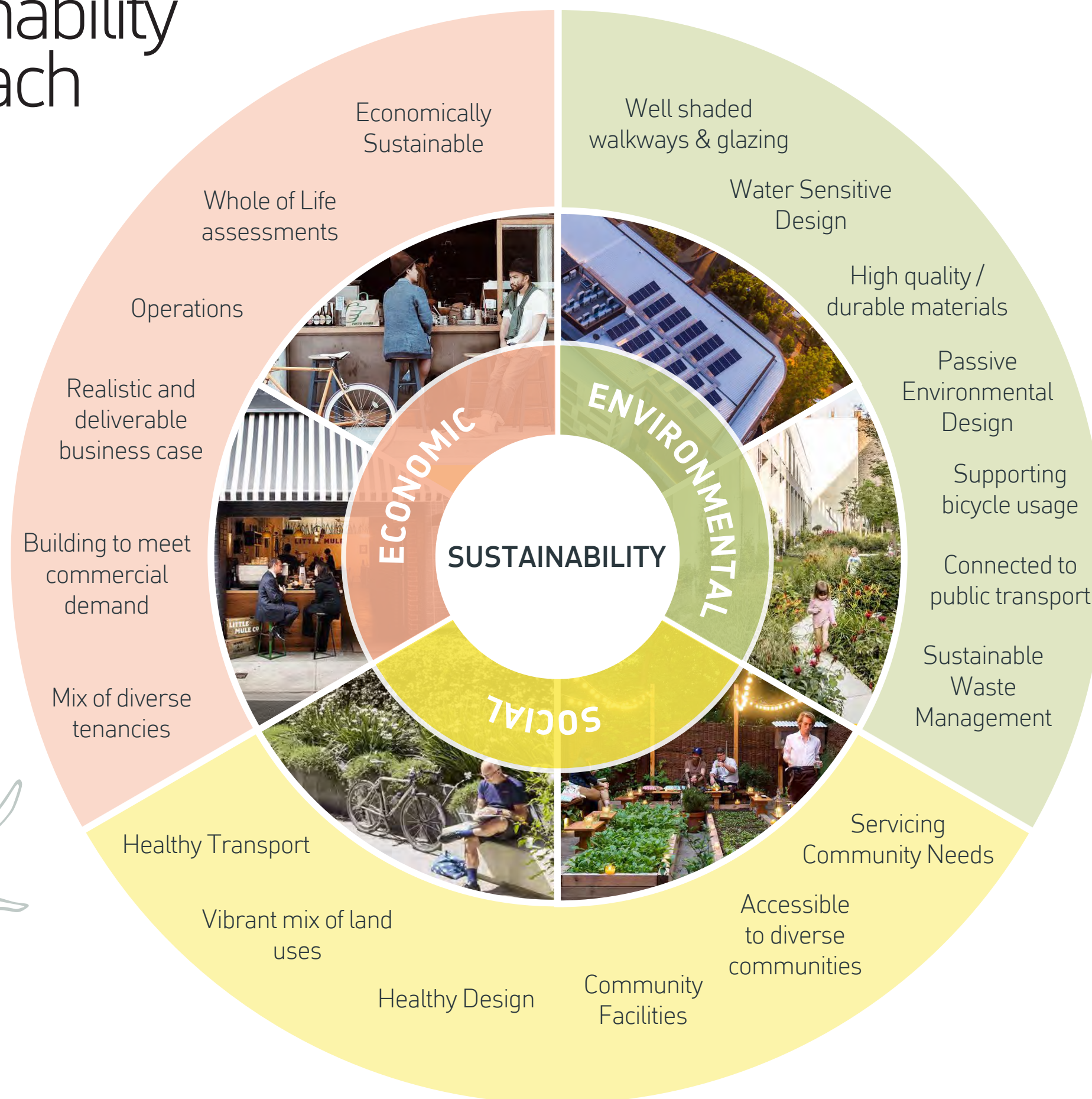
- + Supermarket and specialty glazed shopfronts and a public piazza **activating main street**





# 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

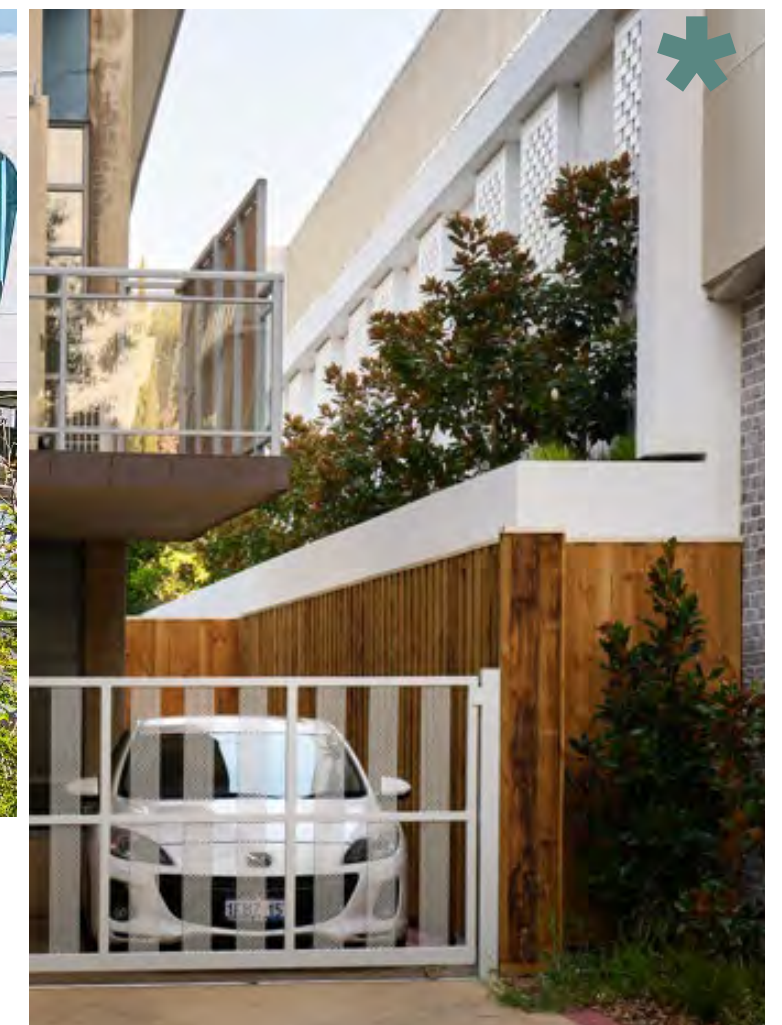
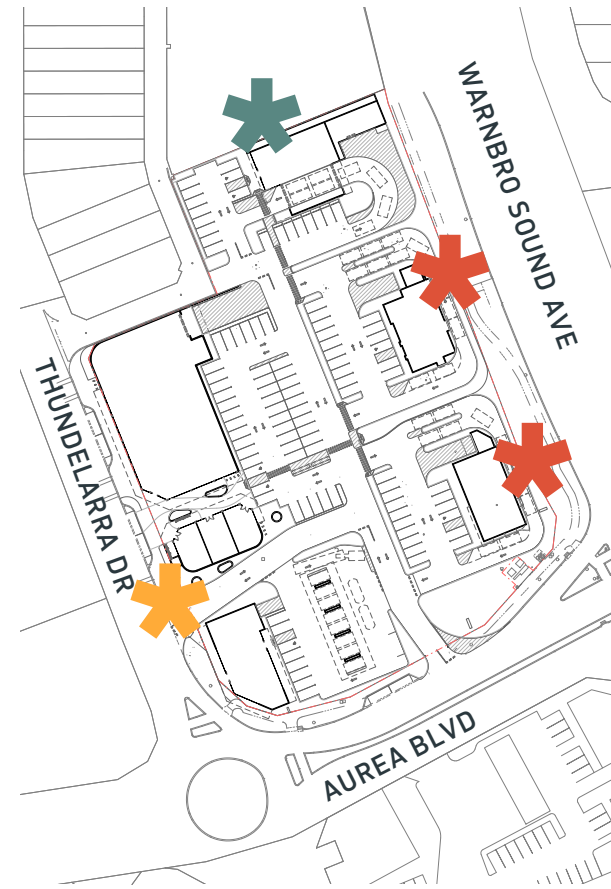
## east – screened buffer



- + **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





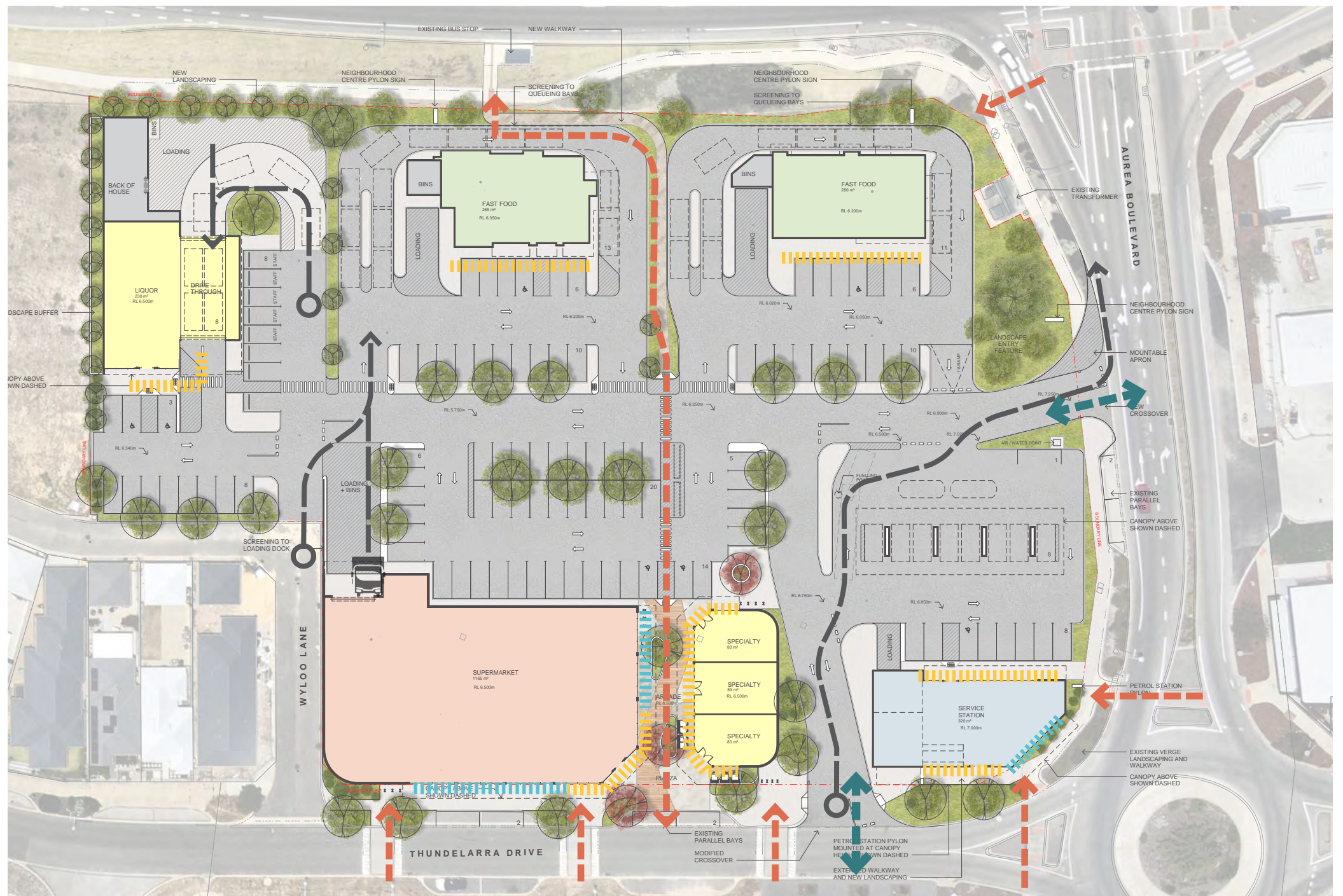
# G connections

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

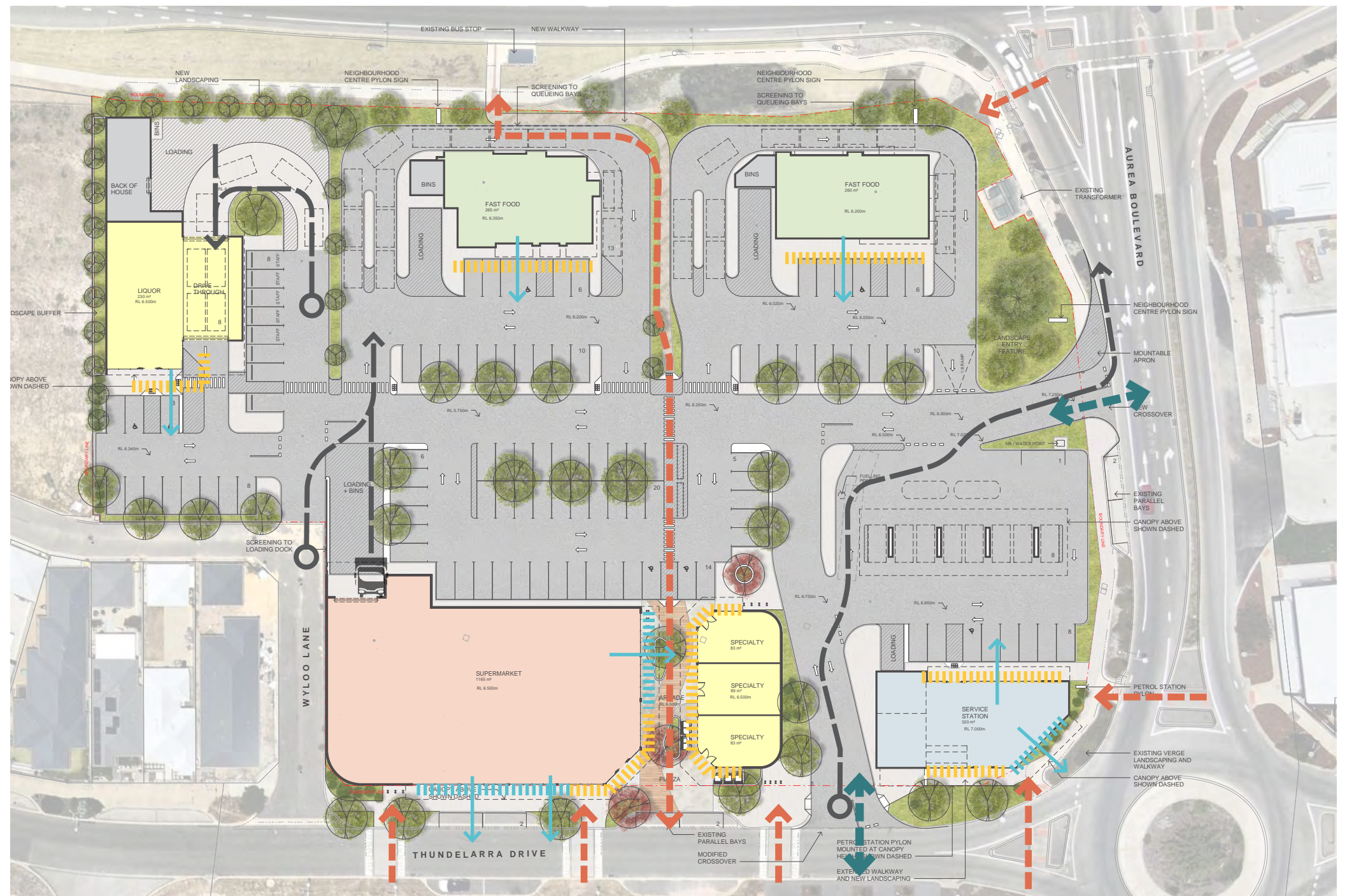
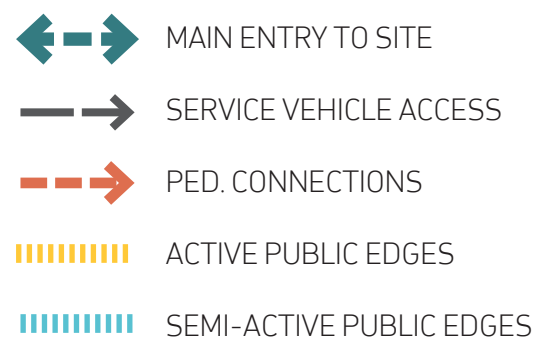


- ←→ MAIN ENTRY TO SITE
- SERVICE VEHICLE ACCESS
- PEDESTRIAN CONNECTIONS
- ||||| ACTIVE PUBLIC EDGES
- ||||| SEMI-ACTIVE PUBLIC EDGES





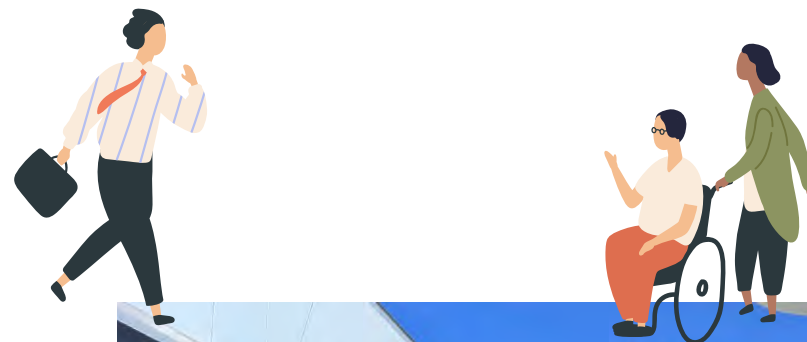
- + **Passive surveillance** of public spaces via the supermarket windows and F&B alfresco areas, ensuring the main street remains a safe and walkable space. The fuel forecourt and drive-through areas also provide public surveillance. The fuel will operate 24 hours and have CCTV which significantly improves 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





# I placemaking for the community

Community



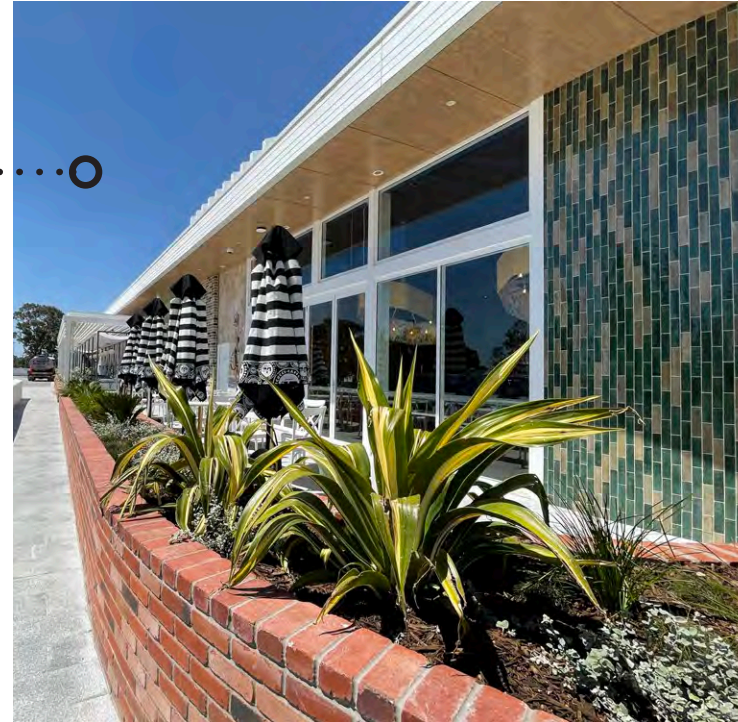
- + At its heart this development is a building for the community, creating a **neighbourhood hub** to the surrounding catchment
- + **Supporting social interaction** with the creation of public amenity including new centres of activity in the new public piazza and arcade
- + This design is accessible 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

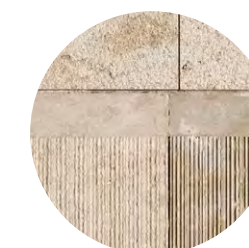
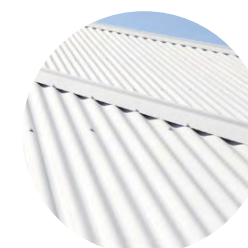
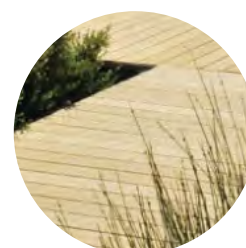
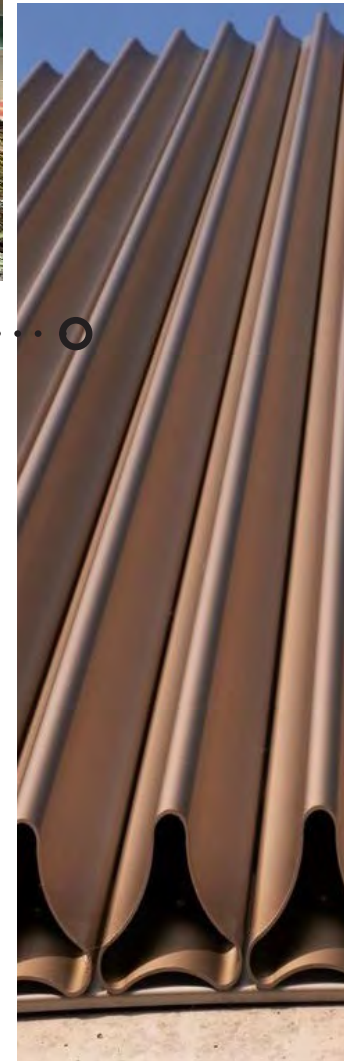


- + **Textured facade materials** to emphasise feature elevations

- + **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

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**Prepared for: Ladybug Thirteen Pty Ltd**

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**Project Ref: EAQ-22031**  
**March 2023**

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Environment | Air Quality





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#### Approved for Release

Name	Position	File Reference
John Hurley	Principal Consultant	EAQ22031-GoldenBayServiceStation+EmissionsImpactAssessment-Final

#### Signature

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*This document presents the outcomes of a Desktop Emissions Modelling Assessment. All emissions inputs into the model were sourced from previous site-specific measurements, from peer reviewed public domain data and/or industry specific emissions' factor publications except where detailed otherwise herein. EAQ has not attempted to verify externally sourced data beyond its use herein. The modelling assessment has been prepared using the best available information provided by the Client and in conjunction with regulatory guidance from the appropriate regulatory jurisdiction(s). EAQ has exercised its diligence and due-care in delivering the outcomes of the assessment according to accepted assessment practices and techniques. EAQ disclaims any and all liability and responsibilities for damages of any nature, to any party, which may be caused from misapplication or misinterpretation by third parties of this assessment*

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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) <sup>[1]</sup> 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.

