# Metro Outer Joint Development Assessment Panel Agenda

**Meeting Date and Time:** Thursday, 6 April 2023; 9:30am
**Meeting Number:** MOJDAP/238
**Meeting Venue:** Electronic Means

**To connect to the meeting via your computer - https://us06web.zoom.us/j/85068625367**

**To connect to the meeting via teleconference dial the following phone number - +61 8 6119 3900**
**Insert Meeting ID followed by the hash (#) key when prompted - 850 6862 5367**

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

## 1 Table of Contents

**Attendance**

**DAP Members**

Mr Eugene Koltasz (Presiding Member)
Ms Karen Hyde (Deputy Presiding Member)
Mr Jason Hick (Third Specialist Member)

*Item 8.1*
Cr Lorna Buchan (Local Government Member, City of Rockingham)
Cr Mark Jones (Local Government Member, City of Rockingham)

*Item 8.2 & 8.3*
Cr Frank Cvitan (Local Government Member, City of Wanneroo)
Cr Vinh Nguyen (Local Government Member, City of Wanneroo)

**Officers in attendance**

*Item 8.1*
Mr Mike Ross (City of Rockingham)
Mr David Waller (City of Rockingham)

*Item 8.2*
Mr Greg Bowering (City of Wanneroo)
Miss Xin Xu (City of Wanneroo)

*Item 8.3*
Mr Greg Bowering (City of Wanneroo)
Mr Dawie Jansen van Rensburg (City of Wanneroo)

**Minute Secretary**

Mr Stephen Haimes (DAP Secretariat)

**Applicants and Submitters**

*Item 8.1 & 8.2*
Mr Alessandro Stagno (Apex Planning)

*Item 8.3*
Mr Ben Carter (Pinnacle Planning)

**Members of the Public / Media**

Nil.

## 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 conducted by electronic means (Zoom) open to the public. 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.

## 5. Declarations of Due Consideration

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

## 6. Disclosure of Interests

Nil.

## 7. Deputations and Presentations

**7.1** Mr Alessandro Stagno (Apex Planning) presenting in support of the recommendation for the application at Item 8.1. The presentation will address support for officer recommendation and request the Panel approve the proposed development.

**7.2** Mr Alessandro Stagno (Apex Planning) presenting in support of the recommendation for the application at Item 8.2. The presentation will address support for officer recommendation.

**7.3** Mr Ben Carter (Pinnacle Planning) presenting in support of the recommendation for the application at Item 8.3. The presentation will address support for proposal and confirmation around precursory land tenure and road construction.

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

## 8. Form 1 – Responsible Authority Reports – DAP Applications

### 8.1 Lot 1 (No.1) Rae Road & Lot 2 (No.172) Safety Bay Road, Shoalwater

| | |
|---|---|
| Development Description: | Proposed Child Care Premises |
| Applicant: | Apex Planning |
| Owner: | Cedarbay Investments Pty Ltd/ Southerly Ocean Pty Ltd |
| Responsible Authority: | City of Rockingham |
| DAP File No: | DAP/22/02383 |

### 8.2 No.121 (Lot 2812) Exmouth Drive, Butler

| | |
|---|---|
| Development Description: | Child Care Centre |
| Applicant: | Apex Planning |
| Owner: | Fabcot Pty Ltd |
| Responsible Authority: | City of Wanneroo |
| DAP File No: | DAP/22/02339 |

### 8.3 500 (Lot 9047) Maritime Drive, Jindalee

| | |
|---|---|
| Development Description: | Multiple Dwellings (33 Units), Holiday Accommodation (14 Units) and Restaurant |
| Applicant: | Pinnacle Planning |
| Owner: | Linic Group Jindalee Pty Ltd |
| Responsible Authority: | City of Wanneroo |
| DAP File No: | DAP/22/02391 |

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

Nil.

## 10. State Administrative Tribunal Applications and Supreme Court Appeals

| Current SAT Applications | | | | |
|---|---|---|---|---|
| **File No. & SAT DR No.** | **LG Name** | **Property Location** | **Application Description** | **Date Lodged** |
| DAP/18/01543 DR 75/2022 | City of Joondalup | Lot 649 (98) O'Mara Boulevard, Iluka | Commercial development | 02/05/2022 |
| DAP/22/02159 DR163/2022 | Shire of Murray | No. 630 (Lot 137) Pinjarra Road, Furnissdale | Proposed Petrol Filling Station | 28/09/2022 |
| DAP/21/02036 DR236/2022 | City of Swan | Lot 97 (31) & 817 (47) Lakes Road, Hazelmere | Proposed Construction of a Logistics Depot with Ancillary Office Area | 23/12/2022 |

## 11. General Business

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

## 12. Meeting Closure

Government of **Western Australia**
Development Assessment Panels

# Presentation Request Form

Regulation 40(3) and DAP Standing Orders 2020 cl. 3.5

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

## Presentation Request Guidelines

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

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

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

## Presenter Details

| | |
|---|---|
| Name | Alessandro Stagno |
| Company (if applicable) | Apex Planning |
| Please identify if you have any special requirements: | **YES** ☐ **NO** ☒<br>If yes, please state any accessibility or special requirements:<br>Click or tap here to enter text. |

## Meeting Details

| | |
|---|---|
| DAP Name | Metro Outer Joint Development Assessment Panel |
| Meeting Date | 6 April 2023 |
| DAP Application Number | DAP/22/02383 |
| Property Location | Lot 1 (No.1) Rae Road & Lot 2 (No.172) Safety Bay Road, Shoalwater |
| Agenda Item Number | 8.1 |

## Presentation Details

| | |
|---|---|
| I have read the contents of the report contained in the Agenda and note that my presentation content will be published as part of the Agenda: | **YES** ☒ |
| Is the presentation in support of or against the report recommendation)? *(contained within the Agenda)* | **SUPPORT** ☒ **AGAINST** ☐ |
| Is the presentation in support of or against the proposed development? | **SUPPORT** ☒ **AGAINST** ☐ |
| Will the presentation require power-point facilities? | **YES** ☐ **NO** ☒<br>**If yes, please attach** |

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Development Assessment Panels

**Presentation Content***

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

| | |
|---|---|
| Brief sentence summary for inclusion on the Agenda | *The presentation will address:*<br>Support for **officer recommendation** and request the Panel approve the proposed development. |

In accordance with Clause 3.5.2 of the *DAP Standing Orders*, your presentation request must also be accompanied with a written document detailing the content of your presentation.

*Please attach detailed content of presentation or provide below:*

Please refer to attached submission.

apex
planning

# Submission to DAP

| | | | |
|---|---|---|---|
| **From:** | Alessandro Stagno | **Date:** | 3 April 2023 |
| **Subject:** | Agenda item 8.1 – MOJDAP/238 – proposed child care premises<br>Lot 1 (1) Rae Road & Lot 2 (172) Safety Bay Road, Shoalwater | | |

Apex Planning is the applicant of the child care facility proposed at the corner of Rae Road and Safety Bay Road in Shoalwater.

The proposal seeks approval for a child care premises on land which is zoned for commercial purposes under the City of Rockingham's Town Planning Scheme No.2 (**TPS2**). The site forms part of a small commercial precinct comprised of several lots zoned Commercial.

The 'responsible authority' recommendation in the RAR requests the Panel to defer this application, pending the provision of a 'needs assessment' to evidence the demand for child care services. This recommendation is not supported by the applicant and is considered to be problematic from a statutory planning point of view, as it relates to market competition / demand considerations.

The City's planning staff has undertaken an expert assessment of the development proposal against the applicable planning framework, and concluded that the application is worthy of **approval**. An 'officer recommendation' is provided in the RAR which recommends the application be **approved**, subject to conditions. This recommendation is supported.

The RAR contains a comprehensive assessment of this development proposal, giving proper consideration to its planning merits based on:

- The design approach of the facility being generally consistent with the principles of *State Planning Policy 7.0 Design of the Built Environment*.
- Traffic and access considerations confirmed to be appropriate, having regard for the detailed traffic assessments produced in support of the application.
- Potential amenity impacts appropriately managed through a responsive layout and acoustic attenuation measures incorporated into the proposal.
- Compliance with key scheme and policy standards, including the appropriateness of locating a child care premises on land zoned for commercial purposes (noting this is identified as a 'preferred' location under the City's Child Care Premises Policy).

The RAR concludes that no needs assessment is required for the subject proposal, given it complies with all other relevant scheme and policy standards and noting the site's location within a small commercial precinct. The applicant agrees with this conclusion.

It is relevant to highlight that appropriate due diligence was carried out by the operator and proponent at the start of the project, which considered whether it would be viable for a child care premises to be established in this location. If the centre would not be viable, an application would not have been made for development approval.

With the above considered, it is appropriate for the Panel to grant **approval** in accordance with the officer recommendation put forward by the City of Rockingham's planning department. I look forward to presenting in support of this proposal on Thursday 6th April, and will be pleased to respond to any questions from the Panel.

**ALESSANDRO STAGNO**
**APEX PLANNING**

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Development Assessment Panels

# Presentation Request Form

Regulation 40(3) and DAP Standing Orders 2020 cl. 3.5

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

## Presenter Details

| | |
|---|---|
| Name | Alessandro Stagno |
| Company (if applicable) | Apex Planning |
| Please identify if you have any special requirements: | **YES** ☐ **NO** ☒<br>If yes, please state any accessibility or special requirements:<br>Click or tap here to enter text. |

## Meeting Details

| | |
|---|---|
| DAP Name | Metro Outer JDAP |
| Meeting Date | 6 April 2023 |
| DAP Application Number | DAP/22/02339 |
| Property Location | Lot 2812 (121) Exmouth Drive, Butler |
| Agenda Item Number | 8.2 |

## Presentation Details

| | |
|---|---|
| I have read the contents of the report contained in the Agenda and note that my presentation content will be published as part of the Agenda: | **YES** ☒ |
| Is the presentation in support of or against the report recommendation)? *(contained within the Agenda)* | **SUPPORT** ☒ **AGAINST** ☐ |
| Is the presentation in support of or against the proposed development? | **SUPPORT** ☒ **AGAINST** ☐ |
| Will the presentation require power-point facilities? | **YES** ☒ **NO** ☐<br>**If yes, please attach** |

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Development Assessment Panels

**Presentation Content***

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

| | |
|---|---|
| Brief sentence summary for inclusion on the Agenda | *The presentation will address:*<br>Support for officer recommendation |

In accordance with Clause 3.5.2 of the *DAP Standing Orders*, your presentation request must also be accompanied with a written document detailing the content of your presentation.

*Please attach detailed content of presentation or provide below:*

Please refer to attached submission and powerpoint slides.

apex planning

# Submission to DAP

| | | | |
|---|---|---|---|
| **From:** | Alessandro Stagno | **Date:** | 3 April 2023 |
| **Subject:** | Agenda item 8.2 – MOJDAP/238 – proposed child care premises<br>Lot 2812 (121) Exmouth Drive, Butler (**development site**) | | |

Apex Planning is the applicant of the child care facility proposed at the development site.

We are pleased that the proposed development is recommended for **approval**. We have carefully reviewed the 'responsible authority' recommendation and are satisfied with the recommended conditions.

The RAR prepared by City of Wanneroo provides comprehensive consideration of the site characteristics and applicable planning controls, explaining why this development should be **approved**. The amenity of the local area will be enhanced by a well-designed and highly accessible child care centre, encouraging alternate modes of transport and opportunities for multi-use trips. This centre is an exemplar of childcare in a transit oriented context.

The following note offers a concise summary of the proposal and key site considerations.

## 1 SITE LOCATION AND CHARACTERISTICS

Lot 2812 (the development site) is a triangular lot within the 'core' of the Butler District Centre. The site is adjacent to Butler station and Butler Central shopping centre. Refer to **Figure 1:**


**Figure 1**

Lot 2812 is essentially landlocked. The site has a 4.4m wide frontage to Exmouth Drive (eastern side) and adjoins privately owned land at each other frontage. Lot 2811 (the Butler Central site) is shaded in blue to highlight its relationship with Lot 2812.

Relevantly, the area encompassing Lot 2811 includes Clipstone Parkway (and its verges) and the shopping centre car park. The background to the creation of Lot 2812 is explained on Page 6 of the RAR, recognising that the lot was created with the underlying intent to utilise shared accessways and parking on Lot 2811.

As outlined on Pages 10-11 and Attachment 6 of the RAR, legal right of carriageway exists within the accessway and parking areas of Lot 2811 affording the *"full and free right, liberty, power and authority"* to Lot 2812 to utilise these areas for the purpose of access and parking.

## 2 SUMMARY OF DEVELOPMENT PROPOSAL

The proposed site plan is provided as **Figure 2** below (again with Lot 2811 shaded in blue), with a dot point summary of how the proposal responds to Lot 2812:


- An 'L' shaped building addressing Clipstone Parkway and the southern parking bays in Lot 2811, creating a 'landmark' response to both corner frontages. The layout opens the internal and outdoor areas to the north for optimised access to light, which is a high quality design outcome. Whilst the irregular shape of Lot 2812 would be constraining for most land uses, it is advantageous for a childcare facility. The design approach was **supported** by the City's Design Review Panel as confirmed on Page 8 of the RAR.
- Entry at the south-western corner of the building, with a walkway facing parking bays along the south. A parking assessment is provided at Page 10-11 of the RAR which demonstrates acceptable parking arrangements for the facility, recognising its transit-oriented / activity centre location creates significant parking advantages.
- Pedestrian walkways along the southern and western frontages of the site, which connect to the existing footpath network of the area. The pathway connections provide linkages to Butler train station, Butler Central, and the wider locality.

In relation to the third dot point above, discussion is provided in the RAR (Page 12) in relation to pedestrian accessibility. Patrons would either access the facility via a connection to Clipstone Parkway (west) or the pathway connection to Exmouth Drive (east).

The RAR recognises this arrangement is the best option available, due to an inability to obtain consent from the landowner of Lot 2811 to establish footpath connections closer to the entrance. The proponent worked with the owner of Lot 2811 for a considerable period time but no consent to make alterations within this privately owned lot was obtained.

The operator of the facility is comfortable with the arrangements. The relatively indirect connectivity from the southern car park simply equates to a diminished level of convenience. It is confirmed in the RAR that the pedestrian arrangements would not unreasonably impact the functionality of the child care facility and warrant support and approval.

## 3 CONCLUSION

The development proposal before the Metro Outer JDAP seeks approval for a child care facility within a transit oriented / urban core location. This centre is an exemplar of childcare in a transit oriented context.

The facility is designed in response to the site's triangular shape, providing a suitable landmark response to both corner frontages of Clipstone Parkway and an attractively designed building which will contribute positively to the local area. The design approach was supported by the City's Design Review Panel.

The City of Wanneroo has recommended the development be **approved**, concluding that the child care facility is appropriate for this location and will complement the Butler District Centre.

I look forward to presenting in support of this proposal on Thursday 6th April, and will be pleased to respond to any questions from the Panel.

**ALESSANDRO STAGNO**
**APEX PLANNING**

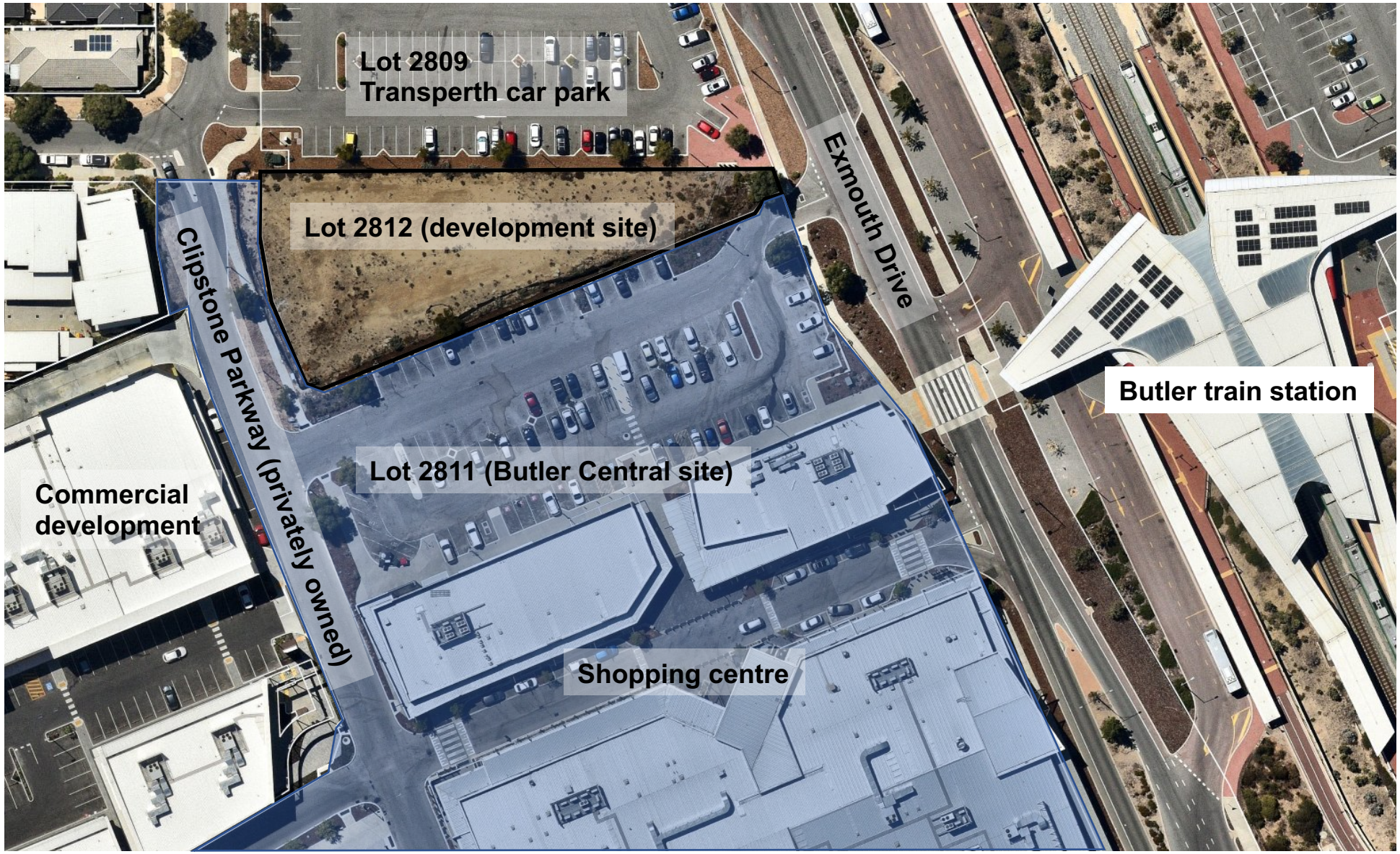
# Nido Early School

Lot 2812 (121) Exmouth Drive, Butler


apex
planning

# Site context

- Activity centre core / train station precinct
- Walkable catchment of Butler station, shopping centre, various car parks
- Irregularly shaped site with essentially no public road frontage
- Clipstone Parkway adjoining site is privately owned (part of Lot 2811)
- Right of carriageway exists over Clipstone Parkway and shopping centre car park



# Site plan

- Responsive building layout addressing both corner frontages of Clipstone Parkway
- Articulated building form supported by the Design Review Panel
- The building and outdoor area are open to the north with optimised access to light
- Walkways along southern and western frontages linking to existing footpath network
- Solar panels and pop up light wells on roof

# Internal layout

- Highly functional and interconnected layout
- Feature piazza linking to playscape
- Internal activity spaces directly connected to playscape
- Building entrance covered and linked to walkway canopy
- Significant provision of windows along all elevations
- Window shrouds along western frontage to reduce heat gain but allow access to light

# Recommendation for approval

- Appropriate location within a transit oriented / activity centre context
- High quality design **supported** by the City's Design Review Panel
- Complementary to other uses in the locality
- Creates opportunities for multi use trips and transit options for commuting parents using the train station or high frequency bus interchange
- Responsive parking arrangements consistent with how this type of facility should operate in a transit oriented context
- Will contribute toward a vibrant and connected District Centre

Government of **Western Australia**
Development Assessment Panels

# Presentation Request Form

Regulation 40(3) and DAP Standing Orders 2020 cl. 3.5

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

## Presenter Details

| | |
|---|---|
| Name | Ben Carter |
| Company (if applicable) | Pinnacle Planning |
| Please identify if you have any special requirements: | **YES** ☐ **NO** ☒<br>If yes, please state any accessibility or special requirements:<br>Click or tap here to enter text. |

## Meeting Details

| | |
|---|---|
| DAP Name | Metro Outer Joint Development Assessment Panel |
| Meeting Date | 6 April 2023 |
| DAP Application Number | DAP/22/02391 |
| Property Location | Lot 9047 Maritime Drive, Jindalee |
| Agenda Item Number | 8.3 |

## Presentation Details

| | |
|---|---|
| I have read the contents of the report contained in the Agenda and note that my presentation content will be published as part of the Agenda: | **YES** ☒ |
| Is the presentation in support of or against the report recommendation)? *(contained within the Agenda)* | **SUPPORT** ☒ **AGAINST** ☐ |
| Is the presentation in support of or against the proposed development? | **SUPPORT** ☒ **AGAINST** ☐ |
| Will the presentation require power-point facilities? | **YES** ☐ **NO** ☒<br>**If yes, please attach** |

Government of **Western Australia**
Development Assessment Panels

**Presentation Content***

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| | |
|---|---|
| Brief sentence summary for inclusion on the Agenda | *The presentation will address:*<br>Support for proposal and confirmation around precursory land tenure and road construction. |

In accordance with Clause 3.5.2 of the *DAP Standing Orders*, your presentation request must also be accompanied with a written document detailing the content of your presentation.

*Please attach detailed content of presentation or provide below:*

- Proposal is recommended for approval, subject to conditions acceptable to our client.
- Application has undergoing extensive design review and has benefited from a full suite of consultant inputs to refine design and technical aspects.
- The proposal has been design to comply with height, plot ratio, access/egress and commercial land use requirements under the prevailing ASP 78.
- Design responds to existing 1-2 storey built form, market conditions and construction considerations in seeking to propose 3 storeys across the site.
- The compliance with height, plot ratio and commercial floorspace inclusions in particular, we say, overcomes the comments provided within the objections relating to the proposal, noting a larger building, whilst contemplated within the planning framework, may be more impactful, when compared to the subject proposal.
- The creation of the lot, the subject of the application, is both certain and imminent, and is in accordance with ASP 78, and a subdivision approval which reflects the appropriate lot size, layout and configuration
- The road construction is complete, save for final top seal coat, with works to be concluded within the fortnight, and clearances lodged thereafter
- The Deposited Plan for this stage is to be filed with Landgate this week, with Titles anticipated the first week of May
- On the basis approval is granted as recommended, we are advised by our client that the documentation programme prior to submitting a building permit is 6-9 months, and note that this process has not yet commenced.
- Accordingly, the delay to the finalisation and titling of this stage will have no impact or delay to the approval of the proposal.
- We seep approval as per the recommendation and conditions as presented in the RAR.

heath
DEVELOPMENT COMPANY
3/11 McCabe Street
NORTH FREMANTLE WA 6159

PO BOX 381. Cottesloe WA 6911
mail@heathdevelopment.com

3rd April 2023

Pinnacle Planning
9/473 Beach Road
DUNCRAIG WA 6023

**RE: Maritime Drive Jindalee**

Dear Ben,

Thanks for your email regarding the creation of Lot 1362 Maritime Drive, Jindalee. I have enquired as to the current position of the titling of lots in Stage 19 in our estate which includes Lot 1362, your clients lot. Our contractors have experienced considerable delays due to the lack of supply of limestone blocks for retaining walls and also the shortage of wall builders. In the meantime we are in the process of bonding the unfinished works and seeking clearances from the various authorities. This will enable the early release of titles. The answer to your queries is set out as follows:

1. The roadworks are virtually completed other than the final asphalt seal. This wont be done until the wall building is completed in order to protect the road surface. The City of Wanneroo has now approved the bonding of the unfinished works.

2. The Deposited Plan will be lodged with Landgate next week.

3. Many clearances are currently being sought and the clearance request to the City of Wanneroo will be lodged this week.

4. On the basis of the current guidelines we would expect titles to be issued in the first week of May 2023.

Trusting this information is of assistance

Should you have any queries, please don't hesitate to contact me.

Yours sincerely

**Brian Newman**
Project Director

# LOT 1 (No.1) RAE ROAD AND LOT 2 (No.172) SAFETY BAY ROAD, SHOALWATER - PROPOSED CHILD CARE PREMISES

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

| | | |
|---|---|---|
| **DAP Name:** | Metro Outer Joint Development Assessment Panel | |
| **Local Government Area:** | City of Rockingham | |
| **Applicant:** | Apex Planning | |
| **Owner:** | Cedarbay Investments Pty Ltd<br>Southerly Ocean Pty Ltd | |
| **Value of Development:** | $2.15 million<br>☐ Mandatory (Regulation 5)<br>☒ Opt In (Regulation 6) | |
| **Responsible Authority:** | City of Rockingham | |
| **Authorising Officer:** | Mr Peter Ricci, Director Planning and Development Services | |
| **LG Reference:** | DD020.2022.00000305.001 | |
| **DAP File No:** | DAP/22/02383 | |
| **Application Received Date:** | 29 November 2022 | |
| **Report Due Date:** | 29 March 2023 | |
| **Application Statutory Process Timeframe:** | 90 Days, with an additional 35 days agreed. | |
| **Attachment(s):** | 1. Development Application<br>2. Intersection Analysis<br>3. Acoustic Report | |
| **Is the Responsible Authority Recommendation the same as the Officer Recommendation?** | ☐Yes<br>☐ N/A | Complete Responsible Authority Recommendation section |
| | ☒ No | Complete Responsible Authority and Officer Recommendation sections |

**Responsible Authority Recommendation**

That the Metro Outer Joint Development Assessment Panel resolves to:

That Council ADOPTS the Responsible Authority Report for the application for the proposed Child Care Premises Lot 1 (No.1) Rae Road and Lot 2 (No.172) Safety Bay Road, Safety Bay) contained as Attachment 1 as the report required to be submitted to the presiding member of the Metro Outer Joint Development Assessment Panel pursuant to Regulation 12 of the Planning and Development (Development Assessment Panels) Regulation 2011 which REQUESTS that the Metro Outer Joint Development Assessment Panel defers consideration of the matter pending the receipt and assessment of a Needs Assessment as required by Planning Policy No.3.3.5 - Child Care Premises.

**Officer Recommendation**

That the Metro Outer Joint Development Assessment Panel resolves to:

**APPROVE** DAP Application reference DAP/22/02383 and the accompanying plans listed as follows:

- Site Location Plan, Job No. 0794, Drawing No. DA01, Revision A, dated 14 November 2022;
- Proposed Demolition Plan, Job No. 0794, Drawing No. DA02, Revision A, dated 14 November 2022;
- Site Plan, Job No. 0794, Drawing No. DA03, Revision A, dated 14 November 2022;
- First Floor Site Plan, Job No. 0794, Drawing No. DA12, Revision A, dated 14 November 2022;
- Site Survey Overlay Plan, Job No. 0794, Drawing No. DA04, Revision A, dated 14 November 2022;
- Landscaping Plan, Job No. 0794, Drawing No. DA05, Revision A, dated 14 November 2022;
- Proposed Ground Floor Plan, Job No. 0794, Drawing No. DA06, Revision A, dated 14 November 2022;
- Proposed First Floor Plan, Job No. 0794, Drawing No. DA07, Revision A, dated 14 November 2022;
- Elevations 1 & 2, Job No. 0794, Drawing No. DA08, Revision A, dated 14 November 2022;
- Elevations 3 & 4, Job No. 0794, Drawing No. DA09, Revision A, dated 14 November 2022;
- Fencing elevations (as amended) Job No. 0794, Drawing No. DA13, Revision A, dated 14 November 2022;
- Perspectives 1-4, Job No. 0794, Drawing No. DA10, Revision A, dated 14 November 2022; and
- Perspectives 5-8, Job No. 0794, Drawing No. DA11, Revision A, dated 14 November 2022.

in accordance with Clause 68 of the Planning and Development (Local Planning Schemes) Regulations 2015 and the provisions of clause 68(2)(b) of the deemed provisions of the City of Rockingham Town Planning Scheme No. 2, subject to the following conditions as follows:

**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. All development must be carried out in accordance with the approved plans (and drawings) as listed below including any amendments to those plans (and drawings) as shown in red:
    - Site Location Plan, Job No. 0794, Drawing No. DA01, Revision A, dated 14 November 2022;
    - Proposed Demolition Plan, Job No. 0794, Drawing No. DA02, Revision A, dated 14 November 2022;

- Site Plan, Job No. 0794, Drawing No. DA03, Revision A, dated 14 November 2022;
- First Floor Site Plan, Job No. 0794, Drawing No. DA12, Revision A, dated 14 November 2022;
- Site Survey Overlay Plan, Job No. 0794, Drawing No. DA04, Revision A, dated 14 November 2022;
- Landscaping Plan, Job No. 0794, Drawing No. DA05, Revision A, dated 14 November 2022;
- Proposed Ground Floor Plan, Job No. 0794, Drawing No. DA06, Revision A, dated 14 November 2022;
- Proposed First Floor Plan, Job No. 0794, Drawing No. DA07, Revision A, dated 14 November 2022;
- Elevations 1 & 2, Job No. 0794, Drawing No. DA08, Revision A, dated 14 November 2022;
- Elevations 3 & 4, Job No. 0794, Drawing No. DA07, Revision A, dated 14 November 2022;
- Fencing elevations (as amended) Job No. 0794, Drawing No. DA13, Revision A, dated 14 November 2022;
- Perspectives 1-4, Job No. 0794, Drawing No. DA11, Revision A, dated 14 November 2022; and
- Perspectives 5-8, Job No. 0794, Drawing No. DA07, Revision A, dated 14 November 2022.

save that, in the event of an inconsistency between the approved plans and a requirement of the conditions set out below, the requirement of the conditions shall prevail.

4. No more than one hundred (100) children are to be accommodated at the Child Care Premises.

5. No more than fifteen (15) staff are permitted at the Child Care Premises at any time.

6. 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 areas until after 7:00am.

7. 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.

8. Prior to applying for a Building Permit 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) Parking arrangements for contractors.

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

9. The crossover shall be designed and constructed in accordance with the City's Commercial Crossover Specifications.

10. Prior to the occupation of the development, the existing redundant crossovers must be removed and the verge, footpath, kerbing and landscaping must be reinstated to the satisfaction of the City of Rockingham.

11. The carpark must:

(i) provide a minimum of 28 car parking spaces (inclusive of one accessible bay);

(ii) be designed, constructed, sealed, kerbed, drained and marked in accordance with User Class 1A (Staff) and User Class 3 (Visitors) 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) accessible car parking space dedicated to people with disabilities, which are designed, constructed, sealed, kerbed, drained and marked in accordance with User Class 4 of 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.

(v) Parking bays exclusively used for staff parking are to marked to the satisfaction of the City of Rockingham.

12. Prior to applying for a Building Permit, a Waste Management Plan must be prepared for the Childcare Premises development and include the following detail to the satisfaction of the City of Rockingham:

(i) the location of bin storage areas and bin collection areas;

(ii) the number, volume and type of bins, and the type of waste to be placed in the bins;

(iii) management of the bins and the bin storage areas, including cleaning, rotation and moving bins to and from the bin collection areas; and

(iv) frequency and timing of bin collections of which are to be conducted outside of operating hours only.

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

13. 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.

14. Prior to occupation of the development, the following Acoustic treatments, as identified in the Lloyd George Acoustics report dated 5 August 2022, must be installed:-

(i) A 2.1m high double sheeted colourbond or brick fence/wall along the eastern boundary abutting No.3-5 Rae Road;

(ii) A 1.8m high double sheeted colourbond or brick fence/wall along the southern boundary and the 28m rear portion of the fence abutting No.174 Safety Bay Road;

(iii) A 2.1m high double sheeted colourbond or brick fence/wall along the 14m front portion of the fence abutting No.174 Safety Bay Road;

(iv) A 1.8m high 'Plexiglass' fence along the 13.2m northern a portion of boundary with the 8.53m truncation and 20.7m north western frontage being solid masonry; and

(v) The fences listed above having a minimum density of 8Kg/m3.

The acoustic treatment must be maintained to satisfaction of the City of Rockingham for the duration of the development.14.

15. 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.

16. 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 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, acknowledging that groundwater source cannot be used for this site.

(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; and

(vi) Street trees to be provided along Safety Bay Road and Rae Road at a rate of one (1) tree per ten (10) metres

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.