---

<sup>1</sup> 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**

<b>50 m</b>	Operating during normal business hours of Monday – Saturday from 0700 – 1900 hours
<b>100 m</b>	Freeway service stations
<b>200 m</b>	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 <sup>3</sup> at 25°C
<b>Benzene</b>	1 hour	<a href="#">EPA NSW 2016</a>	0.009	29
	Annual	<a href="#">NEPM 2011</a>	0.003	9.6
<b>Toluene</b>	24 hour		1	3,770
	Annual		0.1	377
<b>Ethyl benzene</b>	1 hour	<a href="#">EPA NSW 2016</a>	1.8	8,000
	Annual	Toxicos 2011		270
<b>Xylenes</b>	24 hour	<a href="#">NEPM 2011</a>	0.25	1,080
	Annual		0.2	870
<b>Cyclohexane</b>	1 hour	<a href="#">EPA NSW 2016</a>	5	190
<b>n-Hexane</b>			0.9	3,200
<b>Styrene</b>	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.



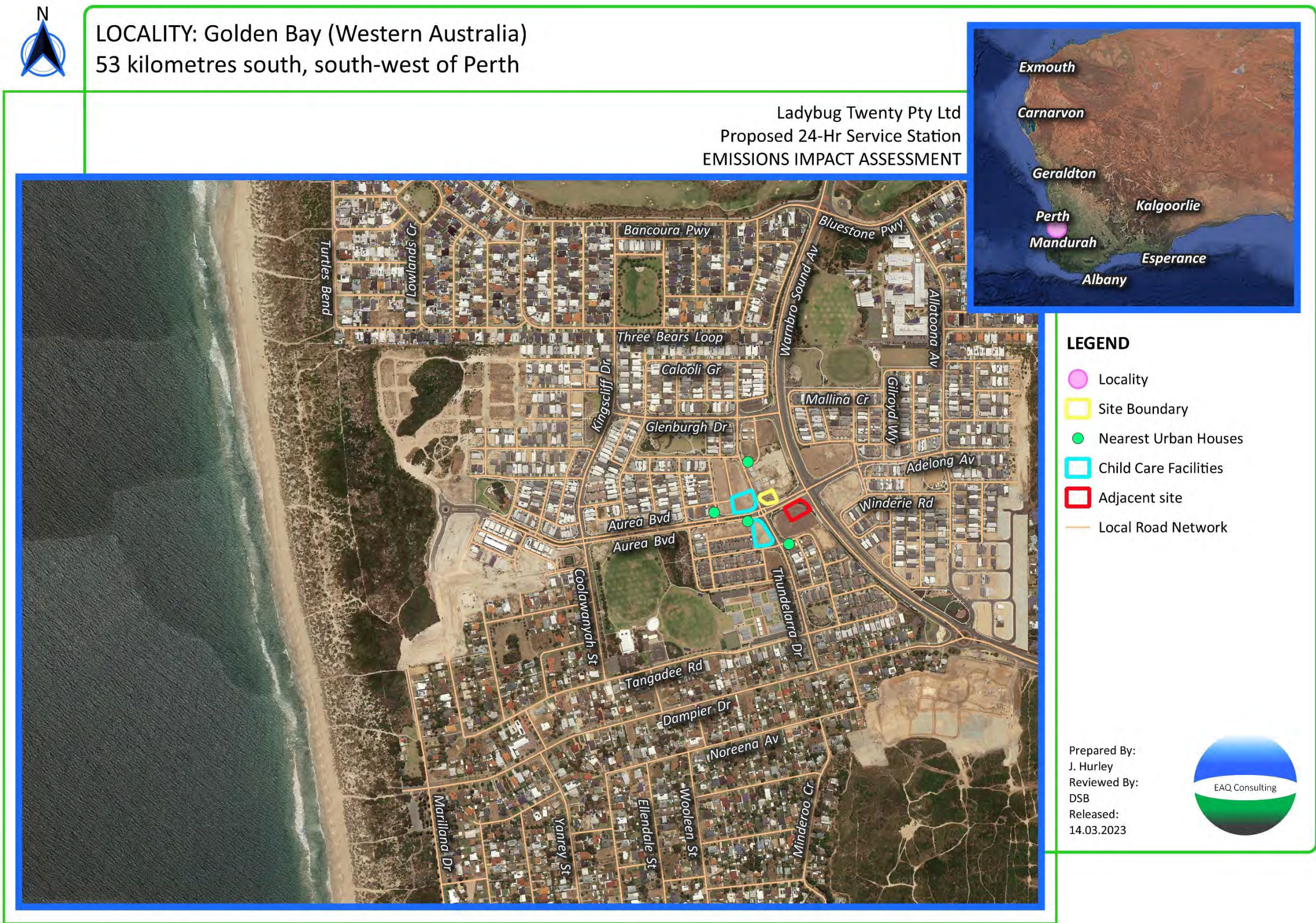


Figure 1-1: Proposed 24-hr Golden Bay Service Station (assessed)



# 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
<b>Average Daily Refuelling Volume</b>	<b>25,610 L</b>
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
<b><i>Underground Tank Filling</i></b>	-	-
Submerged Filling	880	8.4
Splash Filling	1380	-
Submerged filling with vapour balance	40	0.42
Underground tank breathing losses	120	0.84
<b><i>Vehicle Refuelling</i></b>	-	-
Displacement Losses (uncontrolled)	1320	8.4
Displacement Losses (90% controlled i.e., VR 2)	132	0.74
<b><i>Spillages</i></b>	-	-
Uncontrolled	80	0.61
Controlled	-	0.41
<b><i>"Whoosh" Emissions (fuel cap removal)</i></b>	-	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	<b>6.15%</b>
17	<b>6.15%</b>
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) – <b>VR1</b>	0.267	0.1	0.1
Passive Emissions from Vehicle Refuelling ( <b>VR 1 &amp; 2</b> )	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
<b>Average Daily Refuelling Volume</b>	<b>13,800 L</b>
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) – <b>VR1</b>	0.178	0.075	0.1
Passive Emissions from Vehicle Refuelling ( <b>VR 1 &amp; 2</b> )	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  $5^\circ$  to  $10^\circ$  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	n-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 mg/L throughput	CAPCOA Lbs/1000 Gallons throughput	CAPCOA mg/L throughput
VR2	Peak Hourly Volume at Bowsers (transactions [40-50/hr] x Litres per car)			1	1.20%	307	19.51%	307	0.085	0.198	0.198	0.050				
	CAPCOA (Lbs/1000gallons to mg/L)			2	0.80%	205	13.01%	205	0.057	0.132	0.132	0.033	Underground Tank Filling			
	CAPCOA (Lbs/1000gallons to g/L)			3	0.60%	154	9.76%	154	0.043	0.099	0.099	0.025	Submerged Filling	880	8.4	1007
	Losses (g/L)			4	0.80%	205	13.01%	205	0.057	0.132	0.132	0.033	Splash Filling	1380		
	VR 2 - 10% Losses (g/L)			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)			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			7	5.50%	1,409	89.43%	1,409	0.391	0.908	0.908	0.227	Vehicle Refuelling			
	E10 % of T-Volumes			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			9	5.50%	1,409	89.43%	1,409	0.391	0.908	0.908	0.227	Displacement Losses (90% controlled e.g VRU 71	132	0.74	89
	% of Other Fuels			10	5.70%	1,460	92.68%	1,460	0.405	0.941	0.941	0.235	Spillages			
Fuel Ratio Factor			11	6.00%	1,537	97.56%	1,537	0.427	0.990	0.990	0.248	Uncontrolled	80	0.61	73	
Storage Tanks VR 1	Time to Fill Tank			12	6.00%	1,537	97.56%	1,537	0.427	0.990	0.990	0.248	Controlled		0.41	49
	Total Volume/hr			13	5.70%	1,460	92.68%	1,460	0.405	0.941	0.941	0.235	"Whoosh" Emissions		0.26 - 0.66	79
	NPI 1999			14	5.60%	1,434	91.06%	1,434	0.398	0.924	0.924	0.231	"Whoosh" Emissions (averaged)		0.46	79
	9600000 mg/hr			15	5.90%	1,511	95.93%	1,511	0.420	0.974	0.974	0.243	Diesel	176		
	9600.000 g/hr			16	6.15%	1,575	100.00%	1,575	0.438	1.015	1.015	0.254	LPG	0.04		
	2.667 g/s			17	6.15%	1,575	100.00%	1,575	0.438	1.015	1.015	0.254				
	4.5m High Vent Rate			18	5.80%	1,485	94.31%	1,485	0.413	0.957	0.957	0.239				
	VR1 10% losses			19	5.10%	1,306	82.93%	1,306	0.363	0.842	0.842	0.210				
	Final Value			20	4.00%	1,024	65.04%	1,024	0.285	0.660	0.660	0.165				
	Annually			21	3.50%	896	56.91%	896	0.249	0.578	0.578	0.144				
	8410666.667 grams			22	3.40%	871	55.28%	871	0.242	0.561	0.561	0.140				
	8410.666667 kgs			23	2.60%	666	42.28%	666	0.185	0.429	0.429	0.107				
	23.04292237 kgs/day			24	1.80%	461	29.27%	461	0.128	0.297	0.297	0.074				
	Deliveries weekly				100.0%	25610			Max	1.015		0.254				
	Per delivery								SUM	16.5029		4.1257				
	0.267 g/s								Per Nozzle	2.0629		2.0629				
	Cars per hour				45				Annual Fuel Sales		9,347,561					
L per car on average				35				Annual Bulk Volume		9,360,000						
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		27.78%	
		ULP 91 130		72.22%	
		ULP 95		0.00%	
		ULP 98		0.00%	
	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			



## **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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**Author:** Mohammad Rasouli

**Project manager:** Mohammad Rasouli

**Client:** Ladybug Twenty Pty Ltd

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**Document revision:** r01c

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# 1 Introduction

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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

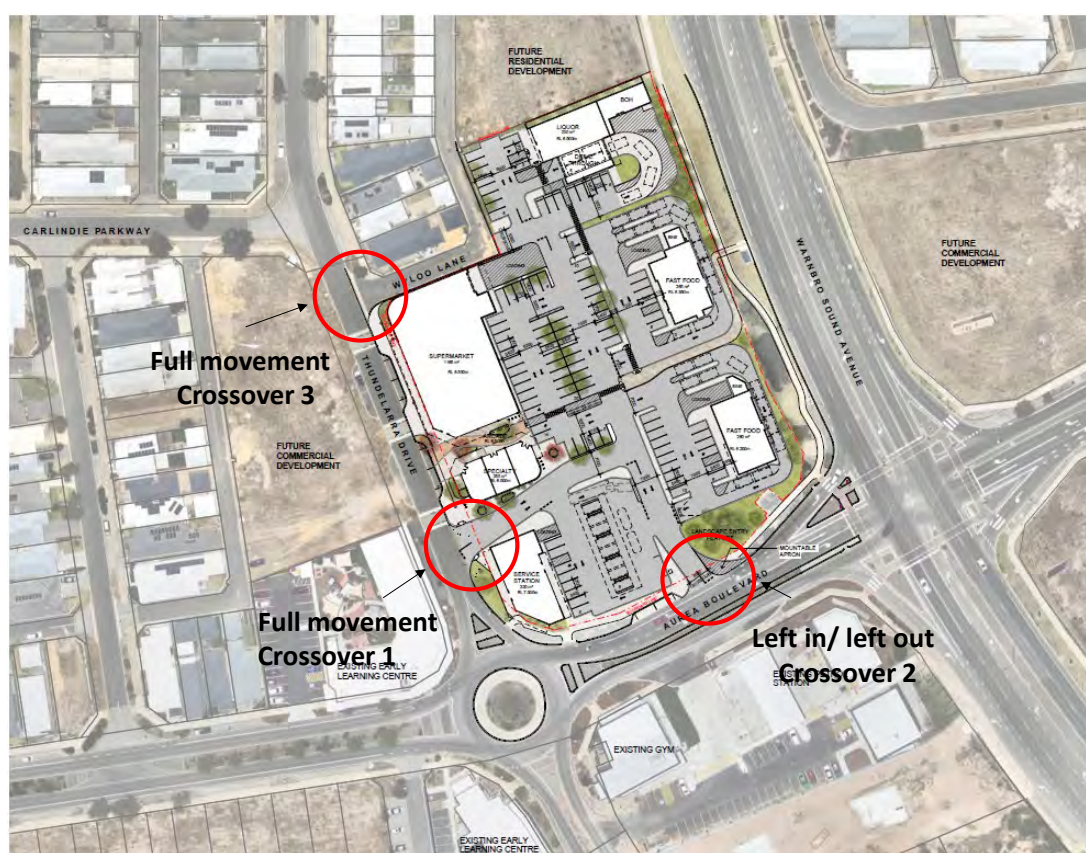
The development proposal is for a Neighbourhood Centre comprising the following elements:

- Two Fast-food outlets with drive through facilities (approximately 525m<sup>2</sup> GFA in total);
- A Liquor Store with drive through facility (approximately 230m<sup>2</sup> GFA);
- A Supermarket (approximately 1,165m<sup>2</sup> GFA);
- Specialty shops (approximately 255m<sup>2</sup> 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 (265m<sup>2</sup>) 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 (260m<sup>2</sup>) 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:

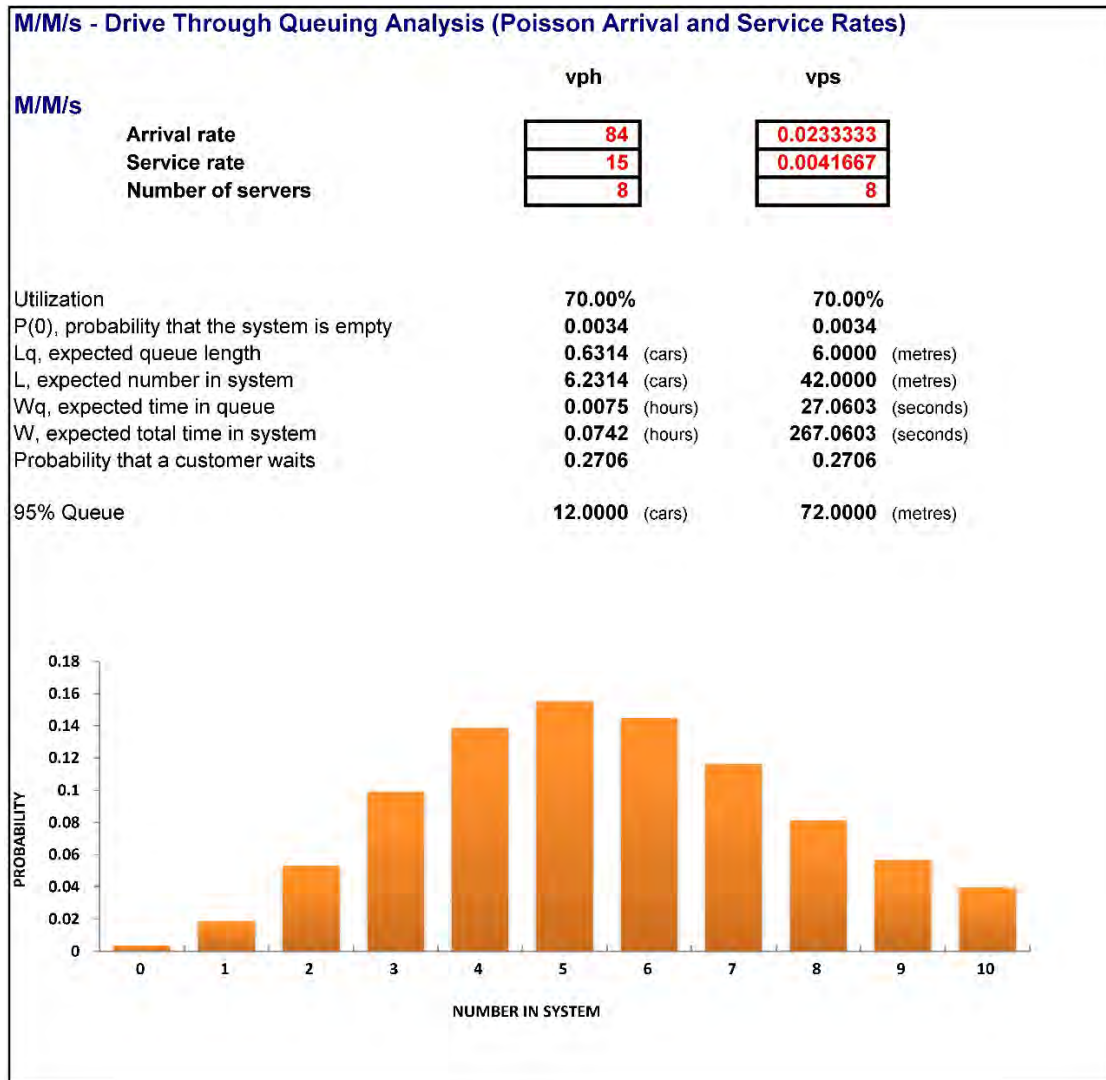
- ✚ Vehicles arrive unevenly following Poisson’s probability distribution;
- ✚ Service time is exponentially distributed;
- ✚ There is one server per queue, i.e. there are 8 queues, one for each bowser;
- ✚ The capacity of the queue in which arriving users wait before being served is infinite (for the 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).

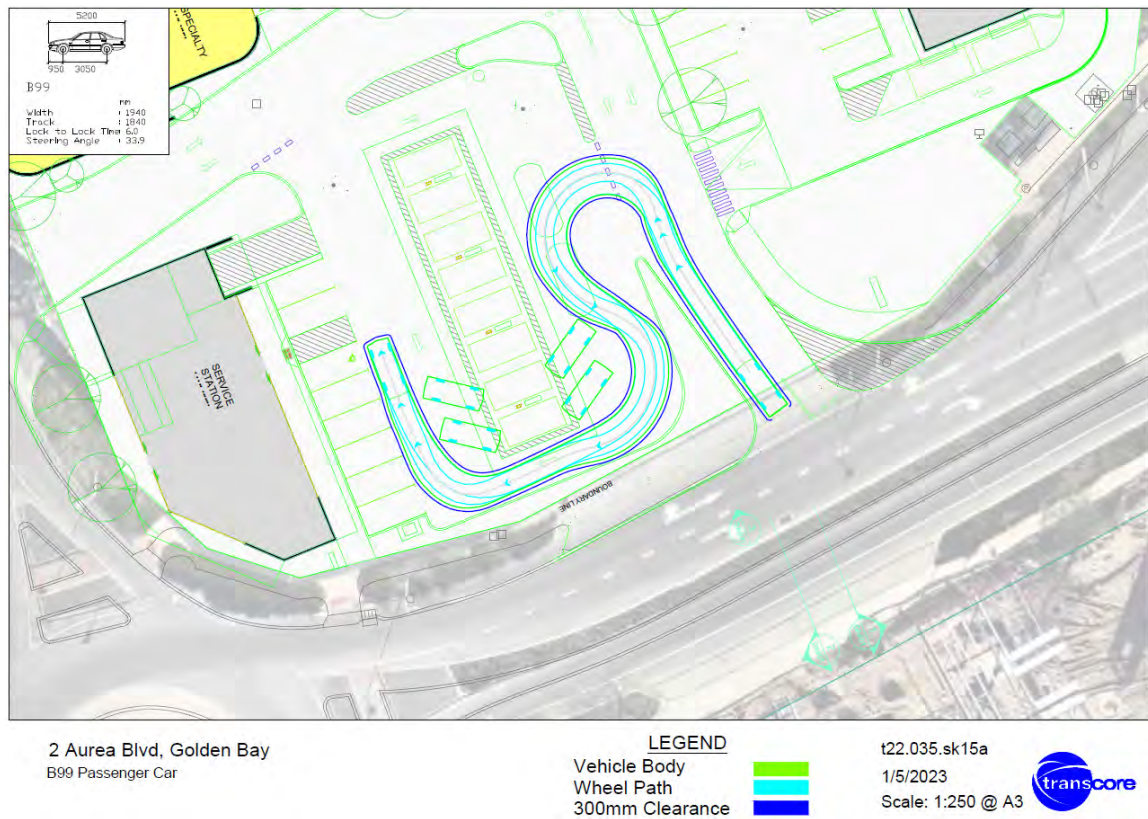


The queue length usually adopted for robust analysis is the 95th percentile queue. Assuming equal queue distribution it is estimated that in the worst-case scenario there will be one vehicle waiting behind each refuelling vehicle at four bowzers. The service station layout can accommodate this level 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.

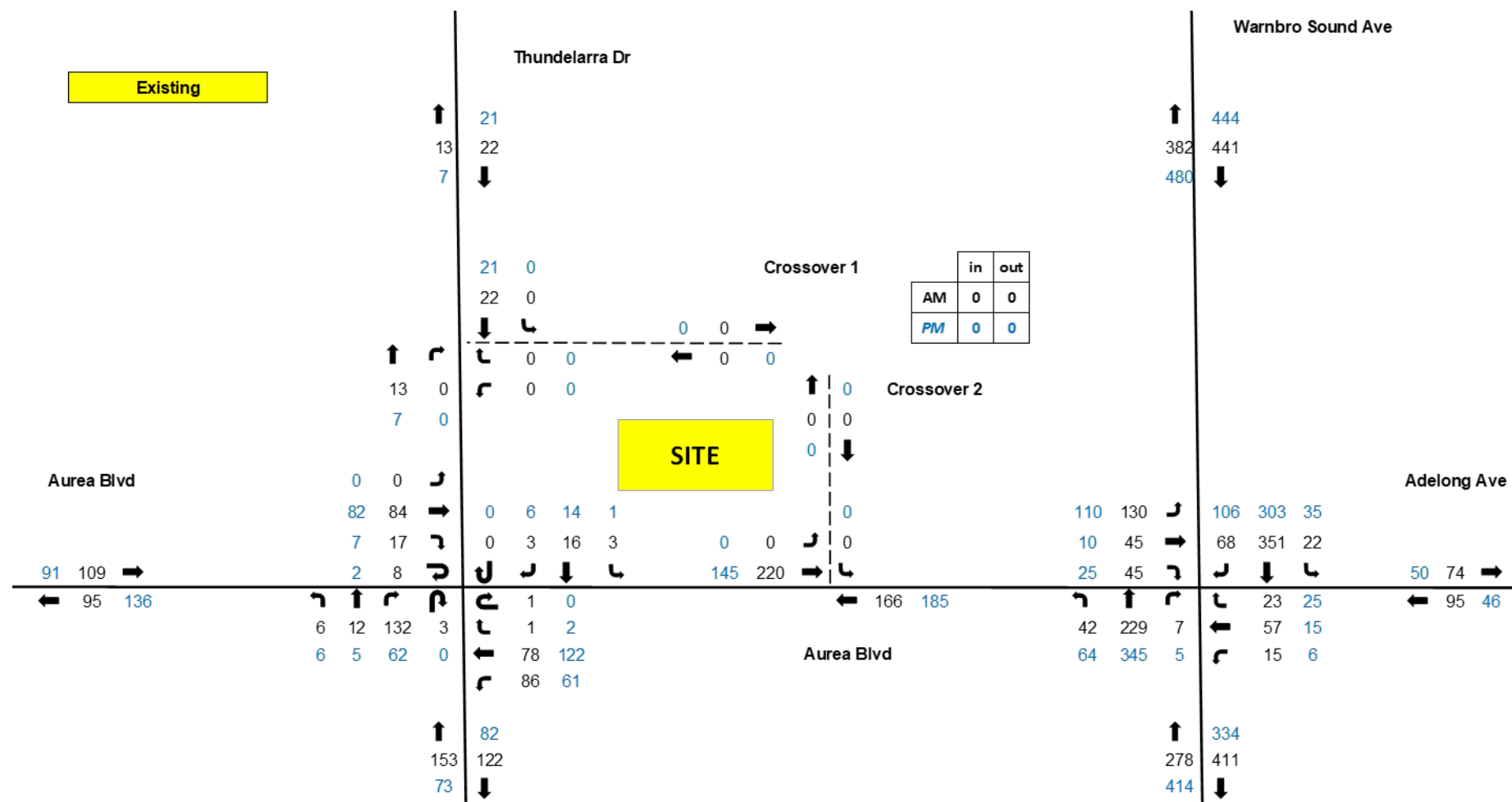


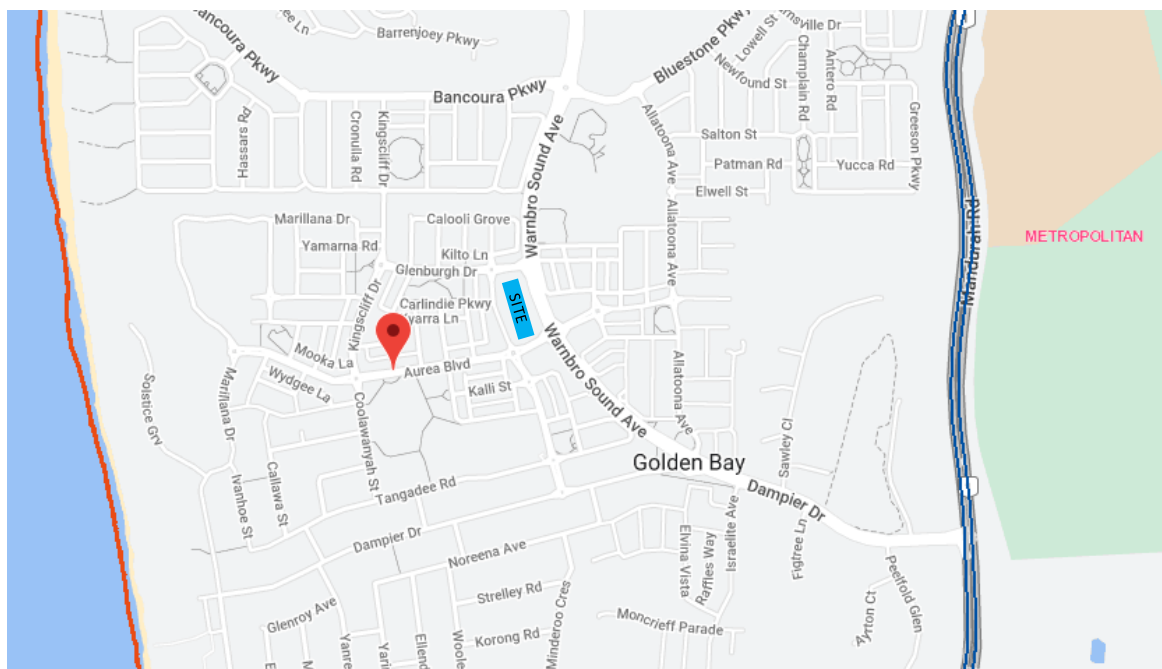
Figure 8: Existing traffic counts AM/ PM peak hour



### 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.

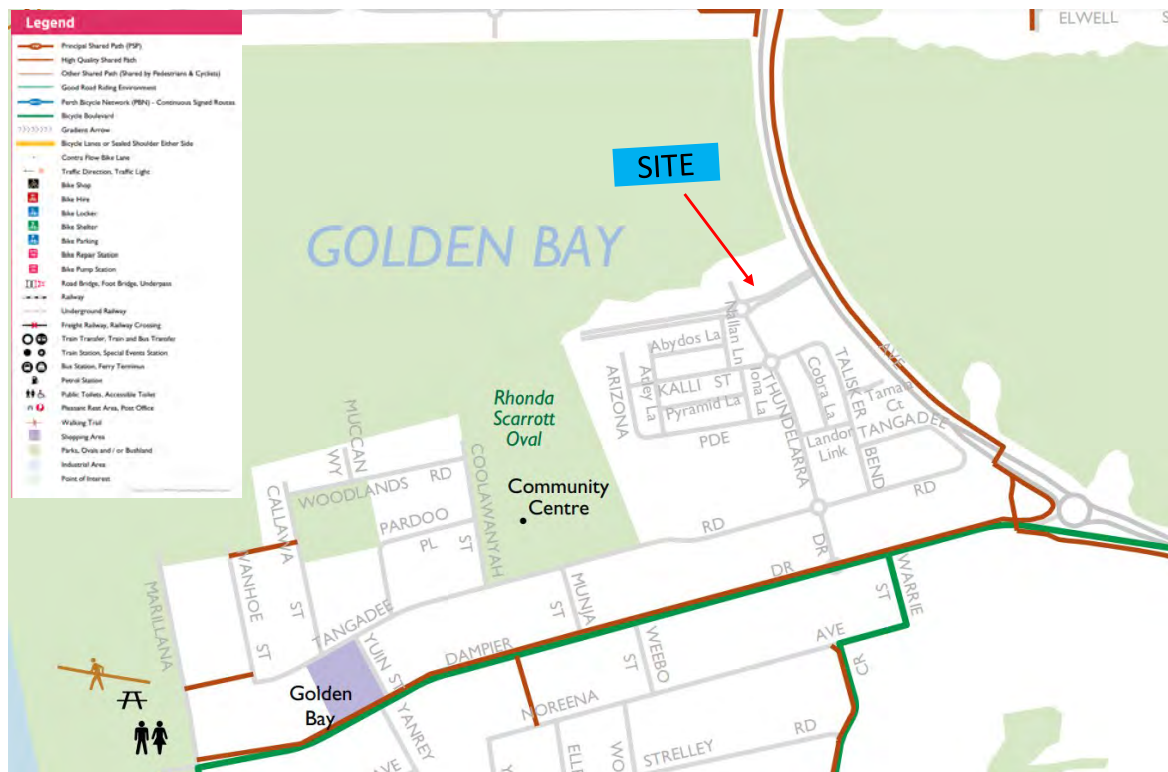


Figure 11: Bike map (source: Department of Transport)

### 3.6 Crash Data

Information available on the Main Roads WA website indicates only one crash for the existing roundabout intersection of Aurea Blvd and Thundelarra Drive during the last five-year period ending in December 2021. This crash entailed no casualty.

The signalised intersection of Aurea Blvd / Warnbro Sound Avenue recorded a total of 4 road crashes with no casualty during the last five-year period ending in December 2021 as illustrated in **Table 1**.

The crash records over the last 5 years demonstrate that the road network in this vicinity has been constructed to a high standard with no particular safety issue.

**Table 1. Crash Statistics for the Aurea Blvd / Warnbro Sound Avenue**

Intersection				Total Crashes	Casualty
Aurea Blvd / Warnbro Sound Avenue				4	0
Rear End	Non collision	Pedestrian	Daylight	PDO Major	Dry
1	2	0	2	1	4



## 4 Changes to Surrounding Transport Networks

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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

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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

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### 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 trips<sup>1</sup> (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**.

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<sup>1</sup> 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
<b>TOTAL TRAFFIC</b>						<b>4834</b>	<b>260</b>	<b>401</b>	<b>129</b>	<b>131</b>	<b>200</b>	<b>201</b>

**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
	<b>68</b>	<b>69</b>	<b>94</b>	<b>94</b>	<b>2337</b>

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
	<b>61</b>	<b>62</b>	<b>106</b>	<b>107</b>	<b>2497</b>

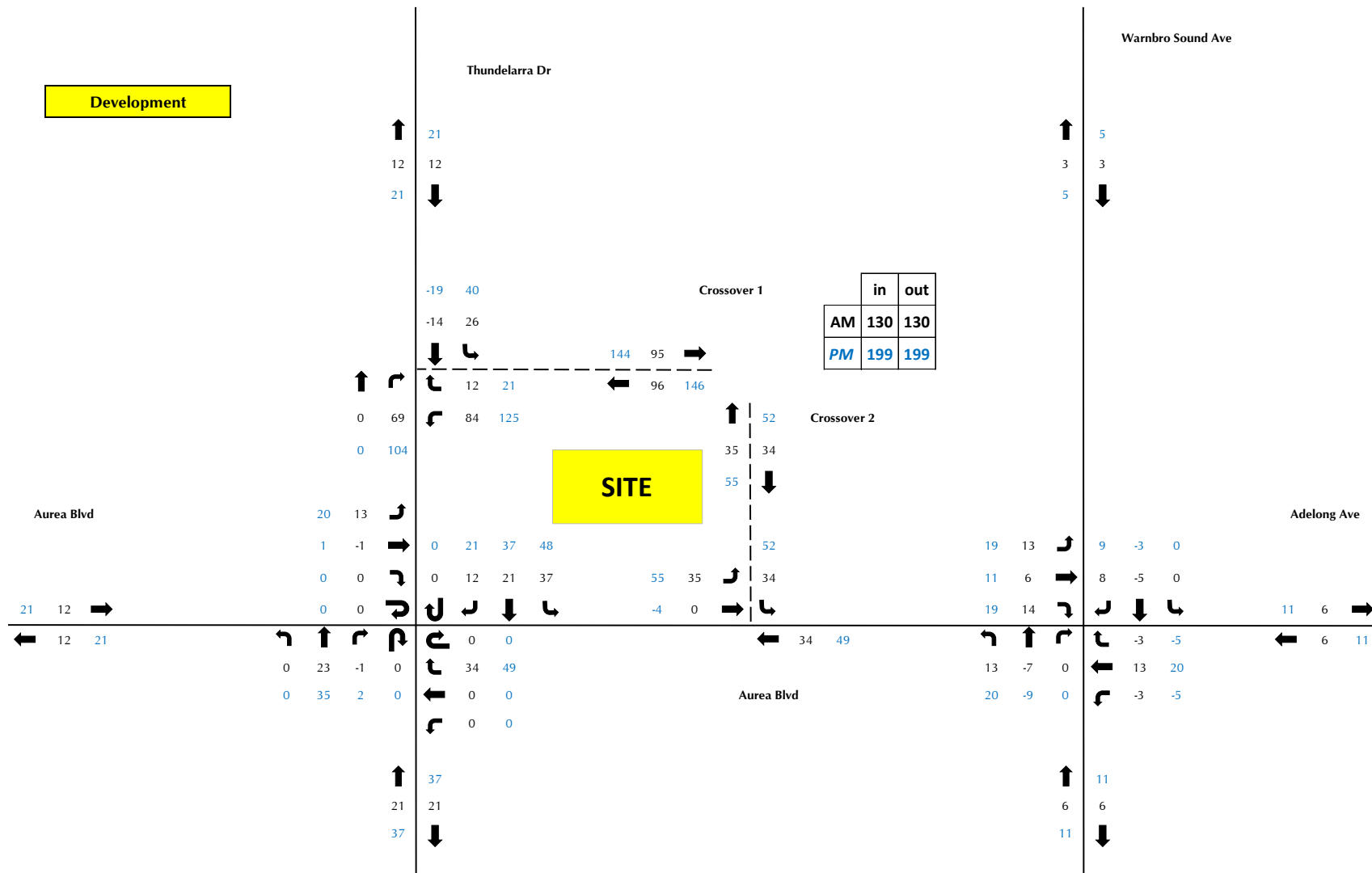


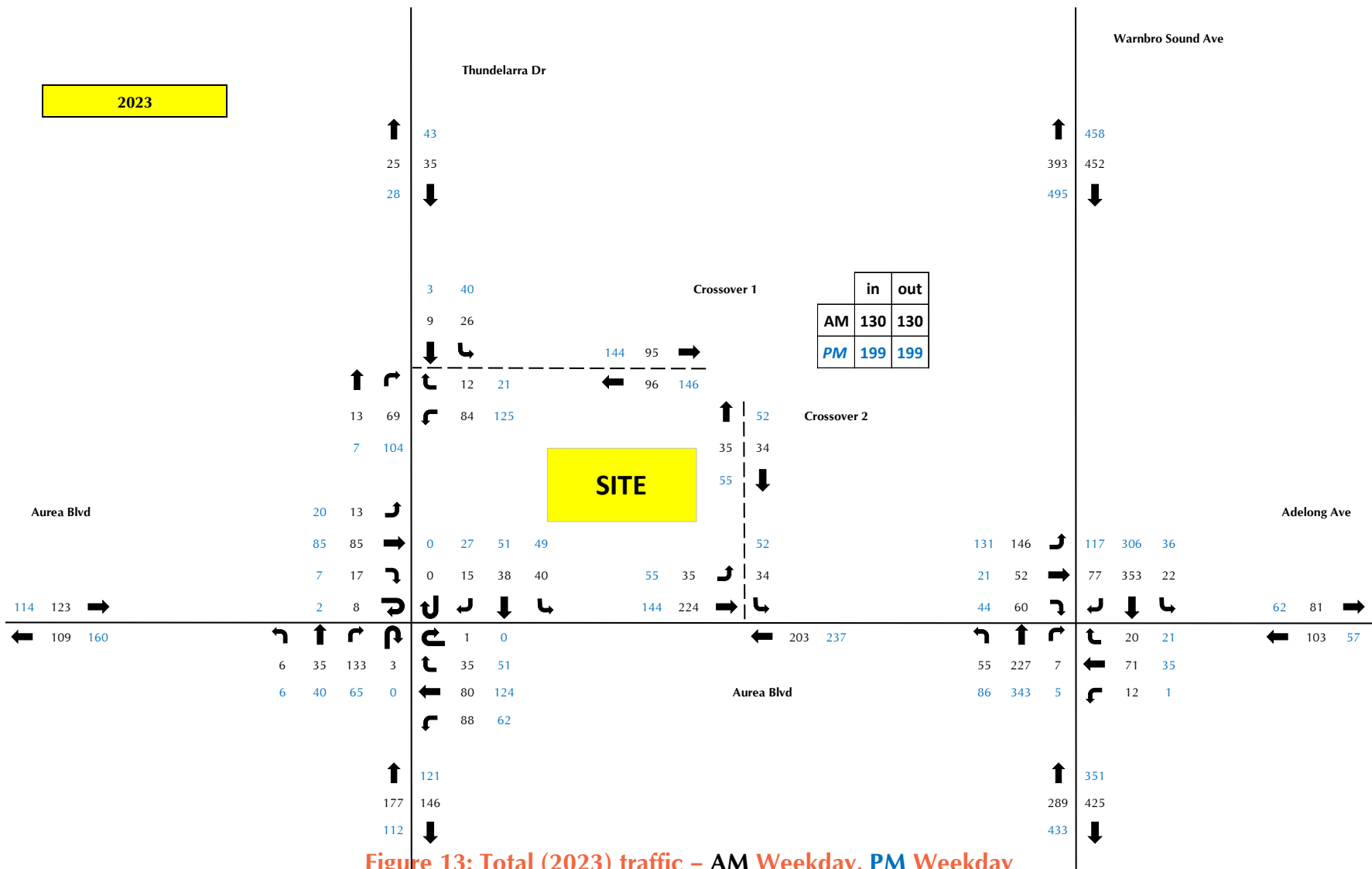
Figure 12: Proposed development traffic – AM Weekday, PM Weekday

## 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**.





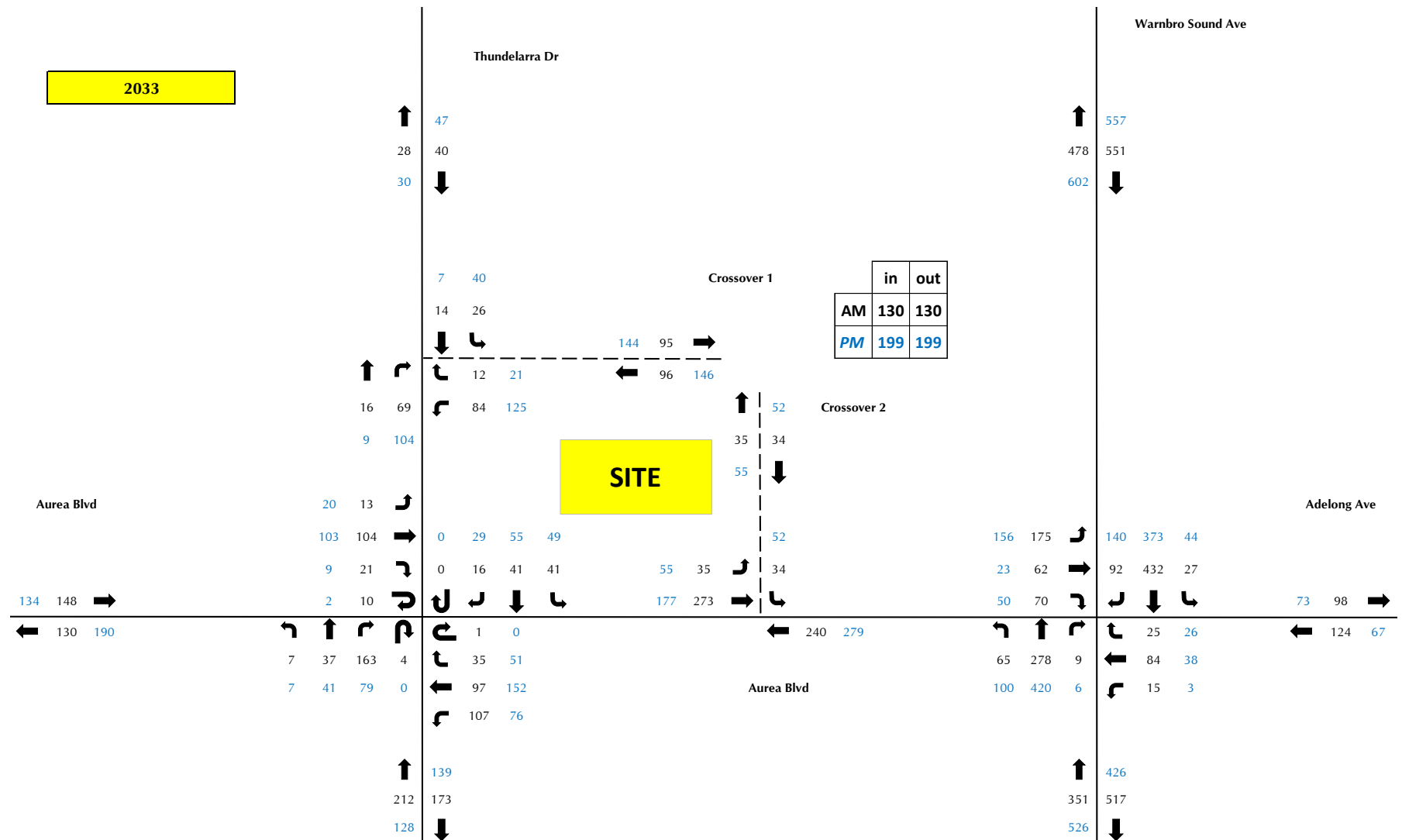


Figure 14: Total (2033) traffic – AM Weekday, PM Weekday

## 6.4 Analysis of Local Intersections & Crossovers

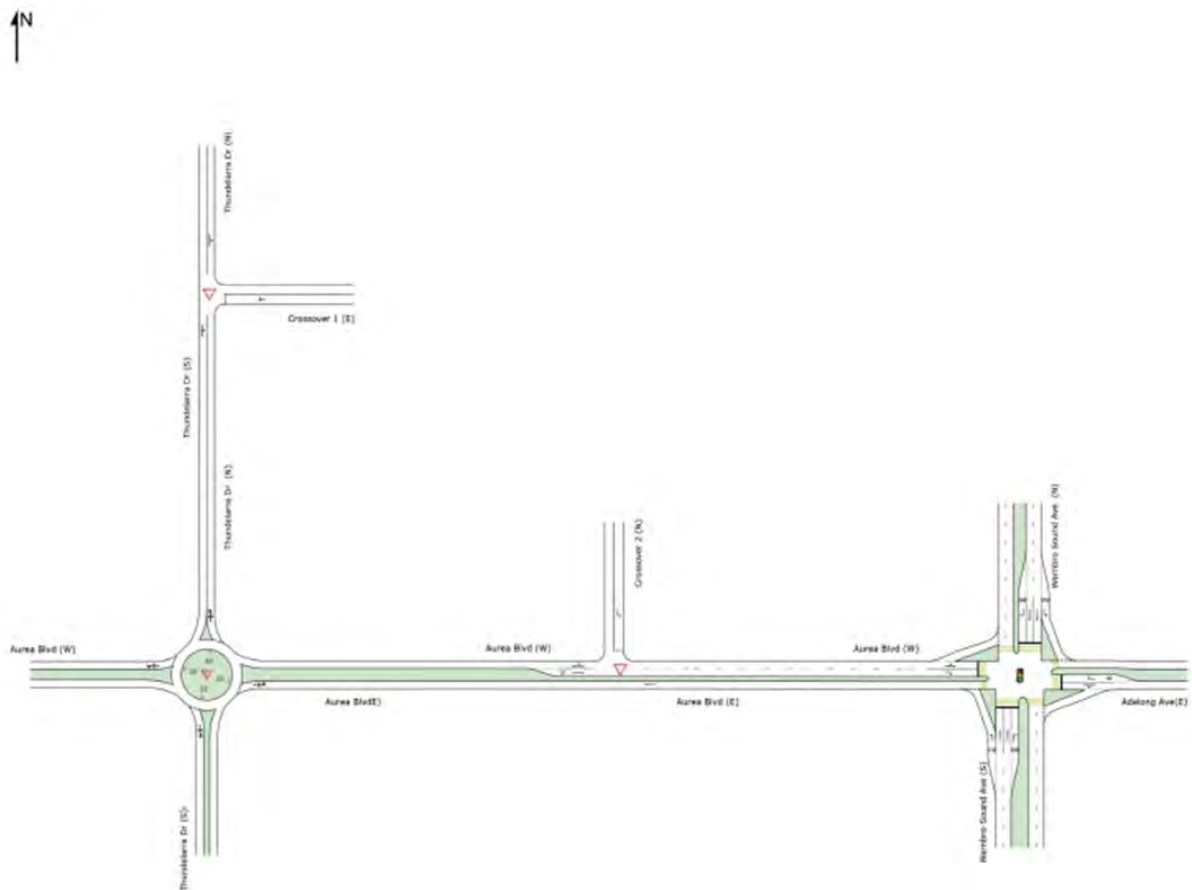
Capacity network analysis was undertaken using the SIDRA computer software package for year 2023 and 2033. SIDRA is an intersection modelling tool commonly used by traffic engineers for all types of intersections. SIDRA outputs are presented in the form of Degree of Saturation, Level of Service, Average 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.