17. Prior to the issue of a Building Permit, exhaust facilities associated with the proposed kitchen area must be designed in accordance with Australian Standard AS 1668.2—2002, The use of ventilation and air conditioning in buildings, Part 2: Ventilation design for indoor air containment control (excluding requirements for the health aspects of tobacco smoke exposure) and be fitted with filtration and odour suppression devices to the satisfaction of the City of Rockingham.

    The exhaust facilities must be installed prior to the occupation of the development and must be thereafter maintained to the satisfaction of the City of Rockingham for the duration of the development.

18. The applicant is responsible for protecting any existing City streetscape assets along Safety Bay Road and Rae Road during the course of construction. 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.

19. In accordance with the City of Rockingham Planning Policy – 3.3.14 – Bicycle Parking and End of Trip Facilities, one short-term bicycle parking spaces and two long-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 must be approved by the City of Rockingham prior to applying for a Building Permit and constructed prior to occupancy of the development.

**Advice Notes**

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 any demolition or 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 *Health (Public Building) Regulations 1992*; the applicant and owner should liaise with the City's Health Services in this regard.

4. 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.

5. 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.

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 advised that in respect of Condition 7, 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.

**Details: outline of development application**

| | |
|---|---|
| Region Scheme | Metropolitan Region Scheme |
| Region Scheme - Zone/Reserve | Urban |
| Local Planning Scheme | Town Planning Scheme No.2 |
| Local Planning Scheme - Zone/Reserve | Commercial |
| Structure Plan/Precinct Plan | N/A |
| Structure Plan/Precinct Plan - Land Use Designation | N/A |
| Use Class and permissibility: | Child Care Premises - "D" use |
| Lot Size: | 1,879m$^2$ |
| Existing Land Use: | Vacant Land |
| State Heritage Register | No |
| Local Heritage | ☒ N/A<br>☐ Heritage List<br>☐ Heritage Area |
| Design Review | ☒ N/A<br>☐ Local Design Review Panel<br>☐ State Design Review Panel<br>☐ Other |
| Bushfire Prone Area | No |
| Swan River Trust Area | No |

**Proposal:**

The applicant is seeking Development Approval for a Child Care Premises (CCP), which includes the following:-

- A two storey building orientated towards the intersection of Safety Bay Road and Rae Road, with car parking to the east and outdoor child play space to the west:
- Fifteen (15) Full time staff and One Hundred (100) children consisting of the following age groups:
  - 0-2 years (20 spaces);
  - 2-3 years (20 spaces);
  - 3-5 years (60 spaces);
- An external bin store to the south of the carpark.

- Twenty Eight (28) on-site car parking bays, inclusive of one (1) accessible bay, are proposed to the east of the building, with vehicle access proposed via a 6m wide cross over on Rae Road approximately 7m from the western boundary.
- The proposed hours of operation are 6:30am to 6:30pm on weekdays. No outdoor activities are proposed between 6.30am and 7.00am.

To mitigate noise from the car park and outdoor play areas, the following fencing is proposed (Figure 4):

- 2.1m high double sheeted colorbond or brick fence/wall along the eastern boundary;
- 2.1m and 1.8m high double sheeted colorbond or brick fence/wall along the south western boundary; and
- 1.8m high 'Plexiglass' fence along the northern a portion of boundary with the remainder solid masonry.

The following reports and supporting material accompany the application:

- Development Application Report;
- Development Plans;
- Child Care Needs Assessment;
- Landscape Plan;
- Transport Impact Statement ;
- Acoustic Assessment; and
- Bushfire Management Plan and Emergency Evacuation Plan.

**Background:**

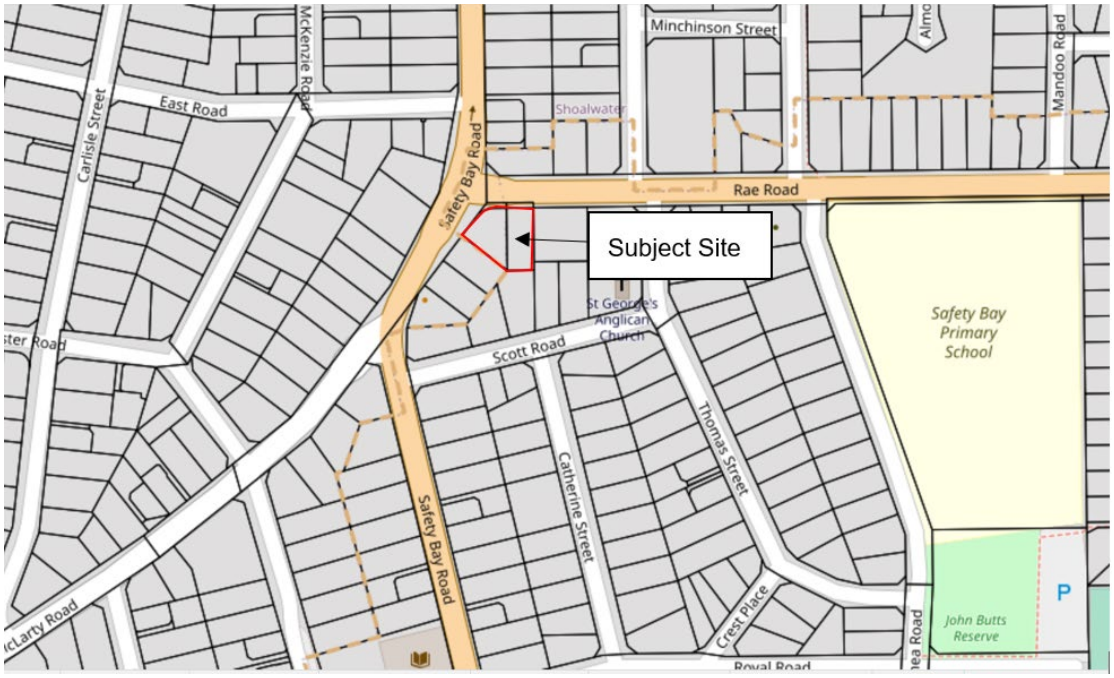
Site and Locality

The subject site is located at the intersection of Rae Road and Safety Bay Road. The combined site area of the two lots is 1,878m$^2$. The site is currently vacant with previous surf shop building being demolished in late 2022.

The site forms part of a small Local Commercial Centre containing 7 Lots, which front Safety Bay Road and Rae Road. To the east of the site is medium density housing site (R40). The land directly to the south is low density housing (R15). There is also a mixture of R15/20/40 housing in the surrounding locality.

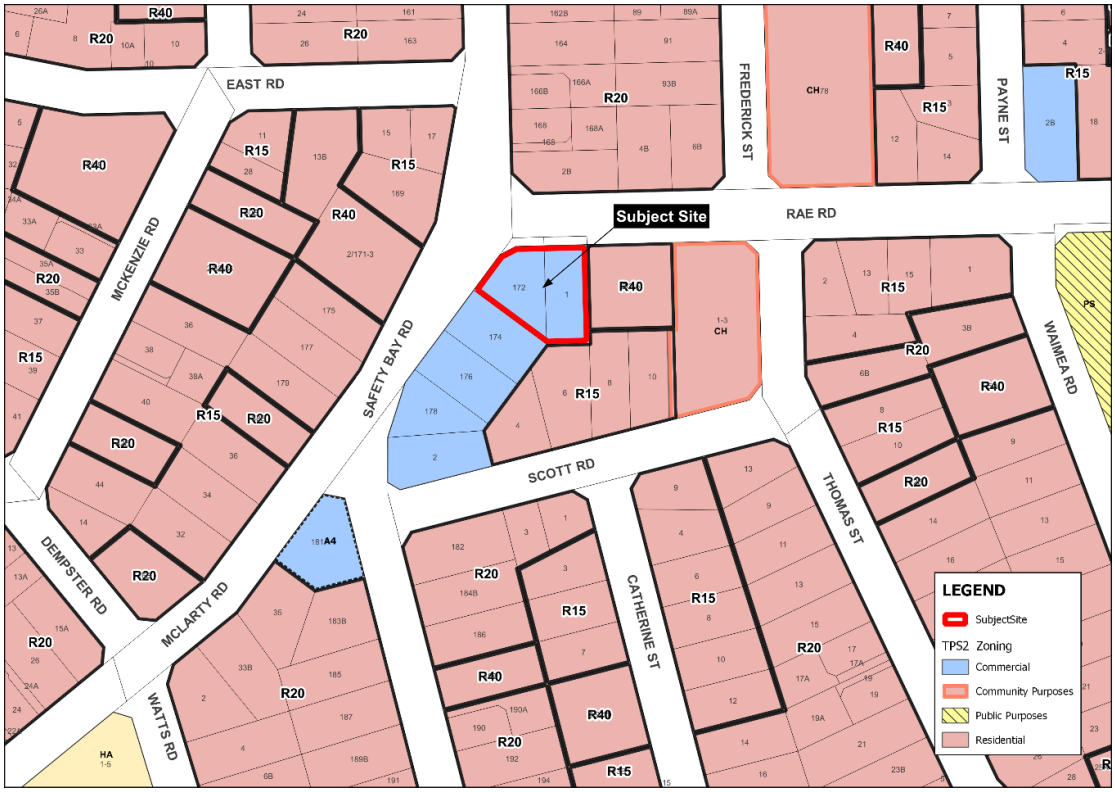
The site is within the 400m catchment of the 551 bus service which links Rockingham Train Station with Shoalwater via the Rockingham City Centre.

There are two operating CCP's in the vicinity of the proposed development. The closest is located approximately 162m to the east of the site fronting Rae Road. The second CCP is located approximately 310m to the north of the site fronting Safety Bay Road (refer to Figure 5).

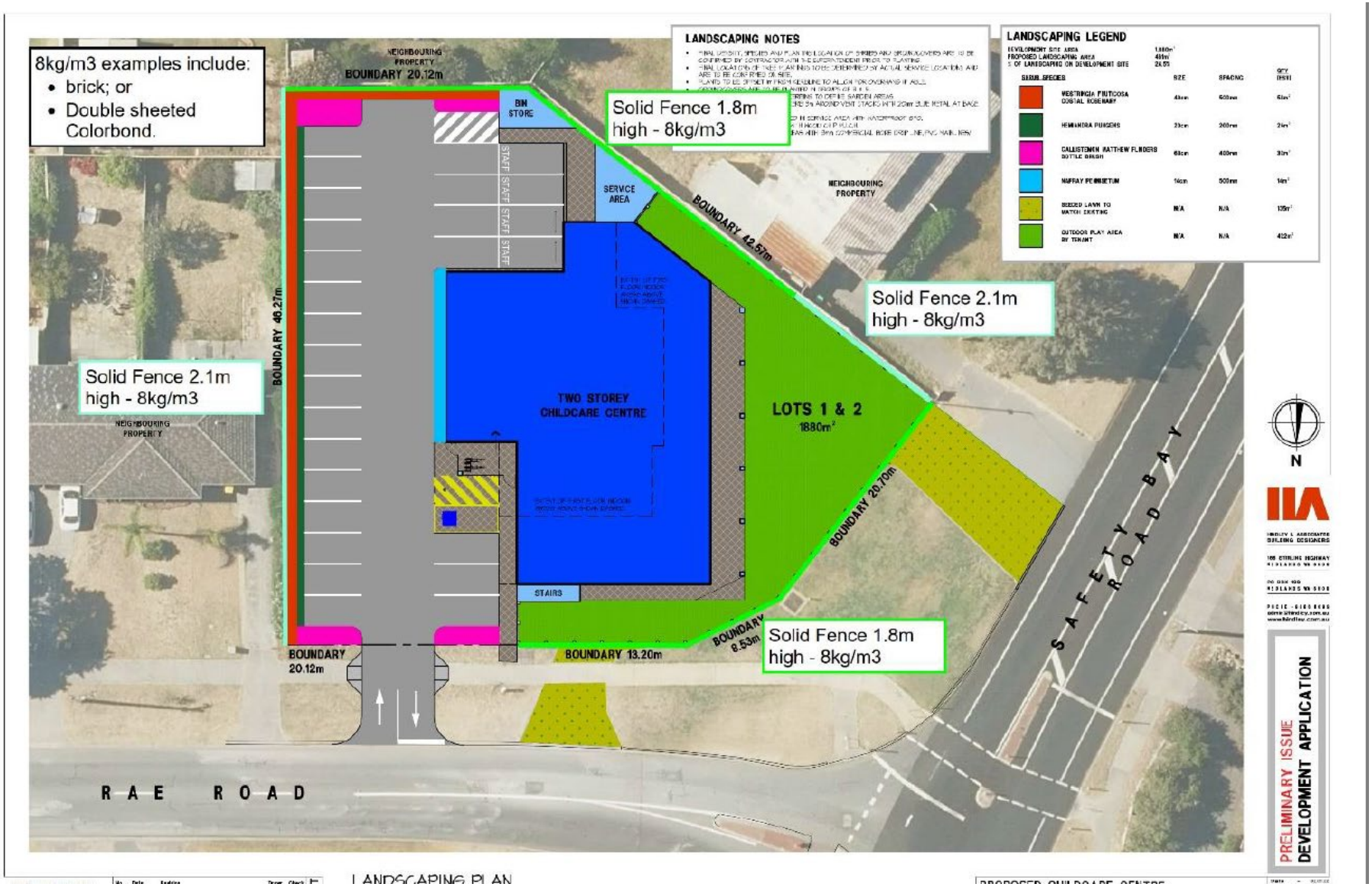



1. Location Plan


2. Aerial Photograph of the Subject Site


Subject Site
EAST RD
RAE RD
SCOTT RD
MCKENZIE RD
SAFETY BAY RD
DEMPSTER RD
MCLARTY RD
WATTS RD
FREDERICK ST
PAYNE ST
THOMAS ST
CATHERINE ST
WAIMEA RD
LEGEND
SubjectSite
TPS2 Zoning
Commercial
Community Purposes
Public Purposes
Residential

3. Zoning Map


8kg/m3 examples include:
• brick; or
• Double sheeted Colorbond.
NEIGHBOURING PROPERTY
BOUNDARY 20.12m
BIN STORE
Solid Fence 1.8m high - 8kg/m3
LANDSCAPING NOTES
LANDSCAPING LEGEND
SERVICE AREA
STAFF STAFF STAFF STAFF
NEIGHBOURING PROPERTY
BOUNDARY 42.57m
Solid Fence 2.1m high - 8kg/m3
BOUNDARY 46.27m
Solid Fence 2.1m high - 8kg/m3
NEIGHBOURING PROPERTY
TWO STOREY CHILDCARE CENTRE
LOTS 1 & 2
1880m²
BOUNDARY 20.70m
STAIRS
BOUNDARY 8.53m
Solid Fence 1.8m high - 8kg/m3
BOUNDARY 13.20m
BOUNDARY 20.12m
SAFETY BAY ROAD
R A E R O A D
N
PRELIMINARY ISSUE
DEVELOPMENT APPLICATION
LANDSCAPING PLAN

4. Site Plan

**Legislation and Policy:**

Legislation

- Planning & Development Act 2005;
- Metropolitan Region Scheme;
- Town Planning Scheme No.2;
- Planning and Development (Local Planning Schemes) Regulations 2015; and
- Environmental Protection (Noise) Regulations.

State Government Policies

- State Planning Policy 7.0 - Design of the Built Environment; and
- State Planning Policy 7.3 - Residential Design Codes Volume 1.

Structure Plans/Activity Centre Plans

N/A

Local Policies

- Planning Policy 3.3.5 - Child Care Premises
- Planning Policy 3.3.14 - Bicycle Parking and End of Trip Facilities
- Planning Policy 3.4.3 - Urban Water Management

**Consultation:**

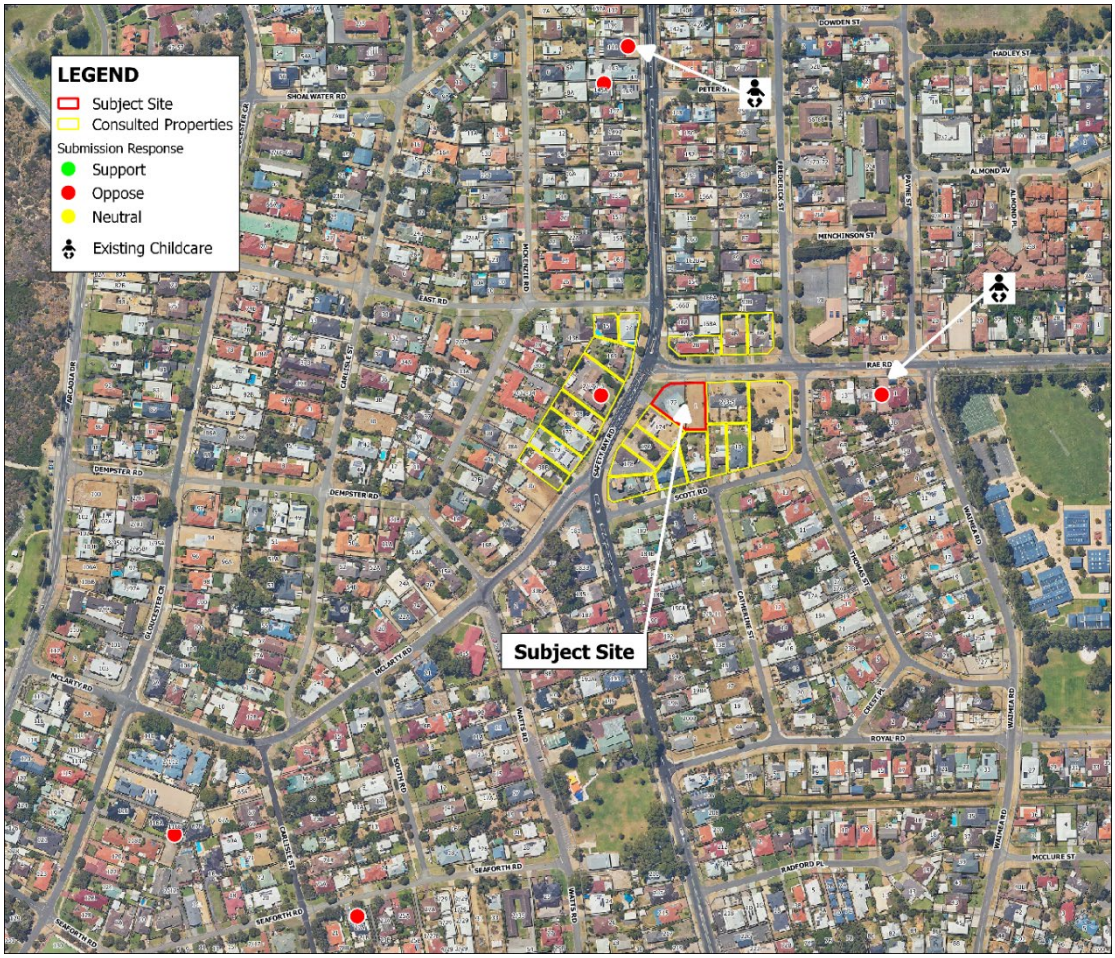
Public Consultation

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

- Landowners and occupiers identified on the Consultation Map below were notified in writing of the proposed application;
- The application was made available for public inspection at the City's Administration Offices and published on the City's website; and
- Submissions were requested over a 15 day period, between 19 January and 3 February 2023.

At the close of the advertising period, twelve (12) submissions objecting to the proposal were received. Two submissions were lodged by the same submissioner and two submissions were also received from existing CPP operators (refer to Figure 5) located in the locality objecting to the proposal.

The submissions received are shown in Figure 5. One submissioner did not provide an address and a further 5 submissions were received from locations beyond the extent of the Consultation Area shown in Figure 5.




5. Consultation Map

The submissions received objecting to the application are summarised as follows:

| **Traffic Safety** |
|---|
| **Submission:**<br>Traffic will increase at intersection of Rae Road and Safety Bay Road. |
| Applicants Comment:<br>Refer to the attached revised TIS which demonstrates an insignificant impact to the local road network and adjacent intersection. Notwithstanding this, it is important to recognise that the land is zoned for commercial purposes under the City's LPS3 and therefore a commercial level of traffic generation should be expected from this site. |
| City's Comment:<br>A further Intersection Analysis has been provided by the Applicant in support of the application. The City is satisfied that the increased traffic from the development will not have an undue impact on the performance of the intersection of Rae Road and Safety Bay Road.<br>The proposed tandem bays (parking bays behind another parking bay) are allocated for staff use only and will be managed internally by the operator to avoid any potential issues. |

| **Parking and Staff Ratios** |
|---|
| **Submission:**<br>**Concerns that the staff numbers will be understated resulting in inadequate staff car parking.** |
| Applicant's Comment:<br>*"Staff numbers have been supplied by the childcare operator, who operates numerous facilities Australia-wide. Staffing has been calculated based on the ratios under childcare licensing requirements and operational requirements".* |
| City's Comment:<br>The City has cross referenced the ratios of staff to children using the Australian Children's Education & Care Quality Authority (ACECQA) requirements, being the peak body governing childcare services. The number of staff proposed is sufficient for the ages and number of the children proposed.<br>The parking assessment in the Legal and Statutory section below demonstrates that there are sufficient car bays on-site to cater for the parking demand generated by the development. The parking area will be required to be designed in accordance with the relevant Australian Standards. |
| **Noise Impacts** |
| **Submission:**<br>**Noise generated from the CPP, and the adverse impact on surrounding residential properties.** |
| Applicants Comment:<br>*"An environmental noise assessment has been prepared by Lloyd George Acoustics which demonstrates compliance with the Environmental Protection (Noise) Regulations 1997 based on minor and acceptable mitigation measures".* |
| City's Comment:<br>The Applicants amended acoustic report clarifies the acoustic wall treatments between No.1 Rae Road and No.3 Rae Road is a 2.1m high double sided colourbond fence for the full length of the boundary. The report demonstrates compliance with the Environmental Protection (Noise) Regulations 1997 (Noise Regs). Noise is further discussed in the comments section below. |
| **Level of Service** |
| **Submission:**<br>**Concern the proposed childcare premises will adversely impact the level of service provided to the community, and by other existing childcare facilities in the area.** |
| Applicants Comment:<br>*"Concerns surrounding level of service / demand are subjective and unfounded. A number of considerations relate to the demand experienced by operators, which can include:*<br>• *The distribution of centres in the wider locality*<br>• *The age of a centre*<br>• *The quality of service delivered by a centre*<br>*With regard to the above, whilst there are two existing centres within 350m of the site, it is important to recognise that there are no other full-service centres servicing the local area within a 3km radius to the east and even further to the south-east.* |

| |
|---|
| *The distribution of centres indicates that these areas, which are likely within the catchment of Safety Bay Primary, are likely undersupplied given the vast area and significant amount of residential dwellings.*<br>*The land in question is zoned for commercial purposes and hence a development of this nature would be expected based on the applicable planning framework."* |
| City's Comment:<br>The City requested a Needs Assessment from the Applicant which has not been provided.<br>The City has assessed the proposal in accordance with *Local Planning Policy – 3.3.5 Child Care Premises.*<br>This matter has been considered by the City in the Policy Section of this report. |

Referrals/consultation with Government/Service Agencies

Only the Water Corporation was consulted as it has requested a copy of the plans for all JDAP's within the City of Rockingham.

The following summarises the comments received:

| **1. Water Corporation** |
|---|
| Submission:<br>**The proposed development does not appear to affect Water Corporation assets. Water and Wastewater Servicing are available in the area which this development can connect to.**<br>**This proposal will require approval by our Building Services section prior to the commencement of works. Infrastructure Contributions and fees may be required to be paid prior to approval being issued.**<br>**For further information about building applications, please follow this link:**<br>http://www.watercorporation.com.au/Developing-and-building/Building/Lodging-a-building-applicaiton. |
| City's Comment:<br>Noted. |

Design Review Panel Advice

Not Applicable

Swan Valley Planning

Not Applicable

**Planning Assessment:**

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

SPP7.0 is the lead document to guide design outcomes in the planning system through an overarching framework that addresses design quality and built form outcomes. SPP7.0 includes 10 principles of good design and outlines the design review process.

The City is satisfied that the design generally complies with the principles of SPP7.0 as the design presents positively to the street and has considered the context and character of the liability.

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

PP3.3.5 seek to promote the orderly and proper planning of Child Care Centres by promoting suitable locations, good design and centres that accommodate the needs of the children and their careers.

The proposed development has been assessed against the requirements of PP3.3.5. Where the proposal requires further refinement or specific conditions of Development Approval are proposed, these are noted in the table below:

| Requirement | Provided | Compliant |
|---|---|---|
| **Location** | | |
| (a) Distributed strategically to provide the maximum benefit to the community it serves; | The location of the site has connectivity to public transport and is located in a prominent location achieving a wider catchment area. | Yes |
| (b) Within easy walking distance or part of appropriate commercial, recreation or community nodes and education facilities; | The site is within close proximity to the Shoalwater Neighbourhood Centre (520m), Safety Bay Primary School (280m) and Penguin Road Local Centre (550m). | Yes |
| (c) Located in areas where adjoining uses are compatible with a CPP (includes considering all permissible uses under the zoning of adjoining properties); | A residential area is located to the east and a further commercial uses to the south-west. The Safety Bay Primary School is located 280m to the East. | Yes |
| (d) Serviced by public transport (where available); | The 551 bus runs along Safety Bay Road and Rae Road, with the nearest stops 55m and 125m from the site. | Yes |
| (e) Considered suitable from a traffic engineering/safety point of view; | Traffic Impacts have been quantified in TIS. No safety concerns have been raised. | Yes |
| (f) Of sufficient size and dimension to accommodate development without affecting amenity of the area. | The proposed lot is 1,879m$^2$ in area, which is sufficient to accommodate a Child Care Centre of this scale. | Yes |
| **Site Characteristics** | | |
| As a general rule, sites in a residential area should be of regular shape and greater than 1,000m² in size. A maximum site coverage of 50% will apply to any proposal to prevent the over-development of any lot. | The site is located in a commercial centre. Notwithstanding the zoning the site is 1,879m$^2$.<br>The floor area of the proposed building is 530m$^2$ which represents 28.21% of the site. | Yes |
| **Carparking** | | |
| Parking to be provided in accordance with TPS2.<br>- 1 Bay per 8 Children<br>- 1 Bay per staff member | 100 children capacity requiring 12.5 in addition to the 15 bays required for staff which equated to 27.5 bays (rounded to 28). 28 bays have been provided (15 staff 13 visitors). | Yes |

| | | |
|---|---|---|
| **Traffic Impacts** | | |
| A traffic impact statement assessment will be required where, in the opinion of the Manager, Statutory Planning, a proposed CPP has the potential to impact on the functionality and amenity of an area and may create or exacerbate unsafe conditions for children and families using the premises, or for pedestrians or road users. | The applicant has provided a TIS and an intersection analysis that demonstrates that additional vehicle trips generated by the proposed development would perform satisfactory at the opening date and 10 years into the future. As such the City supports the TIS outcomes. | Yes |
| **Noise Impacts** | | |
| A noise impact assessment may be required for the development of a CPP. The objectives should be to limit the noise impact of the CPP on adjacent properties, and also limit any noise impact from external sources on the CPP. This may be achieved either by physical separation, design and layout of the premises or by implementing noise mitigation measures, such as acoustic treatments to buildings. Although each application will need to be assessed on its individual merits, the following basic principles apply: | An Acoustic Report has been submitted in support of the application. The noise emissions proposed are<br>Considered to be compliant with the Environmental Projection (Noise) Regulations 1997, subject to acoustic barrier fencing requirements applying. | Yes |
| (a) Where a CPP is located adjacent to a noise sensitive use, such as houses, retirement villages and nursing homes, the noise-generating activities of the CPP, such as the outdoor play areas, parking areas and any plant equipment, are to be located away from the noise sensitive use; | The play areas are located on the opposite side of the development from the adjoining residential properties. The proposed 2.1m and 1.8m fences are deemed sufficient. | Yes. Acoustic barriers are proposed to ensure compliance with the *Environmental Protection (*Noise) *Regulations 1997* |

| Noise Impacts (cont…) | | |
|---|---|---|
| (b) Where, due to design limitations or safety considerations, noise-generating activities such as outdoor play areas are located close to noise-sensitive uses, appropriate noise mitigation is to be undertaken; and | Refer above. | Yes |
| (c) The design and construction of buildings may include noise-mitigation measures to reduce impact from external sources and to achieve accepted indoor noise limits. | The use of plexiglass has been used in part to mitigate traffic noise on the proposed vulnerable land use but also for additional safety. | Yes |
| **Design Considerations** | | |
| The appearance of a CPP 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. | The building is two storey with a pitched roof. The orientation of the building to the street corner is a positive design choice. | Yes |
| **Need for Child Care Premises** | | |
| Where, in the opinion of the Manager, Statutory Planning, a proposed CPP may have an adverse impact on the level of service to the community by similar existing or approved facilities.<br>The proponent will be require to provide further information in regard to the level of existing services in the locality, proximity to other CPP, population catchments for the proposed CPP and the number of primary schools and kindergartens in the locality, in relation to the development of the proposed new facility. | The WAPC Planning Bulletin for CCP's provides guidance for considering the level of service. The WAPC states that there have been legal decisions which have *"discounted the need for the applicant to prove the need for a commercial facility".* The WAPC also, however, states that *"if there is a demonstrable impact on the amenity of an area or the level of service enjoyed by the community, then this is a relevant local planning consideration".*<br>The City requested a Level of Service Assessment from the applicant which has not been provided. The City also notes that three of the objections were received from existing CCP operators based on the level of service. For planning context the details of those centres is as follows: | Yes |

| Need for Child Care Premises | | |
|---|---|---|
| | - No.139-141 Safety Bay Road, approximately 310m to the north of the site. 139 Safety Bay Road is approved in 1986, later correspondence confirmed the capacity for 35 children. 141 Safety Bay Road is managed by the same operator as 139 Safety Bay Road. It was originally approved as a play area extension in 1994. The most recent expansion was approved in 2006 and was approved for 48 Children.<br>- No.1 Waimea Road, approximately 165m to the east of the site fronting Rae Road. Approved in 1998 for 48 Children.<br>The third centre is located at Lot 1 (No.1) Greene Street, Rockingham but was not considered to be in proximity being some 3km away.<br>The City acknowledges the Commercial zoning of the land being a preferred location for a CCP over a residential zoned site. It is also accepted that due diligence, with regard to the commercial viability of a CCP has been undertaken by the applicant in the knowledge of existing and approved CCPs in the vicinity.<br>Whilst a Needs Assessment quantifying the level of service has not been provided, this is not fatal to the Councils consideration of the application as the proposal complies with all other relevant TPS and Policy requirements.<br>The City has also conducted a review of State Administrative Tribunal (SAT) cases and not found any examples of the level of service impacting SAT's decision.<br>Notwithstanding, Council does have the ability to recommend a deferral, however it is not the City's recommendation to do so. | |

Town Planning Scheme No.2 (TPS2)

*Clause 3.2 - Zoning Table*

The subject site is zoned 'Commercial' in TPS2.

A CCP is a permissible use in the 'Commercial' Zone, being a 'D' land use, meaning that the use is not permitted unless the local government has exercised its discretion by granting development approval.

*Clause 4.6.1 – Objective of the Commercial zone*

The development is considered to be consistent with the objective of the Commercial zone, being:

*"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 City is satisfied that the proposed development will maintain the quality of the existing surrounding residential area.

*Clause 4.6.2 - Form of development*

In considering applications for Development Approval the decision maker shall *"ensure that the site planning, scale, built form, elevations and landscaping of the development contribute positively to the streetscape, appearance and amenity of the locality".*

The City considers the orientation and massing of the proposed building to be consistent with urban design principles and is therefore supported.

*Clause 4.15.1.3 - Car parking*

Pursuant to Clause 4.15.1.3, car parking for a CCP is to be provided in accordance with Table 2 of TPS2. The following table shows the calculation for the proposal:

| **Land Use** | **TPS2 Requirement** | **Proposed Staff and Children** | **Bays Required** |
|---|---|---|---|
| Child Care Premises | 1 bay per 8 children | 100 children | 12.5 |
| | 1 per staff | 15 staff | 15 |
| **Total Required** | 27.5 (28) | | |
| Total Bays Provided on-site | 28 | | |
| Shortfall | **0** | | |

The above table demonstrated compliance with Clause 4.15.1.3 with 27 standard bays and 1 accessible bay being provided on-site.