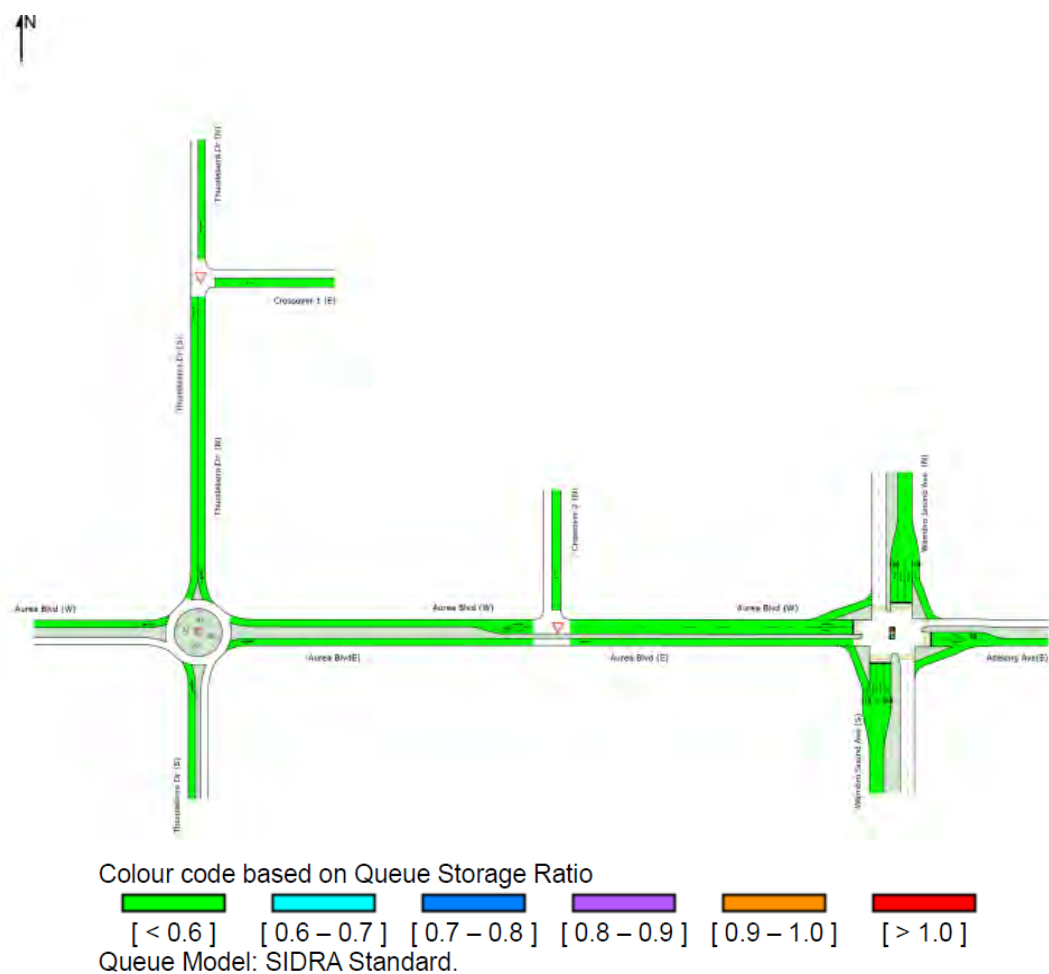
## DEVELOPMENT CROSSOVERS

SIDRA analysis indicates that development crossovers will operate satisfactorily in 2023 and 2033 during assessed peak hours. All movements operate with good level of service (LoS A) with minimal delays and queuing.

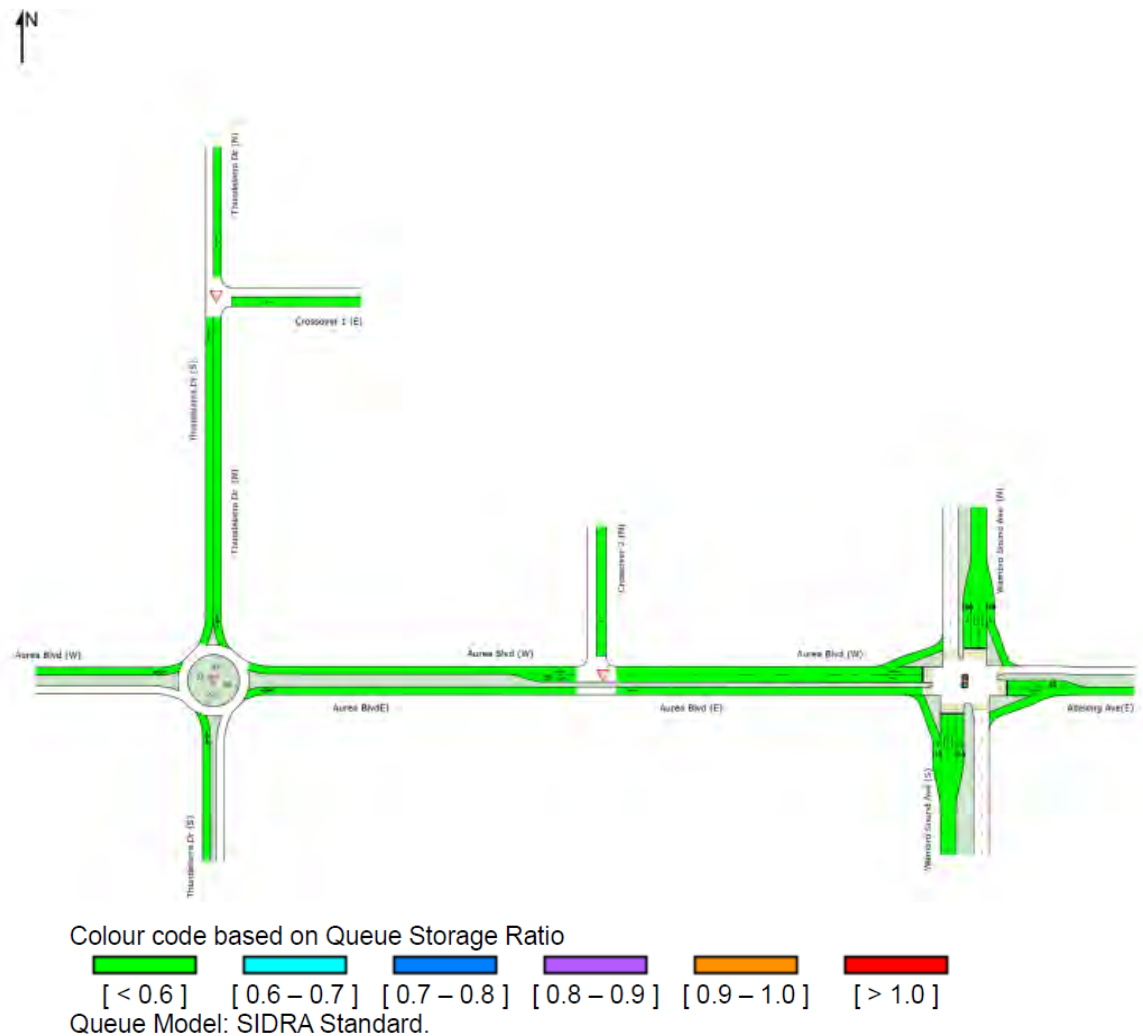
## NETWORK OPERATION

Relevant SIDRA network outputs were reviewed for the assessed peak hours to establish the operation of the development crossovers and the nearby intersections as an integrated network.

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 16: Weekday AM and PM peak hour network analysis – queue storage ratio (2023)**



**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 (+/-)
<b>Supermarket</b>	70	50	-20
<b>Specialty shops</b>	16	5	-11
<b>Fast Food outlets</b>	49	46	-3
<b>Service station</b>	22	15	-7
<b>Liquor store</b>	18	27	+9
<b>On-street bays</b>		4	+4
<b>Total theoretical shortfall considering the on-street bays</b>			-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	
<b>6:00</b>	0	7	5	2	11	25	<b>123</b>
<b>7:00</b>	0	14	5	3	15	38	<b>110</b>
<b>8:00</b>	2	21	20	5	22	69	<b>78</b>
<b>9:00</b>	2	28	25	6	15	76	<b>71</b>
<b>10:00</b>	4	35	34	8	13	94	<b>53</b>
<b>11:00</b>	5	49	39	11	9	114	<b>33</b>
<b>12:00</b>	5	56	39	14	9	124	<b>23</b>
<b>13:00</b>	5	56	44	13	11	129	<b>18</b>
<b>14:00</b>	5	49	39	11	11	116	<b>31</b>
<b>15:00</b>	5	42	34	10	13	105	<b>43</b>
<b>16:00</b>	9	49	29	11	15	114	<b>33</b>
<b>17:00</b>	11	56	25	11	22	125	<b>23</b>
<b>18:00</b>	14	56	34	11	18	134	<b>14</b>
<b>19:00</b>	14	42	44	11	11	123	<b>24</b>
<b>20:00</b>	9	28	25	8	9	78	<b>69</b>
<b>21:00</b>	7	7	25	2	7	47	<b>100</b>

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	
<b>6:00</b>	0	7	5	2	11	25	<b>123</b>
<b>7:00</b>	0	14	5	3	15	38	<b>110</b>
<b>8:00</b>	2	21	20	5	22	69	<b>78</b>
<b>9:00</b>	2	28	25	6	15	76	<b>71</b>
<b>10:00</b>	4	35	39	10	13	101	<b>46</b>
<b>11:00</b>	5	70	44	16	9	144	<b>3</b>
<b>12:00</b>	5	63	49	14	9	141	<b>6</b>
<b>13:00</b>	7	63	44	13	11	138	<b>9</b>
<b>14:00</b>	7	56	39	11	11	125	<b>22</b>
<b>15:00</b>	7	49	34	10	13	113	<b>34</b>
<b>16:00</b>	9	49	29	11	15	114	<b>33</b>
<b>17:00</b>	14	49	25	11	22	121	<b>26</b>
<b>18:00</b>	18	35	44	8	18	123	<b>24</b>
<b>19:00</b>	18	14	44	3	11	90	<b>57</b>
<b>20:00</b>	13	14	25	3	9	63	<b>84</b>
<b>21:00</b>	9	7	25	2	7	49	<b>98</b>

## 8 Provision of Heavy Vehicles

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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

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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



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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><b>Impact on the performance of surrounding intersections and increased traffic safety risks</b></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><b>Insufficient separation distance between intersections to accommodate an access</b></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul> <p>Queue from the traffic signal impacting on the access</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul> <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&amp;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><b>Neighbourhood Centre Detailed Area Plan</b></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 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	<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
		<b>Fast food outlet with drive through</b>	227	227	185	185
		<b>Liquor</b>	0	0	41	41
		<b>Supermarket</b>	19	48	186	116
		<b>Specialty</b>	1	19	11	8
		<b>Service Station</b>	100	100	112	112
		<b>Total</b>	<b>347</b>	<b>394</b>	<b>534</b>	<b>462</b>
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"> <li>o Encroaching into the opposing traffic lane</li> <li>o Clash with kerbing</li> <li>o Insufficient horizontal clearance to the kerb ramp</li> <li>o Reversing movement</li> </ul>	<ol style="list-style-type: none"> <li>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.</li> <li>2. The body of the vehicle would not clash with the kerbs;</li> <li>3. The clearance maybe insufficient at some kerbs but the body of the truck would not clash with the kerbs.</li> <li>4. the 12.5m truck reverse back to the supermarket loading bay for a short distance which would not undermine traffic operations or safety.</li> </ol>

		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.

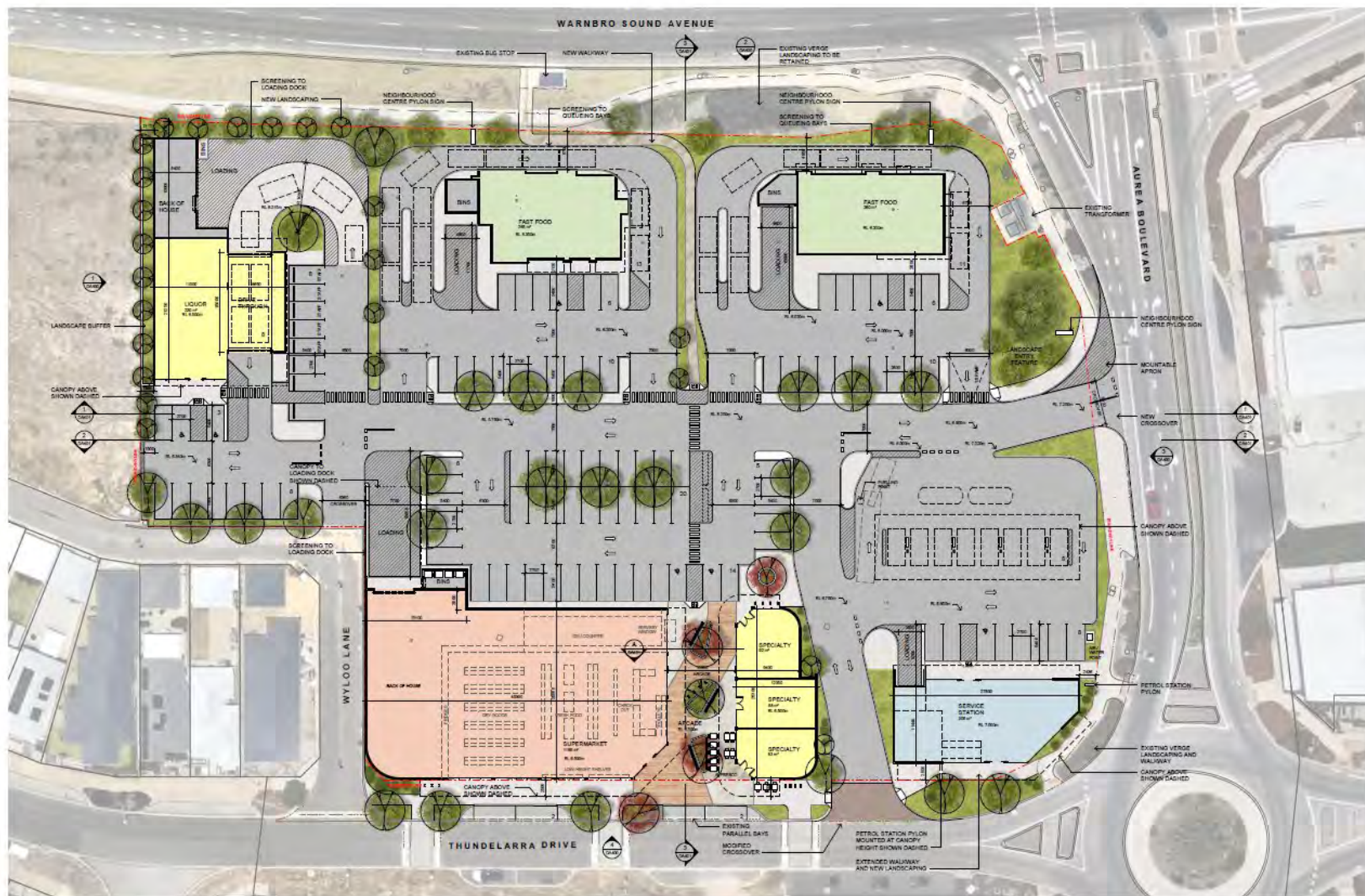
# Appendix B

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## PROPOSED DEVELOPMENT PLAN







**PROPOSED GROUND FLOOR PLAN  
GOLDEN BAY NEIGHBOURHOOD CENTRE**

Status: **DEVELOPMENT APPLICATION**  
Path: C:\Users\jara\Documents\Bay Local Plan\GDS\44634-K-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

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## 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 veh/h ]	[ HV % ]	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 %	v/c	sec		[ Veh. veh	Dist ] m				km/h
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 % ]				[ 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

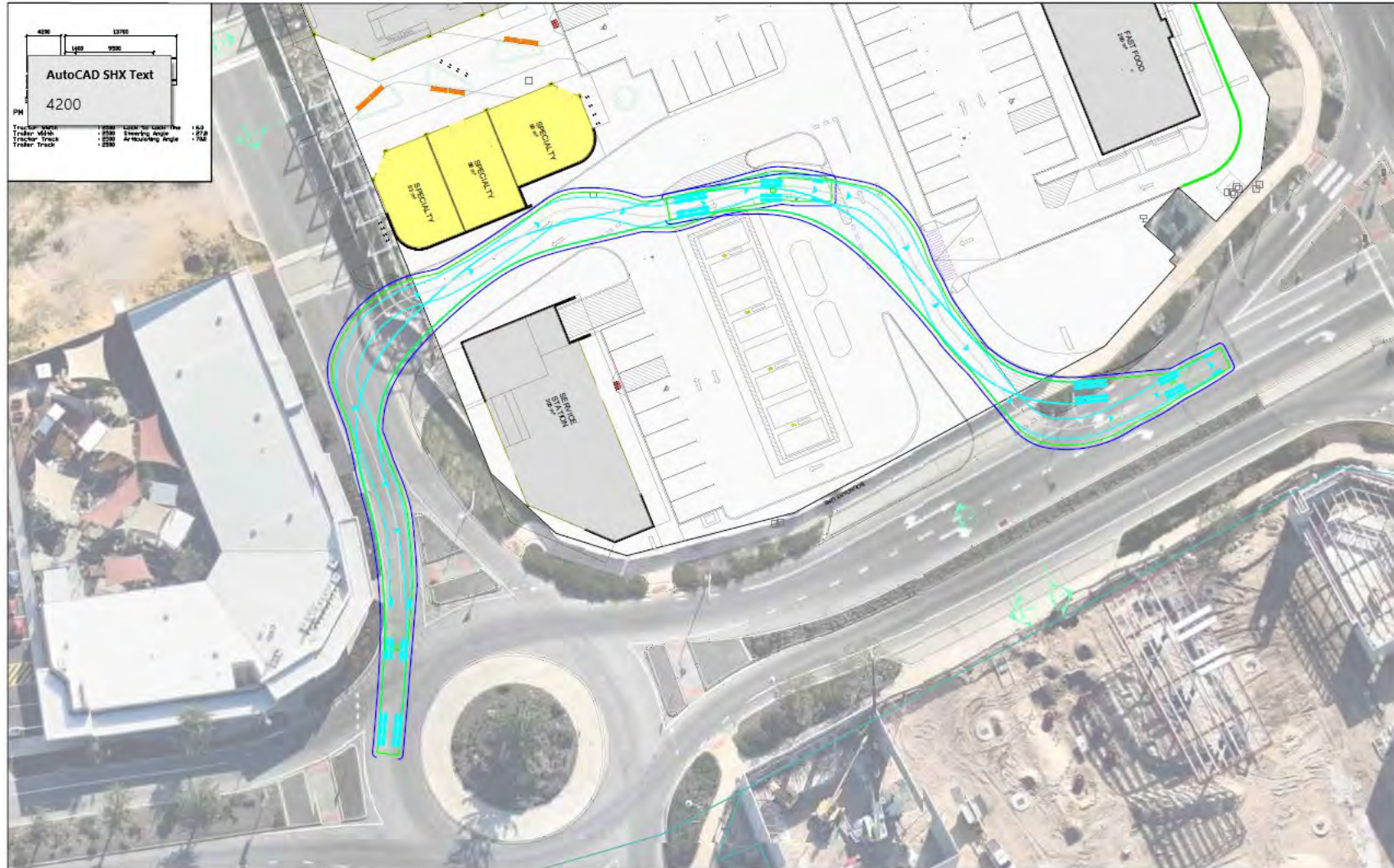




# Appendix C

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## TURN PATH ANALYSIS



2 Aurea Blvd, Golden Bay  
19.0 m Semi-railers  
Fuel tanker circulation

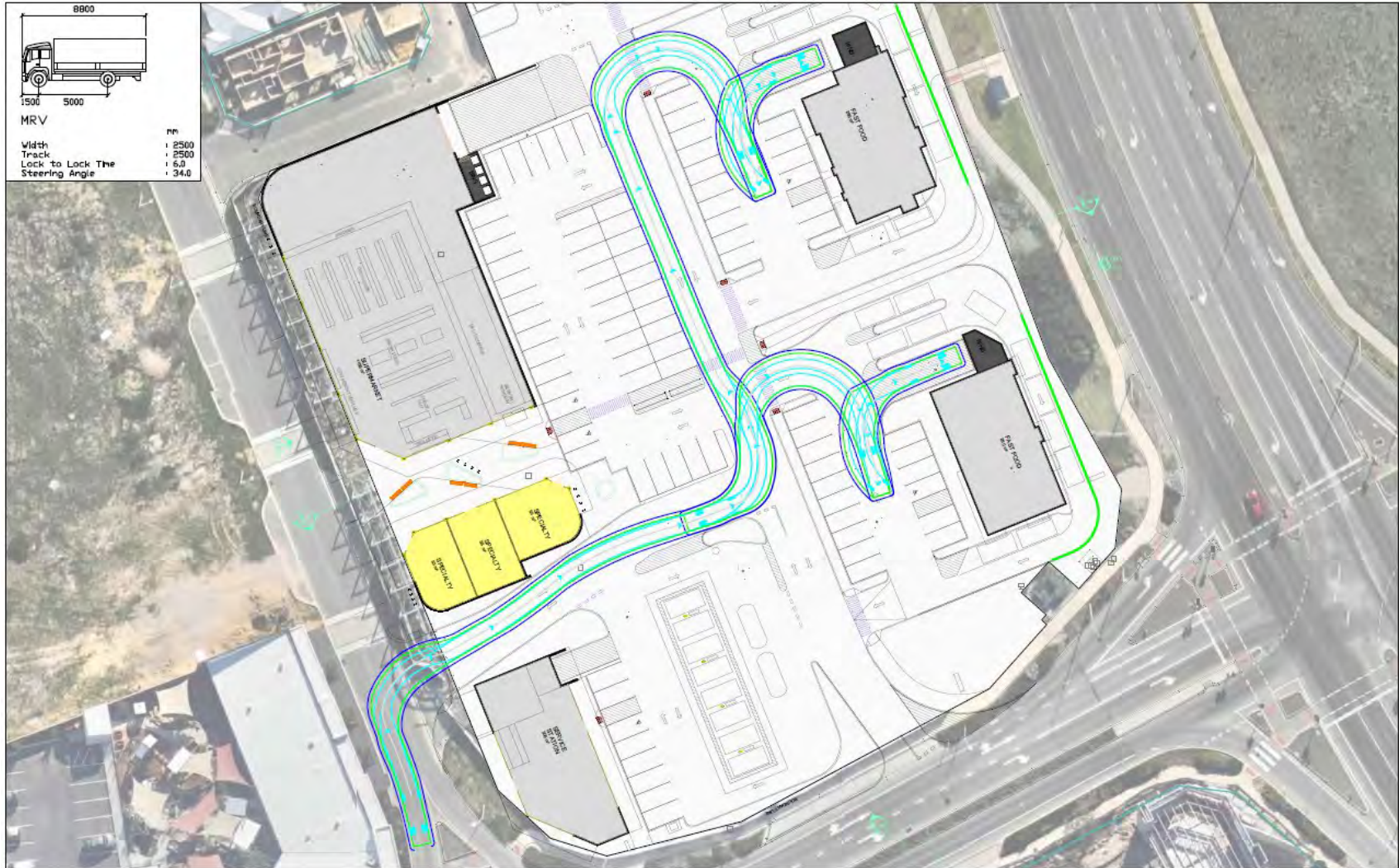
**LEGEND**  
Vehicle Body  
Wheel Path  
500mm Clearance