Planning Policy No.3.3.14 - Bicycle Parking and End of Trip Facilities (PP3.3.14)

The aim of the policy is to facilitate the appropriate provision of secure, well designed and effective onsite 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.

| **Provision** | **Requirement** | **Proposed** | **Assessment** |
|---|---|---|---|
| Bicycle Parking PP3.3.14 – Table 1 | Short Term parking 0.05 spaces per visitor =0.6 (1) | Nil | A condition is recommended that 3 parking bays are provided. |
| | Long Term Parking 0.1 spaces per staff =1.5(2) | | |

Environmental (Noise) Protection Regulations

The acoustic assessment indicates that compliance with the *Environmental Protection (Noise) Regulations 1997* (Noise Regulations) will be achieved and recommends the following measures:

- Outdoor play should not occur prior to 7:00am;
- Effective noise barriers constructed on the eastern, southern, south-western and north-western boundaries; and
- Nominated car parking bays on site plan to be used by staff prior to 7:00am.

Subject to conditions, the City is satisfied that the development will comply with the *Environmental Protection (Noise) Regulations 1997*.

**Conclusion:**

This proposal has been assessed in accordance with TPS2 and City Policy and is compliant.

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

The planning report confirms that waste will be collected by a private waste services provider outside peak period times. The City supports this arrangement.

The City notes that a formal needs assessment qualifying the level of service has not been provided, it is not deemed fatal to the City's consideration of the application as the preproposal complies with all other relevant TPS and policy requirements.

The intersection analysis provided for the intersection of Rae Road and Safety Bay Road has shown a slight increase in traffic anticipated primarily in the morning period (between 6:30am - 7:30am), however, it will still provide an adequate level of service and does not meet the threshold for an intersection upgrade.

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.

# Proposed Child Care Premises

Application for Planning Approval


Lot 1 (1) Rae Road & Lot 2 (172) Safety Bay Road, Shoalwater

November 2022

apex planning

**Development Application**

Lot 1 (1) Rae Road & Lot 2 (172) Safety Bay Road, Shoalwater

Prepared for Cedarbay Investments Pty Ltd & Southerly Ocean Pty Ltd

# DOCUMENT CONTROL

| DESCRIPTION | DATE |
|---|---|
| 221123 22-080 DA report - Shoalwater (rev0).docx | 23 November 2022 |


## Apex Planning

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# CONTENTS



# APPENDICES

# 1 INTRODUCTION

Apex Planning has produced this application for planning approval for Cedarbay Investments Pty Ltd & Southerly Ocean Pty Ltd, the registered proprietors of Lot 1 (1) Rae Road & Lot 2 (172) Safety Bay Road, Shoalwater (hereafter referred to as the **development site**).

The proposal involves the demolition of existing development on the site and its replacement with an early learning centre accommodating up to 100 children, with associated full-time educators and support staff.

The proposal will establish a quality childcare facility on land zoned for commercial purposes under the City's local planning scheme, at the corner of two key transport routes for the Shoalwater / Safety Bay locality. The facility is suitably located and will be highly accessible to local families, noting it is within the 400m catchment of a local school, bus services, churches and a community centre.

The proposed facility features a site-responsive layout informed by expert architectural, traffic, and acoustic input. The building is designed in a contemporary residential style which allows it to integrate with its context and respond sensitively to adjoining properties.

It is requested the Metro Outer JDAP grant approval to the proposed development.

## 1.1 PRE-LODGEMENT ENGAGEMENT

On 3rd March 2022, the landowner and Apex Planning attended a pre-lodgement engagement meeting with the City of Rockingham.

Various key elements of the site, development, local planning framework and traffic/access considerations were discussed.

The City's feedback was used to inform finalisation of the proposed development.

# 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** | **Plan** | **Volume** | **Folio** | **Lot area** | **Ownership** |
| 1 | 5948 | 1220 | 914 | 931sqm | Cedarbay Investments Pty Ltd<br>Southerly Ocean Pty Ltd |
| 2 | 5948 | 1248 | 231 | 948sqm | |

The Certificates of Title (**CT**) and Plan are provided at **Appendix 1**. There are no encumbrances listed on the CT which relate to the proposed development.

# 3 CONTEXTUAL CONSIDERATIONS

The following sub-sections describe the contextual characteristics of the site. Refer to **Figure 1: Aerial Photo** and **Photos 1-5** on the subsequent pages, which illustrate the development site and surrounds.

## 3.1 REGIONAL CONTEXT

The development site is located in the municipality of the City of Rockingham and is approximately:

- 41km south-west of the Perth CBD
- 3.5km west of the Rockingham Strategic Centre
- 0.5km south of the Shoalwater Neighbourhood Centre

The site is located at the south-eastern corner of the Safety Bay Road / Rae Road 'T' intersection. Both Safety Bay Road and Rae Road are classified as Distributor A roads under the Main Roads road network hierarchy.

Safety Bay Road is a key north-south route for the Shoalwater locality, providing a linkage between Parkin Street (north) and Arcadia Street (south). Rae Road is a key east-west route for the area, providing a linkage between Safety Bay Road (west) and Ennis Avenue (east), terminating at the Rockingham Train Station.

## 3.2 LOCAL CONTEXT

The development site forms part of a planned commercial precinct with frontage to the Rae Road / Safety Bay Road 'T' intersection. The precinct is comprised of seven lots zoned for commercial purposes under Local Planning Scheme No.3 (**LPS3**). The precinct largely includes various non-residential land uses and comprises a mixture of single and double storey scale buildings.

More widely, the locality generally contains low-density residential development with some grouped housing sites and multi-unit sites scattered throughout. It is noted that many sites throughout the area are afforded R20 and R40 densities, indicating infill development may occur as time goes on.

The following key points of interest are located within the 400m walkable catchment of the development site:

- Safety Bay Primary School, located further east along Rae Road.
- Rockingham Church of Christ and St George's Church, both located along Rae Road.
- McLarty Hall Community Centre, located at the corner of McLarty Road and Watts Road.
- Safety Bay Library and Wilson Park, both located further south along Safety Bay Road.


| | | |
|---|---|---|
| **Figure 1: Aerial Photo** | NORTH | **Drawn:** Alessandro Stagno<br>**Rev:** 0 |
| **Lot 1 (1) Rae Road & Lot 2 (172) Safety Bay Road, Shoalwater** | | **Source:** MNG Access<br>**Date:** 20 October 2022<br>apex planning |

The Shoalwater neighbourhood shopping centre is also located approx. 500m north of the site along Safety Bay Road and is also within reasonable walking distance.

The development site adjoins commercially zoned land to the west and residentially zoned land to the east and south. The eastern adjoining site contains side-by-side units and the southern adjoining site contains a single dwelling with large rear backyard.

The site is adjacent to the Safety Bay Road / Rae Road 'T' intersection. A priority pedestrian crossing is located opposite the site which provides a safe pedestrian connection for the existing footpath network on Rae Road to Safety Bay Road.

In terms of public transport, the 551 bus route operates along Safety Bay Road and provides a link to Rockingham train station. Buses operate during the peak AM and PM periods, generally running every 30 minutes during these periods.

## 3.3 SITE CONDITIONS AND TOPOGRAPHY

The development site is comprised of two lots totalling approximately 1,880sqm of area. Lot 1 is vacant and Lot 2 contains a former single storey surf shop which is now unoccupied.

Lot 2 contains two access points, one to Rae Road and one to Safety Bay Road, whilst Lot 1 is not currently provided with access.

In terms of local topographical conditions, both lots fall to the south with an approximate 1m drop of levels from the street boundary to the southern boundary.

According to mapping systems, the development site appears to have access to the necessary urban utilities services.

Survey data is included with the development plans at **Appendix 2**.

## 3.4 SITE PHOTOS

**Photo 1**: View of lot 1, looking south.


**Photo 2**: View of lot 2, looking south.


**Photo 3**: Rae Road streetscape and footpath, looking east.

**Photo 4**: Boundary interface with adjoining land to the east, viewed from within Lot 1.

# 4 DESCRIPTION OF PROPOSAL

The proposal involves the demolition of the existing single storey commercial building on the development site and its replacement with a new childcare facility to be operated by Genius. The development plans are provided at **Appendix 2** for reference, which include a landscape plan indicating planting arrangements.

The facility will provide early learning and care services for up to 100 children, accommodated within an attractive and innovatively designed two-storey development. The early learning centre is proposed to operate from 6:30am-6:30pm Monday to Friday and will cater for the following age groups:

- 0-2 years: 20 places
- 2-3 years: 20 places
- 3-5 years: 60 places

The proposal will increase the provision of early learning places within a local commercial precinct which has serviced the local area for a number of years. The surrounding locality is planned for increased residential densities under the local planning scheme and may experience infill development over the coming years, which would increase local childcare demand.

The site is within the 400m catchment of local bus services linking to Rockingham station, as well as Safety Bay Primary School, churches and a local community centre. The site is also within reasonable walking distance of the local Shoalwater shopping centre. The site at a key corner location, at the intersection of two important transport routes for the locality and is well-positioned to deliver services to the community.

The layout of the proposed development is responsive to the characteristics of the site and its surroundings, through:

- The positioning of an attractively and residentially designed building in the centre of the site, where it addresses the site's corner frontage.
- Playscapes on the ground floor and upper floor facing the street frontage and the commercially zoned land to the west, reducing impacts to the residentially zoned land to the east and south.
- Car park and driveway / access along the eastern side, which only experiences usage / activity during limited times of the day. Parking bays will be controlled prior to 7am to further reduce acoustic impact. A landscape buffer is provided along the car park periphery to further enhance the site's interface with adjoining properties.

The architectural style of the proposed childcare building is contemporary residential, presenting similarly to a typical double storey residential dwelling but with a distinct front façade feature enhancing its response to the Safety Bay Road / Rae Road corner. The front façade provides a large facebrick gable feature containing a 'Genius childcare' sign with aluminium batts which provides site-specific expression. The upper level playscape is framed with 1.8m glass balustrades with black detailing, which contain privacy screening for the playscapes and surrounding resi properties.

The development incorporates the common residential format of masonry facebrick on the ground floor and textured / rendered finish at the upper level in complementary shades of cream, muted greys, and darker 'monument' finish. A pitch roof is employed for the building in Colorbond material which strengthens its residential response.

The main entry is at the eastern side of the building, conveniently accessed from the car park and with a direct/legible pathway connection to the footpath network on Rae Road. The entry includes a secure gated alcove containing bike racks and sufficient space for prams whilst parents enter the building with children.

The car park is functional and facilitates safe movement, with the provision of a turnaround bay and reversing area at the end of the car park aisle. The ACROD shared space is deliberately positioned opposite the entrance, to enhance and optimise accessible access. The car park contains 28 bays, with the tandem configuration of four rear staff bays allowing pre-7am staff to park closer to commercially zoned land (reducing acoustic impact) whilst also creating space for the turnaround movements of waste collection vehicles.

The car park will be accessed via a 6m wide full-movement crossover to Rae Road, positioned as far east as possible from the Safety Bay Road intersection in a compliant and acceptable manner. It is important to recognise that this proposal creates optimised access outcomes which would not have been possible if the two lots comprising the development site were developed individually, noting a single access point is provided at the furthest point from the intersection.

The bin store is located at the southern end of the site, where it is not visible from the public realm and largely detached from residentially zoned land (though there is a slight interface). The bin store is framed with minimum 1.8m high fencing and will present to adjoining properties as a typical fence with no discernible visual impact.

A separate enclosure for AC units and mechanical plant is provided adjacent to the tandem bays, again inconspicuous to the public realm and positioned along the boundary shared with commercially zoned land to reduce potential impacts to nearby residential zoned premises.

In respect of boundary treatment, the following fencing is proposed around the site:

- 1.8m high Perspex screens with decals along the playscape where it faces the corner, with brick piers in selected textured render paint finish.
- 1.8m high brickwork style solid fencing along the playscape where it faces Safety Bay Road, with brick piers in selected textured render paint finish (to suit the design typology of the childcare building).
- Solid 2.1m and 1.8m high profiled boundary fence along the western playscape boundary, meeting the density required under the acoustic assessment.
- Solid 1.8m high profiled boundary fence along the eastern and southern car park boundaries, meeting the density required under the acoustic assessment.

Overall, the proposal represents a well-designed and well-configured early learning facility which is sensitive to its surroundings.

## 4.1 LANDSCAPING ARRANGEMENTS

A conceptual landscape plan depicting planting arrangements within the car park and the verges of Safety Bay Road and Rae Road is with the drawing set at **Appendix 2**. The landscape plan depicts:

- The provision of landscape buffer strips along the car park's eastern and southern boundaries, which include 7 screen / shade trees.
- The closure of existing crossovers to Safety Bay Road and Rae Road, and replacement with verge treatments matching existing.

## 4.2 TRAFFIC ASSESSMENT

The proposed development is supported by a Transport Impact Statement (**TIS**) produced by Flyt. The TIS is provided at **Appendix 3**.

With regard to traffic generation, the TIS concludes that the AM and PM peak trip generation is estimated at 82 and 74 respectively, resulting in an insignificant impact to the surrounding road network.

The traffic assessment also considers parking demand for the centre and determines parking provision should be sufficient to cater for the needs of the centre, noting the provision of 28 bays for 100 placements, 15 full-time educators, and additional support staff that may attend the site during off-peak periods.

The traffic assessment also contains swept path plans demonstrating an 8m waste collection vehicle can make satisfactory movements through the site. Waste collection would occur during off-peak periods or when the facility is closed.

The assessment demonstrates the proposal does not generate unacceptable traffic, and the surrounding road network is entirely capable of accommodating the facility.

## 4.3 ACOUSTIC

An environmental noise assessment has been produced by Lloyd George Acoustics in accordance with statutory requirements. The acoustic report is provided at **Appendix 4**.The assessment concludes that the facility will comply with the *Environmental Protection (Noise) Regulations 1997* at all times for all current and future sensitive receivers within proximity of the site, based on the fencing details depicted on the plans.

## 4.4 WASTE AND SERVICING

The proposed development provides an enclosed bin storage area at the south-western corner of the car park. Waste collection will be undertaken by private contractor. Waste collection activities will be carried out during off-peak periods or when the facility is closed. Swept path plans are included with the TIS which demonstrate an 8m waste collection vehicle can enter and exit the car park in a forward gear. A waste management plan can be provided at building permit stage.

# 5 STATUTORY PLANNING ASSESSMENT

## 5.1 METROPOLITAN REGION SCHEME (**MRS**)

The subject site and adjoining roads are zoned Urban under the Metropolitan Region Scheme (**MRS**). The proposed development is consistent with the MRS and warrants approval.

## 5.2 STATE PLANNING POLICY 7.0: DESIGN OF THE BUILT ENVIRONMENT

An assessment against the ten principles of SPP7.0 is provided in **Table 2** below.

| **Table 2: Ten design principles of SPP7.0** |
|---|
| **1. Context and character**<br>*Good design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place.* |
| Design response:<br>• The development is consistent with the intent of the Commercial zone, and will provide an essential community service which will meet the current and future needs of the area.<br>• The facility is proposed within a suitable corner location which is highly accessible to the community via the adjoining road network.<br>• The proposed development is comprised of a contemporary residential style building with unimposing colour tones and domestic style materials.<br>• The arrangement of the development is responsive to the characteristics of the land around the site, with the car park forming the interface with adjoining residentially zoned properties (reducing noise impacts) and the built form / playscape forming the site's corner response.<br>• The site is located appropriately to deliver childcare services, noting it forms part of a commercially zoned precinct which is within the 400m catchment of the local primary school, churches, and community centre. |
| **2. Landscape quality**<br>*Good design recognises that together landscape and buildings operate as an integrated and sustainable system, within a broader ecological context.* |
| Design response:<br>• A landscape plan is provided with the development plans at **Appendix 2** which depicts suitable landscape planting within the site's car park and the adjoining verges.<br>• The playscape forms part of the site's design response to the adjoining streetscapes, and is likely to contain various landscape treatments and play equipment. |
| **3. Built form and scale**<br>*Good design ensures that the massing and height of development is appropriate to its setting and successfully negotiates between existing built form and the intended future character of the local area.* |
| Design response:<br>• The building is double storey, incorporating a pitch roof format with a front feature gable providing a distinct and attractive response to the site's corner location.<br>• The built form approach adopted for the facility is distinctly residential in nature, based on its pitch roof format, external treatments and selection of materials. The facility integrates well with its surroundings from a built form and scale point of view.<br>• External bulk is diminished through the use of alternating materials, colours and finishes throughout the building. This includes masonry brickwork at ground level and texture render finish at the upper level, to break the building up into distinct 'sections'.<br>• The childcare building achieves compliant setbacks to the adjoining properties. |

**4. Functionality and build quality**

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

Design response:

- The development provides large open indoor and outdoor areas which are well connected and generally north facing.
- The facility meets all relevant regulatory requirements, ensuring the spaces are functional and fit for purpose.
- The arrangement of the building and outdoor areas discourages 'dead spaces' and ensures a clear line of sight is maintained between internal and external activity spaces which enhances child supervision.
- Significant natural light is achieved within the building as a result of the generally north facing active areas.
- Materials and finishes are carefully selected to ensure durability and weather resistance.

**5. Sustainability**

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

Design response:

- The building is designed to optimise access to natural sunlight. The eastern and western sides of the building provide glazed openings which will allow daylight permeability and facilitate natural ventilation and airflow.
- The playscapes are designed to receive sunlight, whilst the vegetation and verandahs will increase shade and provide a natural cooling effect.
- The facility will enhance social and economic outcomes through the increase of childcare places for the local community and the creation of full time employment for local residents.
- Landscape planting selection will include waterwise species.

**6. Amenity**

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

Design response:

- The facility provides generous internal and external spaces designed to a high standard with an engaging playscape connected to the internal activity spaces, which will result in optimised amenity for children.
- The car park provides acoustically compliant fencing as necessary to achieve suitable noise levels. The car park also contains landscape buffer planting to soften its visual effect to the adjoining properties.
- The playscapes are deliberately positioned within the street setback and western areas, as these are the most detached from residentially zoned properties (considered to be most sensitive).
- The development is attractively and responsively designed, which contributes positively to streetscape amenity. This includes the architecturally treated building with feature roof / gable facing the adjoining intersection and is framed by engaging outdoor play spaces.
- The placement of car park to the western side of the development results in an optimal outcome for the adjoining residential properties, as this eliminates potential bulk/scale impact and the car park is generally an inactive area outside of the peak AM and PM periods.

**7. Legibility**

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

Design response:

- The site is at a key corner location which will be identifiable and form a community focal point.
- The facility's car park is accessed by an identifiable crossover extending to Rae Road.

| |
|---|
| • An accessible pedestrian pathway will link the entry of the facility to the Rae Road footpath network. The pathway link is straight and has a clear line of sight from the street. |
| **8. Safety**<br>*Good design optimises safety and security, minimising the risk of personal harm and supporting safe behaviour and use.* |
| Design response:<br>• The facility is designed in accordance with relevant regulatory standards which ensures safety and security for the users of the centre.<br>• The centre optimises passive surveillance of the car park and street through the use of openings and permeable fencing.<br>• The entrance to the facility is secured with a gate. |
| **9. Community**<br>*Good design responds to local community needs as well as the wider social context, providing environments that support a diverse range of people and facilitate social interaction.* |
| Design response:<br>• The facility is intended to be a community focal point which would offer services to local families.<br>• The playscape will be an engaging environment in which children will be able to socialise, learn and play together.<br>• Parents will have opportunities to converge at the facility during drop off and pick up. |
| **10. Aesthetics**<br>*Good design is the product of a skilled, judicious design process that results in attractive and inviting buildings and places that engage the senses.* |
| Design response:<br>• The development is designed in response to site-specific constraints which facilitate the prominence of its attractive buildings and external spaces, as well as the screening of its car park.<br>• The building is of a high design quality, utilising a number of built form treatments and unimposing colour tones with domestic style materials.<br>• The feature roof and front gable creates a site-specific identity and adds architectural expression to the development. |

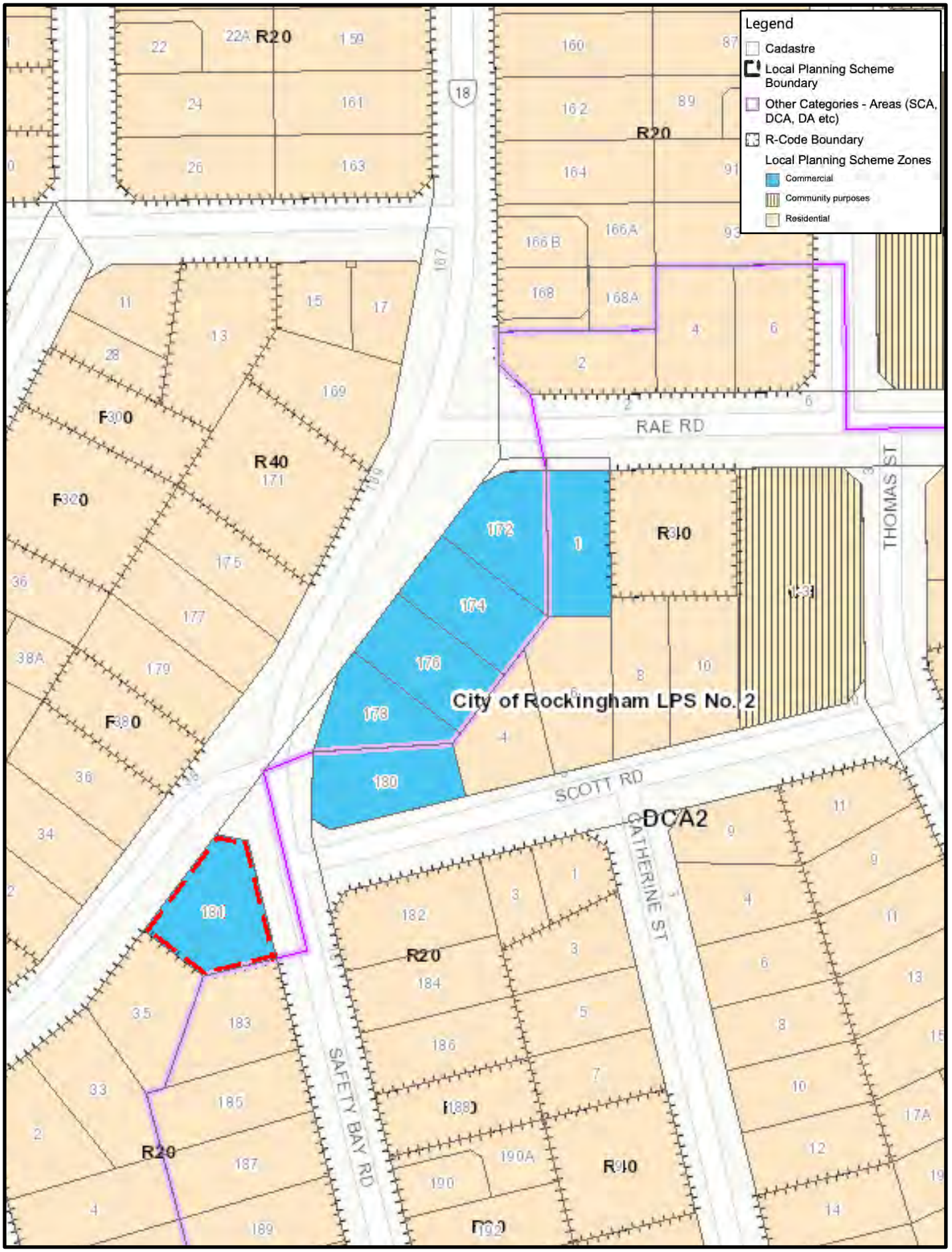
## 5.3 CITY OF ROCKINGHAM LOCAL PLANNING SCHEME NO. 2 (**LPS2**)

### 5.3.1 ZONING AND LAND USE

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.*

The development seeks approval for a child care premises catering for up to 100 kids with 15 full-time educators and associated additional support staff, who would provide services in accordance with the *Education and Care Services National Law (Western Australia)* and associated regulations.




| | | |
|---|---|---|
| **Figure 2: Zoning Map** | NORTH | **Drawn:** Alessandro Stagno<br>**Rev:** 0 |
| **Lot 1 (1) Rae Road & Lot 2 (172) Safety Bay Road, Shoalwater** | | **Source:** PlanWA<br>**Date:** 20 October 2022<br>**apex** planning |

The use is properly classified as 'Child Care Premises', which is identified as a 'D' discretionary use in the Commercial zone. The proposed development is entirely appropriate for establishment on the site for the following reasons:

- The proposed development would deliver an important urban support service which caters for the care and early education of children from families of the surrounding community, within a highly accessible and suitable location.
- The site forms part of a planned commercial precinct, comprised of a number of lots zoned commercial. This has created the opportunity for noisier areas to be positioned closer to commercial zoned land which reduces impact to residential zoned land.
- The site is within the 400m catchment of the local primary school, churches, community centre and local bus services. The facility will complement each of these local points of interest.
- The facility provides a suitable design response to its corner location which incorporates attractive architectural expression, domestic style design features and an engaging outdoor area. A positive contribution will be made to the local streetscape environment.
- A range of expert reporting and the justification provided in this report demonstrates that the amenity of surrounding properties will not be adversely impacted with respect to traffic, noise, and landscaping.
- The locality is generally underdeveloped, noting current dwelling and lot sizes are not commensurate with densities afforded to various sites. Infill development may occur in the future which would increase the current demand for child care services.

The proposed use is appropriate and warrants approval accordingly.

### 5.3.2 PARKING ASSESSMENT

An assessment against the parking standards set out under *Table No. 2 – Carparking Table* of LPS2 is provided below.

Under *Table No. 2 – Carparking Table*, a Child Care Premises requires:

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

The facility includes a car park which provides a total of 28 onsite bays.

The proposed childcare facility will have a capacity of 100 children (requiring 12.5 bays for visitors). With regard to staffing arrangements:

- A minimum of 15 full-time educators are required by the *Education and Care Services National Regulations 2012.* It is important to note that whilst there are 15 full-time educators, this does not represent the maximum number of staff required to compliantly and effectively deliver childcare services on the site.
- The 15 full-time educators typically work a full 8 hour day, but their arrival and departure is staggered in 15-30 minute intervals during the morning and afternoon periods. The centre will typically be fully staffed between 9am-9:30am

to 3pm-3:30pm. This means not all 15 staff bays are utilised during the peak AM and PM periods.

- Support staff performing important support functions for the centre also attend during off-peak periods. These include a cook to prepare meals, and lunch cover staff to provide supervision to children while the main educators take breaks in the middle of the day. Support staff typically attend outside of the centre's peak drop-off / pick-up times, when the visitor bays are underutilised (ie between 9:30am and 3:30pm).

The parking demand analysis provided as part of the TIS (section 3.2) notes that the provision of 28 onsite bays will be sufficient to cater for the needs of the centre based on:

- The operational characteristics of the facility, with respect to the arrival/departure of both parents and staff.
- Not all staff are expected to drive to the site. Some staff are likely to car pool or use public transport (noting the 551 route is readily accessible to the site).

In consideration of the information provided above, it is respectfully requested that no condition be applied which contains an upper limit of staff. Such a restriction would only create operational implications for the centre, and may create perverse outcomes whereby the number of staff attending who do not park onsite exceeds the upper limit enforced by the condition. The proponent has no objection to providing a parking management plan in accordance with a condition of planning approval.

### 5.3.3 COMMERCIAL ZONE DEVELOPMENT STANDARDS

Clause 4.6 of LPS2 contains various standards relating to development proposed within the Commercial zone. **Table 3** below provides an assessment against the relevant standards.

**Table 3: Commercial zone development standards**

| Development standard | Response |
|---|---|
| 4.6.2 Form of Development<br>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. | As outlined in the previous sections of this report, the proposed development is designed in a site-responsive manner and is arranged such that impacts to residential zoned land is minimised. This is achieved through:<br>• Built form which is designed in a residential manner being positioned centrally, addressing the adjoining intersection and providing a suitable corner response.<br>• Playscapes being provided within the street setback and western setback areas of the site, where they are detached from residentially zoned properties.<br>• Car parking area provided at the eastern side of the site, adjoining residentially zoned properties. The car park contains no built form (creating no bulk impact) and is a low-activity area outside of the AM and PM peak periods. |

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| | The double storey scale of the development is appropriate and presents suitably to the adjacent intersection. The built form approach of the facility is attractively designed with residential features, including a pitch roof format, feature gable with brickwork and unimposing colour tones. Perceived bulk is reduced through the approach of using heavier brickwork treatment for the ground level and a more lightweight approach at the upper level which breaks the building down into distinct 'sections'.<br><br>The proposed landscaping approach softens the visual effect of the car park and provides screening for the adjoining residential properties with 7 trees along the car park periphery.<br><br>Overall, it is evident the facility is suitably designed and appropriate for establishment on the site. |
| 4.6.3 Parking<br>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. | The preceding section of this report contains a parking assessment demonstrating the acceptability of the proposed arrangements. |
| 4.6.4 Setbacks<br>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:-<br>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;<br>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. | <u>Front setback</u>: the development achieves a 5m primary street setback to Rae Road, which is considered appropriate because:<br>• It allows the architecturally treated front façade of the development to establish a response to the site's corner location. The street response is appropriate and will clearly improve the site's contribution to local streetscape amenity.<br>• The building is positioned such that its setback to the rear Residential R15 property is maximised to reduce potential bulk impact.<br><br><u>Eastern residential boundary (R40)</u>: The development achieves a **compliant** 13.3m setback to this boundary, noting wall height of 6.3m and wall length of 14m closest to the boundary.<br><br><u>Southern residential boundary (R15)</u>: Table 1 of the R-Codes requires a 6m rear setback. The proposed childcare building achieves 11.8m to this boundary, which is **compliant**. It is noted that an area allocated for bin store is located at the southern end of the site. The enclosure is comprised of 1.8m high smartascreen material and presents in the same manner as typical boundary fencing. Therefore, the bin store does not create bulk impact and would not be discernible to the adjoining property.<br><br><u>Western commercial boundary</u>: The development provides a minimum 3.4m setback to the western boundary, which results in a greater setback compared to that which exists currently (2.35m). The setback is appropriate, noting it relates to a small portion of the side |

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| | of the building which then increases in setback as the building shape changes angle. The setback is appropriate, will enhance the current situation and can achieve the requirements of the BCA. |
| 4.6.5 Landscaping<br>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.<br>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 provides a total of 461sqm landscaped area which includes soft landscaping in the car park and the softscape areas in the outdoor play area, which will contain landscape planting (to be confirmed at detailed design stage). This equates to 24.5% of total site area and is compliant. |

### 5.3.4 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 4** below provides an assessment against the relevant matters.

**Table 4: 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 report addresses 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. |
| (m) the compatibility of the development with its setting, including —<br>(i) the compatibility of the development with the desired future character of its setting; and<br>(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; | • The development site forms part of a commercially zoned precinct, though it is noted the site adjoins residential zoned land to the west and south. Where there is an interface between land zoned commercial and residential, there is an acceptance that the level of amenity/character will be distinctly different to that which would be achieved where sites are only zoned residential.<br>• The proposal is designed in an attractive and site responsive manner. The building is clearly designed in a residential format with pitch roof, residential materials and |

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| | unimposing colour tones complementary to the overall design style of the development.<br>• The building presents in two-storey scale which is not out of character with other buildings in the locality. Bulk is diminished through the use of feature façade treatments, alternating materials / finishes and breaking the building down into 'sections'.<br>• The layout of the facility reduces bulk to the adjoining residential zoned properties to the east and south, providing car parking along the eastern side of the site which creates a significant building setback.<br><br>The scale, height, orientation and appearance of the development is consistent with the current and future character of the locality. |
| (n) the amenity of the locality including the following<br>(i) environmental impacts of the development;<br>(ii) the character of the locality;<br>(iii) social impacts of the development; | Local amenity is characterised by a commercial precinct (including the development site) forming the corner response for Rae Road and Safety Bay Road. The commercial precinct interfaces with land zoned residential, requiring a suitable design response.<br><br>The development is consistent with the established local character by proposing an attractively designed building in a residential format to establish the corner response. The layout of the facility is also such that impacts to the adjoining residential zoned properties are reduced, both from a built form and operational point of view.<br><br>The community-focused nature of the use will build on the availability of essential early learning services for the current and future residents of the local area. In this regard, it is relevant to note the site is within the 400m catchment of local bus services connecting to Rockingham station, the local primary school, churches and a local community centre. The establishment of a childcare facility on the site will not result in any detrimental social impacts. The proposal will result in direct full time employment for childcare staff, and will provide childcare services to local families. This is a positive social outcome.<br><br>An environmental noise assessment was prepared in support of the proposal which demonstrates it will comply with the *Environmental Protection (Noise) Regulations 1997*. |
| (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 | A conceptual landscape plan is provided with the DA package which demonstrates landscaping within the car park and verges. |

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| (s) the adequacy of<br>(i) the proposed means of access to and egress from the site; and<br>(ii) arrangements for the loading, unloading, manoeuvring and parking of vehicles; | A TIS has been produced in support of the proposal which demonstrates the appropriateness and adequacy of proposed access arrangements.<br>The TIS also includes swept path plans demonstrating the acceptable movements of waste collection vehicles, which can enter and exit the car park in forward gear. |
| (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 | A TIS has been produced in support of the proposal which demonstrates the facility will create an insignificant amount of traffic, particularly during peak traffic periods. |
| (x) the impact of the development on the community as a whole notwithstanding the impact of the development on particular individuals | The proposed facility will provide 100 additional childcare places of varying age groups for the local community and create direct full time employment for staff. These are considered to be positive outcomes for the community. |

### 5.3.5 DEVELOPMENT CONTRIBUTION PLAN NO.2 (**DCP2**)

The development site falls within an area covered by DCP2 under the scheme map.

In accordance with Section 11 of the DCP2 provisions contained within *Schedule No. 11* of the scheme text, a cost contribution is not payable where a development approval does not create an additional number of 'dwelling units'.

The proposed development is for non-residential development, and therefore does not create additional dwelling units. It follows that a contribution is not payable.

## 5.4 PLANNING POLICY 3.3.5 CHILD CARE PREMISES

The City's Planning Policy 3.3.5 sets out the policy standards applicable to proposals involving child care premises in the scheme area. Planning Policy 3.3.5 is addressed in **Table 5** below.

| **Table 5: policy standards (child care premises)** | |
|---|---|
| **4.1 Location** | |
| (a) Distributed strategically to provide maximum benefit to the community it serves; | The proposed childcare facility is located such that it is highly accessible to the local community, commuters and parents accessing the local school.<br>The site has frontage to two Distributor A roads which provide key linkages through the Shoalwater locality and connect to Rockingham slightly further east. Additionally, the site is within the 400m catchment of local bus services providing a public transport connection to Rockingham station, as well as the local primary school, churches and community centre. The site is therefore suitably located and will provide significant benefit to the community. |
| (b) Within easy walking distance or part of appropriate commercial, recreation or community nodes and education facilities; | The development site is within the 400m catchment of the local primary school, bus services, churches, and |

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| | community centre. Approximately 500m north of the site is the Shoalwater shopping centre. |
| (c) Located in areas where adjoining uses are compatible with a Child Care Premises (includes considering all permissible uses under the zoning of adjoining properties); | The development site forms part of a commercially zoned precinct and has direct interface with two residential zoned properties to the east and south. The content of this DA package demonstrates residential amenity is maintained to an acceptable standard with respect to built form, noise, traffic. |
| (d) Serviced by public transport (where available); | The site is within the 400m walkable catchment of local bus services connecting to Rockingham train station. The site is considered to be well serviced. |
| (e) Considered suitable from a traffic engineering/safety point of view; and | A TIS has been prepared in support of the development which demonstrates an insignificant impact to the local road network, and a suitable access system. |
| (f) Of sufficient size and dimension to accommodate the development without affecting the amenity of the area. | The site is 1,880sqm and comfortably fits the development. The development provides compliant indoor and outdoor play areas, compliant / acceptable setbacks, and a responsive built form approach. |
| **4.2 Site characteristics** | |
| 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.<br>As a general rule, sites in a residential area should be of regular shape and greater than 1000m2 in size. A maximum site coverage of 50% will apply to any proposal to prevent the over-development of any lot.<br>The topography of the site should be considered, as steep slopes may affect access to the facility, noise transfer and methods of noise mitigation.<br>Sites selected for Child Care Premises should also be assessed to determine their potential for soil and groundwater contamination. Section 6 of the Department of Water, Environment and Regulation (DWER) *'Contaminated Sites and the 'Land Use Planning Process'* (April 2006) guideline sets out a useful methodology to assist local government in carrying out such assessments. | As noted above, the site is 1,880sqm and provides ample space to accommodate buildings, playscapes, car parking, landscaping and various amenities. Site cover equates to approximately 35%.<br>The development is proposed on land which will be flat at the completion of subdivisional lot creation works. The land does not contain any known contamination. |
| **4.3 Carparking** | |
| An application for Development Approval shall make provision for parking bays in accordance with the standards and requirements of Clause 4.15 and Table Nos.2 and 3 of Town Planning Scheme No.2. | A comprehensive parking assessment is provided earlier in this report and as part of the supporting TIS, which demonstrate the parking arrangements are satisfactory. |
| **4.4 Traffic impacts** | |
| A Traffic Impact Statement/Assessment will be required where, in the opinion of the | A TIS has been prepared in support of the proposed development by a suitably qualified and experienced |

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| Manager, Statutory Planning, a proposed Child Care Premises has the potential to impact on the functionality and amenity of an area and may create or exacerbate unsafe conditions for children and families using the premises, or for pedestrian or road users. | transport consultant, demonstrating the proposal is entirely acceptable. |
| **4.5 Noise impacts** | |
| A Noise Impact Assessment may be required for the development of a Child Care Premises. The objectives should be to limit the noise impact of the Child Care Premises on adjacent properties, and also limit any noise impact from extern sources on the Child Care Premises. This may be achieved either by physical separation, design and layout of the premises or by implementing noise-mitigation measures, such as acoustic treatments to buildings.<br>Although each application will need to be assessed on its individual merit, the following basic principles apply: | An environmental noise assessment has been prepared in support of this proposal and has informed the design of the facility. Compliance with the Noise Regulations is readily achieved. |
| (a) Where a Child Care Premises is located adjacent to a noise sensitive use, such as houses, retirement village and nursing homes, the noise-generation activities of the Child Care Premises, such as the outdoor play areas, parking areas and any plant equipment, are to be located away from the noise sensitive use; | The car park is provided at the eastern side of the site, interfacing with two residential properties, whilst the playscape and plant yard are located away from residentially zoned receivers with no direct interface. This reduces impact to the more sensitive properties.<br><br>The car park provides a suitable acoustic interface with residences as it generates the least amount of noise, and is a low activity area outside of the peak AM and PM periods. |
| (b) Where, due to design limitations or safety considerations, noise-generating activities such as outdoor play areas are located close to noise-sensitive uses, appropriate noise mitigation is to be undertaken; and | Acoustic mitigation measures are incorporated into the development to achieve compliance, including acoustically attenuated fencing and controlled use of bays. Refer to the acoustic assessment for details. |
| (c) The design and construction of buildings may include noise-mitigation measures to reduce impact from external sources and to achieve accepted indoor noise limits. | Not applicable. |
| **4.6 Design considerations** | |
| 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.<br>Setbacks to side and rear boundaries and the orientation of openings to indoor play areas should minimum any impact on adjoining properties.<br>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 | The design approach adopted for the proposal achieves a high standard by virtue of:<br>• Its contemporary residential design format, which employs a pitch roof and domestic materials in complementary colours.<br>• The incorporation of a feature gable with brickwork and aluminium batts to form the corner response to Rae Road / Safety Bay Road.<br>• Perceived bulk broken down by using heavier brickwork materiality on the ground floor and alternate lightweight and texture rendered materials at the upper floor. |

| | |
|---|---|
| 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.<br>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.<br>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. | • The use of black detail framed Perspex screens for the upper level playscape and a portion of the ground floor fence.<br>• The layout of the facility, which facilitates generous building setbacks to the eastern and southern residentially zoned properties and reduces acoustic impact.<br>Passive solar orientation has been optimised, through the north and west facing activity spaces and playscape.<br>Open style fencing is provided along a portion of the playscape's frontage to Rae Road / Safety Bay Road which will enhance interactivity.<br>Landscaping is provided within the car park and adjoining verges, which will enhance the development. |
| **4.7 Hours of operation** | |
| For Child Care Premises in Residential areas, hours of operation will be restricted to 6:30am to 7:00pm, unless otherwise agreed to by the Council. | Hours of operation are consistent with the policy standard. |
| **4.8 Advertising signs** | |
| Any proposed advertising sign must accord with the provisions of clause 5.3 of Town Planning Scheme No.2. Furthermore, a Sign Licence application is required to be submitted to Building Services, pursuant to the Council's Signs, Hoardings and Bill Posting Local-Law. | An assessment against policy 3.3.1 is provided in this report. |
| **4.9 Need for child care premises** | |
| 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. | Under the recently published position statement for child care premises published by the WAPC, it is confirmed under section 5.1 that *"the WAPC is the of the view that a proponent does not have to demonstrate there is sufficient demand for the facility"*. |

## 5.5 PLANNING POLICY 3.3.1 CONTROL OF ADVERTISEMENTS

Proposals involving external signage are to be assessed against the City's Planning Policy 3.3.1.

The development includes the following signage:

- A 'Genius Childcare' insignia on the front gable feature, at 3.8m x 1.45m. The sign is comprised of simple lettering and will face the corner.

- A ‘Genius Childcare’ insignia on the eastern façade above the entry, at 3.8m x 1.45m. The sign is comprised of simple lettering and enhances identification of the site entry.
- A small 1.8m directional car park entry sign at the eastern side of the Rae Road crossover, to identify the entrance to the car park.
- A 4m high pylon sign facing Safety Bay Road, integrated into the front fence. The sign simply contains ‘genius’ lettering with the ‘G’ logo.

In considering the suitability of the signs against their respective standards under the policy, the following factors warrant due regard:

- Only four signs are proposed, which is minimal and does not constitute a proliferation.
- The wall signs are simplistic in nature, comprising the Genius insignia which relates to the proposed business. Both signs have a purpose and are integrated into the building through appropriate sizing, colour and design style.
- In respect of the two freestanding signs:
    - Both signs face separate street frontages.
    - The smaller car park entry sign is only 1.8m in height and will appropriately direct vehicles into the site without creating undue visual impact. Whilst the sign is located within 1.8m of the front boundary, it is positioned as such for functional reasons and is a necessary component of the development. The sign will not create sightline issues and will not detract from the visual amenity of the locality.
    - The larger 4m pylon sign is incorporated into the front fence and allows the facility to be identified as patrons travel along Safety Bay Road. The sign is designed in a style befitting the overall development and complements the front gable feature noting it comprises similar graphics and colouring.
- Overall, the signage proposed is at a high standard and minimises proliferation of advertising. Each sign has a purpose and is located at a different part of the site. The signage strengthens site identity and does not create negative streetscape impacts.

The City’s support for the signage is warranted.

# 6 CONCLUSION

This application for planning approval involves the establishment of a new Early Learning Centre at Lot 1 (1) Rae Road & Lot 2 (172) Safety Bay Road, Shoalwater which would cater for up to 100 children.

The proposed development warrants the City's support for the following reasons:

- The facility is highly accessible to local residents and the wider catchment by virtue of its key corner location, and will build on the provision of essential community services for the local area.
- The proposal is consistent with the requirements of the local planning framework and is appropriately located on land zoned for commercial purposes.
- The proposed building is designed to a high architectural standard, incorporating contemporary residential design elements, and will enhance the streetscape quality of the local area.
- The proposal is supported by expert traffic and acoustic assessments, demonstrating its suitability.

It is respectfully requested that the Metro Outer JDAP grant approval to the proposed development.

**APPENDIX 1**

CERTIFICATES OF TITLE AND PLAN

WESTERN AUSTRALIA

| REGISTER NUMBER | |
|---|---|
| 1/P5948 | |
| DUPLICATE EDITION | DATE DUPLICATE ISSUED |
| 3 | 26/5/2022 |

VOLUME 1220 FOLIO 914

# RECORD OF CERTIFICATE OF TITLE

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts

REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

**LAND DESCRIPTION:**

LOT 1 ON PLAN 5948

**REGISTERED PROPRIETOR:**
(FIRST SCHEDULE)

SOUTHERLY OCEAN PTY LTD
IN 1/2 SHARE
CEDARBAY INVESTMENTS PTY LTD
IN 1/2 SHARE
BOTH OF 41 PENGUIN ROAD SHOALWATER WA 6169
AS TENANTS IN COMMON

(TP P097940 ) REGISTERED 1/4/2022

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

1. TITLE EXCLUDES THE LAND SHOWN ON S.O. DIAGRAM 73863.

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: 1220-914 (1/P5948)
PREVIOUS TITLE: 1071-998
PROPERTY STREET ADDRESS: 1 RAE RD, SAFETY BAY.
LOCAL GOVERNMENT AUTHORITY: CITY OF ROCKINGHAM

NOTE 1: P061763 SECTION 138D TLA APPLIES TO CAVEAT N943089

WESTERN AUSTRALIA

| REGISTER NUMBER | |
|---|---|
| 2/P5948 | |
| DUPLICATE EDITION | DATE DUPLICATE ISSUED |
| N/A | N/A |

VOLUME 1248 FOLIO 231

# RECORD OF CERTIFICATE OF TITLE

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts

REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

**LAND DESCRIPTION:**

LOT 2 ON PLAN 5948

**REGISTERED PROPRIETOR:**
(FIRST SCHEDULE)

CEDARBAY INVESTMENTS PTY LTD
IN 1/2 SHARE
SOUTHERLY OCEAN PTY LTD
IN 1/2 SHARE
BOTH OF 41 PENGUIN ROAD SHOALWATER WA 6169
AS TENANTS IN COMMON

(T P202919 ) REGISTERED 1/7/2022

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

1. TITLE EXCLUDES THE LAND SHOWN ON S.O. DIA 73863.

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:**

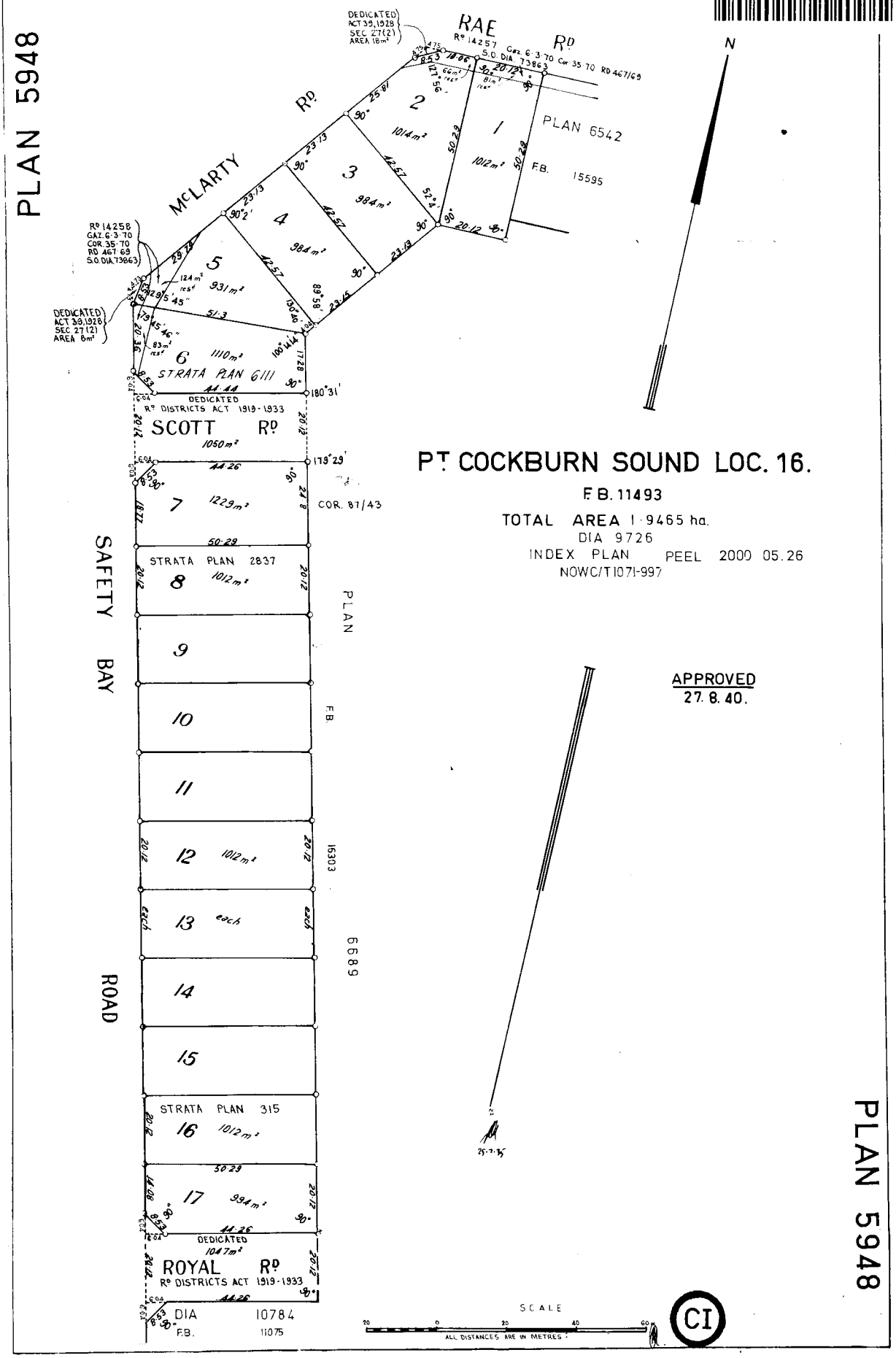
The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: 1248-231 (2/P5948)
PREVIOUS TITLE: 1071-998
PROPERTY STREET ADDRESS: 172 SAFETY BAY RD, SHOALWATER.
LOCAL GOVERNMENT AUTHORITY: CITY OF ROCKINGHAM

NOTE 1: DUPLICATE CERTIFICATE OF TITLE NOT ISSUED AS REQUESTED BY DEALING K602137

P 005948 F 01

PLAN 5948




# PT COCKBURN SOUND LOC. 16.

F B. 11493

TOTAL AREA 1·9465 ha.

DIA 9726

INDEX PLAN PEEL 2000 05.26

NOWC/T1071-997

APPROVED
27. 8. 40.

PLAN 5948

CI

# APPENDIX 2

DEVELOPMENT PLANS


N

HINDLEY & ASSOCIATES
BUILDING DESIGNERS

166 STIRLING HIGHWAY
NEDLANDS WA 6009

PO BOX 199
NEDLANDS WA 6909

PHONE - 9386 6699
admin@hindley.com.au
www.hindley.com.au

DEVELOPMENT APPLICATION



| No. | Date | Revision | Drawn | Check |
|---|---|---|---|---|
| PRE | 02.09.22 | PRELIMINARY ISSUE | CPH | CPH |
| A | 14.11.22 | DEVELOPMENT APPLICATION ISSUE | CPH | CPH |

A2 SHEET

# SITE LOCATION PLAN

NOT TO SCALE

PROPOSED CHILDCARE CENTRE
LOTS 1 & 2, No. 172 SAFETY BAY ROAD
SHOALWATER
SOUTHERLY OCEAN & CEDARBAY INVESTMENTS

| | |
|---|---|
| Date - | 02.09.22 |
| Design - | CPH |
| Drawn - | CPH |
| Checked - | CPH |
| Scale - | N.T.S. |
| Job No. - | 0794 |
| Dwg - | DA01 |
| Rev - | A |

## LEGEND

ITEMS TO BE REMOVED / DEMOLISHED SHOWN IN RED.

NOTE: Fence Appears Out of Position

DUG TO LEVEL 3.86 ON LOT (SAND, L/STONE)

Brick & Tile on Slab -Clear

Brick & Tile on Slab

Galv. Shed

PEG GONE

Overhanging Trees

Colorbond Fence (Fair Cond.)

Out Levels Unob.

Thick Bush

Colorbond Fence (Poor Cond.)

Timber Fence (Poor Cond.)

Galv. Shed

Medium Grass

#174 Brick & Tile On L'stone

Brick & Galv Garage

Approx. F/L At Window 4.63

L'stone Ret Wall

Approx. F/L At Rear Door 4.84

Gate

Fibro Fence (Fair Cond.)

Bitumen

Fibro Fence (Poor Cond.)

Bushes 4.05

Chainlink Fence (Poor Cond.)

#172 Brick & Galv on Shop On Slab

Brick & Tile on Slab

Gate

Bush

Long Grass & Small Bush

Approx. F/L At Front Door 4.50

Porch UMR

Metal Posts

Consumer Cable

Consumer Pole

Med Grass

Metal Fence

Approx House F/L @ Front Door On Timber 3.85

Ret Wall Obstructed

Damaged L'stone Ret Wall

Chainlink Fence (Poor Cond.)

Fibro Fence (Poor Cond.)

Overhanging Bushes 3.95

Bushes 3.95

Overhanging

Sewer Junction In: 5.0 Up: 1.0 Inv: 1.7 Depth: 1.2 NOTE: UP

Sewer Junction In: 3.5 Up: 1.2 Inv: 1.6 Depth: 1.3 NOTE: UP

Sewer I.O. In Hatch

Conc M/H

Meter In Metal Hatch

Metal Lids

Metal Post

Semi-Mount

Lawn

Mountable

Bitumen Crossover

Concrete

Concrete Path

Concrete Crossover

Telstra Pole

Verge Tree Ø 0.02m Ht 1.7m

Sewer M/H (4.39)

Sewer M/H (4.42)

Island

Ref Nail at base of kerb A.H.D. Level 3.93m (Established from S.S.M. Peron 11 using data supplied by the Geodetic Section of Landgate)

Ref Nail at base of kerb A.H.D. Level 4.11m (Established from S.S.M. Peron 11 using data supplied by the Geodetic Section of Landgate)

Ref Nail at base of kerb A.H.D. Level 4.58m (Established from S.S.M. Peron 11 using data supplied by the Geodetic Section of Landgate)

Rae Road Bitumen

Power Pole Opp.

N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**DEVELOPMENT APPLICATION**



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| PRE | 02.09.22 | PRELIMINARY ISSUE | CPH | CPH |
| A | 14.11.22 | DEVELOPMENT APPLICATION ISSUE | CPH | CPH |

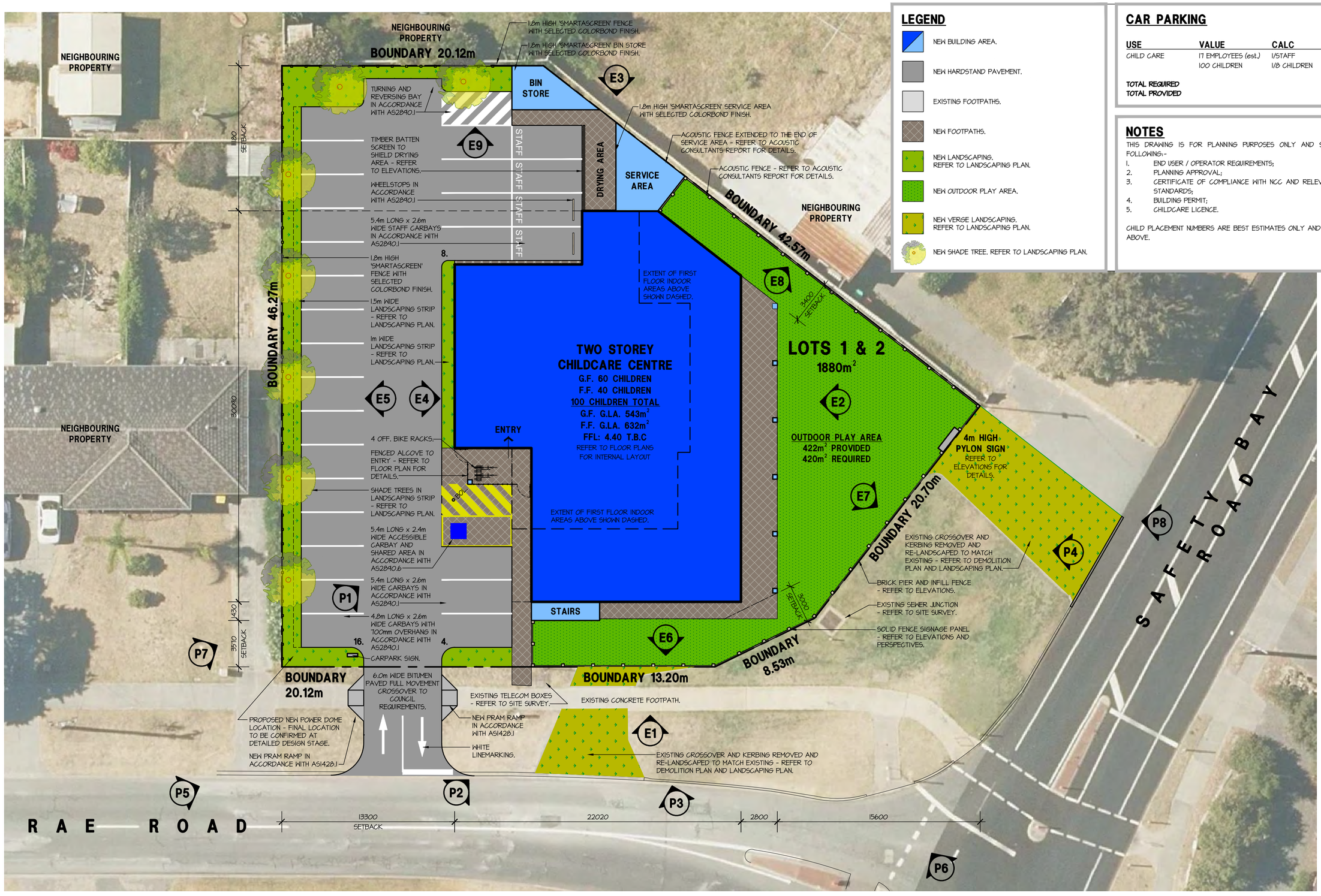
A2 SHEET

# PROPOSED DEMOLITION PLAN

SCALE 1:200

**PROPOSED CHILDCARE CENTRE**
**LOTS 1 & 2, No. 172 SAFETY BAY ROAD**
**SHOALWATER**
**SOUTHERLY OCEAN & CEDARBAY INVESTMENTS**

| | |
|---|---|
| Date - | 02.09.22 |
| Design - | CPH |
| Drawn - | CPH |
| Checked - | CPH |
| Scale - | 1:200 |
| Job No. - | 0794 |
| Dwg - | DA02 |
| Rev - | A |




## LEGEND

- NEW BUILDING AREA.
- NEW HARDSTAND PAVEMENT.
- EXISTING FOOTPATHS.
- NEW FOOTPATHS.
- NEW LANDSCAPING. REFER TO LANDSCAPING PLAN.
- NEW OUTDOOR PLAY AREA.
- NEW VERGE LANDSCAPING. REFER TO LANDSCAPING PLAN.
- NEW SHADE TREE. REFER TO LANDSCAPING PLAN.

## CAR PARKING

| USE | VALUE | CALC | REQUIRED |
|---|---|---|---|
| CHILD CARE | 17 EMPLOYEES (est.) | 1/STAFF | 17 |
| | 100 CHILDREN | 1/8 CHILDREN | 12.5 |
| TOTAL REQUIRED | | | 29.5 |
| TOTAL PROVIDED | | | 28 |

## NOTES

THIS DRAWING IS FOR PLANNING PURPOSES ONLY AND SUBJECT TO THE FOLLOWING:-

1. END USER / OPERATOR REQUIREMENTS;
2. PLANNING APPROVAL;
3. CERTIFICATE OF COMPLIANCE WITH NCC AND RELEVANT AUSTRALIAN STANDARDS;
4. BUILDING PERMIT;
5. CHILDCARE LICENCE.

CHILD PLACEMENT NUMBERS ARE BEST ESTIMATES ONLY AND SUBJECT TO THE ABOVE.

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DEVELOPMENT APPLICATION



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|---|---|---|---|---|
| PRE | 02.09.22 | PRELIMINARY ISSUE | CPH | CPH |
| A | 14.11.22 | DEVELOPMENT APPLICATION ISSUE | CPH | CPH |

A2 SHEET

# PROPOSED SITE PLAN

SCALE 1:200

PROPOSED CHILDCARE CENTRE
LOTS 1 & 2, No. 172 SAFETY BAY ROAD
SHOALWATER
SOUTHERLY OCEAN & CEDARBAY INVESTMENTS

| | |
|---|---|
| Date - | 06.10.22 |
| Design - | CPH |
| Drawn - | CPH |
| Checked - | CPH |
| Scale - | 1:200 |
| Job No. - | 0794 |
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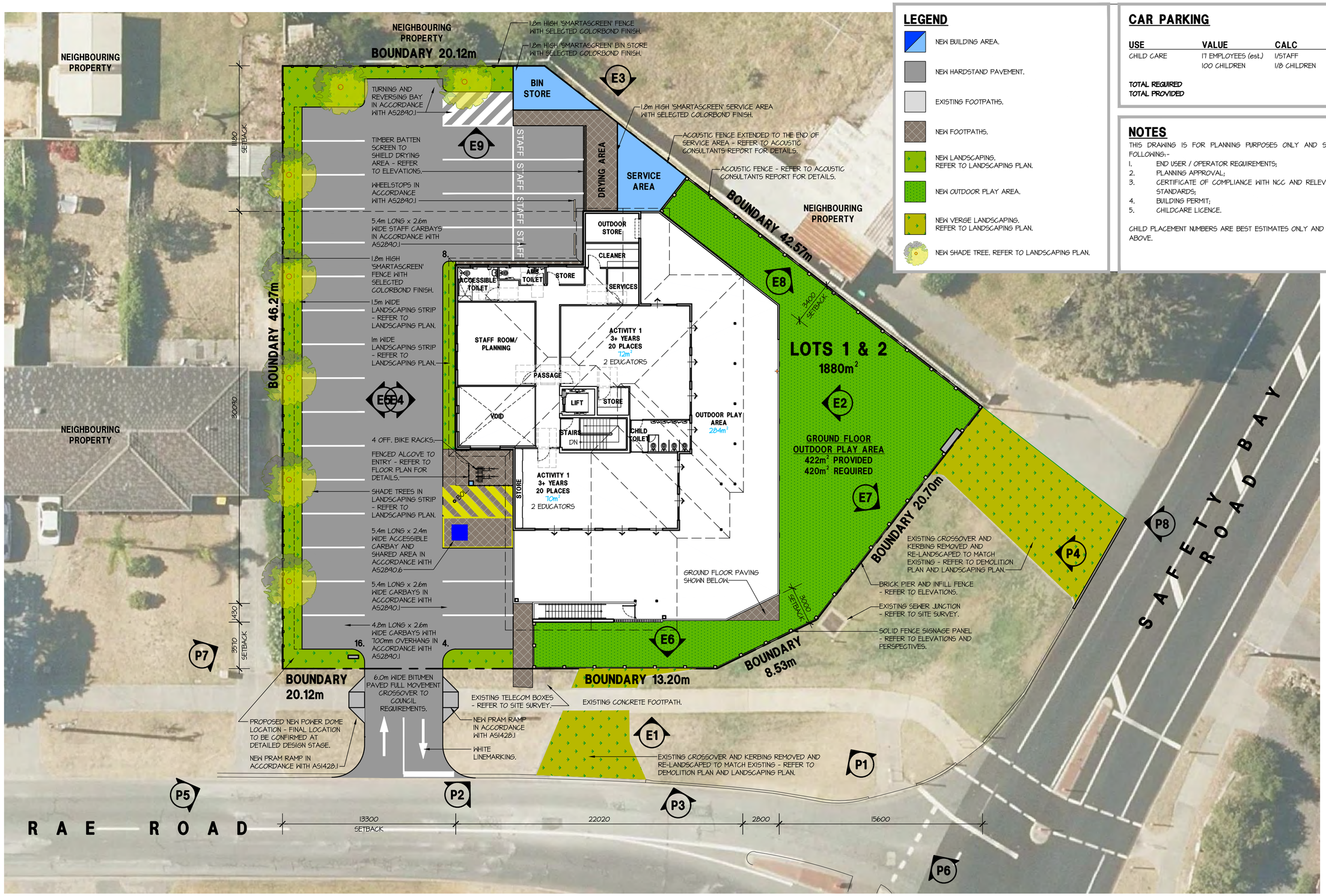
| Rev - | A |




## LEGEND

- NEW BUILDING AREA.
- NEW HARDSTAND PAVEMENT.
- EXISTING FOOTPATHS.
- NEW FOOTPATHS.
- NEW LANDSCAPING. REFER TO LANDSCAPING PLAN.
- NEW OUTDOOR PLAY AREA.
- NEW VERGE LANDSCAPING. REFER TO LANDSCAPING PLAN.
- NEW SHADE TREE. REFER TO LANDSCAPING PLAN.