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1/5/2023  
Scale: 1:400 @ A3







2 Aurea Blvd, Golden Bay  
8.8 MRV  
Service vehicle entry

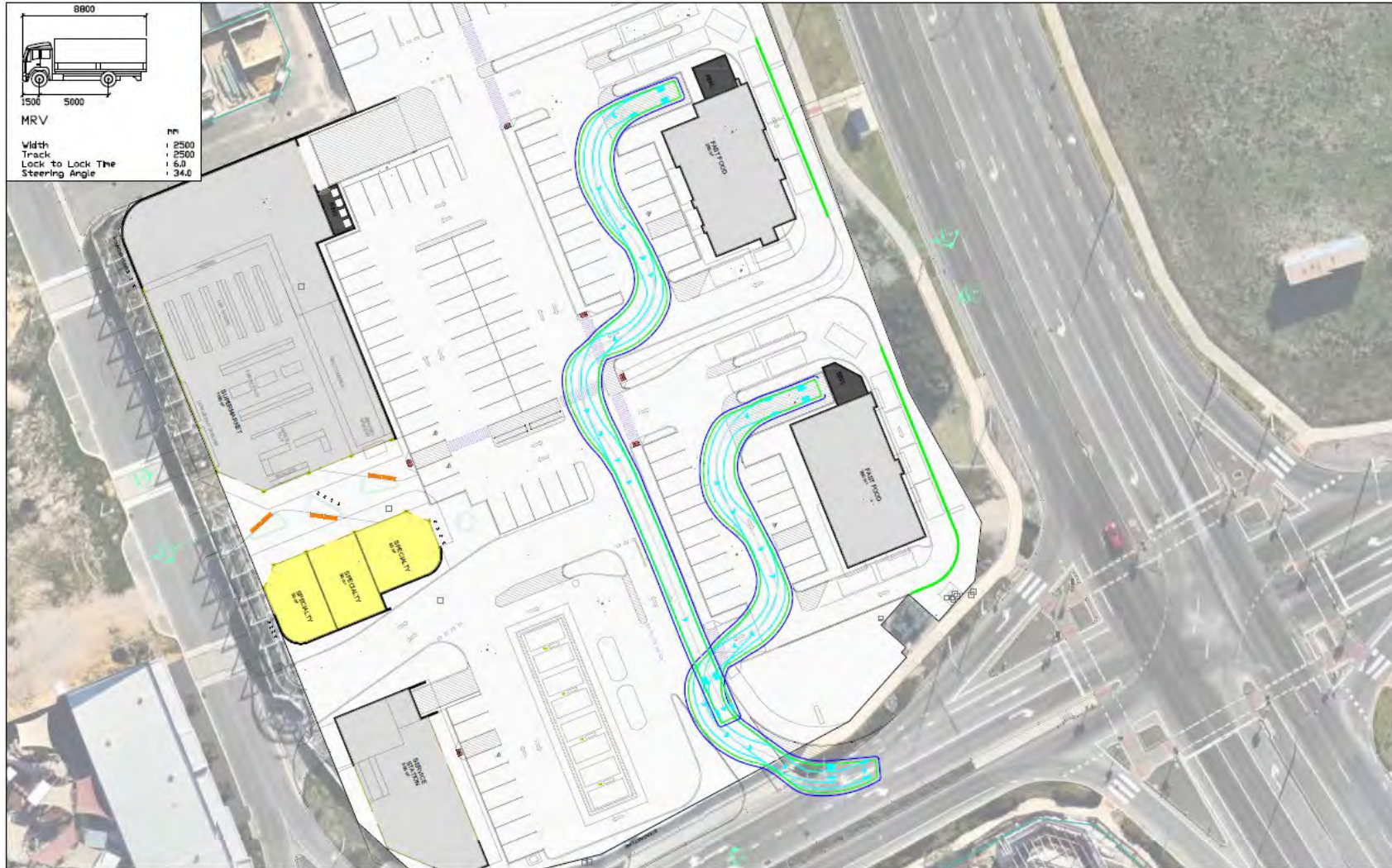
**LEGEND**  
Vehicle Body  
Wheel Path  
500mm Clearance



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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 exit

**LEGEND**  
Vehicle Body  
Wheel Path  
500mm Clearance



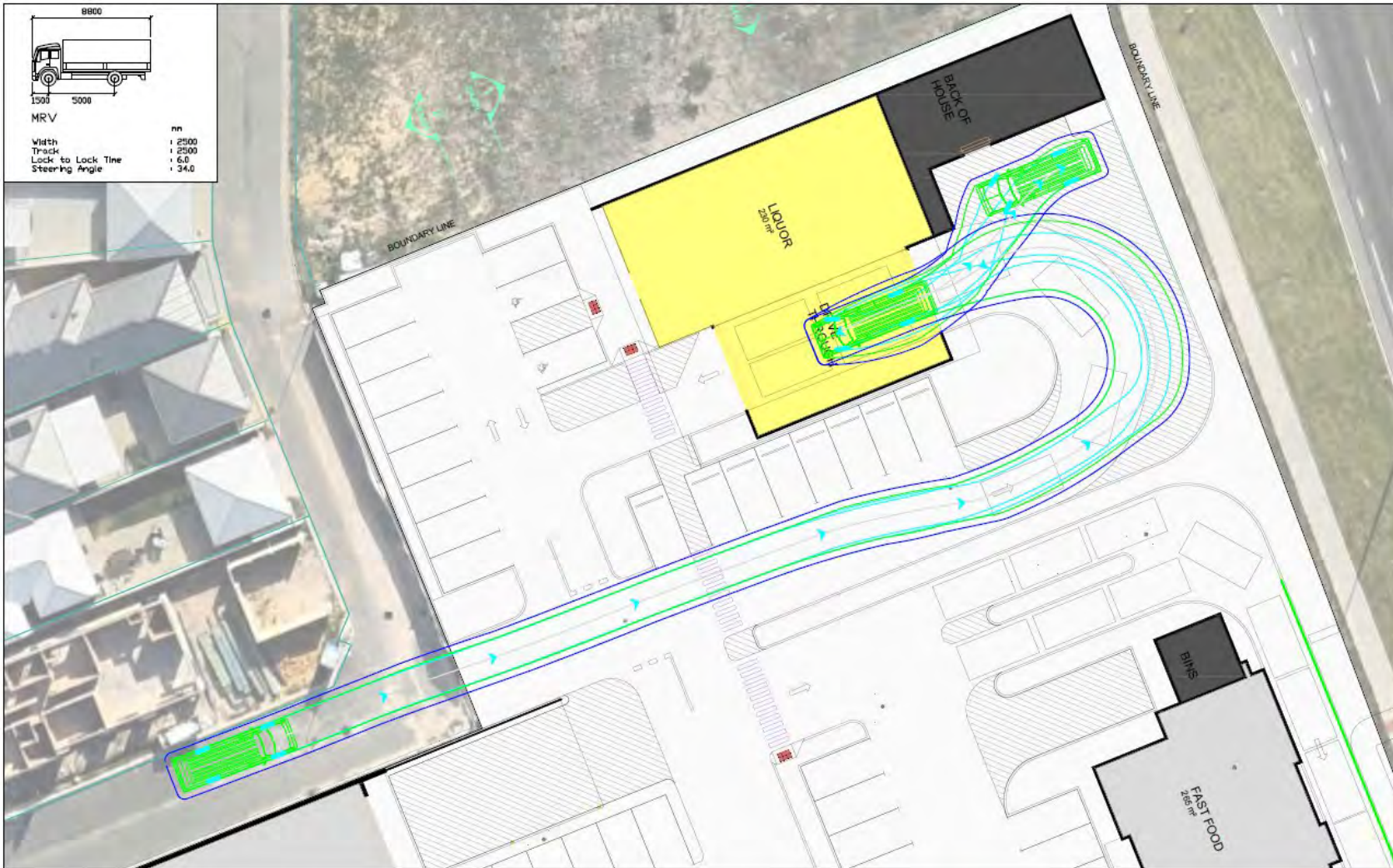
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1/5/2023

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  
8.8m Service Vehicle  
Service vehicle entry

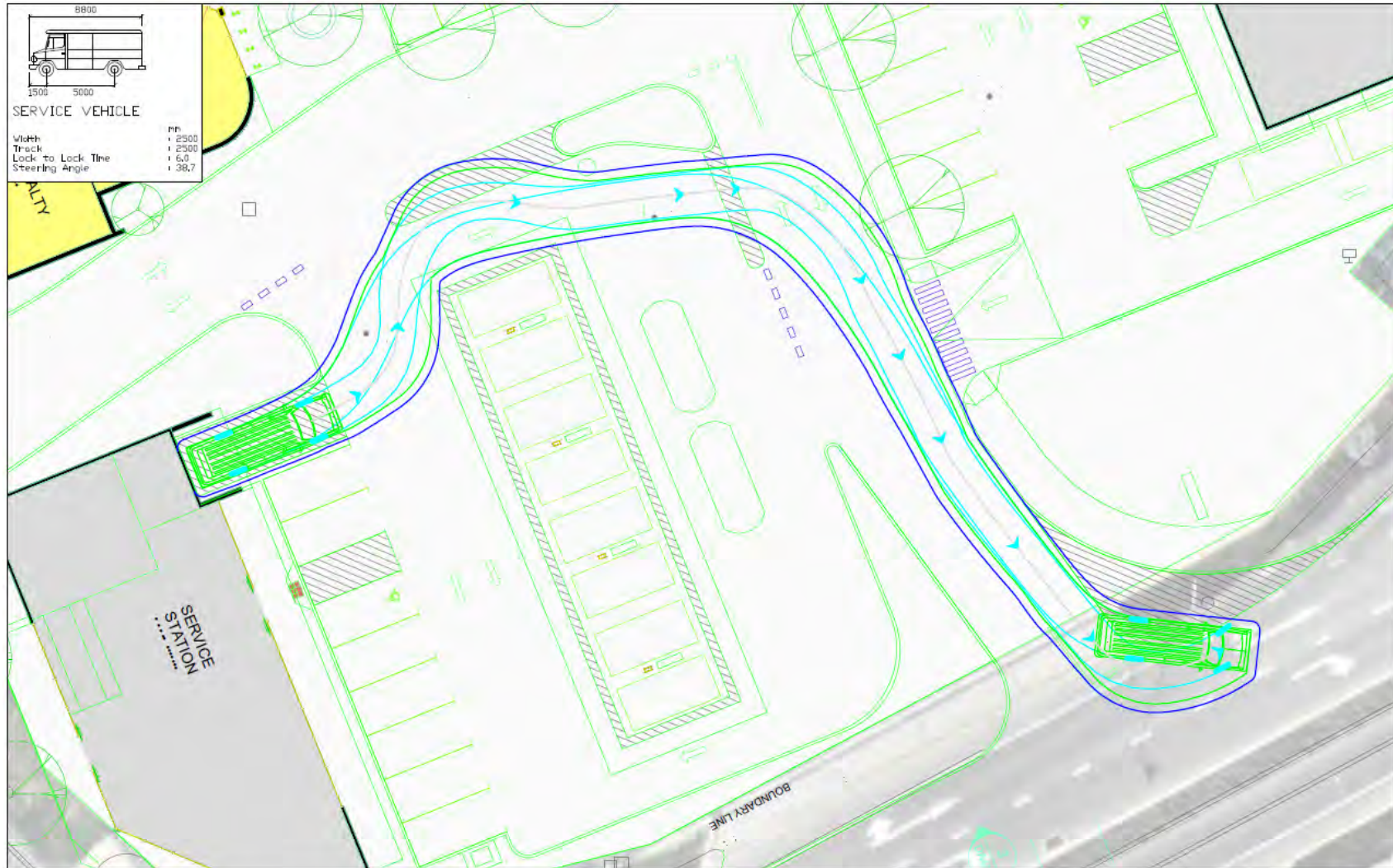
**LEGEND**  
Vehicle Body  
Wheel Path  
500mm Clearance



t22.035.sk16a  
1/5/2023  
Scale: 1:200 @ A3







2 Aurea Blvd, Golden Bay  
8.8m Service Vehicle  
Service vehicle exit

**LEGEND**  
Vehicle Body  
Wheel Path  
500mm Clearance



t22.035.sk17a  
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:

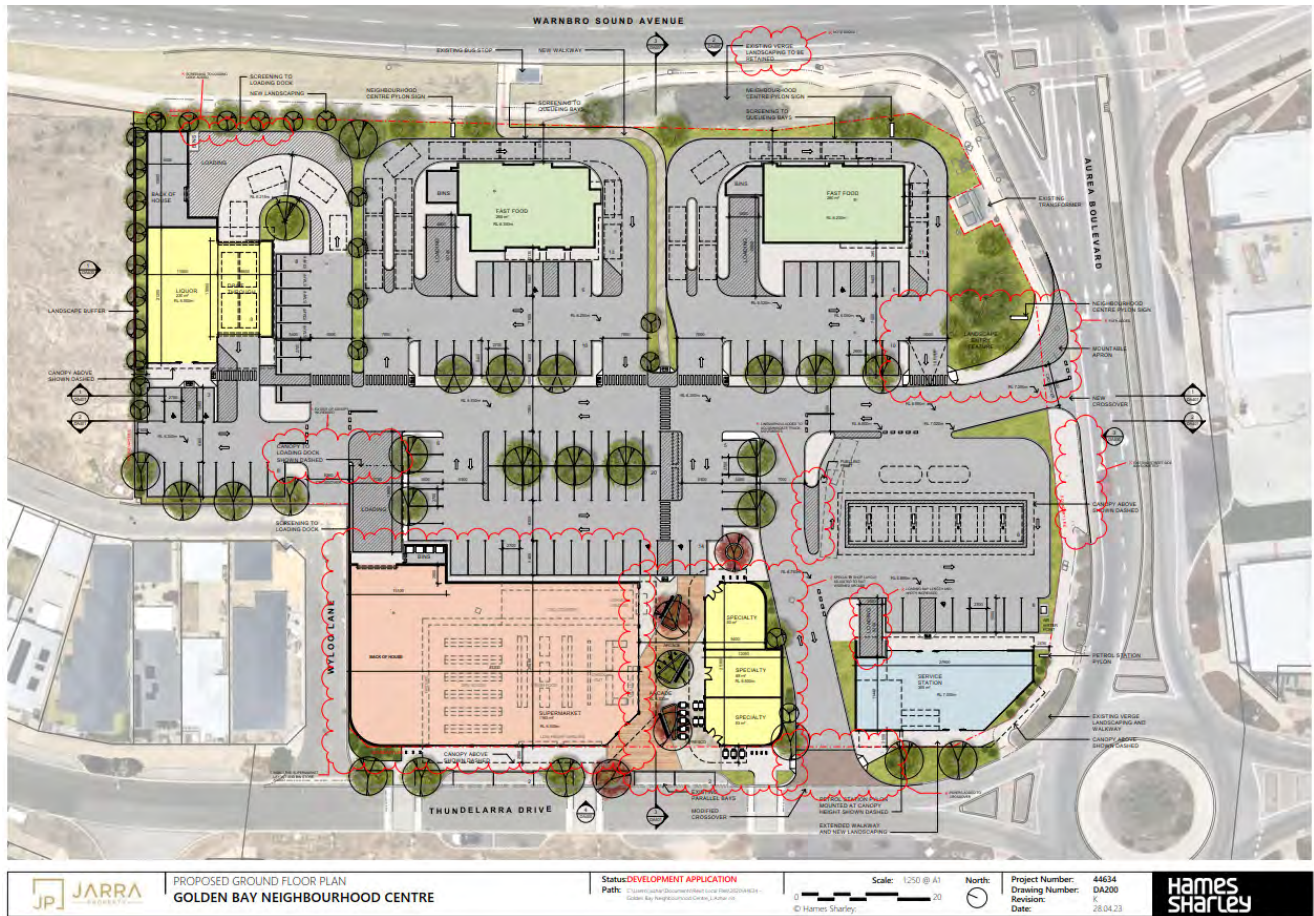
- A 24-hour service station and convenience store;
- A liquor tenancy with drive-through lane; and
- A supermarket and three adjacent specialty retail tenancies;
- Two fast food tenancies with drive-through lanes.



**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 <sup>1</sup>	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 <sub>A10</sub>	L <sub>A1</sub>	L <sub>Amax</sub>
R1, R2, R6 +4 dB IF Noise sensitive premises: highly sensitive area <sup>1</sup>	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 <sup>1</sup>	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.

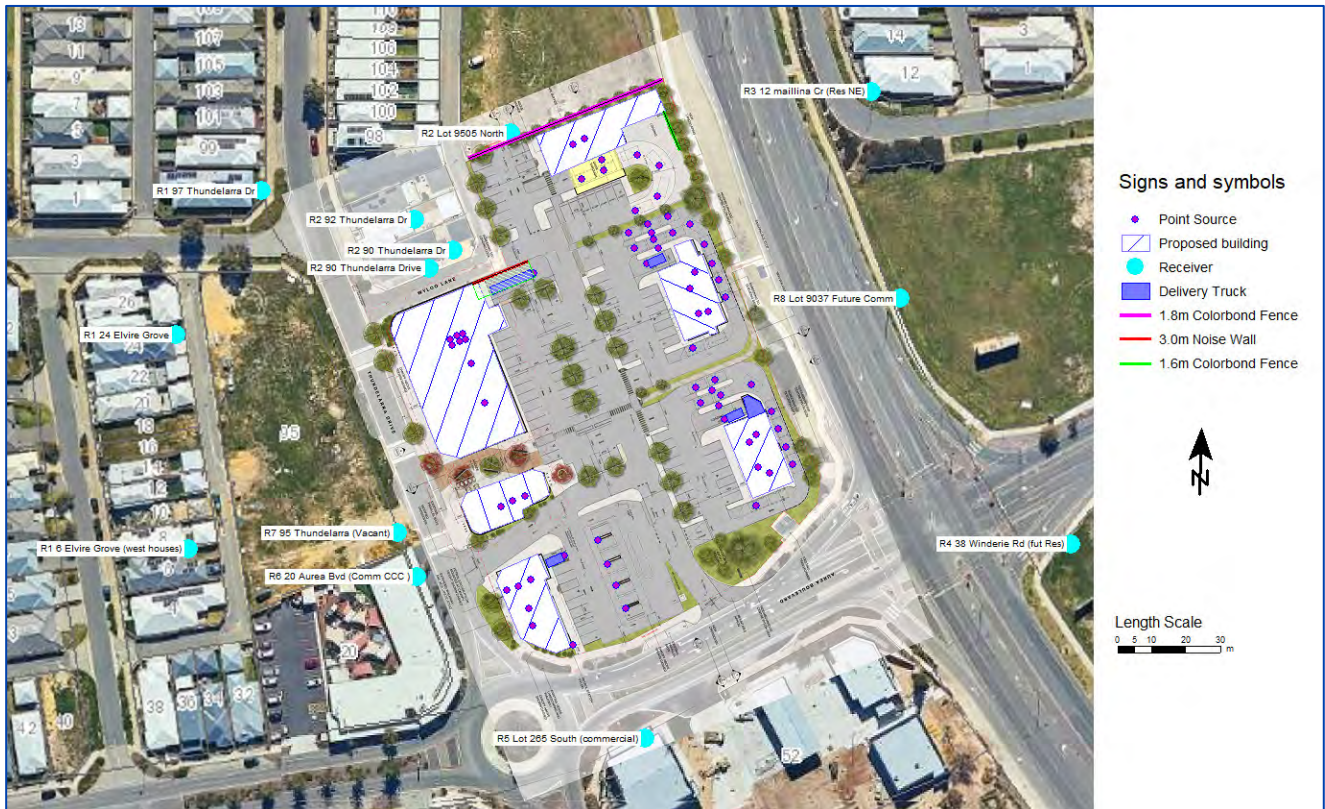
#### 3.2. Topographical Data

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/m<sup>2</sup> 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 <sub>10</sub>	-	65	68	65	67	65	59	50	<b>71</b>
Air Service Alarm – L <sub>max</sub>	-	-	-	-	-	91	96	92	<b>99</b>
Refrigeration Condenser Packages – L <sub>A10</sub>	88	87	85	81	76	70	64	59	<b>82</b>
General Exhaust Fan – L <sub>10</sub>	72	70	64	61	53	53	51	45	<b>63</b>
Toilet Exhaust Fan – L <sub>10</sub>	-	61	67	61	64	60	52	46	<b>67</b>
Typical AC Condensers – L <sub>10</sub>	-	77	75	72	70	67	62	56	<b>75</b>
Pulford Silenced Compressor – L <sub>10</sub>	73	72	75	71	67	63	59	51	<b>73</b>
Ice Box Compressor – L <sub>10</sub>	51	61	61	63	63	59	56	47	<b>68</b>
Car Door Closings – L <sub>max</sub>	71	74	77	81	80	78	72	61	<b>84</b>
Large Refrigerated Truck Condenser – L <sub>1</sub>	88	79	92	90	92	91	85	76	<b>98</b>
Drive-Through Speaker – L <sub>A1</sub>	62	64	66	77	80	73	57	42	<b>82</b>
Drive-Through Car Idling – L <sub>A10</sub>	81	78	74	72	74	74	67	64	<b>79</b>