## CAR PARKING

| USE | VALUE | CALC | REQUIRED |
|---|---|---|---|
| CHILD CARE | 17 EMPLOYEES (est.) | 1/STAFF | 17 |
| | 100 CHILDREN | 1/8 CHILDREN | 12.5 |
| TOTAL REQUIRED | | | 29.5 |
| TOTAL PROVIDED | | | 28 |

## NOTES

THIS DRAWING IS FOR PLANNING PURPOSES ONLY AND SUBJECT TO THE FOLLOWING:-

1. END USER / OPERATOR REQUIREMENTS;
2. PLANNING APPROVAL;
3. CERTIFICATE OF COMPLIANCE WITH NCC AND RELEVANT AUSTRALIAN STANDARDS;
4. BUILDING PERMIT;
5. CHILDCARE LICENCE.

CHILD PLACEMENT NUMBERS ARE BEST ESTIMATES ONLY AND SUBJECT TO THE ABOVE.

N

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| A | 14.11.22 | DEVELOPMENT APPLICATION ISSUE | CPH | CPH |

A2 SHEET

# PROPOSED SITE PLAN (FIRST FLOOR LAYOUT)

SCALE 1:200

PROPOSED CHILDCARE CENTRE
LOTS 1 & 2, No. 172 SAFETY BAY ROAD
SHOALWATER
SOUTHERLY OCEAN & CEDARBAY INVESTMENTS

| | | |
|---|---|---|
| Date | - | 27.09.22 |
| Design | - | CPH |
| Drawn | - | CPH |
| Checked | - | CPH |
| Scale | - | 1:200 |
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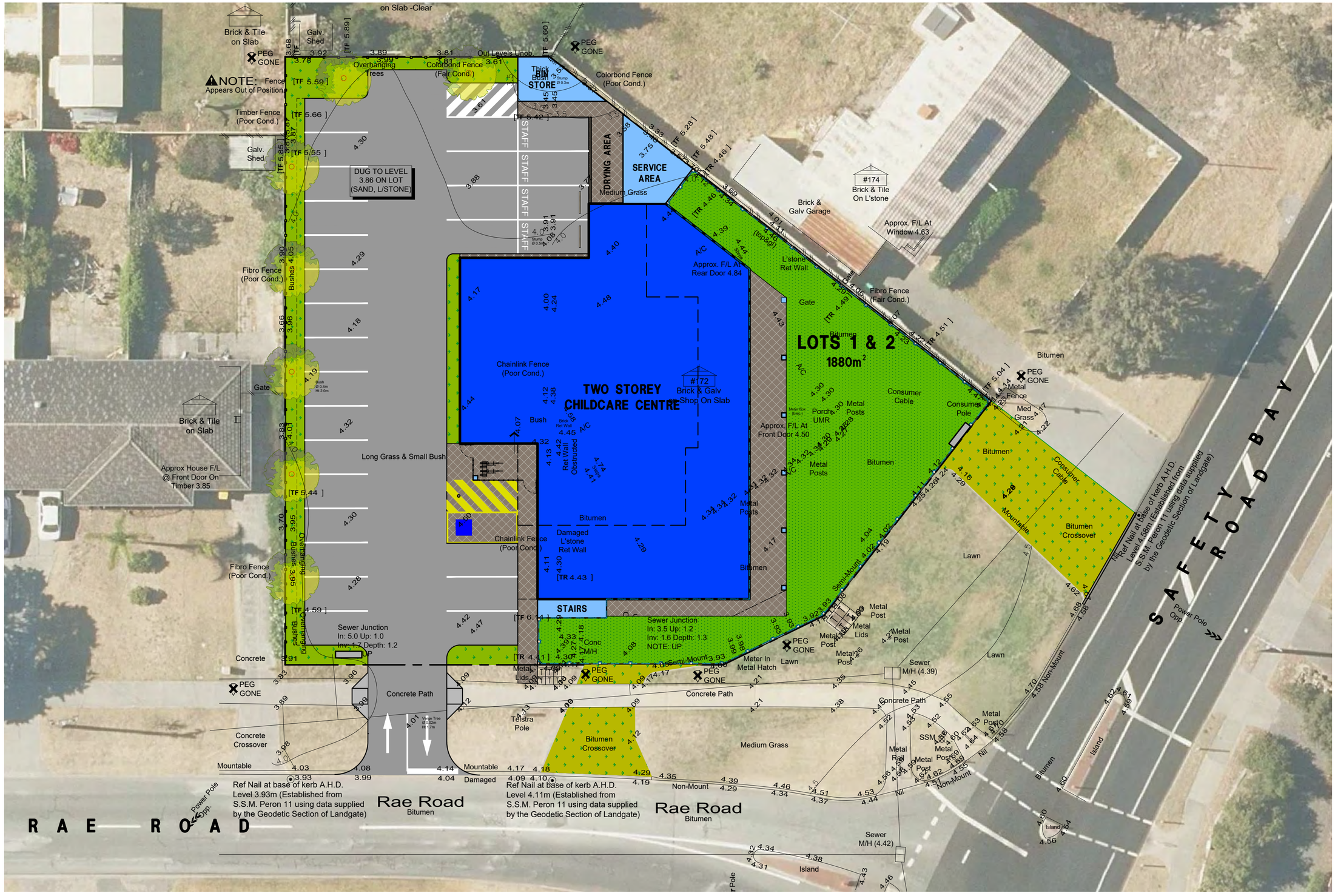
| Dwg | - | DA12 |
| Rev | - | A |

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| A | 14.11.22 | DEVELOPMENT APPLICATION ISSUE | CPH | CPH |

A2 SHEET

# SITE SURVEY OVERLAY PLAN

SCALE 1:200

PROPOSED CHILDCARE CENTRE
LOTS 1 & 2, No. 172 SAFETY BAY ROAD
SHOALWATER
SOUTHERLY OCEAN & CEDARBAY INVESTMENTS

| | |
|---|---|
| Date - | 02.09.22 |
| Design - | CPH |
| Drawn - | CPH |
| Checked - | CPH |
| Scale - | 1:200 |
| Job No. - | 0794 |
| Dwg - | DA04 |
| Rev - | A |

## LANDSCAPING NOTES

- FINAL DENSITY, SPECIES AND PLANTING LOCATION OF SHRUBS AND GROUNDCOVERS ARE TO BE CONFIRMED BY CONTRACTOR WITH THE SUPERINTENDENT PRIOR TO PLANTING.
- FINAL LOCATIONS OF TREE PLANTINGS TO BE DETERMINED BY ACTUAL SERVICE LOCATIONS AND ARE TO BE CONFIRMED ON SITE.
- PLANTS TO BE OFFSET 1m FROM KERBLINE TO ALLOW FOR OVERHANG IF ABLE.
- GROUNDCOVERS ARE TO BE PLANTED IN GROUPS OF 3 & 5.
- SQUARE SHOULDER CONCRETE KERBING TO DEFINE GARDEN AREAS.
- CONCRETE SQUARE SHOULDER KERB 3m AROUND VENT STACKS WITH 20mm BLUE METAL AT BASE OF STACKS.
- RETICULATION CONTROLLER FIXED IN SERVICE AREA WITH WATERPROOF GPO.
- ALL GARDEN AREAS SUPPLIED WITH WOOD CHIP MULCH.
- IRRIGATION TO ALL GARDEN AREAS WITH 13mm COMMERCIAL BORE DRIP LINE, PVC MAINLINES/ LATERAL LINES

## LANDSCAPING LEGEND

| | |
|---|---|
| DEVELOPMENT SITE AREA | 1,880m² |
| PROPOSED LANDSCAPING AREA | 461m² |
| % OF LANDSCAPING ON DEVELOPMENT SITE | 24.5% |

| SHRUB SPECIES | SIZE | SPACING | QTY (EST) |
|---|---|---|---|
| WESTRINGIA FRUTICOSA COSTAL ROSEMARY | 40cm | 500mm | 58m² |
| HEMIANDRA PUNGENS | 20cm | 200mm | 24m² |
| CALLISTEMON MATTHEW FLINDERS BOTTLE BRUSH | 60cm | 400mm | 32m² |
| NAFRAY PENNISETUM | 14cm | 500mm | 14m² |
| SEEDED LAWN TO MATCH EXISTING | N/A | N/A | 135m² |
| OUTDOOR PLAY AREA BY TENANT | N/A | N/A | 422m² |
| CORYMBIA CITRIODORA 'SCENTUOUS' | 1.5m | 7750mm | 7 |

NEIGHBOURING PROPERTY

NEIGHBOURING PROPERTY

BOUNDARY 20.12m

BIN STORE

STAFF STAFF STAFF STAFF

SERVICE AREA

NEIGHBOURING PROPERTY

BOUNDARY 42.57m

BOUNDARY 46.27m

EXTENT OF FIRST FLOOR INDOOR AREAS ABOVE SHOWN DASHED.

TWO STOREY CHILDCARE CENTRE

LOTS 1 & 2
1880m²

NEIGHBOURING PROPERTY

EXTENT OF FIRST FLOOR INDOOR AREAS ABOVE SHOWN DASHED.

BOUNDARY 20.70m

STAIRS

BOUNDARY 8.53m

BOUNDARY 13.20m

BOUNDARY 20.12m

SAFETY BAY ROAD

R A E R O A D

N

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A2 SHEET

# LANDSCAPING PLAN

SCALE 1:200

PROPOSED CHILDCARE CENTRE
LOTS 1 & 2, No. 172 SAFETY BAY ROAD
SHOALWATER
SOUTHERLY OCEAN & CEDARBAY INVESTMENTS

| | | |
|---|---|---|
| Date | - | 02.09.22 |
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| Scale | - | 1:200 |
| Job No. | - | 0794 |
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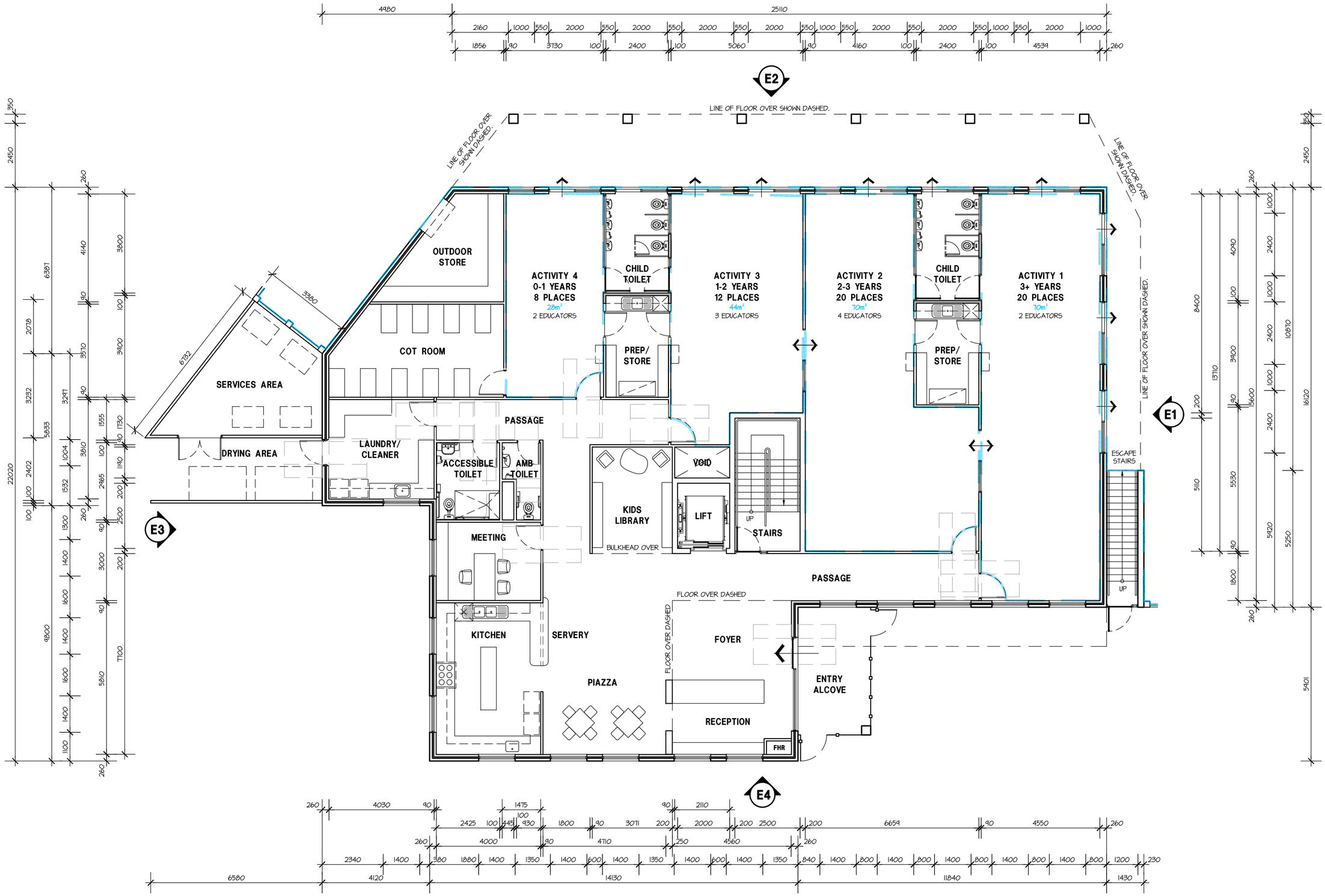
| Rev | - | A |

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A2 SHEET

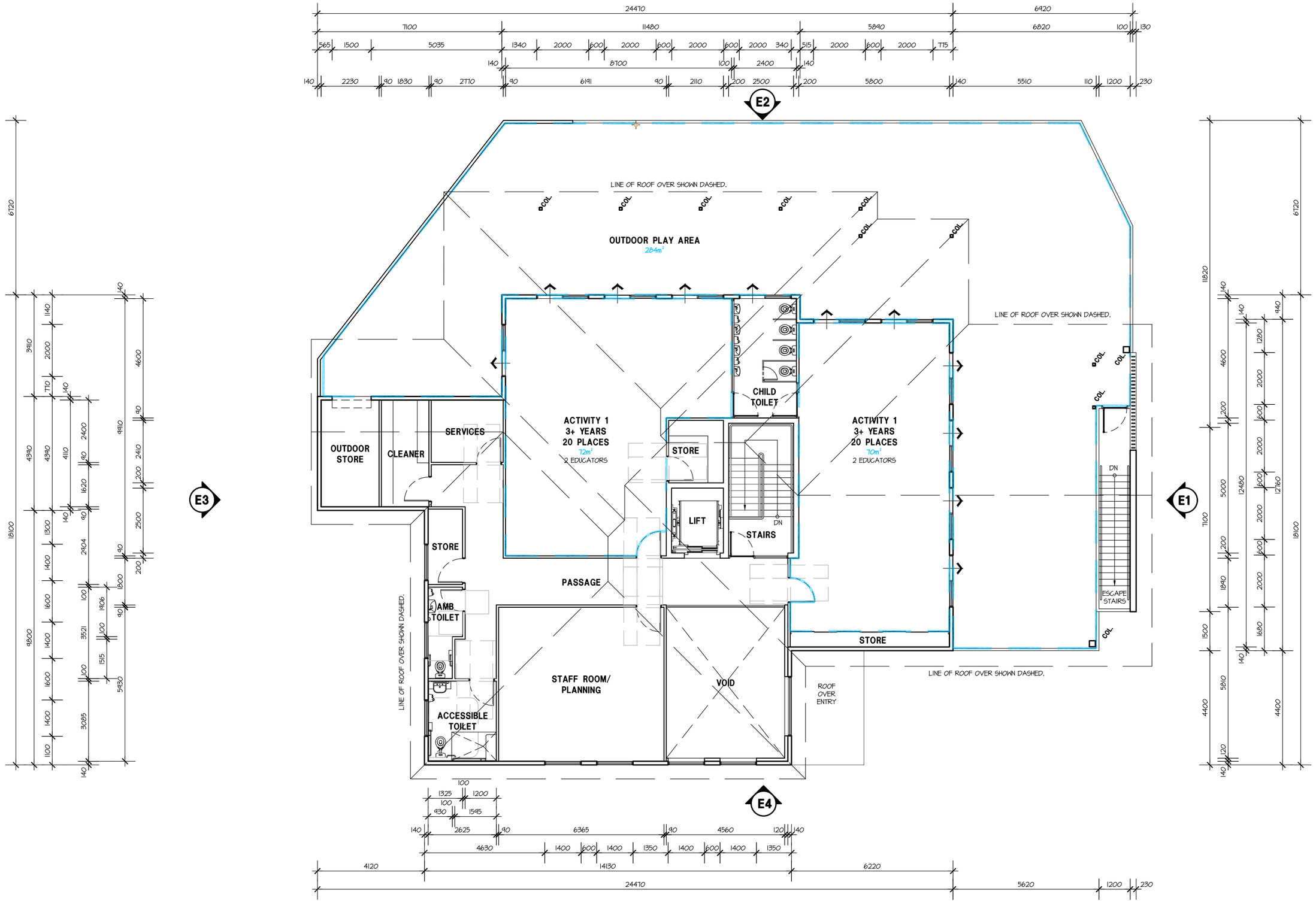
# PROPOSED GROUND FLOOR PLAN

SCALE 1:100

N

**PROPOSED CHILDCARE CENTRE**
**LOTS 1 & 2, No. 172 SAFETY BAY ROAD**
**SHOALWATER**
**SOUTHERLY OCEAN & CEDARBAY INVESTMENTS**

| | |
|---|---|
| Date - | 02.09.22 |
| Design - | CPH |
| Drawn - | CPH |
| Checked - | CPH |
| Scale - | 1:100 |
| Job No. - | 0794 |
| Dwg - | DA06 |
| Rev - | A |

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| A | 14.11.22 | DEVELOPMENT APPLICATION ISSUE | CPH | CPH |

A2 SHEET

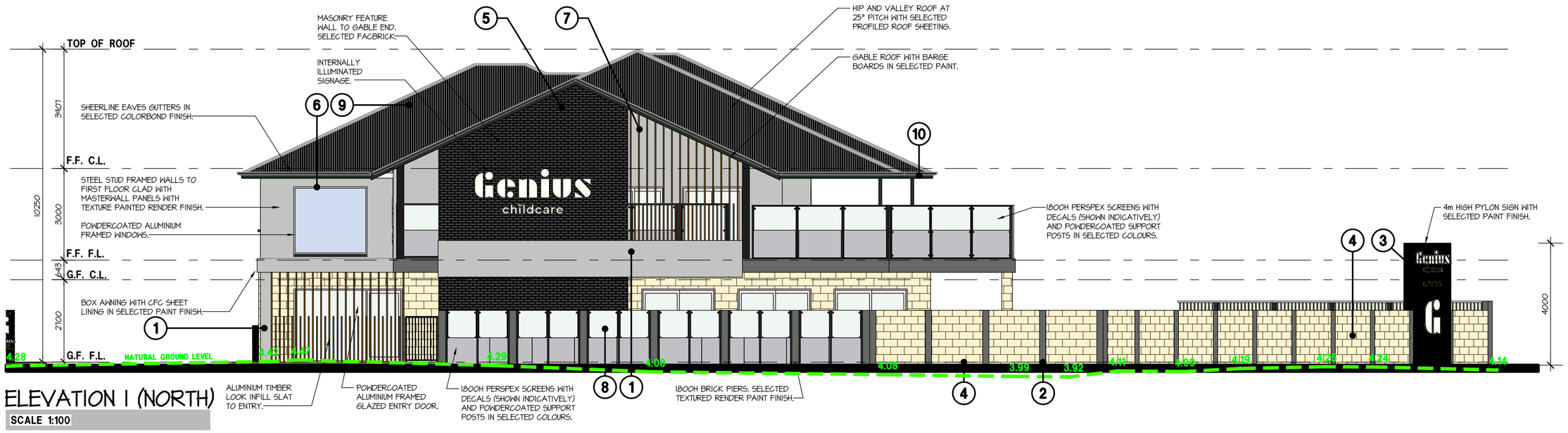
# PROPOSED FIRST FLOOR PLAN

SCALE 1:100

N

PROPOSED CHILDCARE CENTRE
LOTS 1 & 2, No. 172 SAFETY BAY ROAD
SHOALWATER
SOUTHERLY OCEAN & CEDARBAY INVESTMENTS

| | | |
|---|---|---|
| Date | - | 02.09.22 |
| Design | - | CPH |
| Drawn | - | CPH |
| Checked | - | CPH |
| Scale | - | 1:100 |
| Job No. | - | 0794 |
| Dwg | - | DA07 |
| Rev | - | A |




# ELEVATION 1 (NORTH)

SCALE 1:100


# ELEVATION 2 (WEST)

SCALE 1:100

## FINISHES SCHEDULE

1. DULUX PAINT - 'TRANQUIL RETREAT' TEXTURED FINISH **PAINT CODE - SNA61**
2. DULUX PAINT - 'TEAHOUSE' TEXTURED FINISH **PAINT CODE - SNA66**
3. DULUX PAINT - 'CB MONUMENT' TEXTURED FINISH
4. MIDLAND BRICK - 'BULLARA' STRETCHER BOND
5. MIDLAND BRICK - 'ESTILO NIRO METALICO' STRETCHER BOND
6. DULUX - POWDERCOAT DURALLOY 'SHALE GREY' MATTE FINISH
7. KNOTWOOD - ALUMINIUM BATTS 'NORWEGIAN BEECH'
8. PERSPEX WITH SUPPORT FRAMING IN POWDERCOAT 'BLACK'
9. CUSTOM ORB PROFILED SHEETING COLORBOND - 'SHALE GREY MATTE'
10. EAVES GUTTERS COLORBOND - 'MONUMENT'



| No. | Date | Revision | Drawn | Check |
|---|---|---|---|---|
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DEVELOPMENT APPLICATION

**PROPOSED CHILDCARE CENTRE**
**LOTS 1 & 2, No. 172 SAFETY BAY ROAD**
**SHOALWATER**
**SOUTHERLY OCEAN & CEDARBAY INVESTMENTS**

Date - 02.09.22
Design - CPH
Drawn - CPH
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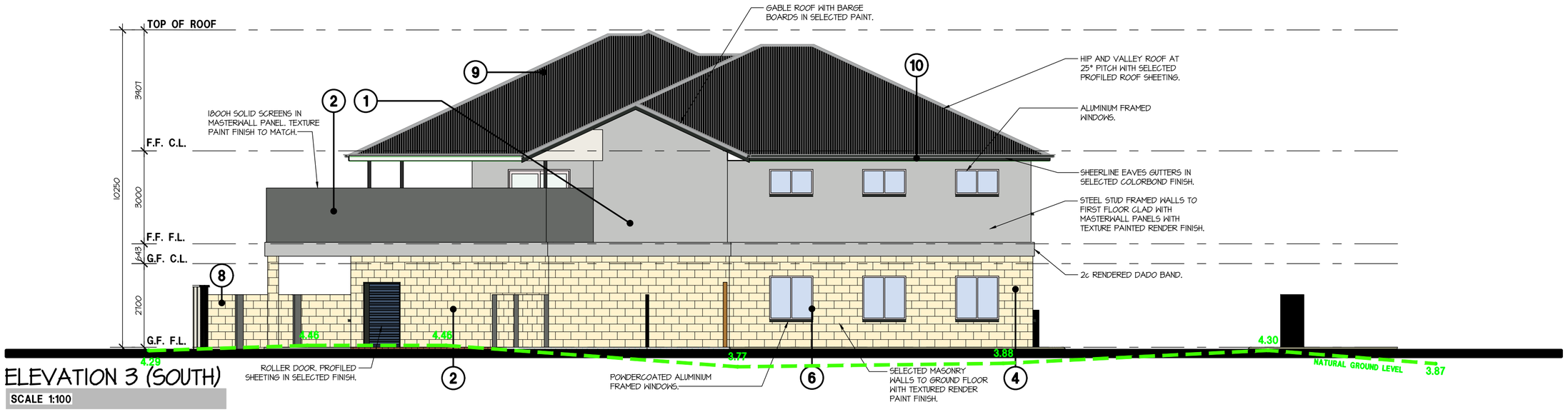
Job No. - 1794
Dwg - DA08
Rev - A




# ELEVATION 3 (SOUTH)

SCALE 1:100


# ELEVATION 4 (EAST)

SCALE 1:100

TEXT-250

## FINISHES SCHEDULE

1. DULUX PAINT - 'TRANQUIL RETREAT' TEXTURED FINISH **PAINT CODE - SNA61**
2. DULUX PAINT - 'TEAHOUSE' TEXTURED FINISH **PAINT CODE - SNA66**
3. DULUX PAINT - 'CB MONUMENT' TEXTURED FINISH
4. MIDLAND BRICK - 'BULLARA' STRETCHER BOND
5. MIDLAND BRICK - 'ESTILO NIRO METALICO' STRETCHER BOND
6. DULUX - POWDERCOAT DURALLOY 'SHALE GREY' MATTE FINISH
7. KNOTWOOD - ALUMINIUM BATTS 'NORWEGIAN BEECH'
8. PERSPEX WITH SUPPORT FRAMING IN POWDERCOAT 'BLACK'
9. CUSTOM ORB PROFILED SHEETING COLORBOND - 'SHALE GREY MATTE'
10. EAVES GUTTERS COLORBOND - 'MONUMENT'



| No. | Date | Revision | Drawn | Check |
|---|---|---|---|---|
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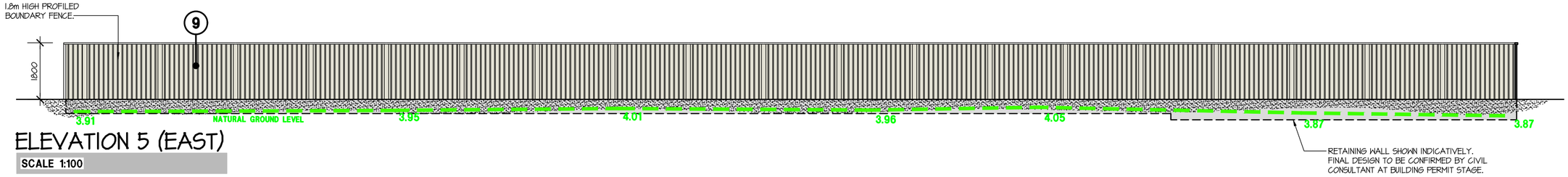
DEVELOPMENT APPLICATION

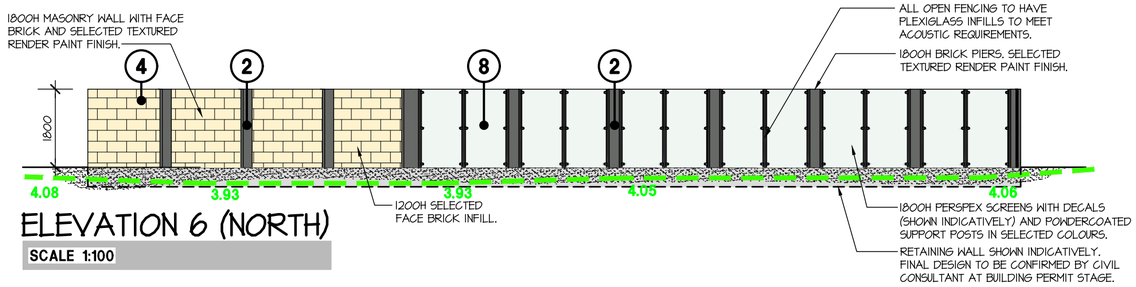
**PROPOSED CHILDCARE CENTRE**
**LOTS 1 & 2, No. 172 SAFETY BAY ROAD**
**SHOALWATER**
**SOUTHERLY OCEAN & CEDARBAY INVESTMENTS**

Date - 02.09.22
Design - CPH
Drawn - CPH
Checked - CPH
Scale - 1:100
Job No. - 0794
Dwg - DA09
Rev - A




## ELEVATION 5 (EAST)

**SCALE 1:100**

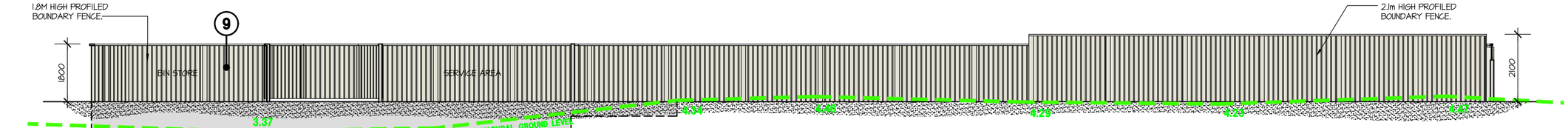



## ELEVATION 6 (NORTH)

**SCALE 1:100**

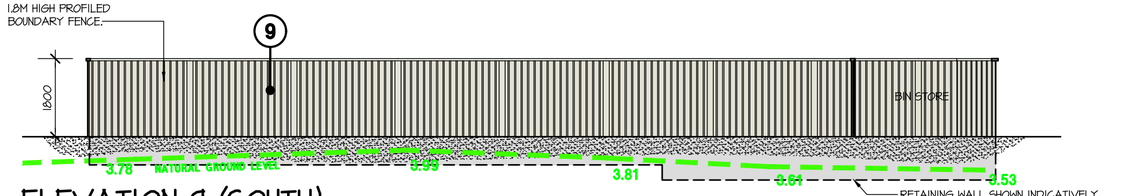

## ELEVATION 7 (NORTH-WEST)

**SCALE 1:100**




## ELEVATION 8 (SOUTH-WEST)

**SCALE 1:100**




## ELEVATION 9 (SOUTH)

**SCALE 1:100**

## FINISHES SCHEDULE

1. DULUX PAINT - 'TRANQUIL RETREAT' TEXTURED FINISH **PAINT CODE - SN461**
2. DULUX PAINT - 'TEAHOUSE' TEXTURED FINISH **PAINT CODE - SN466**
3. DULUX PAINT - 'CB MONUMENT' TEXTURED FINISH
4. MIDLAND BRICK - 'BULLARA' STRETCHER BOND
5. MIDLAND BRICK - 'ESTILO NIRO METALICO' STRETCHER BOND
6. DULUX - POWDERCOAT DURALLOY 'SHALE GREY' MATTE FINISH
7. KNOTWOOD - ALUMINIUM BATTS 'NORWEGIAN BEECH'
8. PERSPEX WITH SUPPORT FRAMING IN POWDERCOAT 'BLACK'
9. CUSTOM ORB PROFILED SHEETING COLORBOND - 'SHALE GREY MATTE'
10. EAVES GUTTERS COLORBOND - 'MONUMENT'

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| PRE | 07.10.22 | PRELIMINARY ISSUE | CPH | CPH |
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A2 SHEET

# PROPOSED CHILDCARE CENTRE
# LOTS 1 & 2, No. 172 SAFETY BAY ROAD
# SHOALWATER
# SOUTHERLY OCEAN & CEDARBAY INVESTMENTS

| | | |
|---|---|---|
| Date | - | 07.10.22 |
| Design | - | CPH |
| Drawn | - | MDB |
| Checked | - | CPH |
| Scale | - | 1:100 |
| Job No. | - | 0794 |
| Dwg | - | DA13 |
| Rev | - | A |


PERSPECTIVE 1

NOT TO SCALE


PERSPECTIVE 2

NOT TO SCALE


PERSPECTIVE 3

NOT TO SCALE


PERSPECTIVE 4

NOT TO SCALE



| No. | Date | Revision | Drawn | Check |
|---|---|---|---|---|
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DEVELOPMENT APPLICATION

PROPOSED CHILDCARE CENTRE
LOTS 1 & 2, No. 172 SAFETY BAY ROAD
SHOALWATER
SOUTHERLY OCEAN & CEDARBAY INVESTMENTS

Date - 02.09.22
Design - CPH
Drawn - RCP
Checked - CPH
Scale - N.T.S.
Job No. - 0794
Dwg - DA10
Rev - A


PERSPECTIVE 5

NOT TO SCALE


PERSPECTIVE 6

NOT TO SCALE


PERSPECTIVE 7

NOT TO SCALE


PERSPECTIVE 8

NOT TO SCALE



| No. | Date | Revision | Drawn | Check |
|---|---|---|---|---|
| PRE | 02.09.22 | PRELIMINARY ISSUE | RCP | CPH |
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DEVELOPMENT APPLICATION

PROPOSED CHILDCARE CENTRE
LOTS 1 & 2, No. 172 SAFETY BAY ROAD
SHOALWATER
SOUTHERLY OCEAN & CEDARBAY INVESTMENTS

| | | |
|---|---|---|
| Date | - | 02.09.22 |
| Design | - | CPH |
| Drawn | - | CPH |
| Checked | - | CPH |
| Scale | - | N.T.S. |
| Job No. | - | 0794 |
| Dwg - | | DA11 |
| Rev - | | A |

**APPENDIX 3**

TRANSPORT IMPACT STATEMENT


# Shoalwater Childcare Centre
# Lots 1 & 2, 172 Safety Bay Road, Shoalwater

## TRANSPORT IMPACT STATEMENT

email: info@flyt.com.au twitter.com/flytplan web: www.flyt.com.au

| PROJECT | 81113-729-FLYT-TRS-0002 Rev1 | | | |
|---|---|---|---|---|
| Revision | Description | Originator | Review | Date |
| 0 | Draft | MDR | CXS | 15/09/2022 |
| 1 | Final | MDR | CXS | 24/10/2022 |

# Contents



# 1. INTRODUCTION

## 1.1 Development Proposals

This Transport Impact Statement (TIS) has been prepared by Flyt in support of the proposed development at Lots 1 and 2, No. 172 Safety Bay Road, Shoalwater for a childcare centre.

The proposed development can be summarised as comprising:

- Childcare Centre to accommodate 100 children
  - 8 children between the ages of 0-1 years
  - 12 children between the ages of 1-2 years
  - 20 children between the ages of 2-3 years
  - 60 children between the ages of 3-5 years
- Childcare Centre to be serviced under the following staff arrangements:
  - 15 educators (Monday-Friday, full-time)
  - Additional part-time educators covering staff breaks (Monday-Friday, 10am-3pm)
  - 1 chef (Monday-Friday, half day)
  - 1 centre area manager (visits site once or twice a week between 10am-3pm)

## 1.2 Site Context

The site of the proposed Shoalwater Childcare Centre is located at Lots 1 and 2, No. 172 Safety Bay Road, Shoalwater – the site is located on the southeast corner of the intersection of Safety Bay Road and Rae Road in Shoalwater. The site has boundaries with Safety Bay Road to the west and Rae Road to the north and is surrounded by predominantly residential properties as well as a restaurant and Safety Bay Primary School further east.

The proposed development is located on Lots 1 and 2 which are zoned Commercial under the City of Rockingham's Town Planning Scheme No. 2. The building on Lot 2 is currently used as a surf shop and Lot 1 is currently vacant. These lots are proposed to be amalgamated as part of this development.

The site of the proposed Shoalwater Childcare Centre is within 800m of Shoalwater Beach to the west, within 400m of Safety Bay Primary School further east and is within proximity to several public reserves. An aerial image showing the location of the subject site is shown in Figure 1.


*Figure 1 Location of the proposed Shoalwater Childcare Centre (source: Hindley and Associates Building Designers, 2022)*

## 1.3 Transport Impact Statement

This TIS has been prepared in accordance with the WA Planning Commission's (WAPC) *Transport Impact Assessment Guidelines – Volume 4 Individual Developments* (2016). The Guidelines promote a three level assessment process, where the required level of assessment is dependent on the likely level of impact, as follows (as shown in Figure 2):

- Low impact – less than 10 peak hour trips, no assessment required.
- Moderate impact – between 10 and 100 peak hour trips, Transport Impact Statement required.
- High impact – more than 100 peak hour trips, full Transport Impact Assessment required.

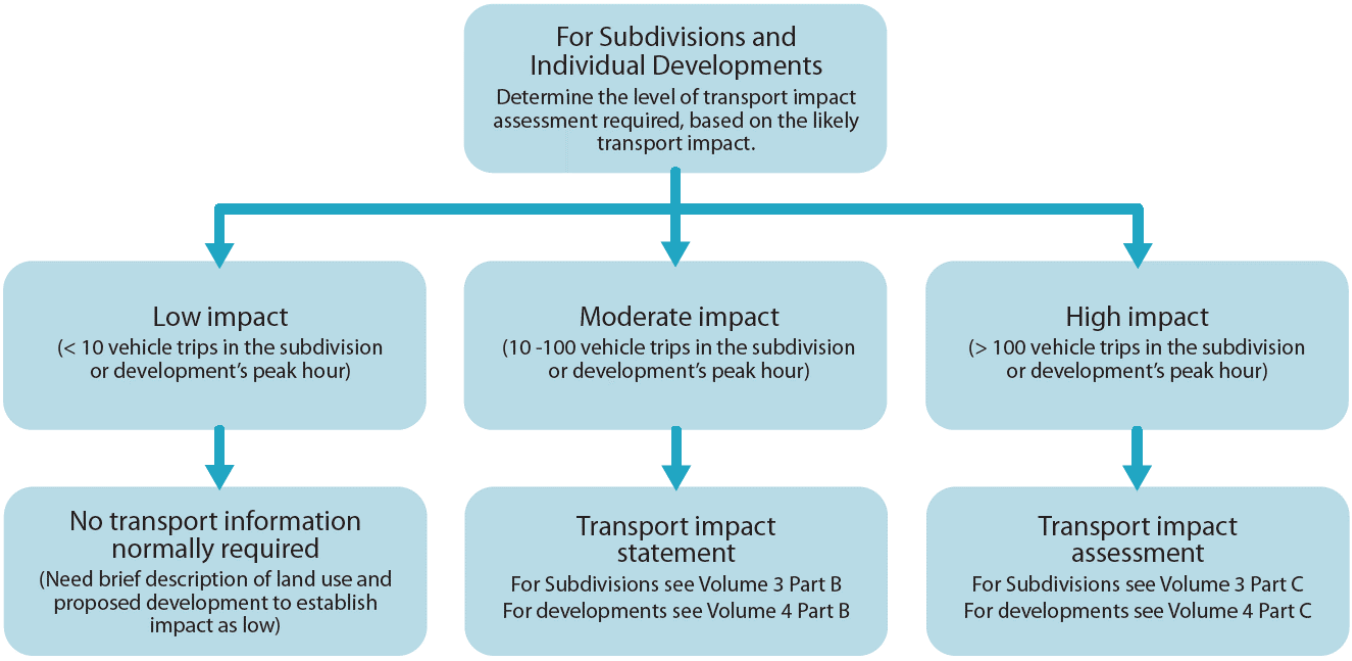


*Figure 2 Level of transport impact assessment required (source: WAPC Transport Impact Assessment Guidelines, 2016)*

As set out in this report, the traffic attributable to the proposed development has been determined to be less than 100 vehicle trips in the operating peak hour, therefore the required level of assessment is a TIS.

## 1.4 Report Structure

The report is structured as required by the *Transport Impact Assessment Guidelines* (WAPC, 2016), with the following sections:

- Proposed development
- Vehicle access and parking
- Provision for service vehicles
- Traffic volumes
- Frontage streets
- Public transport access
- Pedestrian access and amenity
- Bicycle access and amenity
- Site specific issues
- Safety issues
- Summary

# 2. PROPOSED DEVELOPMENT

The site of the proposed Shoalwater Childcare Centre is located at Lots 1 and 2, No. 172 Safety Bay Road, Shoalwater – the site is located on the southeast corner of the intersection of Safety Bay Road and Rae Road in Shoalwater.

The site has boundaries with Safety Bay Road to the west and Rae Road to the north and is surrounded by predominantly residential properties as well as a restaurant and Safety Bay Primary School further east – as shown in Figure 3.


*Figure 3 Detailed location of the proposed Shoalwater Childcare Centre (aerial image source: MetroMap)*

The proposed development of a Childcare Centre can be summarised as comprising:

- Childcare Centre to accommodate 100 children
  - 8 children between the ages of 0-1 years
  - 12 children between the ages of 1-2 years
  - 20 children between the ages of 2-3 years
  - 60 children between the ages of 3-5 years
- Childcare Centre to be serviced under the following staff arrangements:
  - 15 educators (Monday-Friday, full-time)
  - Additional part-time educators covering staff breaks (Monday-Friday, 10am-3pm)
  - 1 chef (Monday-Friday, half day)
  - 1 centre area manager (visits site once or twice a week between 10am-3pm)

Figure 4 shows the site plan for the proposed Shoalwater Childcare Centre. Figure 5 shows the subject sites ground floor plan and Figure 6 shows the subject sites first floor plan for the proposed Shoalwater Childcare Centre.

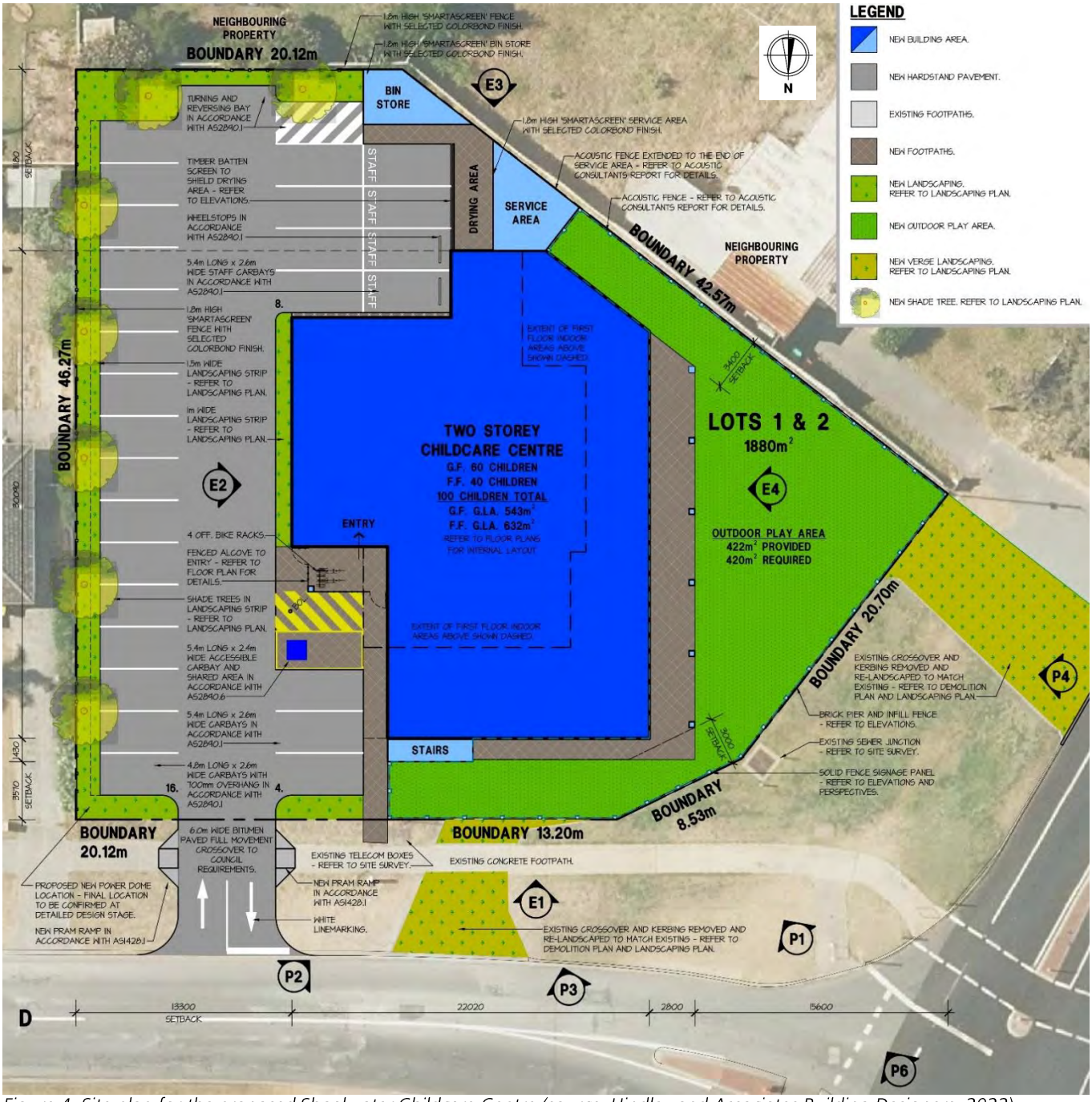


*Figure 4 Site plan for the proposed Shoalwater Childcare Centre (source: Hindley and Associates Building Designers, 2022)*

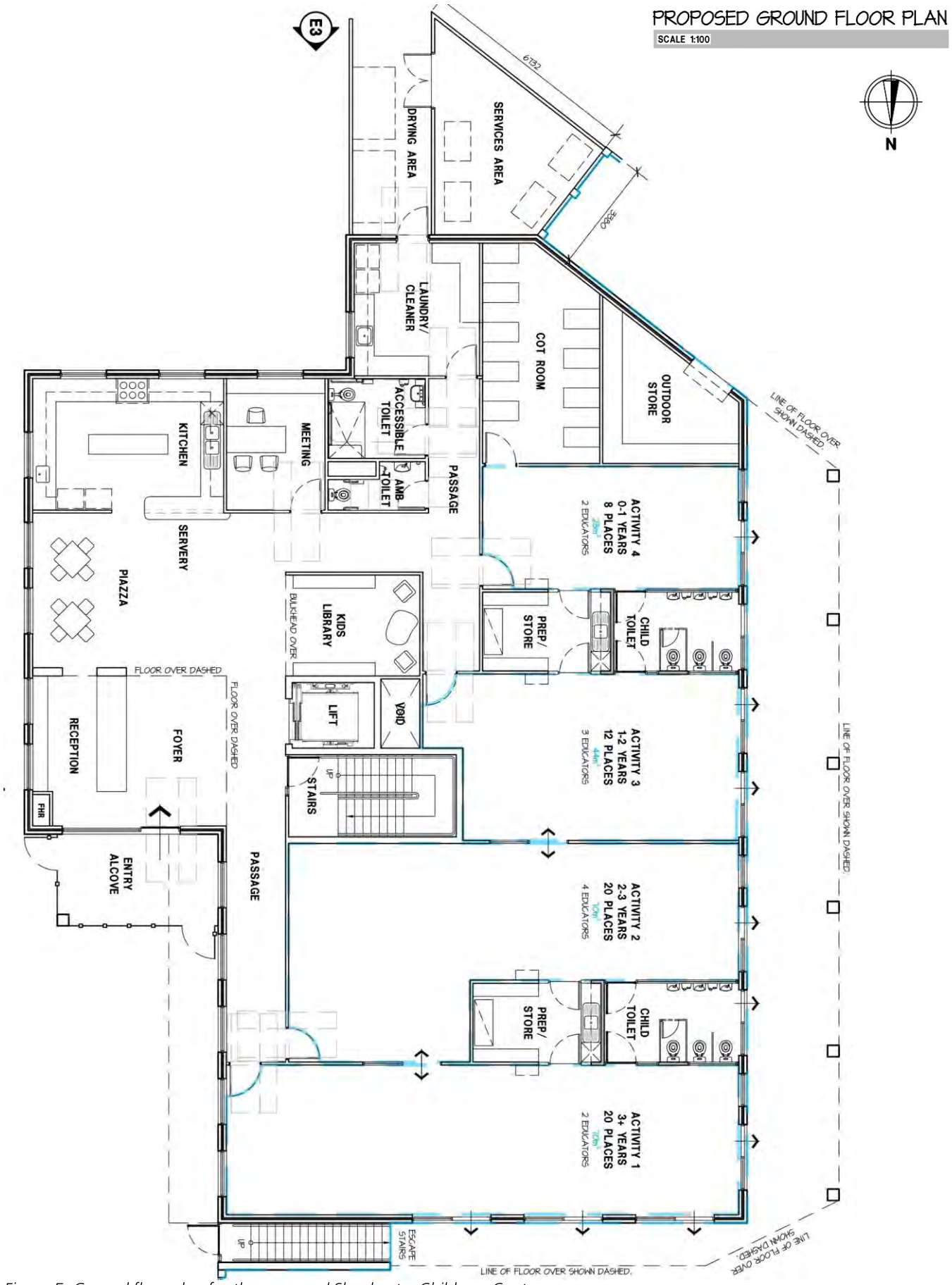


*Figure 5 Ground floor plan for the proposed Shoalwater Childcare Centre (source: Hindley and Associates Building Designers, 2022)*

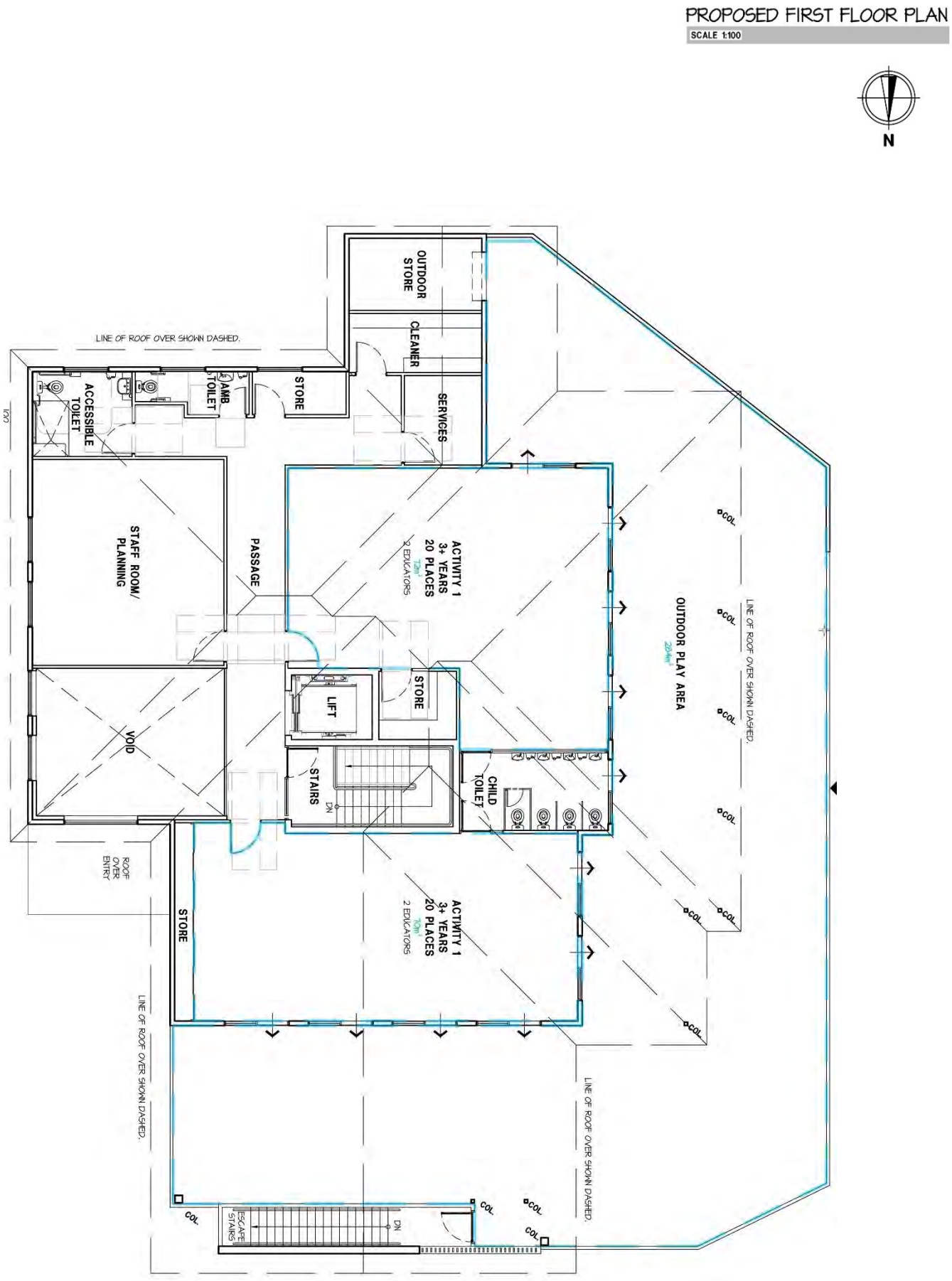


*Figure 6 First floor plan for the proposed Shoalwater Childcare Centre (source: Hindley and Associates Building Designers, 2022)*

# 3. VEHICLE ACCESS AND PARKING

## 3.1 Vehicle Access

The proposed Shoalwater Childcare Centre is located at Lot 1 and 2, No. 172 Safety Bay Road in Shoalwater. The site has boundaries with Safety Bay Road to the west and Rae Road to the north and is surrounded by predominantly residential properties as well as a restaurant and Safety Bay Primary School further east.

It is proposed that all vehicle access to the site would be via a crossover on Rae Road. The crossover would be located approximately 41m from the intersection with Safety Bay Road, which is the furthest possible position for the access point.

It is noted that the proposal will result in the net reduction of crossovers to the road network, as well as the establishment of a crossover to Rae Road which is further away from the Safety Bay Road intersection than the crossover for the existing site.

It is proposed that the crossover would be 6m wide and permit two-way vehicle access to the on-site car park and bin store.

Figure 7 shows the vehicle access arrangements for the proposed Shoalwater Childcare Centre.

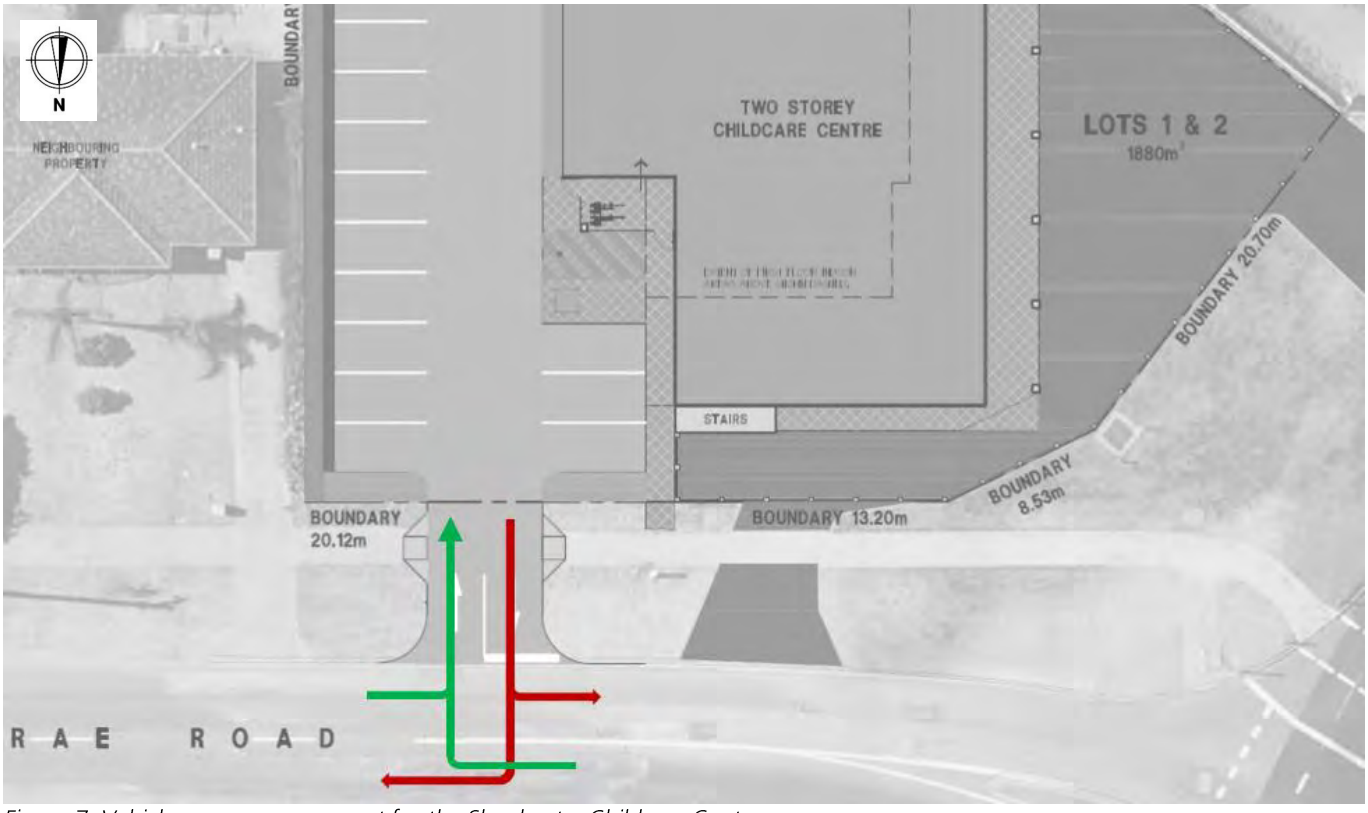


*Figure 7 Vehicle access arrangement for the Shoalwater Childcare Centre (base plan source: Hindley and Associates Building Designers, 2022)*

Figure 8 to Figure 11 show the routes of vehicle access to the proposed Shoalwater Childcare Centre site from the surrounding road network.


*Figure 8 View along Safety Bay Road southbound on approach to Rae Road (source: Google Streetview)*


*Figure 9 View along Safety Bay Road northbound on approach to Rae Road – the subject site is shown on the right (source: Google Streetview)*


*Figure 10 View along Rae Road westbound on approach to Safety Bay Road – the subject site is shown on the left (source: Google Streetview)*


*Figure 11 Southbound view from Safety Bay Road intersection with Rae Road – subject site is the Seabreeze building in view and vacant lot to the left of the Seabreeze building (source: Google Streetview)*

## 3.2 On-Site Parking

The City of Rockingham Local Planning Policy No. 3.3.5 *Child Care Premises* (July 2019) outlines that a Traffic Impact Statement/Assessment is required to support Development Applications for new Childcare Centres, in-line with the requirements of WAPC's *Transport Impact Assessment Guidelines – Volume 4 Individual Developments* (2016).

The Local Planning Policy also states that the proposed Childcare Centre should make provision for parking bays in accordance with the standards and requirements of the City's Town Planning Scheme No.2.

The City's Town Planning Scheme No.2 outlines the following off-street car parking requirements for Childcare Centres within the City:

> *"Child Care Premises – minimum car parking requirement*
>
> - *1 bay per staff member*
> - *1 bay per 8 children attending"*

Based on the above requirements under the Town Planning Scheme the proposed Shoalwater Childcare Centre has the following minimum off-street car parking requirements:

- Staff parking = 15 bays required for 15 full-time staff
  = Additional part-time/occasional staff to utilise parent parking outside of peak drop-off/pick-up periods
- Parent parking = 13 bays required

TOTAL PARKING = 28 bays required

The proposed Shoalwater Childcare Centre has a total of 28 on-site car parking bays. It is proposed that the on-site car parking bays are allocated as follows:

- Staff parking = 15 bays allocated for staff parking with 7 bays along the eastern boundary of the parking area and 8 bays to the south of the Childcare Centre building utilising four tandem bays.
- Parent parking = 13 bays allocated for parent pick-up/drop-off with 9 bays along the eastern boundary of the parking area and 4 bays to the north of the Childcare Centre building (including 1 ACROD bay and associated shared space adjacent to the entry to the Childcare Centre).

The provision of 15 staff bays meets the requirement for full-time room ratio educators. It should be noted that these educators do not arrive and depart from the site at the same time. The first staff begin arriving between 6:00-6:30am, and then continually arrive in 15-30 minute intervals until 9:30am. The centre is fully staffed until 3:00-3:30pm when the first staff start completing their shift and departing the site. This means not all 15 staff bays are occupied at the same time.

In addition, not all staff are expected to drive to the site. Some staff are likely to car pool, use public transport or cycle. In this regard, it is noted that the 551 bus route runs along Safety Bay Road and connects to Rockingham Station. The site is serviced by public transport.

Additional support staff would attend the site over the course of a day to perform various support functions. These staff are not present at the site for a whole day and are typically in attendance outside of the peak pick-up / drop-off periods and when the car park is significantly underused.

Typically, the drop-off or pick-up of children from Childcare Centres takes between 10-15 minutes. Using an average time of 12½ minutes for drop-off or pick-up – the 12 parent parking bays on-site (excluding the 1 ACROD bay) would turnover approximately 4.8 times during the peak hour and accommodate approximately 57 vehicle movements –

therefore accommodating the expected peak hour parent parking demand (see Section 5.2 for details of the development proposals estimated peak hour vehicle trip generation).

Figure 12 shows the allocation of car parking across the proposed Shoalwater Childcare Centre site.

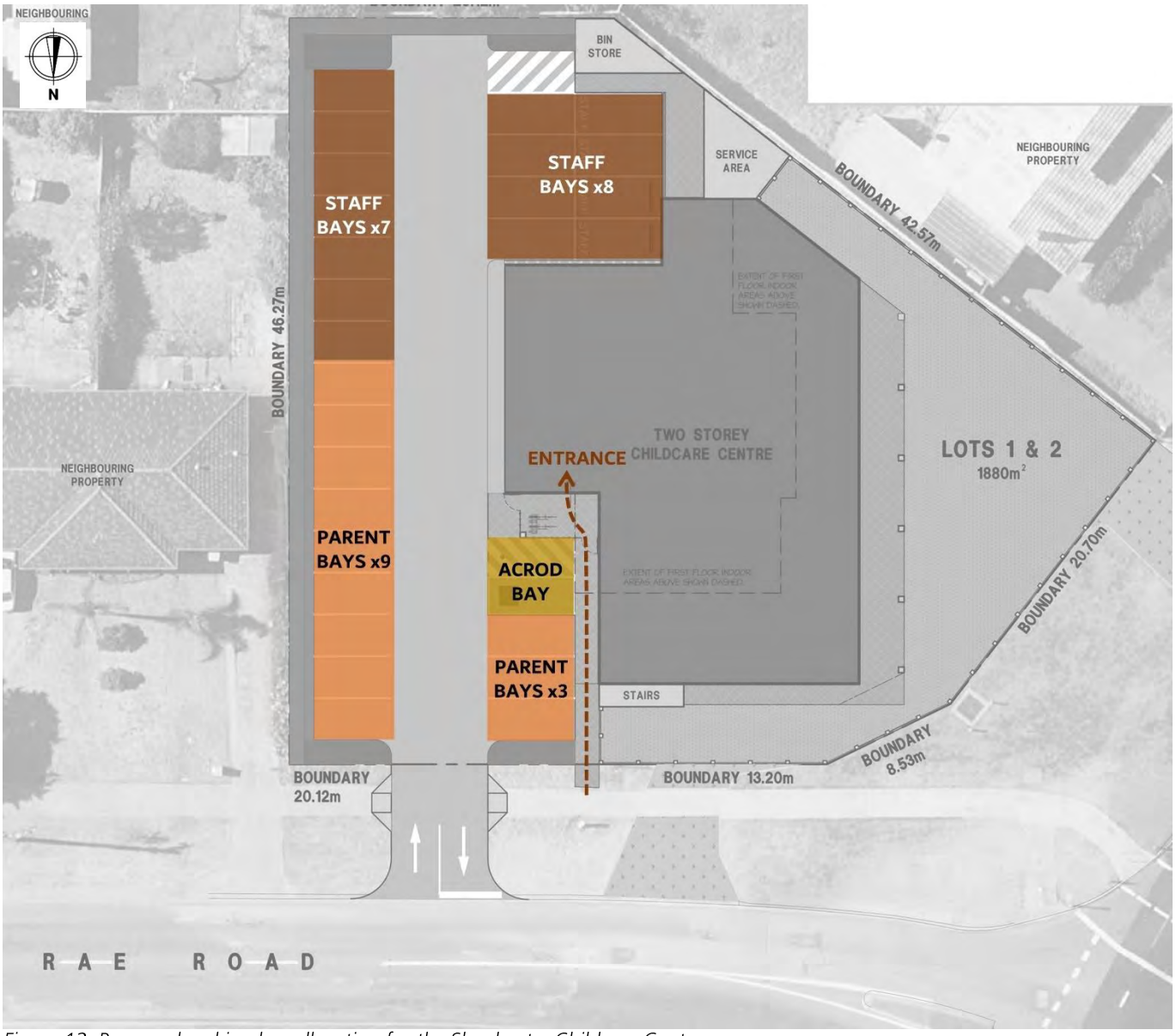


*Figure 12 Proposed parking bay allocation for the Shoalwater Childcare Centre (base plan source: Hindley and Associates Building Designers, 2022)*

## 3.3 Off-Site Parking

No off-site parking is proposed as part of the Development Application for the proposed Shoalwater Childcare Centre facility.

# 4. PROVISION FOR SERVICE VEHICLES

The proposed Shoalwater Childcare Centre's bin store is located in the southwest corner of the on-site car park.

It is proposed that servicing of the site will be by private waste collection outside of the Childcare Centre's operating hours. As such, there will be no parked cars within the site's car park when the waste collection occurs.

The private waste contractor currently operates 8.0m long vehicles, to ensure the site is future proofed to accommodate slightly larger waste collection vehicles in the private waste contractor fleet changes – swept path analysis has been completed for both an 8.0m long vehicle (Figure 13) and 8.8m long vehicle (Figure 14).