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  $L_{Amax}$**

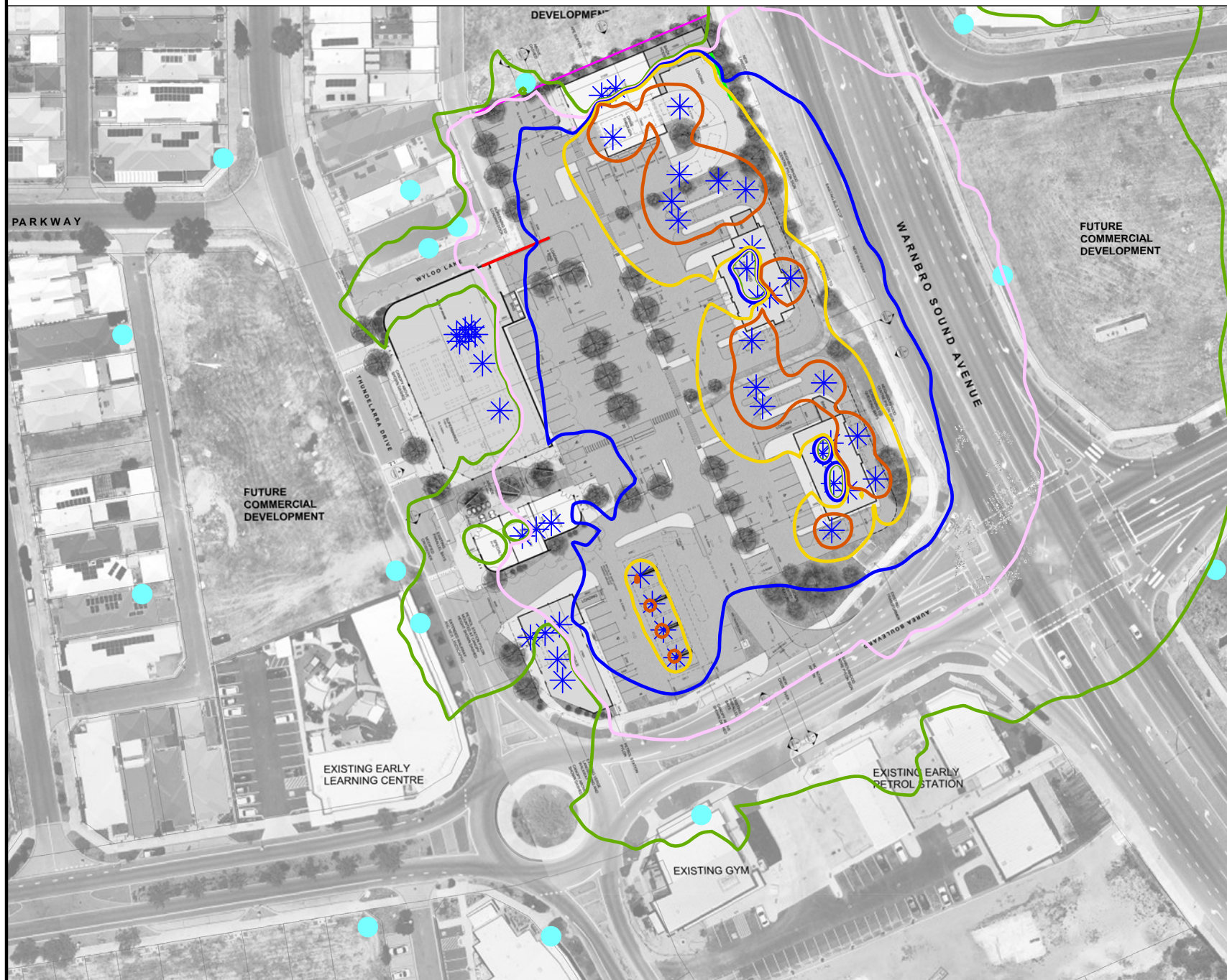
Receiver	Air Service Alarm*	Car Door Closing#	Maximum	Assigned Noise Level	Assessment
R1 6 Elvire Gr (west houses)	24	41	41	61	Complies
R1 24 Elvire Gr (west houses)	25	39	39	61	Complies
R1 97 Thundelarra Dr	27	29	29	61	Complies
R2 90-92 Thundelarra Dr	23	39	39	63	Complies
R2 Lot 9505 North	39	57	57	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

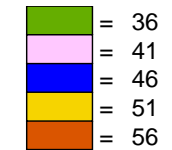
# Adjusted by + 10 dB for impulsiveness

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.

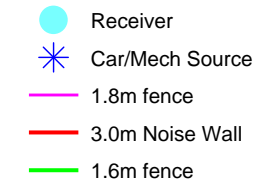
**Figure 4-1 Scenario 1 Noise Ground Floor, dB  $L_{A10}$**



**Predicted Noise level**



**Legend**



Scale 1:1300



Project No: 22117749  
 Consultant: MM  
 Date: 28/04/2023  
 Algorithm: ISO 9613  
 SoundPLAN Version: 8.2



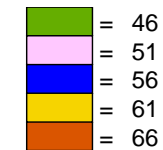
**Lloyd George Acoustics**  
 PO Box 717  
 HILLARYS WA 6923  
 (08) 9401 7770



**Figure 4-2 Scenario 2 Noise Ground Floor, dB  $L_{A1}$**



**Predicted Noise level**

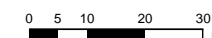


**Legend**

- 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

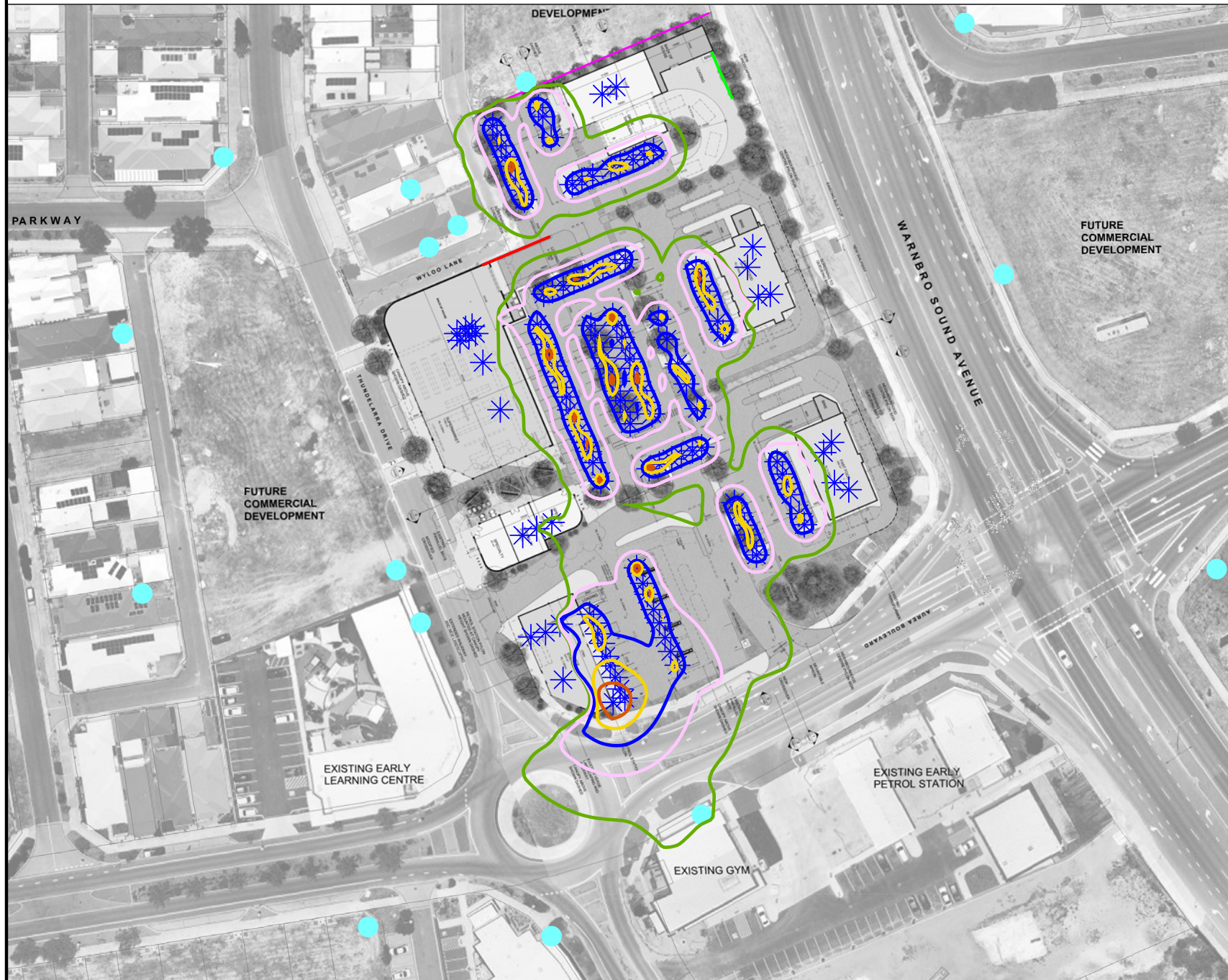
SoundPLAN Version: 8.2



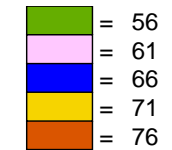
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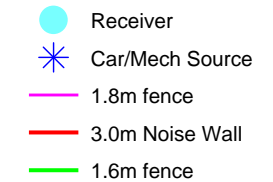
**Figure 4-3 Scenario 3 Noise Ground Floor, dB  $L_{Amax}$**



**Predicted Noise level**



**Legend**



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/m<sup>2</sup>. 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/m<sup>2</sup> and free of gaps.

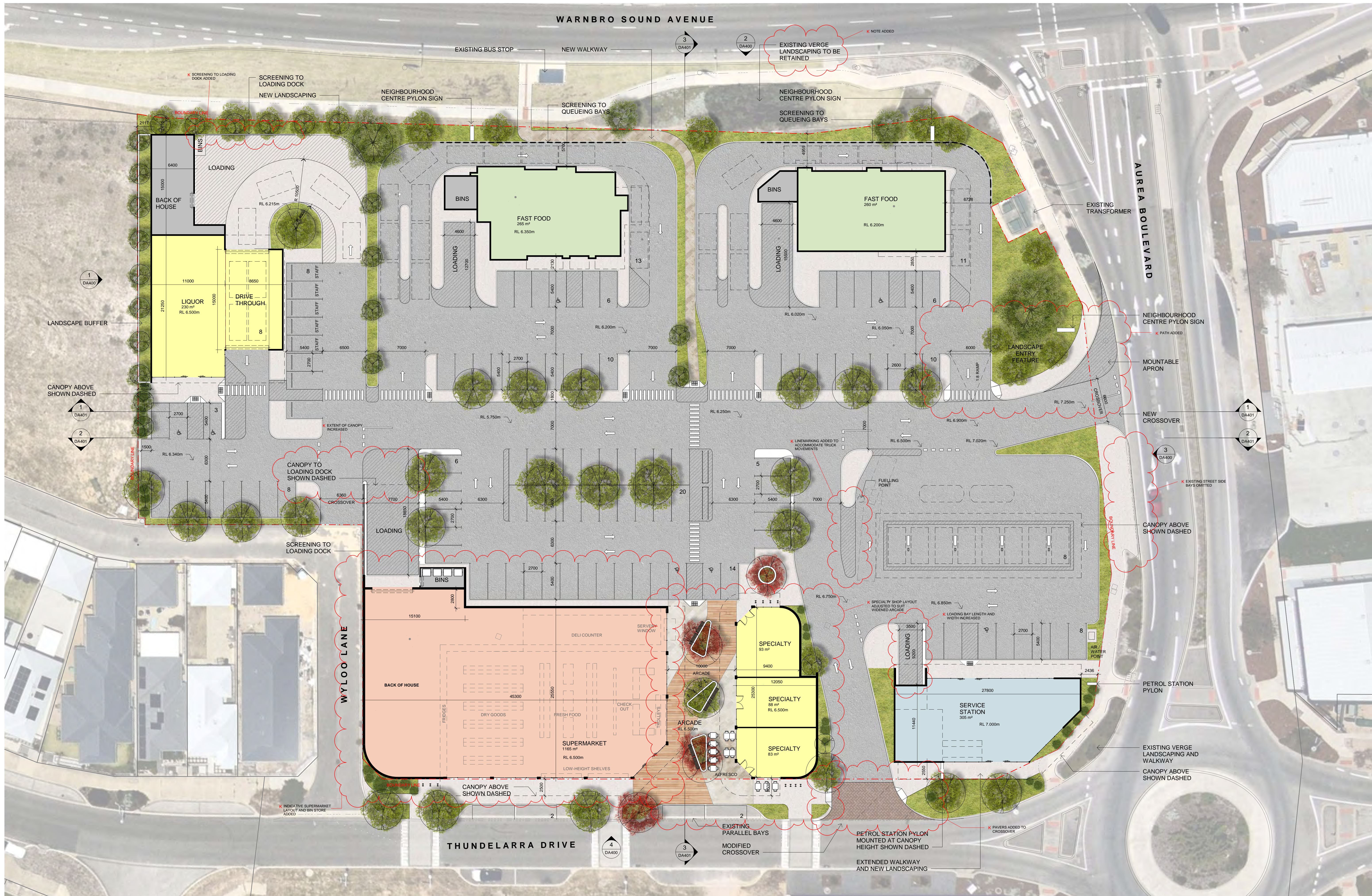
While not required for compliance, noting that the development is at DA stage only, some best practice recommendations have been included below though – to be implemented in the design and operation where practicable:

- 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 A<sub>100</sub> = the percentage of industrial land within  
a 100m radius of the premises receiving the noise

% Type A<sub>450</sub> = the percentage of industrial land within  
a 450m radius of the premises receiving the noise

% Type B<sub>100</sub> = the percentage of commercial land within  
a 100m radius of the premises receiving the noise

% Type B<sub>450</sub> = 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.

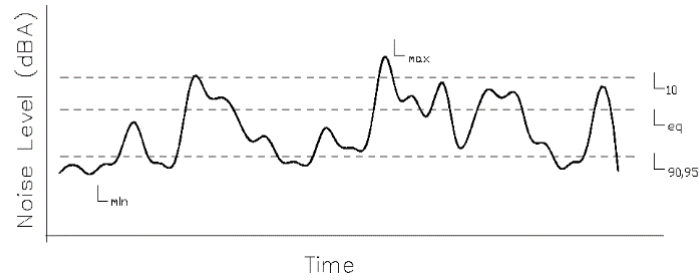
- **Major Road**

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.

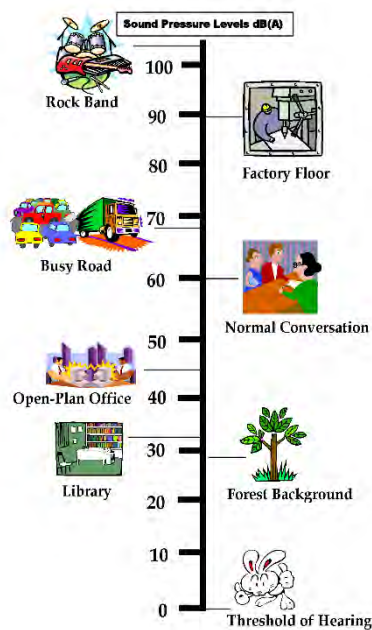
## Chart of Noise Level Descriptors



## Austrroads Vehicle Class

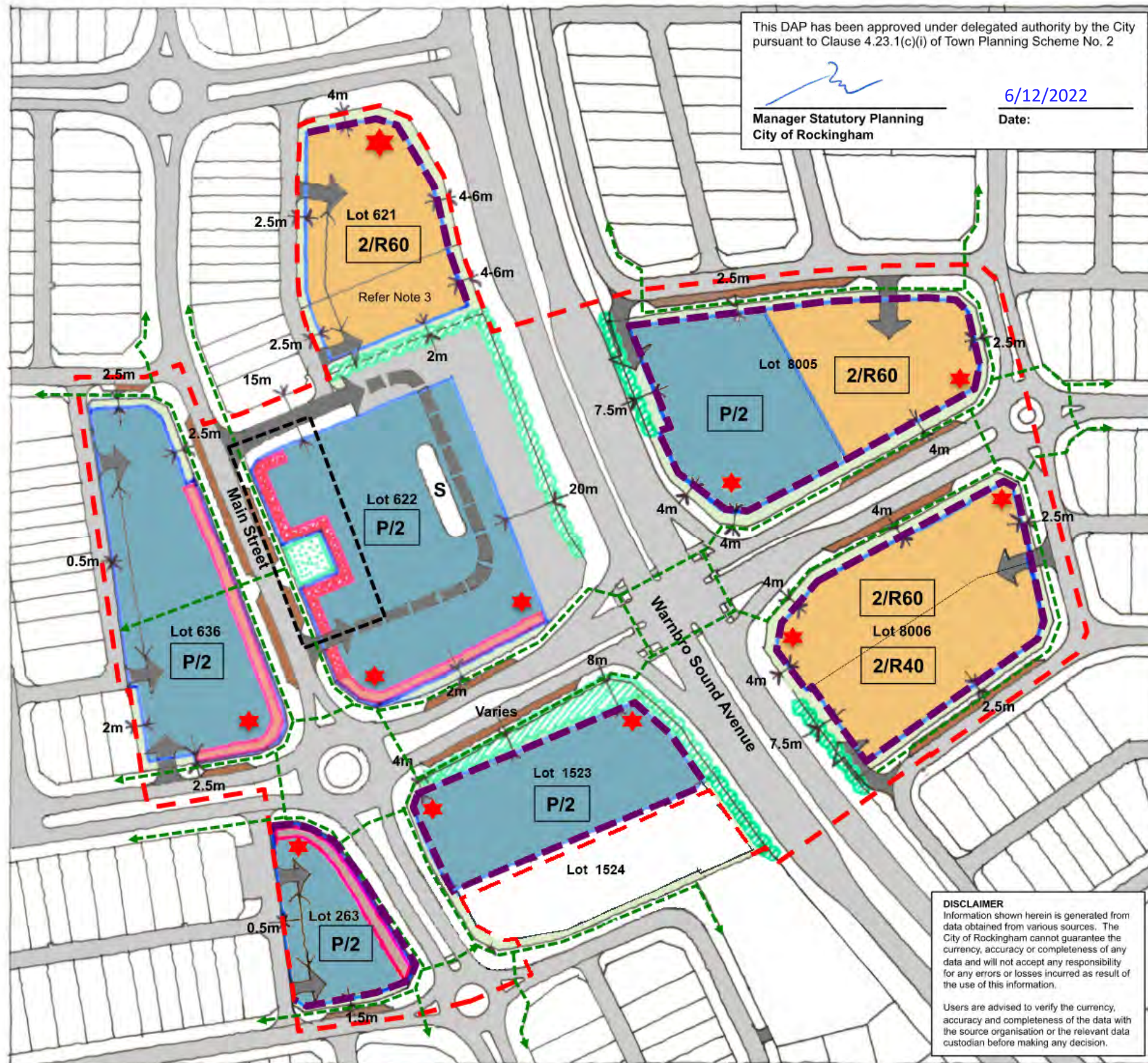
VEHICLE CLASSIFICATION SYSTEM	
AUSTRROADS	
CLASS	DESCRIPTION
1	Light Vehicle Car, van, light truck, utility vehicle, motorbike
2	Light Vehicle Truck, trailer, bus
3	Heavy Vehicle Truck, trailer, bus
4	Heavy Vehicle Truck, trailer, bus
5	Heavy Vehicle Truck, trailer, bus
6	Heavy Vehicle Truck, trailer, bus
7	Heavy Vehicle Truck, trailer, bus
8	Heavy Vehicle Truck, trailer, bus
9	Heavy Vehicle Truck, trailer, bus
10	Heavy Vehicle Truck, trailer, bus
11	Heavy Vehicle Truck, trailer, bus
12	Heavy Vehicle Truck, trailer, bus

## 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.

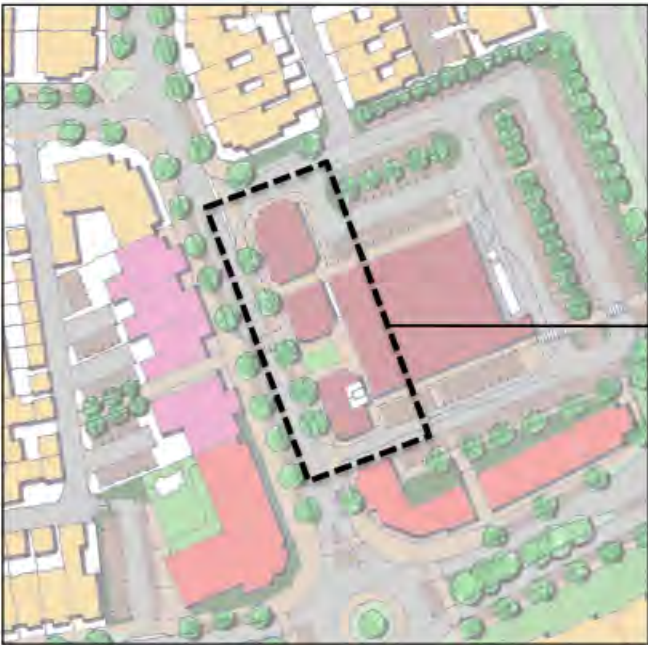
**Habitable frontage:** A habitable frontage must present at least one major opening to habitable rooms of residential development to the adjacent public domain that allows passive surveillance from inside of the building and the adjacent public domain.