The swept path analysis shows that the site accommodates both 8.0m and 8.8m long vehicles entering and exiting the site in forward gear, with sufficient room to manoeuvre within the site to back-up to the bin store in the southwest corner of the on-site car park.

- Waste collection vehicle would access the site from Rae Road.
- Waste collection vehicle would drive into the on-site car park in forward gear along the aisle in the car park.
- Waste collection vehicle would drive into the empty tandem parking bays and reverse back to the bin store and service the bins.
- Waste collection vehicle would then drive out of the site in a forwards gear onto Rae Road.

The proposed routing of the waste collection vehicle movements to access and egress the site, would limit any impact on neighbouring residential properties.

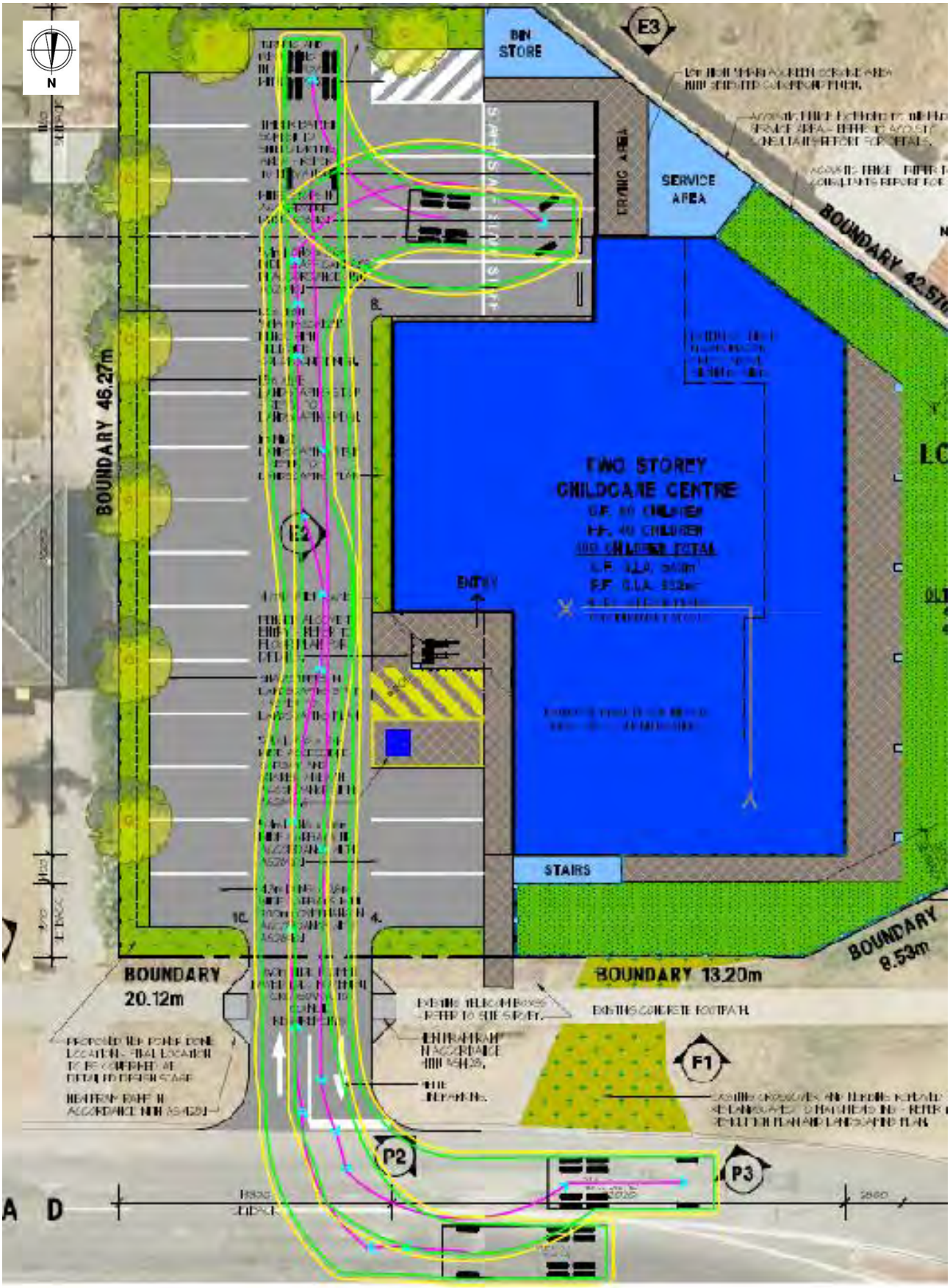


*Figure 13 Swept path analysis for an 8.0m long waste collection vehicle accessing the proposed Shoalwater Childcare Centre site (base plan source: Hindley and Associates Building Designers, 2022)*

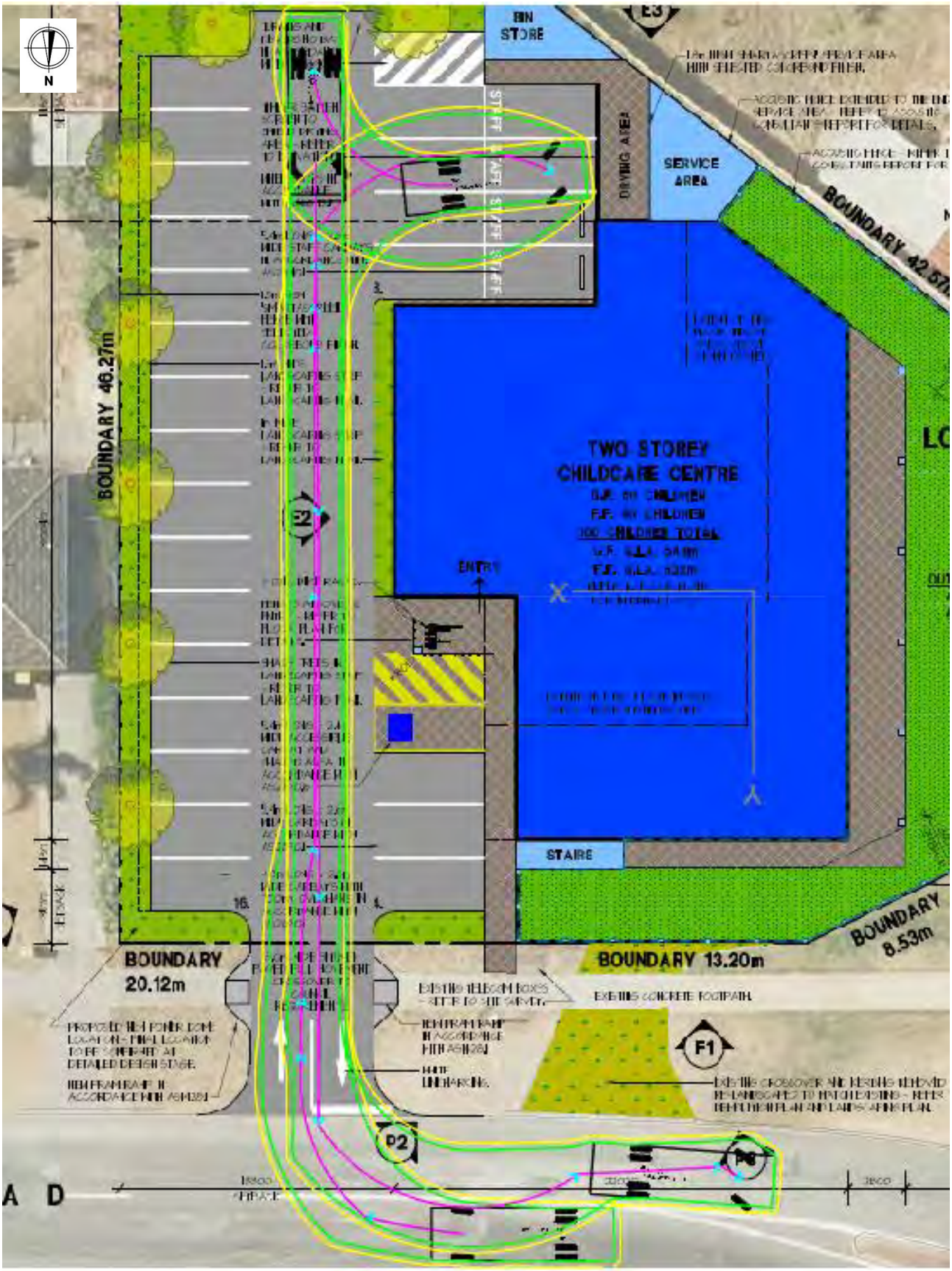


*Figure 14 Swept path analysis for an 8.8m long waste collection vehicle accessing the proposed Shoalwater Childcare Centre site (base plan source: Hindley and Associates Building Designers, 2022)*

# 5. TRAFFIC VOLUMES

## 5.1 Existing Traffic Generated by Proposed Site

The site of the proposed Shoalwater Childcare Centre is located at Lots 1 and 2, No. 172 Safety Bay Road, Shoalwater – the site is located on the southeast corner of the intersection of Safety Bay Road and Rae Road in Shoalwater. The site has boundaries with Safety Bay Road to the west and Rae Road to the north and is surrounded by predominantly residential properties as well as a restaurant and Safety Bay Primary School further east.

The site of the proposed Childcare Centre is currently used as a surf shop and would generate a very small number of trips across the day. The surf shop opens at 10.00am each day therefore any trips generated from this development would not be present on the network during the AM peak travel time for the Childcare Centre.

To support this TIS twenty-four (24) MetroMap historical aerial images were assessed between 30 March 2017 and 24 March 2022. These images showed that a maximum of five cars were parked in the surf shop car park on Monday 31 December 2018 and that typically there are two vehicles parking in the surf shop car park on any given day – which would appear to be staff.

Given the very low number of vehicles shown to be accessing Lot 2, and that none of these trips would be present on the network during the AM peak travel times for the Childcare Centre, no trips have been deducted from the trip generation for the subject site.

## 5.2 Trip Generation of Proposed Development

For the purpose of trip generation assessment, the Childcare Centre is assumed to operate with 17 staff and 100 registered children. The following assumptions have been made in relation to traffic that would be generated by this proposal.

- The Childcare Centre's anticipated operating hours are from 6:30am to 6:30pm.
    - It is anticipated that child drop-off's will occur over an extending period between 6:30am-9:30am – with the **AM peak hour** for drop-off's between **7:30am-8:30am**.
    - It is anticipated that child pick-up's will occur over an extending period between 3:30pm-6:30pm – with the **PM peak hour** for pick-up's between **4:30pm-5:30pm**.

- The Childcare Centre will operate with the following staffing arrangements:
    - 15 staff would work on-site Monday-Friday in a full-time educator role.
    - Additional staff would work on-site Monday-Friday in a part-time role – typically working half day 10am-3pm.
    - 1 staff would work on-site once or twice a week as a visiting area manager – between 10am-3pm.
    - A conservative assumption has been made that 15 staff will independently drive to the site each day and some staff will car pool or use public transport. This may not be the case in operation with more staff potentially car pooling or use public transport.

    - The 15 full-time educator staff would be required on-site Monday-Friday to care for the full complement of 100 children – this is based on a required ratio of educators per child.
    - The additional part-time staff would be required on-site Monday-Friday during the middle of the day.
    - The area manager will typically visit the site once or twice a week during the middle of the day.

    - The 15 full-time staff will be provided on-site car parking with 15 car parking bays available for staff along the eastern boundary of the parking area and 8 bays to the south of the Childcare Centre building utilising four tandem bays.

- The additional part-time staff will utilise parent parking outside of peak drop-off/pick-up periods for children.
- The area manager will utilise parent parking outside of peak drop-off/pick-up periods for children.

- The Childcare Centre's anticipated operating hours are from 6:30am to 6:30pm – it is expected that 2 members of staff would be rostered to start work during the developments AM peak hour and finish work during the development PM peak hour, with all other staff travelling to or from the site outside of the development peak hours.

- The Childcare Centre will cater for 100 registered children:
  - At a range of childcare centres across Perth that Flyt have surveyed, typically:
    - 15% of children are walked to the childcare centre by parents and do not generate a vehicle trip. These children are either walked from their home within a walkable catchment of the childcare centre or they use public transport services to access the childcare centre.
    - 25% of children are from families with more than one child attending the childcare centre – therefore 25% of the children generate 0.5 inbound vehicles trips and 0.5 outbound vehicle trips (assuming these families have two children attending the childcare centre).
    - 60% of children generate 1 inbound vehicle trip and 1 outbound vehicle trip.
    - Of those children arriving at the childcare centre by private vehicle, typically:
      - 55% of children are dropped off during the AM peak hour
      - 50% of children are picked-up during the PM peak hour

Based on maximum attendance at the Childcare Centre on a given weekday and applying the typical childcare centre mode splits outlined above, it is estimated that a maximum total of 82 vehicle trips to/from the site will occur during the developments AM peak hour and 74 vehicle trips to/from the site will occur during the development PM peak hour – as outlined in Table 1.

*Table 1 Proposed Childcare Centre development peak hour vehicle trips based on the proposed operations of the Childcare Centre*

| Type of User | Total On-Site | Number Generating Vehicle Trips | AM Peak Hour Vehicle Movements | | | PM Peak Hour Vehicle Movements | | |
|---|---|---|---|---|---|---|---|---|
| | | | IN | OUT | TOTAL | IN | OUT | TOTAL |
| Staff (full-time) | 15 | 15 (1.0 trips) | 2 | 0 | 2 | 0 | 2 | 2 |
| Staff (part-time) | 2 | 2 (1.0 trips) | 0 | 0 | 0 | 0 | 0 | 0 |
| Children | 100 | 15 (0.0 trips) | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 25 (0.5 trips) | 7 | 7 | 14 | 6 | 6 | 12 |
| | | 66 (1.0 trips) | 33 | 33 | 66 | 30 | 30 | 60 |
| Total Staff & Children | 117 | 15 (0.0 trips) | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 28 (0.5 trips) | 7 | 7 | 14 | 6 | 6 | 12 |
| | | 86 (1.0 trips) | 35 | 33 | 68 | 30 | 32 | 62 |
| **TOTAL VEHICLE TRIPS** | | | **42** | **40** | **82** | **36** | **38** | **74** |

## 5.3 Traffic Impacts of Proposed Development

The proposed Shoalwater Childcare Centre is unlikely to generate significant additional vehicle trips on the road network – many of the vehicle trips to drop-off and pick-up children from the Childcare Centre would be part of a linked trip already being made. The majority of linked trips will be part of the parents commute to their place of work.

The proposed Childcare Centre will generate more vehicle movements during the developments AM peak hour (more concentrated child drop-off activity) as opposed to during the developments PM peak hour (more dispersed child pick-up activity).

As outlined in Section 3.2, the 12 parent parking bays on-site (excluding the 1 ACROD bay) would turnover approximately 4.8 times during the peak hour and accommodate approximately 57 vehicle movements. As such, the number of parent parking bays on-site would be sufficient to accommodate the expected peak hour vehicle trip generation.

In summary:

- The level of vehicle trips generated by the proposed Shoalwater Childcare Centre is focused on generation of vehicle trips associated with children drop-off and pick-up movements. Staff movements are generally outside of peak periods as the educators have to be on-site to cater for the arrival of children and they cannot leave the facility until certain ratios of educators to children are achieved. In addition, some staff are likely to use alternate forms of transport, such as car pooling, public transport or cycling.
- Some drop-off and pick-up movements will be undertaken by foot or involve trips with multiple children being dropped-off or picked-up. In addition, not all movements will be made in the development AM or PM peak hour.
- The majority of traffic movements generated by the site are expected to be a slight redistribution of existing trips on the network as part of a linked trip – primarily as part of a parents existing commute and/or school drop-off/pick-up of older children.

# 6. FRONTAGE STREETS

## 6.1 Road Network Hierarchy

The proposed Shoalwater Childcare Centre has a northern boundary to Rae Road and an eastern boundary to Safety Bay Road. Both of these roads are categorised as Distributor A Roads under the Main Roads WA road network hierarchy.

McLarty Avenue which runs west from Safety Bay Road is a Local Distributor Road as well as Arcadia Drive, Boundary Road, and Hawkes Street which are situated in the wider area. All other roads in proximity of the proposed Shoalwater Childcare Centre site are categorised as Access Roads under the Main Roads WA road network hierarchy.

The road hierarchy surrounding the proposed Shoalwater Childcare Centre site is shown in Figure 15.


*Figure 15 Road hierarchy surrounding the proposed Shoalwater Childcare Centre site (source: Main Roads WA)*

## 6.2 Road Network Speed Limits

Safety Bay Road and Rae Road both have a posted speed limit of 60km/h. Most streets in vicinity of the proposed Shoalwater Childcare Centre site operate under a typical default 50km/h urban speed limit.

The proposed Shoalwater Childcare Centre site is located within close proximity to the Safety Bay Primary School, meaning that a section of Rae Road and Waimea Road to the east of the site operate under a School Zone speed limit of 40km/h Monday to Friday 7.30-9.00am and 2.30-4.00pm during the school terms.

The speed zoning surrounding the proposed Shoalwater Childcare Centre site is shown in Figure 16.


*Figure 16 Posted speed limit surrounding the proposed Shoalwater Childcare Centre site (source: Main Roads WA)*

# 7. PUBLIC TRANSPORT ACCESS

## 7.1 Existing Public Transport Services

The proposed Shoalwater Childcare Centre site is accessible by public transport – with Bus Route 551 providing direct access to the site.

- Bus Route 551
  - Route 551 runs in a circular route beginning at Watts Road and ending at Rockingham Station. The bus route travels along McLarty Road to Safety Bay Road travelling past the subject site.
  - Route 551 provides connections to residential catchments of Peron to the north and Safety Bay to the east as well as to Rockingham Centre. It also travels past Anzac Park, Rockingham Visitors Centre, the Rockingham Museum, Rockingham Montessori School, Rockingham Aquatic Centre and the Mike Barnett Sports Club.
  - Weekday bus services operate between 5.30am and 10.00pm operating on a 30 minute frequency during peak travel times and 60 minute frequency outside of these times.
  - Saturday bus services operate between 6am and 10.45pm – operating on a 60 minute frequency.
  - Sunday bus services operate between 8am and 6pm – operating on a 60 minute frequency.

From the entrance of the proposed Shoalwater Childcare Center, Bus Route 551 services can be accessed with a short 80m walk (1 minute walk time) to the bus stop on Safety Bay Road which travels in a southbound direction. Bus stops for routes 552 and 553 are located on Watts Road 700m south of the subject site and could also be used to access the site with a short 10 minute walk from Watts Road to Rae Road.

Figure 17 shows the location of the proposed Shoalwater Childcare Centre site in relation to local bus routes.

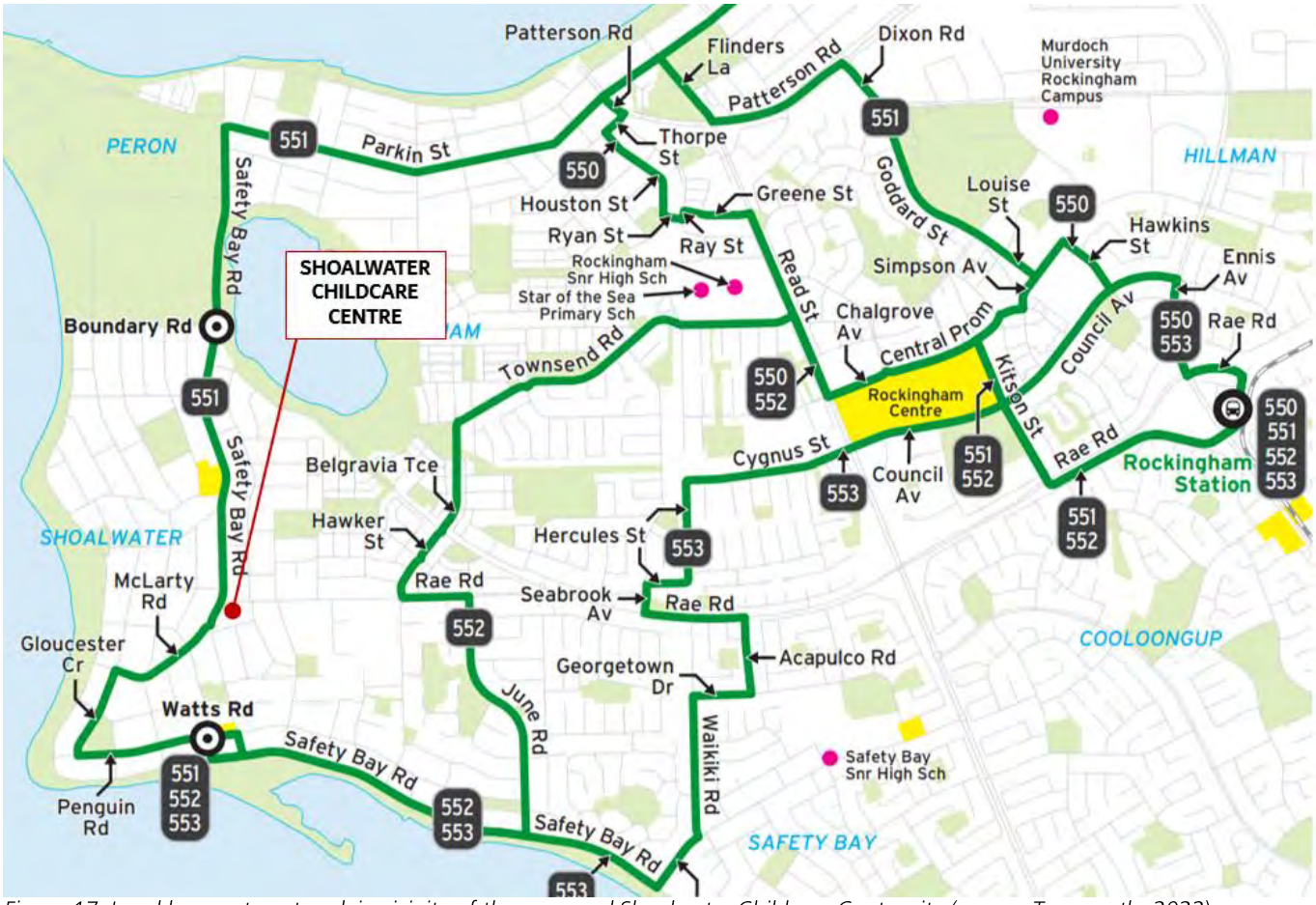


*Figure 17 Local bus route network in vicinity of the proposed Shoalwater Childcare Centre site (source: Transperth, 2022)*

# 8. PEDESTRIAN ACCESS AND AMENITY

## 8.1 Existing Pedestrian Network

The area surrounding the Shoalwater Childcare Centre has an average level of pedestrian connectivity with footpaths on one side of Rae Road, Safety Bay Road, Frederick Street, Waimea Road and Payne Street only. People walking along all other streets will need to walk on-road.

The Walk Score walkability assessment tool considers the proposed Shoalwater Childcare Centre site to be "very-walkable" where most errands can be completed on foot. There are several destinations with a walkable catchment from the site, including Lions Park and Shoalwater Foreshore, Shoalwater IGA, Safety Bay Primary School, Safety Bay Tennis Club, Safety Bay Health Foods Store and The Bay Patisserie, as well as a cluster of shops, cafes and a Post Office at Watts Road. The 15-minute walkable catchment is shown in Figure 18.

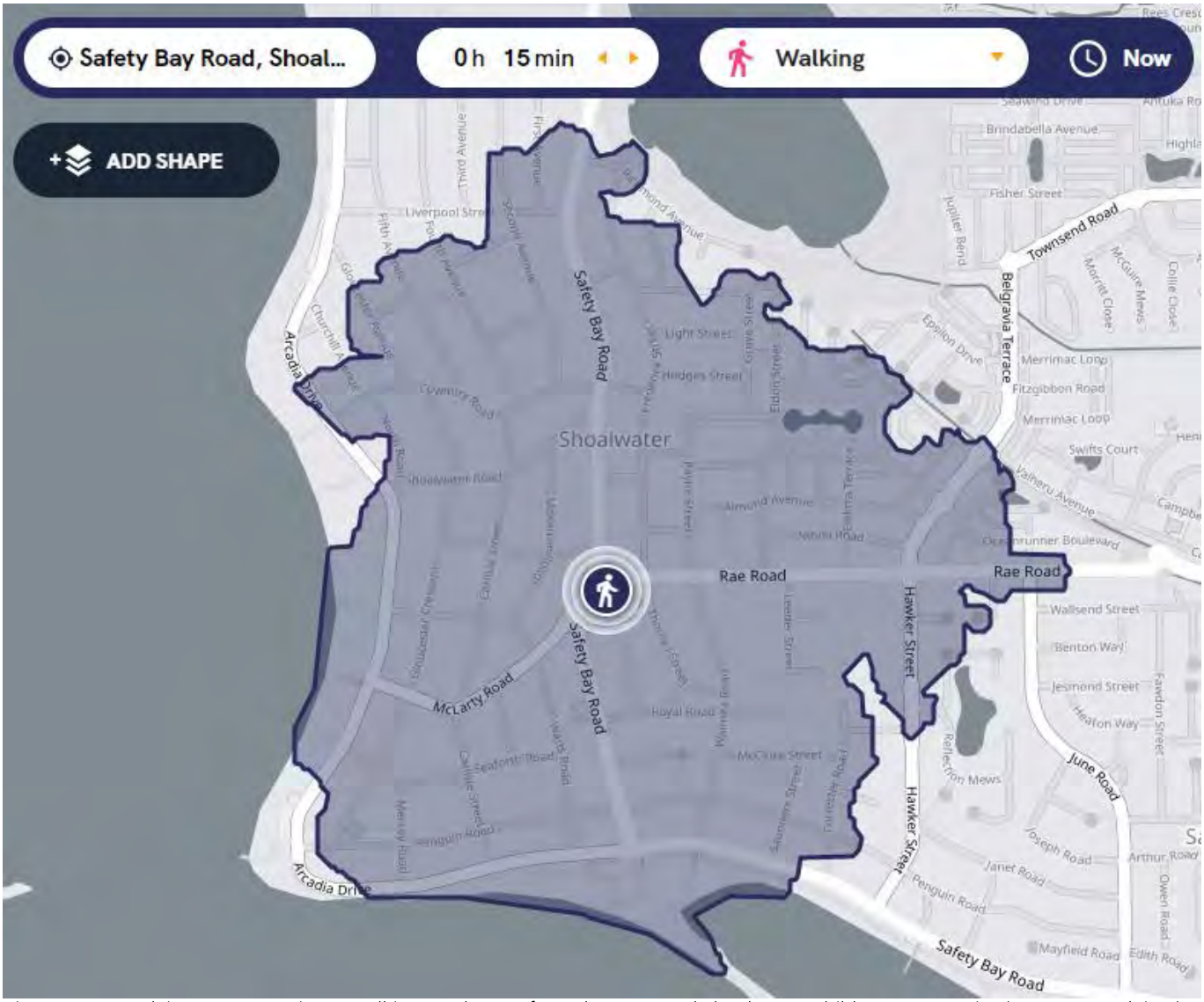


*Figure 18 TravelTime Map 15 minute walking catchment from the proposed Shoalwater Childcare Centre site (source: TravelTime)*

The proposed Shoalwater Childcare Centre site is located within close proximity to the Safety Bay Primary School, meaning that speeds on Rae Road to the east of Frederick Street reduce from 50km/h to 40km/h between 7.30-9.00am and 2.30-4.00pm during school terms.

There is also a traffic warden located at the children's crossing on the corner of Safety Bay Road and Rae Road which ensures traffic comes to a complete stop to allow parents and children to cross the road safely.

The Department of Planning, Lands and Heritage (DPLH) recently released the Urban Tree Canopy Dashboard which provides an interactive snapshot of the extent of tree canopy coverage across the Perth and Peel regions. The urban tree canopy is an essential part of creating healthy, liveable neighbourhoods, where more dense and mature tree canopies can support active travel along walking and cycling paths.

The Perth Metropolitan area has an average of 12% canopy cover from trees over 3m tall in street blocks. In 2018, the street blocks in the suburb of Shoalwater had 8% canopy cover from trees over 3m tall, resulting in 92% of the street block area without any canopy cover – as shown in Figure 19.

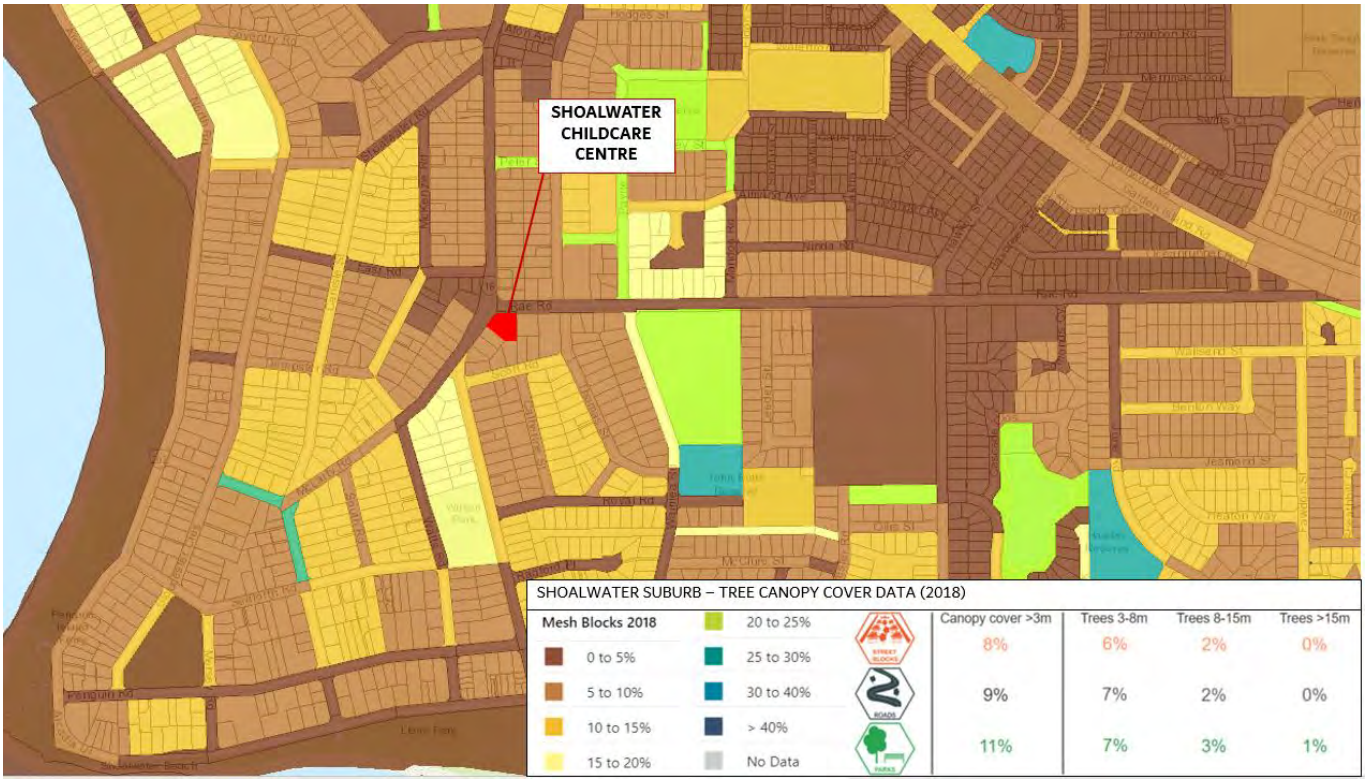


*Figure 19 Shoalwater urban tree canopy (source: Department of Planning, Lands and Heritage)*

The low street block tree canopy cover with trees greater than 3m high, is reflective of the style of development and build-out of the Shoalwater suburb. Google Streetview shows that tree planting has occurred recently along Rae Road and over time these will grow and mature and increase the tree canopy cover.

## 8.2 Development Proposal

Accessing the proposed development by walking would occur along the existing footpath located along the frontage of the subject site on Rae Road. The development proposal for the Shoalwater Childcare Centre includes a footpath which runs between the Childcare Centre entrance and the footpath on Rae Road.

Figure 20 shows the location of the proposed connecting footpath.