**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.



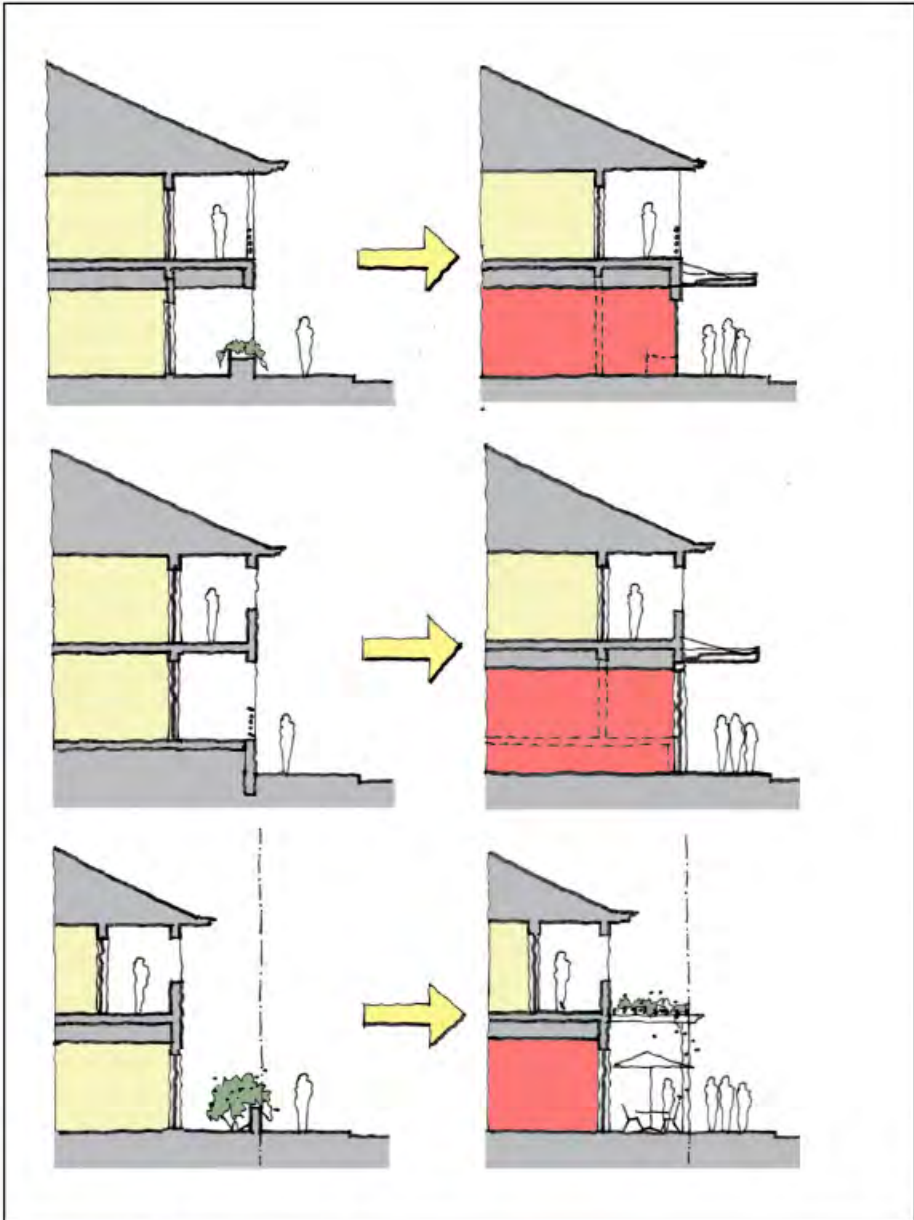
Indicative Development Plan (mixed-use - supporting information)



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**  
**Proposed Mixed Commercial Development (Neighbourhood Centre)**  
**Lot 622 (No.2) Aurea Boulevard, Golden Bay**  
**(20.2023.35.1)**

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 &amp; more bottle shops &amp; fast food outlets only serve to erode this way of life &amp; promote unhealthy &amp; 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	<p>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.</p>



**Schedule Of Submissions**  
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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.

**Schedule Of Submissions**  
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**(20.2023.35.1)**

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.

**Schedule Of Submissions**  
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**(20.2023.35.1)**

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.



**Schedule Of Submissions**  
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**(20.2023.35.1)**

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.

**Schedule Of Submissions**  
**Proposed Mixed Commercial Development (Neighbourhood Centre)**  
**Lot 622 (No.2) Aurea Boulevard, Golden Bay**  
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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><b>Lot 622 (No.2) Aurea Boulevard, Golden Bay</b></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"> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.</li> </ul> <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"> <li>• a service station (with convenience store) on the corner of Thundelarra Drive/Aurea Boulevard</li> <li>• two fast food outlets</li> <li>• a liquor store fronting Warnbro Sound Avenue and</li> </ul> <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 development's 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><b>A Supermarket</b></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><b>3 speciality shops?</b></p> <p>More details, please.....</p> <p><b>Service Station</b></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"> <li>- Light/general pollution</li> <li>- Delivery/Forecourt noise</li> <li>- Increased traffic</li> </ul> <p><b>Two fast food outlets</b></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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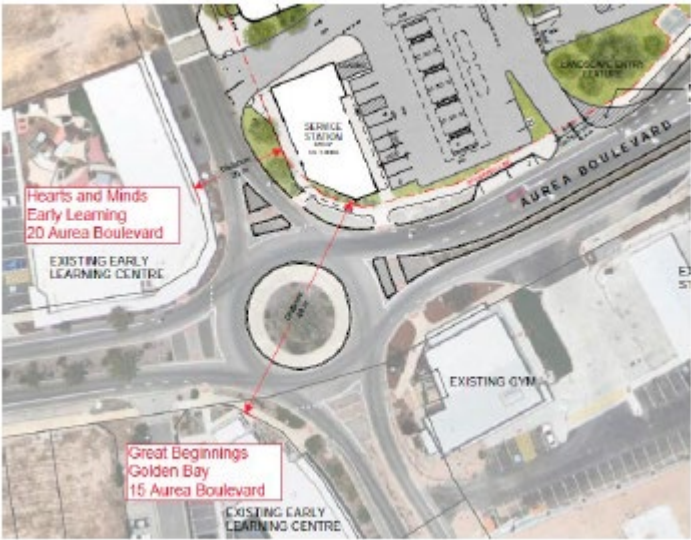
I think the local council and other planning/development authorities will ensure that this proposal will go ahead, we had two (yes, two), childcare centres built during the lockdown, and then a service station shortly afterwards, the construction noise was endless, and it has been in the area for more 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><b>1. Site Context</b></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><b>2. Applicant's Emissions Impact Statement</b></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 developments<sup>2</sup>, 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><b>Incorrect</b> – the childcare centres located at 15 and 20 Aurea Boulevard are the closest sensitive receivers.</p> <p>Emissions Impact Assessment – 4. Assessment Results &amp; 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><b>Incorrect</b> – 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><b>Incorrect</b> – 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"><li>• Spill and leak containment</li><li>• Segregation of dangerous goods</li><li>• Control of ignition sources in hazardous areas</li><li>• Control of hazardous substances that includes any gas, vapour, mist, fume or dust</li><li>• 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</li><li>• Underground storage or handling systems for petroleum products designed, installed, operated and maintained so they don't leak</li></ul></td></tr></table> <p><b>Incorrect</b> – 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><b>3. Conclusion</b></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. 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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"> <li>1. Its very close proximity to the two neighbouring daycare centres and a primary school.</li> <li>2. There already exists a 7-11 petrol station, so adding another one would double the vapour emissions and double the chances of spillages.</li> </ol> <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"> <li>- adverse health effects to residents and children in attendance at the two child care centres and one family day care within the buffer zone</li> <li>- there being far too much cammed onto the site</li> <li>- lack of Parking for the amenities onsite</li> <li>- traffic impacts backing up to the lights on Warnbro sound Ave</li> <li>- Smells from fast food</li> </ul> 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"> <li>- adverse health effects to residents and children in attendance at the two child care centres and one family day care within the buffer zone</li> <li>- there being far too much cammed onto the site</li> <li>- lack of Parking for the amenities onsite</li> <li>- traffic impacts backing up to the lights on Warnbro sound Ave</li> <li>- Smells from fast food</li> </ul> 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"> <li>- adverse health effects to residents and children in attendance at the two child care centres and one family day care within the buffer zone</li> <li>- there being far too much cammed onto the site</li> <li>- lack of Parking for the amenities onsite</li> <li>- traffic impacts backing up to the lights on Warnbro sound Ave</li> <li>- Smells from fast food</li> </ul> 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"> <li>- adverse health effects to residents and children in attendance at the two child care centres and one family day care within the buffer zone</li> <li>- there being far too much cammed onto the site</li> <li>- lack of Parking for the amenities onsite</li> <li>- traffic impacts backing up to the lights on Warnbro sound Ave</li> <li>- Smells from fast food</li> </ul> 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"> <li>- adverse health effects to residents and children in attendance at the two child care centres and one family day care within the buffer zone</li> <li>- there being far too much cammed onto the site</li> <li>- lack of Parking for the amenities onsite</li> <li>- traffic impacts backing up to the lights on Warnbro sound Ave</li> <li>- Smells from fast food</li> </ul> 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"> <li>- adverse health effects to residents and children in attendance at the two child care centres and one family day care within the buffer zone</li> <li>- there being far too much cammed onto the site</li> <li>- lack of Parking for the amenities onsite</li> <li>- traffic impacts backing up to the lights on Warnbro sound Ave</li> <li>- Smells from fast food</li> </ul> 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><b>Please see the attached letter.</b></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><b>Our interest in the application</b></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><b>Evidence to support our submission.</b></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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68. Mr Jeremy Shaw  Premix King Golden Bay Liquor Store	Unit 1, 19 Dampier Drive GOLDEN BAY WA 6174	<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"> <li>&gt; Potential for antisocial behaviour</li> <li>&gt; Food and waste pollution</li> <li>&gt; reduction of trade for existing business leading to a loss income for business and their staff</li> <li>&gt; Adversely affecting current local businesses that include liquor and food sales</li> <li>&gt; Vicinity of the proposed location being close to schools and childcare centres.</li> <li>&gt; The closeness of current liquor stores, fast food establishments and service stations</li> <li>&gt; Interruption of local traffic and parking issues</li> </ul>
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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"> <li>• A supermarket (1,162m2);</li> <li>• Three speciality shops located on Thundelarra Drive;</li> <li>• A service station (with convenience store) with 24 hour operation on the corner of Thundelarra Drive/Aurea Boulevard;</li> <li>• Two fast food outlets with 24 hour operation;</li> <li>• A small liquor store, with a drive-through component fronting Warnbro Sound Avenue; and</li> <li>• The development will be accessed by crossovers from Thundelarra Drive and Aurea Boulevard.</li> </ul> <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"> <li>• 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.</li> <li>• Provide a context for higher-density residential development that capitalises on proximity to local services.</li> </ul> <p>On reviewing available plans and information, <b>we do not support</b> the proposed development and our concerns primarily fall into environmental and urban design categories:</p> <ol style="list-style-type: none"> <li>1. Distance between sensitive land uses and a proposed 24 hour service station.</li> <li>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.</li> <li>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.</li> <li>4. Setback of the proposed liquor store on the northern boundary of the site does not comply with the requirements of the R-Codes.</li> <li>5. The proposed active frontages do not fully comply with the requirements for primary pedestrian entrances in the DAP.</li> <li>6. The corners of the proposed development facing: <ol style="list-style-type: none"> <li>a. Aurea Boulevard and Thundelarra Drive, and</li> <li>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.</li> </ol> </li> <li>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.</li> <li>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.</li> </ol> <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 Oudtschoorn	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"> <li>- 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.</li> <li>- there being far too much crammed onto the site</li> <li>- lack of Parking for the amenities onsite</li> <li>- traffic impacts backing up to the lights on Warnbro sound Ave</li> <li>- Smells from fast food, also the amount of rubbish that comes from the people using these services.</li> </ul> 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"> <li>- 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.</li> <li>- there being far too much crammed onto the site</li> </ul>

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		<ul style="list-style-type: none"> <li>- lack of Parking for the amenities onsite</li> <li>- traffic impacts backing up to the lights on Warnbro sound Ave</li> <li>- Smells from fast food, also the amount of rubbish that comes from the people using these services.</li> </ul> <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>



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SERVICINIG AUTHORITY SCHEDULE OF SUBMISSIONS		
Name	Address	Comment
<b>1. Simon Luscombe</b> Principal Planning Officer   Strategy and Engagement <b>Department of Planning, Lands and Heritage</b>	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 2,495m<sup>2</sup> of gross leasable area.</p> <p><b>Land Requirements</b></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><b>Access</b></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><b>Transport Impact Assessment (TIA)</b></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><b>Recommendation</b></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"> <li>• 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;</li> <li>• It is recommended that the City verify the acceptability of submitted swept path movement drawings at Appendix C: 'Turn Path Analysis';</li> <li>• 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.</li> <li>• Fast food outlets with drive through window, 525m<sup>2</sup> = 186 PM trips</li> <li>• Liquor store, 230m<sup>2</sup> = 41 PM trips</li> <li>• Supermarket, 1,165m<sup>2</sup> = 112 PM trips</li> <li>• Specialty shops, 255m<sup>2</sup> = 17 PM trips</li> <li>• Service station with 8 filling points = 147 PM trips</li> </ul> <p style="text-align: right;">Total: 503 PM peak hour trips</p>
<b>2. Aaron Pittard (he/him)</b> 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>

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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.
<b>3. Dr Michael Lindsay</b> Executive Director Environmental Health Directorate <b>Department of Health</b>	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><b>1. Water Supply and Wastewater Disposal</b></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><b>2. Public Health Impacts</b></p> <p>The DoH is concerned about the short distance between the proposed service station and two existing child-care centres (&lt;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><b>3. Food Act Requirements</b></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: <a href="https://www.health.wa.gov.au/starting-a-food-business-in-wa">Starting a food business in WA (health.wa.gov.au)</a></p> <p><b>4. Medical Entomology</b></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"> <li>• The extent of risk from mosquitoes and mosquito-borne disease relevant to the subject land be determined</li> <li>• A mosquito management plan (MMP) be considered for the area or adapt an existing plan. For further information on development a MMP please visit: <a href="https://www.health.wa.gov.au/mosquito-management">Mosquito management (health.wa.gov.au)</a></li> <li>• Adequately resources effective mosquito management in the area. This involved ensuring sufficient resources and funding</li> </ul>

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		<p>mechanisms are available for ongoing mosquito management in surrounding wetlands</p> <ul style="list-style-type: none"><li>• 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</li><li>• Ensure proposed infrastructure and site works do not create additional onsite mosquito breeding habitat</li></ul>
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<p><b>4. Jane Sturgess</b>  Planning Advice - Kwinana Peel Region  <b>Department of Water and Environmental Regulation</b></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><b>Issue</b>  Noise Management Plan</p> <p><b>Advice</b>  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><b>Issue</b>  Drainage</p> <p><b>Recommendation</b>  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><b>Issue</b>  Water quality protection measures</p> <p><b>Recommendation</b>  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"> <li>• As described above, a Stormwater Management Plan is to be completed to the satisfaction of the City of Rockingham.</li> <li>• 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.</li> <li>• 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.</li> <li>• Further details in relation to design capacity requirements of the petrol and oil separators.</li> </ul> <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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<b>5. Jon Palfreyman Department of Mines Industry Regulation and Safety</b>	Level 2, 1 Adelaide Terrace EAST PERTH WA 6004	(The proposed Service Station will require licensing)
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**Lot 622 (No.2) Aurea Boulevard, Golden Bay**  
**(20.2023.35.1)**

<p><b>6. Sharnie Stuart</b>  Senior Consultant – Land Planning Asset Planning and Services  <b>Department of Education</b></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><b>Incompatible land uses</b>  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><b>Fast-food Outlets</b>  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><b>Service Station</b>  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><b>Liquor shop</b>  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)**  
**Lot 622 (No.2) Aurea Boulevard, Golden Bay**  
**(20.2023.35.1)**

<b>7. Michelle Doherty</b> Planning Assessment Officer Office of Managing Director <b>Main Roads WA</b>	Level 2, 2 Victoria Avenue PERTH WA 6000	<b>Preliminary Response –</b> 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 consider 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 condition 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 an 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 pollutants 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 it's criterion, given it has the most stringent criteria, is the 1-hour average concentrations of benzene.

The maximum (100<sup>th</sup> 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
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## References

- ATSDR. (2007). *Toxicological Profile for Benzene*. Atlanta, Georgia: Agency for Toxic Substances and Disease Registry.
- DWER. (2019). *Guideline: Air Emissions (Draft)*. Perth: Department of Water and Environmental Regulation.
- EPAV. (2022). *Publication 1961 Guideline for assessing and minimising air pollution in Victoria*. Melbourne.
- NEPC. (2011). *National Environmental Protection (Air Toxics) Measure*. Canberra: National Environment Protection Council.
- NSW EPA. (2016). *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales 2016*. NSW Environment Protection Authority.
- NSW EPA. (2022, August). *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*.
- TCEQ. (2022, March 16). *Air Monitoring Comparison Values*. Retrieved from Texas Commission on Environmental Quality: [https://www.tceq.texas.gov/cgi-bin/compliance/monops/agc\\_amcvs.pl](https://www.tceq.texas.gov/cgi-bin/compliance/monops/agc_amcvs.pl)
- Victorian Government. (2001, December 21). *State Environment Protection Policy (Air Quality Management)*. Melbourne, Vic, Australia: Victoria Government Gazette.



## Planning and Development Services Statutory Planning Services



<b>Reference No &amp; Subject:</b>	<b>PD-026/23</b> <b>Joint Development Assessment Panel Application - Proposed Mixed Commercial Development (Golden Bay Neighbourhood Centre)</b>
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"> <li>1. Responsible Authority Report</li> <li>2. Schedule of Submissions</li> </ol>
Maps/Diagrams:	<ol style="list-style-type: none"> <li>1. Location Plan</li> <li>2. Aerial Plan</li> <li>3. Golden Bay Structure Plan (2021)</li> <li>4. Previous Development Approval (June 2016)</li> <li>5. Golden Bay Neighbourhood Centre LDP (2022)</li> <li>6. Photographs Showing Site Context</li> <li>7. Proposed Site Plan</li> <li>8. Elevation Plans</li> <li>9-10. Perspectives</li> <li>11. Landscape Concept</li> <li>12. Mall Concept</li> <li>13. Submission Response Map</li> <li>14. Location of Acoustic Wall along Wyloo Lane</li> <li>15. EPA Guidance Statement No.3 - Separation Distance</li> </ol>

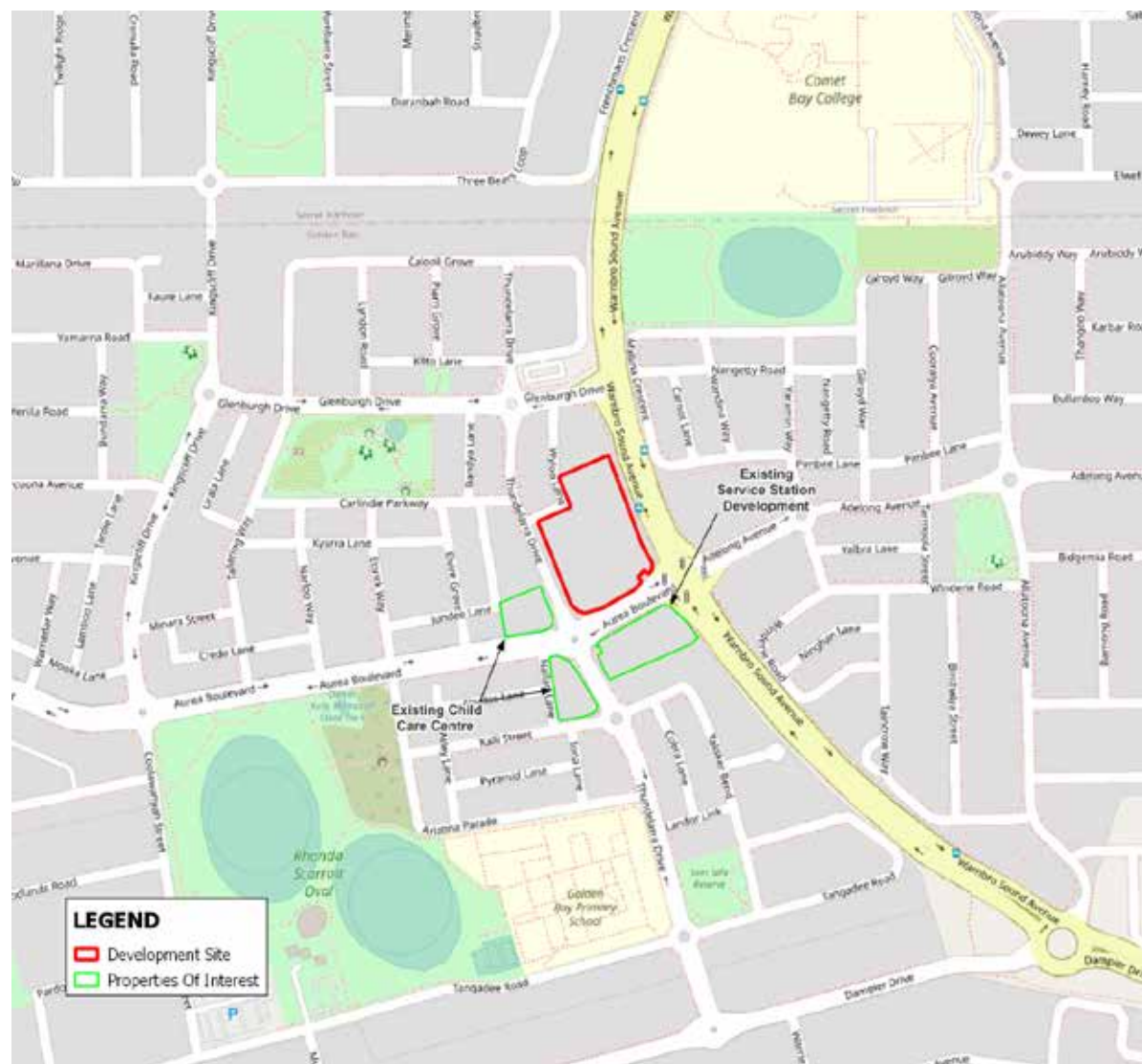
**Maps/Diagrams:**

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 3,240m<sup>2</sup> 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)







## 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:

- 1,165m<sup>2</sup> Supermarket fronting Thundelarra Drive.
- 3 x 'specialty retail' Shops with total 263m<sup>2</sup> floorspace fronting a 'mall', which links Thundelarra Drive and the carpark behind the Supermarket.
- 2 x freestanding Fast Food Outlets (260m<sup>2</sup> and 265m<sup>2</sup>), with drive-through facilities adjacent to Warnbro Sound Avenue.
- 230m<sup>2</sup> freestanding Liquor Store, with back-of-house and drive-through fronting Warnbro Sound Avenue.
- 305m<sup>2</sup> 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).

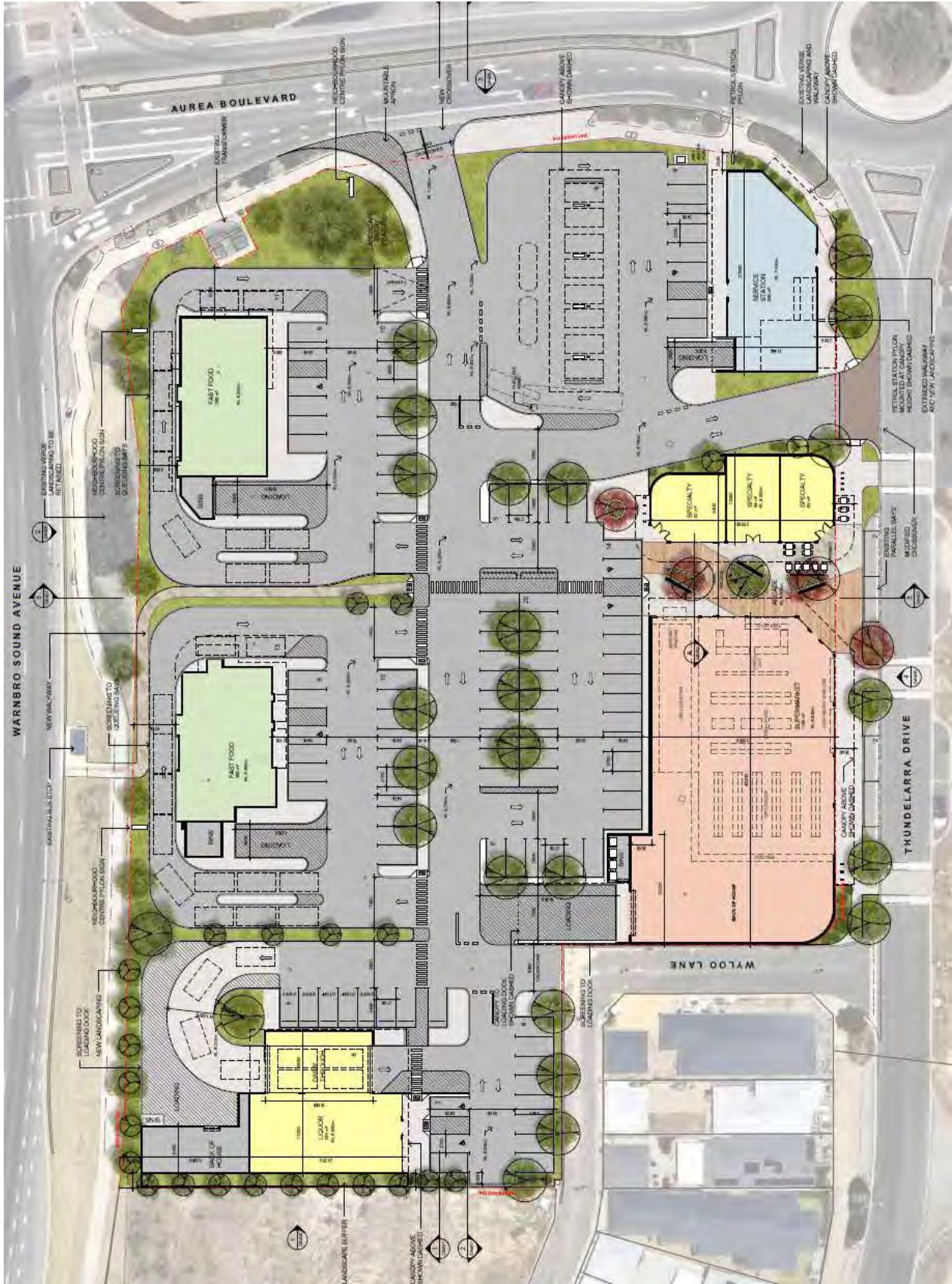
Pre and Post Lodgement Engagement with Applicant:

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:

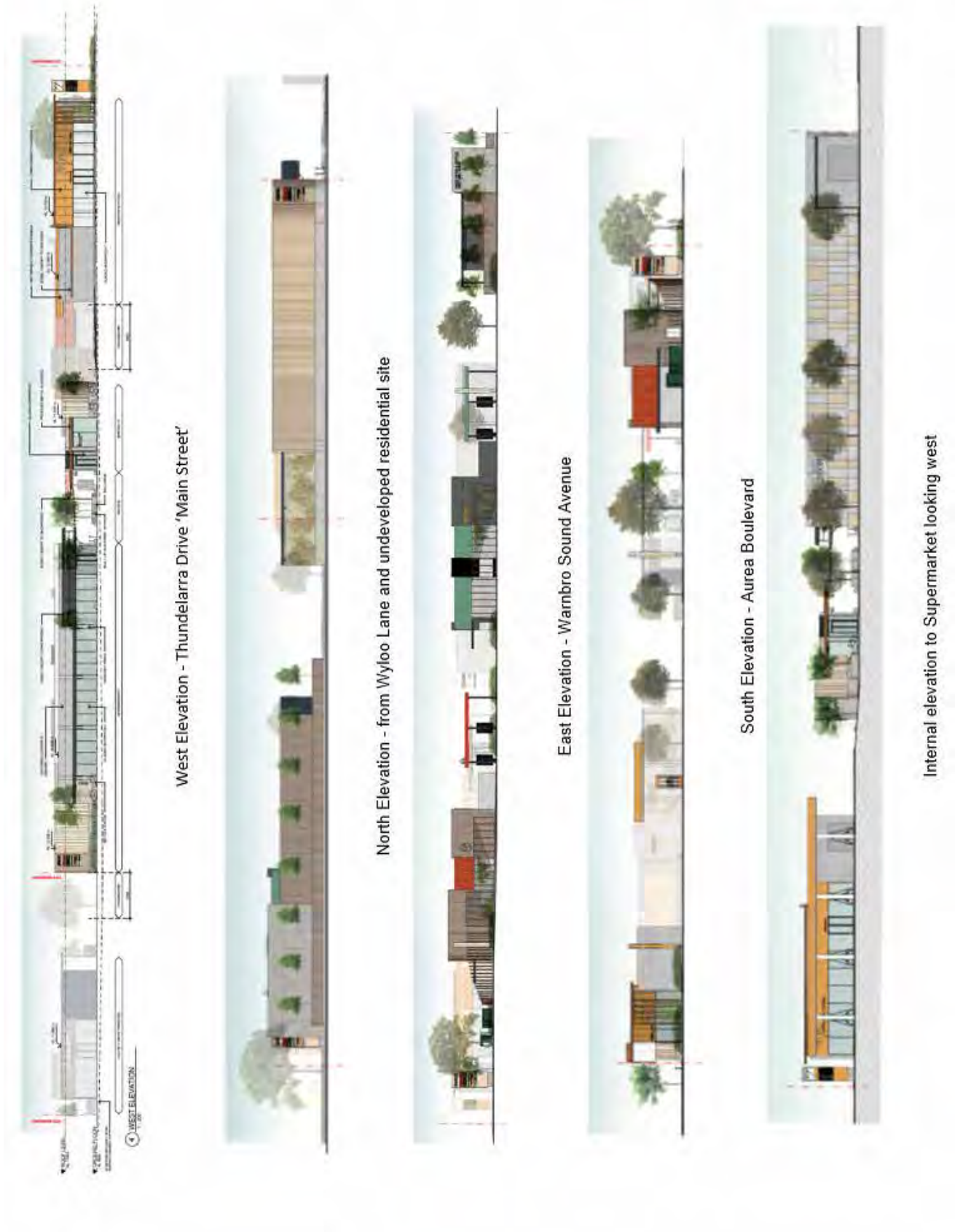
- Consider providing a wider mall (originally proposed at 7.6m), and cross section, to facilitate greater level of use and activity, light penetration and landscaping.
- Provide an internal layout for the Supermarket and notation on plans to ensure windows remain unscreened by advertising, shutters or 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





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





12. Mall 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.

<b>Proliferation of Uses/Need</b>
<p><b><u>Submission:</u></b></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><b><u>Applicant's Response:</u></b></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><b><u>City's Response:</u></b></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>
<b>Health Impact</b>
<p><b><u>Submission:</u></b></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"><li>• 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.</li><li>• Concerns about odour from the Fast Food Outlets.</li><li>• Concerns about the potential health impacts resulting from two Fast Food Outlets in close proximity to a School and Child Care Centres.</li><li>• Concerns about the number of liquor outlets in the area.</li></ul>
<p><b><u>Applicant's Response:</u></b></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 (2499m<sup>2</sup> NLA as opposed to 3240m<sup>2</sup> 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><b><u>City's Response:</u></b></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><b><u>Submission:</u></b></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><b><u>Applicant's Response:</u></b></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><b><u>City's Response:</u></b></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><b><u>Submission:</u></b></p> <p>Concerns were raised about increased levels of rubbish generated by the Fast Food and Service Station uses.</p>
<p><b><u>Applicant's Response:</u></b></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><b><u>City's Response:</u></b></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><b><u>Submission:</u></b></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><b><u>Applicant's Response:</u></b></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><b><u>City's Response:</u></b></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>



<b>Anti-social Behaviour (cont...)</b>
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.
<b>Light-spill</b>
<b><u>Submission:</u></b> Concern was raised about light spill, and operational and customer noise impacting on the amenity of nearby residents as a result of the proposal.
<b><u>Applicant's Response:</u></b> <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>
<b><u>City's Response:</u></b> 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.
<b>Community Benefit</b>
<b><u>Submission:</u></b> Concern was raised that the proposal does not result in an overall community benefit.
<b><u>Applicant's Response:</u></b> <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>
<b><u>City's Response:</u></b> 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.
<b>Alternative Land Uses</b>
<b><u>Submission:</u></b> 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.
<b><u>Applicant's Response:</u></b> <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...)
<b><u>Applicant's Response:</u></b> Nil
<b><u>City's Response:</u></b> 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.
Department of Education (EDWA)
<b><u>Submission:</u></b> <ul style="list-style-type: none"><li>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.</li><li>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.</li><li>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).</li><li>The Liquor Store is unlikely to adversely impact the occupants of the School site.</li><li>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.</li></ul>
<b><u>Applicant's Response:</u></b> Nil
<b><u>City's Response:</u></b> 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. 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. As noted by DoE, the School site is outside the 200m generic buffer identified in GS3.
Department of Health (DoH)
<b><u>Submission:</u></b> <ul style="list-style-type: none"><li>The development is required to be connected to Scheme water and reticulated sewerage.</li><li>Concerned about short distance between the proposed Service Station and two existing child-care centres (&lt;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:</li></ul>



**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 5,000m<sup>2</sup> 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.

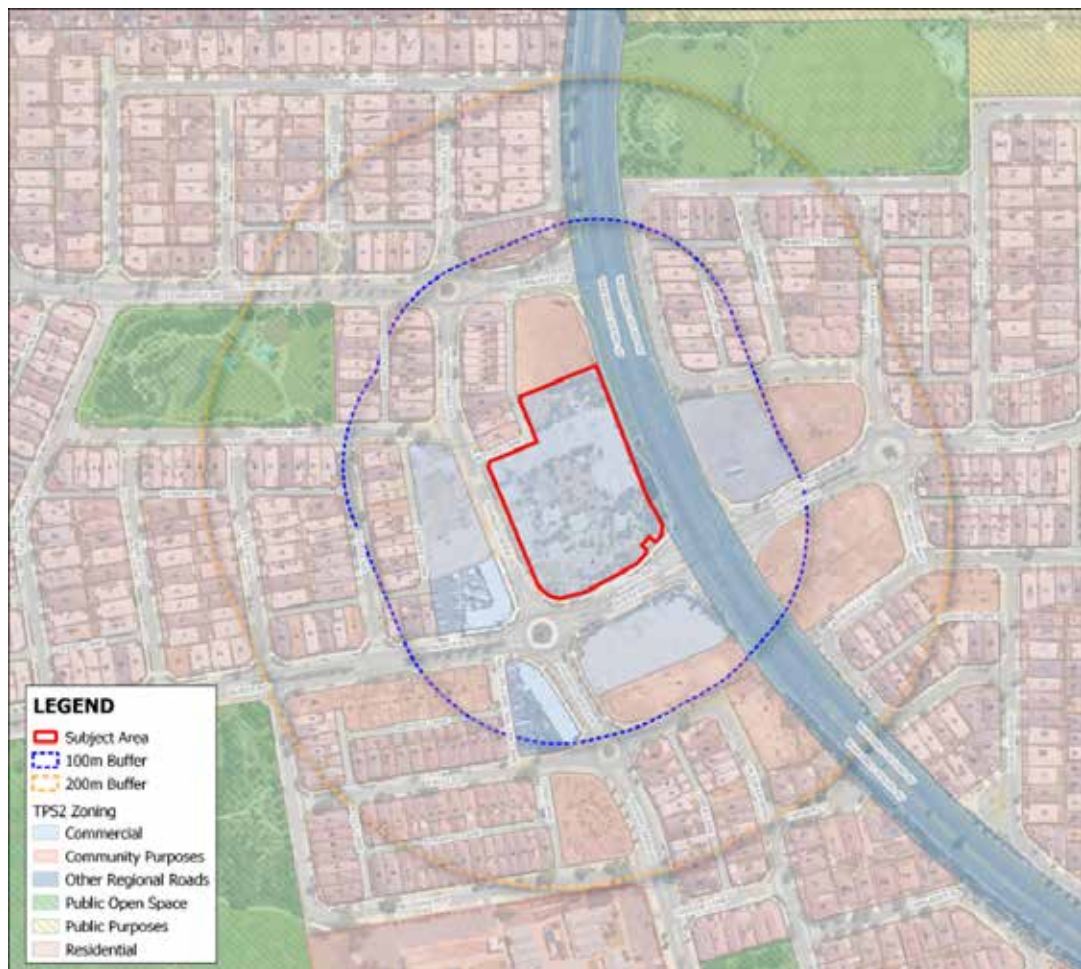
Environmental Protection Authority (EPA) Guidance Statement No.3 (GS3)

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 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. 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 3,240m<sup>2</sup>. The NLA of the proposed development is lower at 2,488m<sup>2</sup>.

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.

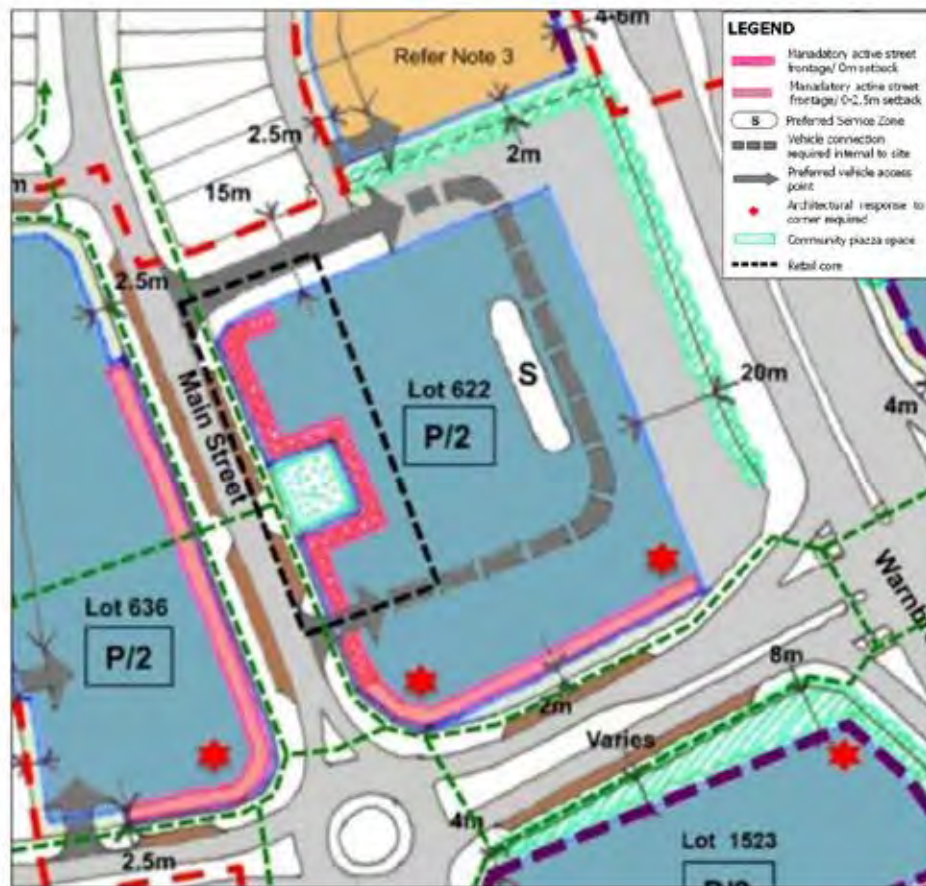
**d. Financial**

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.



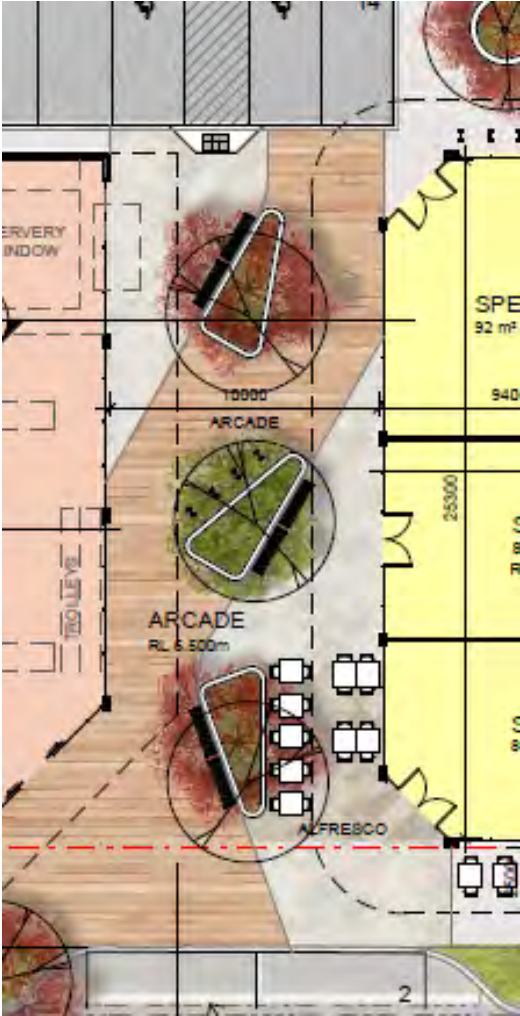
16. Golden Bay Neighbourhood Centre LDP (Extract)

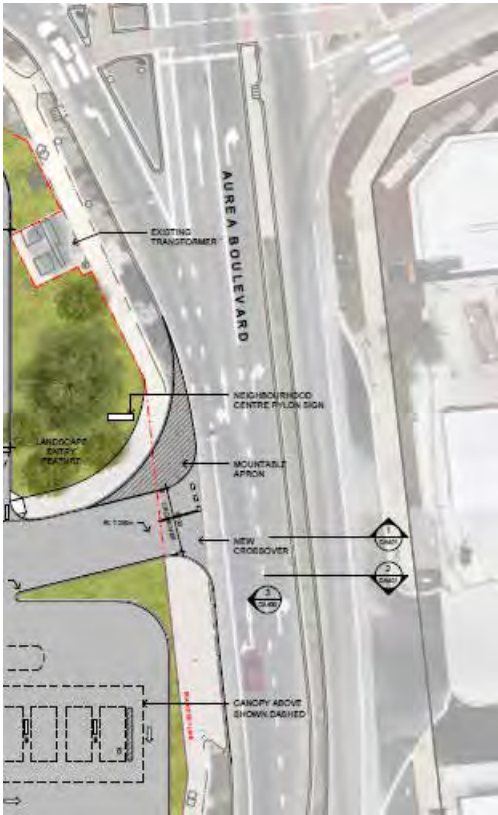
The following Table sets out only those aspects of the proposal which are inconsistent with the elements of the LDP:

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
	<div></div> <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"><li>• 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;</li><li>• 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;</li><li>• Swept path analysis has identified concerns in a number of locations throughout the development;</li><li>• Design of blind aisles and inadequate turnaround in the vicinity of the Liquor Store has been identified;</li><li>• The need for a pedestrian refuge within the Thundelarra Drive crossover given its 9m width; and</li><li>• General concerns about the accuracy of the modelling and associated assumptions, resulting in the TIA outcomes being considered unreliable.</li></ul> <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 <sup>2</sup>	6/100m <sup>2</sup> NLA	99.48 bays
Fast Food	525m <sup>2</sup>	1/11m <sup>2</sup> NLA	47.7 bays
Service Station	305m <sup>2</sup> + 8 service bays and 2 employees	6/100m <sup>2</sup> NLA 1/service bay 1/employee	28.3 bays
Total Proposed NLA	2,488m <sup>2</sup>		
Total Required			175.48 bays
Provided			148 bays
<b>Parking balance</b>			<b>-27.48 bays (shortfall)</b>

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/100m<sup>2</sup> 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 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/m<sup>2</sup>. 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/m<sup>2</sup> 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:

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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





## PART C – OTHER BUSINESS

### 1. State Administrative Tribunal Applications and Supreme Court Appeals

The DAP notes the status of the following State Administrative Tribunal Applications and Supreme Court Appeals:

Current SAT Applications				
File No. & SAT DR No.	LG Name	Property Location	Application Description	Date Lodged
DR75/2022 DAP/18/01543	City of Joondalup	Portion of 9040 (34) Kallatina Drive, Iluka	Mixed Commercial Centre (Iluka Plaza)	02/05/2022
DR169/2023 DAP/23/02486	City of Swan	Lot 1 (No.9) Waterhall Road, South Guildford	Child Care Premises	13/11/2023
DR175/2023 DAP/22/02166	City of Joondalup	1 Lyell Grove (Lot 2), Woodvale	Child Care Premises	30/11/2023
DR179/2023 DAP/22/02358	Shire of Serpentine Jarrahdale	Lot 806 South Western Highway, Byford	Proposed Showroom and Fast Food/Takeaway Development	4/12/2023
DR193/2023 DAP/23/02545	Shire of Serpentine Jarrahdale	575 (Lot 218) Abernethy Road, Oakford	Proposed Educational Establishment	19/12/2023

Current Supreme Court Appeals				
File No.	LG Name	Property Location	Application Description	Date Lodged
DAP/23/02496 CIV 2251 of 2023	City of Swan	Lot 2 & 67 (No.163) and Lot 18 (No.159) James Street, Guildford	Proposed redevelopment of Vaudeville Theatre	03/11/2023

### 2. General Business

### 3. Meeting Closure

In accordance with Section 7.3 of the DAP Standing Orders 2024 a DAP member must not publicly comment on any action or determination of a DAP.