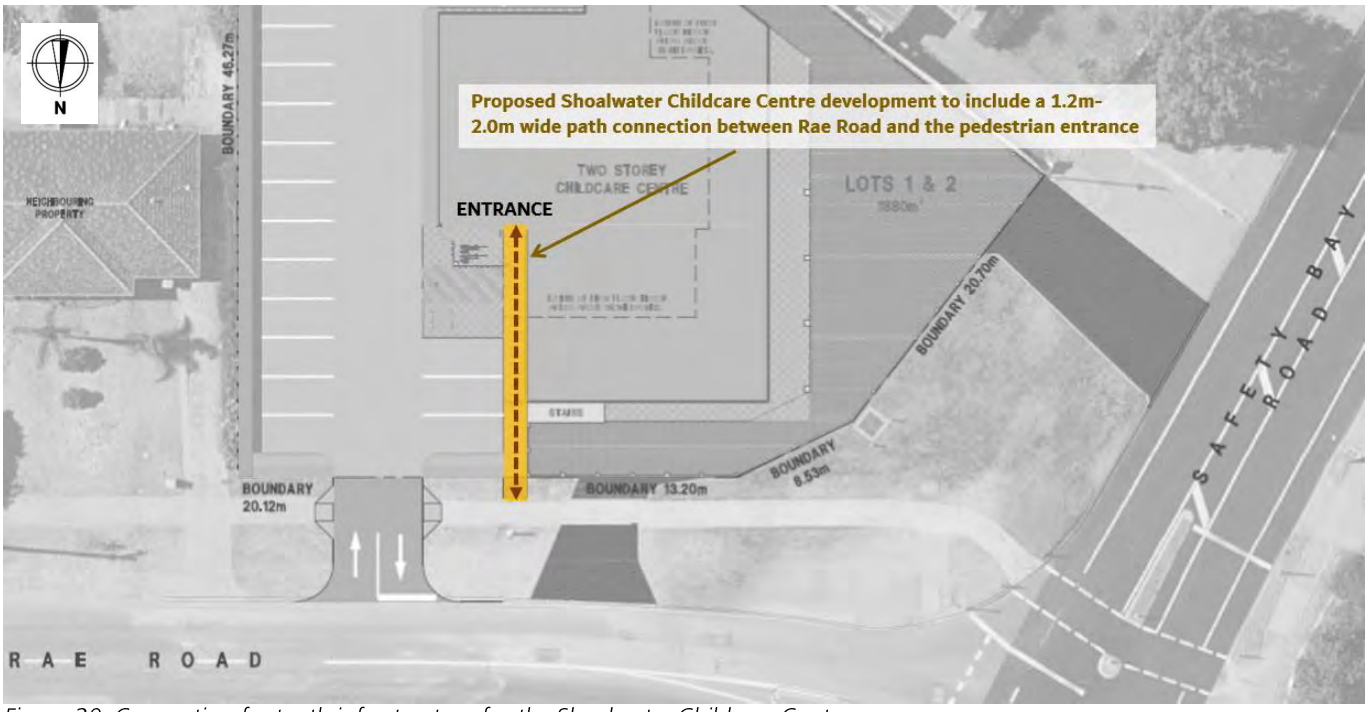


*Figure 20 Connecting footpath infrastructure for the Shoalwater Childcare Centre (base plan source: Hindley and Associates Building Designers, 2022)*

# 9. BICYCLE ACCESS AND AMENITY

## 9.1 Existing Cycle Network

The proposed Shoalwater Childcare Centre site has good bicycle accessibility via existing formal cycling routes. The existing cycle network in proximity of the proposed Childcare Centre is shown in Figure 21.

Safety Bay Road has 2m wide on-road painted cycle lanes and McLarty Avenue is identified as a local bike friendly route and Rae Road currently has an existing 1.8m shared path. Waimea Road to the east of the site has an existing 1.8m shared path and is also identified as a local bike friendly route.

It should be noted that the streets to the north of the site feature paths on at least one side of the street. With cycling permitted on footpaths (with cyclists required to travel safely along the footpath paying due care and attention to pedestrians) this ensures children can be biked to the Childcare Centre using off-road routes via the local footpath network from the north. Streets to the south of Rae Road do not have footpaths (with the exception of Waimea Road) and cyclists will be required to mix with traffic and travel on-road.

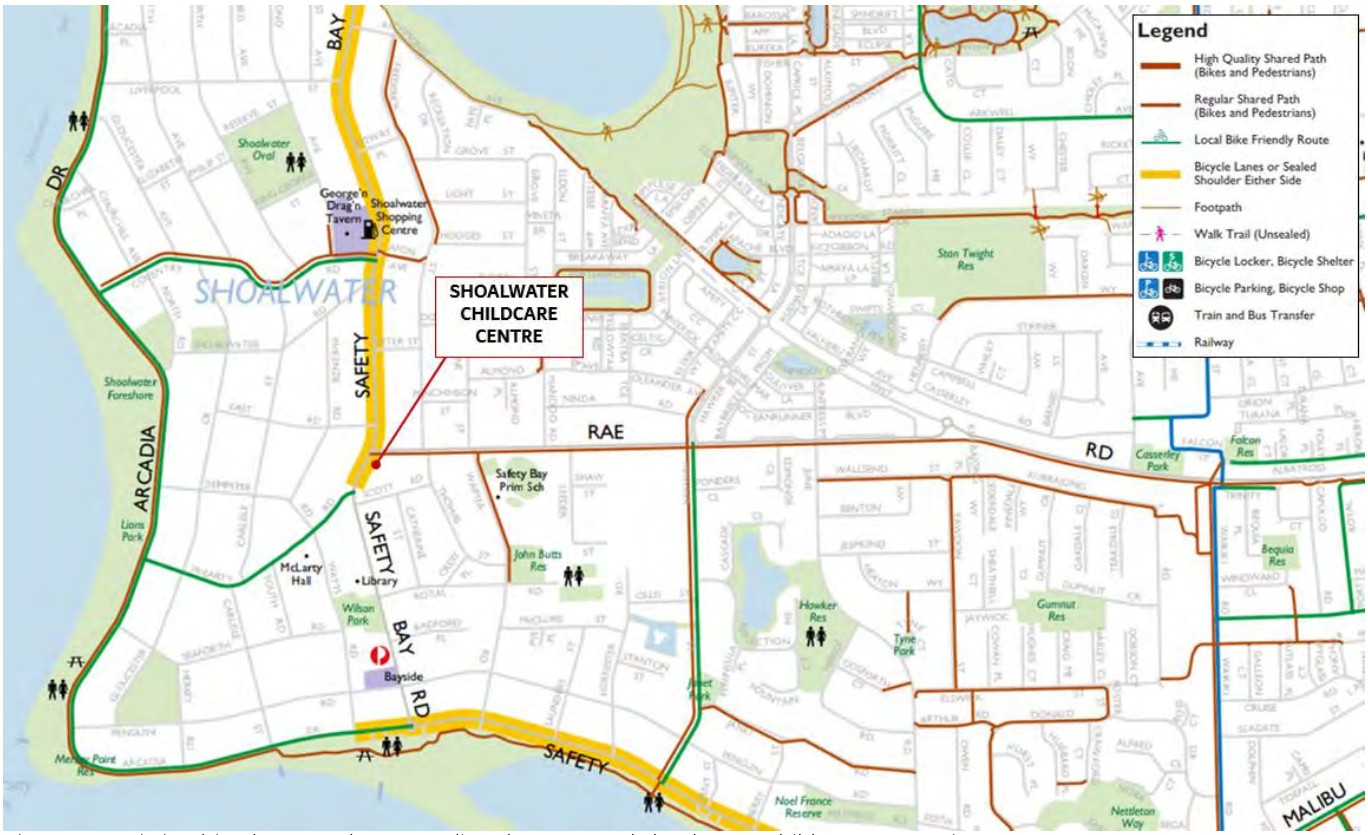


*Figure 21 Existing bicycle network surrounding the proposed Shoalwater Childcare Centre site (source: Department of Transport, Cockburn and Rockingham Map, 2016)*

A heatmap of cycle activity in the vicinity of the proposed Shoalwater Childcare Centre site is shown in Figure 22. The heatmap is produced by cyclists tracking their trips using the commercial product Strava.

The heatmap shows the highest levels of cycling in the local area along Arcadia Drive which follows the coast – as well as high use on Safety Bay Road. There is slightly less use along Rae Road with the lowest levels along the local access roads.


*Figure 22 Strava heatmap for cycling in vicinity of the proposed Shoalwater Childcare Centre site (source: Strava)*

## 9.2 Future Cycle Network

Between 2018-2020 the Department of Transport worked with 33 local governments across Perth and Peel on the Long Term Cycle Network (LTCN) project. The LTCN project has been a collaboration between State and local governments to agree on an aspirational network of bicycle routes that link parks, schools, community facilities and transport services, to make cycling a convenient and viable option for more people and more journeys.

The aim of the project was to develop an aspirational blueprint to ensure State and local governments work together towards the delivery of one continuous cycling network providing additional transport options, recreational opportunities and support for tourism and commercial activity.

In June 2020 the City of Rockingham Council endorsed their LTCN – from July 2020 the LTCN is eligible for the City to seek grant funding support from DoT to deliver bicycle infrastructure along the identified routes – as shown in Figure 23.

The identified LTCN (Figure 23) shows the long-term goal to create a Primary Route from Rockingham Station along Rae Road to Safety Bay Road and north to the foreshore, as well as travelling along the coastline. A Secondary Route is proposed along Hawke Street to the east of the site.

As part of the LTCN project, the City of Rockingham recently secured funding to construct a 7km shared path beginning at Rockingham Station and running along Rae Road, Garden Island Highway and Safety Bay Road towards the Esplanade on the Rockingham Foreshore, creating a crucial east-west link between the station and the foreshore. The progression of this path (and others identified in the LTCN) present the greatest opportunity to support cycling in the area.

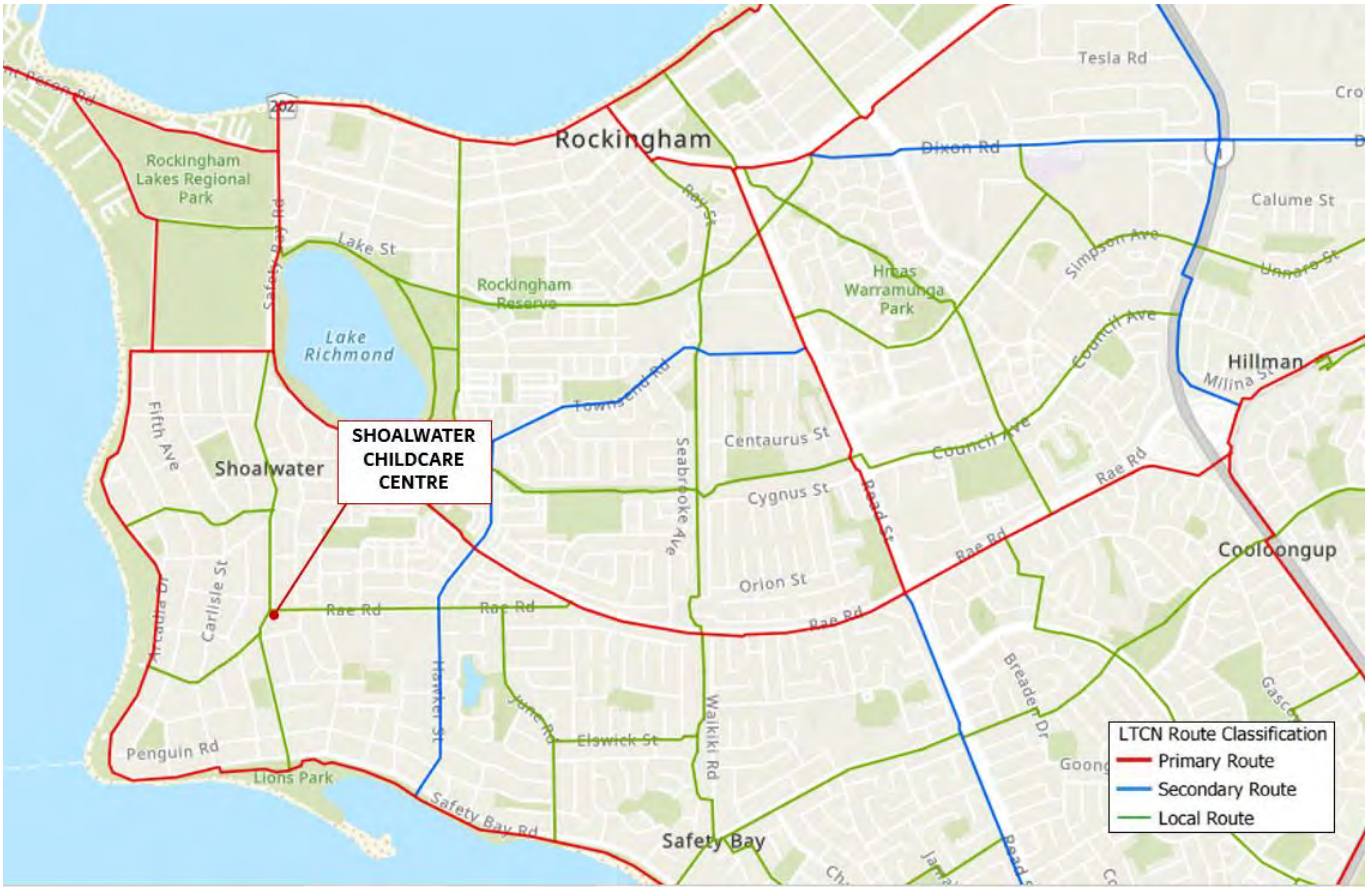


*Figure 23 Long Term Cycle Network in vicinity of the proposed Shoalwater Childcare Centre (source: Department of Transport)*

## 9.3 Development Proposal

As part of the development of the Shoalwater Childcare Centre, four bike parking racks will be provided at the entrance to the facility. These bike parking racks will be able to be used by staff or by parents travelling with their child.

The four bicycle parking racks will be provided at the entrance to the Childcare Centre within the fenced alcove meaning they will be secure across the day. The location of the bicycle parking spaces is shown in Figure 24.

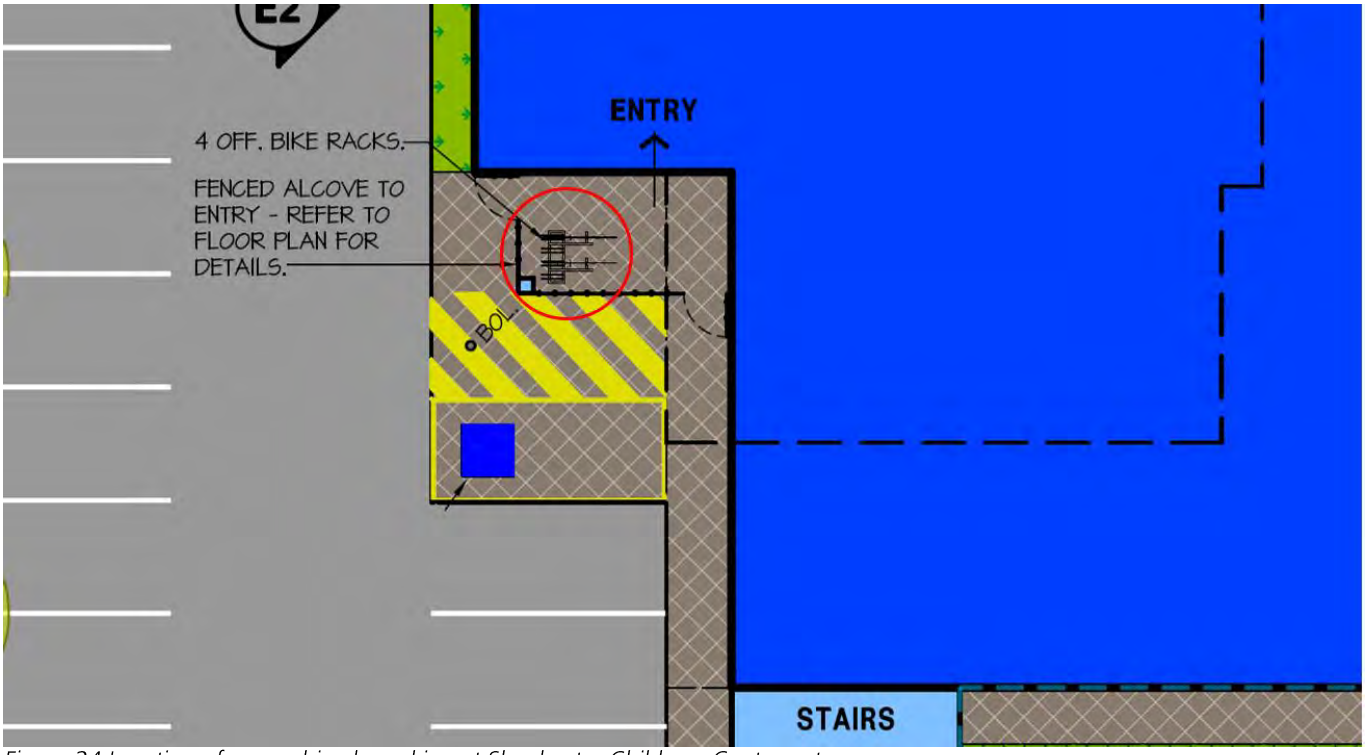


*Figure 24 Location of secure bicycle parking at Shoalwater Childcare Centre entrance (base plan source: Hindley and Associates Building Designers, 2022)*

# 10. SITE SPECIFIC ISSUES

There are no additional site specific issues that are required to be addressed as part of this TIS.

# 11. SAFETY ISSUES

## 11.1 Crash History

In the five-year period ending November 2020, there were 15 reported crashes along Safety Bay Road and Rae Road in proximity of the site of the proposed Shoalwater Childcare Centre:

- Rae Road x2 crashes
  - x1 intersection crash at Rae Road and Frederick Street – collision between two vehicles resulting in major vehicle property damage.
  - x1 intersection crash at Rae Road and Waimea Street – collision between two vehicles resulting in major vehicle property damage.
- Safety Bay Road x13 crashes
  - x3 intersection crashes at Rae Road and Safety Bay Road – collision between two vehicles with one resulting in minor vehicle property damage and two resulting in major vehicle property damage.
  - x1 intersection crash at McLarty Road and Safety Bay Road and Smirk Road – collision between vehicle and object resulting in hospital treatment.
  - x9 midblock crashes to the north and south of Rae Road – with one resulting in requiring medical attention and eight resulting in major vehicle property damage.

Figure 25 shows the recorded location of the reported crashes (blue dots) in relation to the proposed Shoalwater Childcare Centre site.

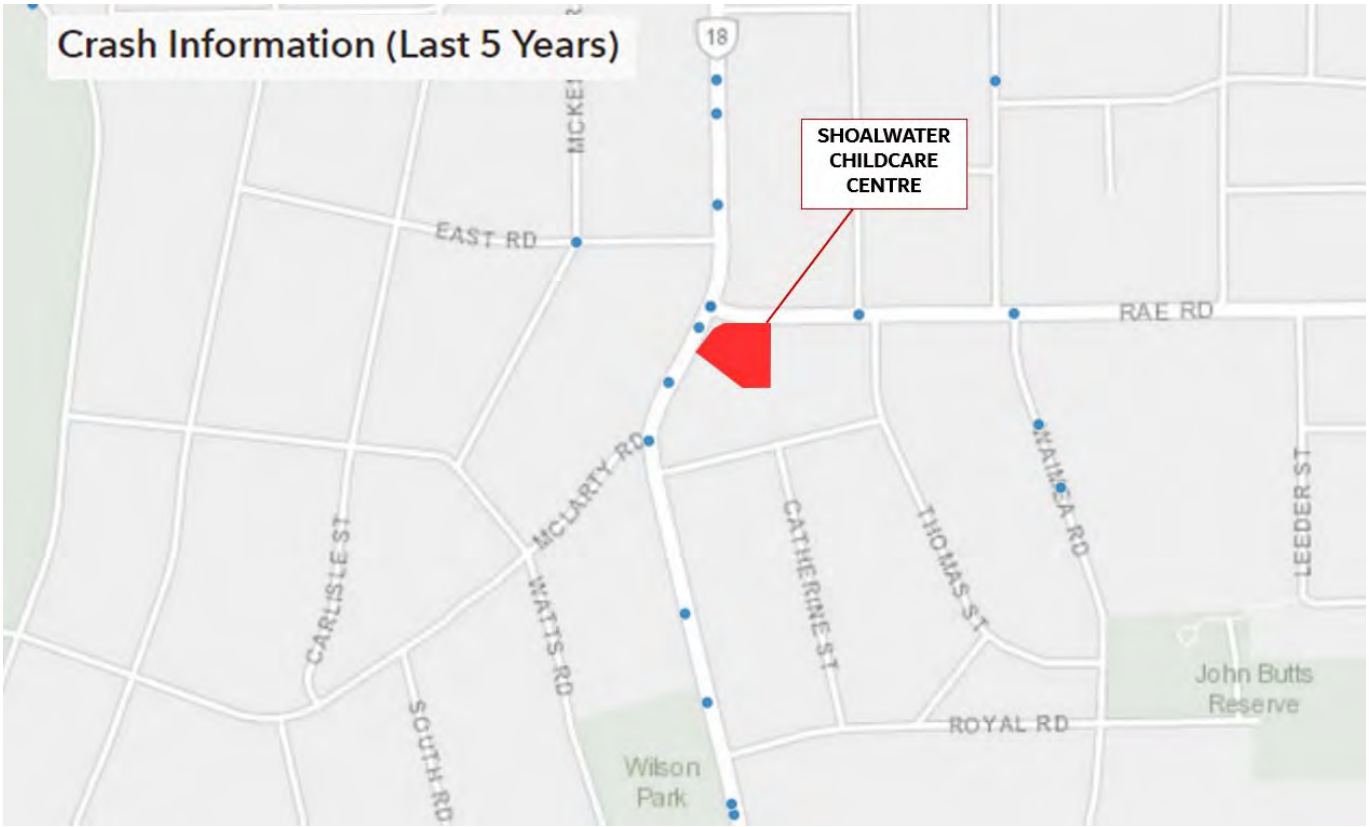


*Figure 25 Crash Summary for five-year period ending November 2020 in proximity to the proposed Shoalwater Childcare Centre site (source: Main Roads WA)*

# 12. SUMMARY

## 12.1 Development Proposals

This Transport Impact Statement (TIS) has been prepared by Flyt in support of the proposed development at Lots 1 and 2, No. 172 Safety Bay Road, Shoalwater for a childcare centre.

The proposed development can be summarised as comprising:

- Childcare Centre to accommodate 100 children
  - 8 children between the ages of 0-1 years
  - 12 children between the ages of 1-2 years
  - 20 children between the ages of 2-3 years
  - 60 children between the ages of 3-5 years
- Childcare Centre to be serviced under the following staff arrangements:
  - 15 educators (Monday-Friday, full-time)
  - Additional part-time educators covering staff breaks (Monday-Friday, 10am-3pm)
  - 1 chef (Monday-Friday, half day)
  - 1 centre area manager (visits site once or twice a week between 10am-3pm)

## 12.2 Vehicle Access and Parking

The proposed Shoalwater Childcare Centre is located at Lots 1 and 2, No. 172 Safety Bay Road Shoalwater.

The site has boundaries with Safety Bay Road to the west, Rae Road to the north, a restaurant and residential properties to the south and Safety Bay Primary School further east.

It is proposed that all vehicle access to the site would be via a crossover on Rae Road. The crossover would be located approximately 41m from the intersection with Safety Bay Road, which is the furthest possible position for the access point.

It is noted that the proposal will result in the net reduction of crossovers to the road network, as well as the establishment of a crossover to Rae Road which is further away from the Safety Bay Road intersection than the crossover for the existing site.

Under the City of Rockingham Town Planning Scheme No.2 the proposed Shoalwater Childcare Centre is required to have the following minimum off-street car parking bays:

- Staff parking = 15 bays required for 15 full-time staff
  = Additional part-time/occasional staff to utilise parent parking outside of peak drop-off/pick-up periods
- Parent parking = 13 bays required

  TOTAL PARKING = 28 bays required

The proposed Shoalwater Childcare Centre has a total of 28 on-site car parking bays. It is proposed that the on-site car parking bays are allocated as follows:

- Staff parking = 15 bays allocated for staff parking with 7 bays along the eastern boundary of the parking area and 8 bays to the south of the Childcare Centre building utilising four tandem bays.
- Parent parking = 13 bays allocated for parent pick-up/drop-off with 9 bays along the eastern boundary of the parking area and 4 bays to the north of the Childcare Centre building (including 1 ACROD bay and associated shared space adjacent to the entry to the Childcare Centre).

## 12.3 Provision for Service Vehicles

The proposed Shoalwater Childcare Centre's bin store is in the southwest corner of the on-site car park.

It is proposed that servicing of the site will be by private waste collection outside of the Childcare Centre's operating hours. As such, there will be no parked cars within the site's car park when the waste collection occurs.

The private waste contractor currently operates 8.0m long vehicles, to ensure the site is future proofed to accommodate slightly larger waste collection vehicles in the private waste contractor fleet changes – swept path analysis has been completed for both an 8.0m long vehicle and 8.8m long vehicle.

The swept path analysis shows that the site accommodates both 8.0m and 8.8m long vehicles entering and exiting the site in forward gear, with sufficient room to manoeuvre within the site to back-up to the bin store in the southwest corner of the on-site car park.

## 12.4 Traffic Impact

The proposed Shoalwater Childcare Centre it estimated to generate a maximum total of 82 vehicle trips to/from the site during the developments AM peak hour (7:30am-8:30am) and 74 vehicle trips to/from the site will occur during the development PM peak hour (4:30pm-5:30pm).

The Childcare Centre is unlikely to generate significant additional vehicle trips on the road network – many of the vehicle trips to drop-off and pick-up children from the Childcare Centre would be part of a linked trip already being made. The majority of linked trip will be part of the parents commute to their place of work and/or school drop-off/pick-up of older children.

The Childcare Centre will generate more vehicle movements during the developments AM peak hour (more concentrated child drop-off activity) as opposed to during the developments PM peak hour (more dispersed child pick-up activity).

The 12 parent parking bays on-site (excluding the 1 ACROD bay) would turnover approximately 4.8 times during the peak hour and accommodate approximately 57 vehicle movements. As such, the number of parent parking bays on-site would be sufficient to accommodate the expected peak hour vehicle trip generation.

The level of vehicle trips generated by the proposed Shoalwater Childcare Centre is focused on generation of vehicle trips associated with children drop-off and pick-up movements. Staff movements are generally outside of peak periods as the educators have to be on-site to cater for the arrival of children and they cannot leave the facility until certain ratios of educators to children are achieved. In addition, some staff are likely to use alternate forms of transport, such as car pooling, public transport or cycling.

Some drop-off and pick-up movements will be undertaken by foot or involve trips with multiple children being dropped-off or picked-up. In addition, not all movements will be made in the development AM or PM peak hour.

The majority of traffic movements generated by the site are expected to be a slight redistribution of existing trips on the network as part of a linked trip – primarily as part of a parents existing commute and/or school drop-off/pick-up of older children.

## 12.5 Public Transport Access

The proposed Shoalwater Childcare Centre site is accessible by public transport – with Bus Route 551 providing direct access to the site and bus routes 552 and 553 located within a 700m walk.

From the entrance of the proposed Shoalwater Childcare Center, Bus Route 551 services can be accessed with a short 80m walk (approximately 1 minute walk time) to the bus stop on Safety Bay Road.

Bus Services

- Routes 551 operates between Watts Road and Rockingham Station. The bus route travels along McLarty Road to Safety Bay Road travelling past the subject site.
- Route 551 provides connections to residential catchments of Peron to the north and Safety Bay to the east as well as to Rockingham Centre. It also travels past Anzac Park, Rockingham Visitors Centre, the Rockingham Museum, Rockingham Montessori School, Rockingham Aquatic Centre and the Mike Barnett Sports Club.

## 12.6 Pedestrian Access

The area surrounding the Shoalwater Childcare Centre has an average level of pedestrian connectivity with footpaths on one side of Rae Road, Safety Bay Road, Frederick Street, Waimea Road and Payne Street only. People walking along all other streets will need to walk on-road.

The Walk Score walkability assessment tool considers the proposed Shoalwater Childcare Centre site to be "very-walkable" where most errands can be completed on foot. There are several destinations with a 15-minute walkable catchment from the site, including Lions Park and Shoalwater Foreshore, Shoalwater IGA, Safety Bay Primary School, Safety Bay Tennis Club, Safety Bay Health Foods Store and The Bay Patisserie, as well as a cluster of shops, cafes and the Post office at Watts Road.

Accessing the proposed development by walking would occur along the existing footpath located along the frontage of the subject site on Rae Road. The development proposal for the Shoalwater Childcare Centre includes a footpath which runs between the Childcare Centre entrance and the footpath on Rae Road.

## 12.7 Cycling Access

The proposed Shoalwater Childcare Centre site has good bicycle accessibility via existing formal cycling routes.

Safety Bay Road has 2m wide on-road painted cycle lanes, and McLarty Avenue is identified as a local bike friendly route and Rae Road currently has an existing 1.8m shared path. Waimea Road to the east of the site has an existing 1.8m shared path and is also identified as a local bike friendly route.

It should be noted that the streets to the north of the site feature paths on at least one side of the street. With cycling permitted on footpaths (with cyclists required to travel safely along the footpath paying due care and attention to pedestrians) this ensures children can be biked to the Childcare Centre using off-road routes via the local footpath network from the north. Streets to the south of Rae Road do not have footpaths (with the exception of Waimea Road) and cyclists will be required to mix with traffic and travel on-road.

As part of the development of the Shoalwater Childcare Centre, four bike parking racks will be provided at the entrance to the facility. These bike parking racks will be able to be used by staff or by parents travelling with their child. The four bicycle parking racks will be provided at the entrance to the Childcare Centre within the fenced alcove meaning they will be secure across the day.

# APPENDIX 4

ENVIRONMENTAL NOISE ASSESSMENT

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# Environmental Noise Assessment - Childcare Centre

## Lots 1 & 2 (#172) Safety Bay Road, Shoalwater

**Reference: 22037217-01**

Prepared for:
Southerly Ocean Pty Ltd & Cedarbay Investments Pty Ltd

# Reference: 22037217-01


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| 17-Nov-22 | 0 | Issued to Client | Matt Nolan | Matt Moyle |
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# EXECUTIVE SUMMARY

Lloyd George Acoustics was engaged by Southerly Ocean Pty Ltd & Cedarbay Investments Pty Ltd to undertake a noise assessment for a proposed childcare centre (CCC) to be located at Lots 1 & 2 (#172) Safety Bay Road, Shoalwater. This report considered noise emissions from the proposed childcare centre to surrounding properties by way of noise modelling of child play, mechanical plant and car door closings.

The predicted noise from all children playing outside and car door closings are considered compliant provided the fences shown on the DA Plans are constructed and the staff car parking is controlled during the night period. This includes a fence that varies between 1.8 and 2.1 metres high along the site boundary. These fences must be solid and free of gaps. The fences must have a minimum surface mass of 8 kg/$m^2$ (not including the northern section of the east boundary fence). Examples of suitable material include brick, limestone, concrete or double sheeted *Colorbond*. For areas where visual permeability is required, sound-rated plexiglass can be used. The northern section of the east boundary fence was considered compliant using single sheet *Colorbond*.

Mechanical plant noise was also calculated to be compliant except at the residential receiver to the west. Once the plant has been designed and selected, this should be further reviewed to ensure compliance prior to Building Permit.

# 1. INTRODUCTION

Lloyd George Acoustics was engaged by Southerly Ocean Pty Ltd & Cedarbay Investments Pty Ltd to undertake an environmental noise assessment for a proposed childcare centre to be located at Lots 1 & 2 (#172) Safety Bay Road, Shoalwater (refer *Figure* 1-1) with the site plan shown in *Figure 1-2* and full Development Application (DA) plans provided in *Appendix A*. The purpose of this report is to consider noise emissions from the proposed childcare centre to surrounding properties.


***Figure 1-1: Subject Site Location (Source: DPLH PlanWA)***

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

- Six internal teaching spaces capable of accommodating up to 100 children, grouped as follows:
  - Activity 1 (one teaching space on Ground Floor and two on Level 1): 60 places for children aged 3+ years;
  - Activity 2: 20 places for children aged 2-3 years;
  - Activity 3: 12 places for children aged 1-2 years;
  - Activity 4: 8 places for children aged 0-1 years.
- Outdoor play areas;
- Amenities and associated mechanical plant such as:
  - Kitchen exhaust fan assumed to be located on roof above;
  - Air-conditioning (AC) plant, assumed to located on the ground in the designated yard as shown on the DA Plans;
- Car parking on the east side of the lot including three staff car parks to be used prior to 7.00am.

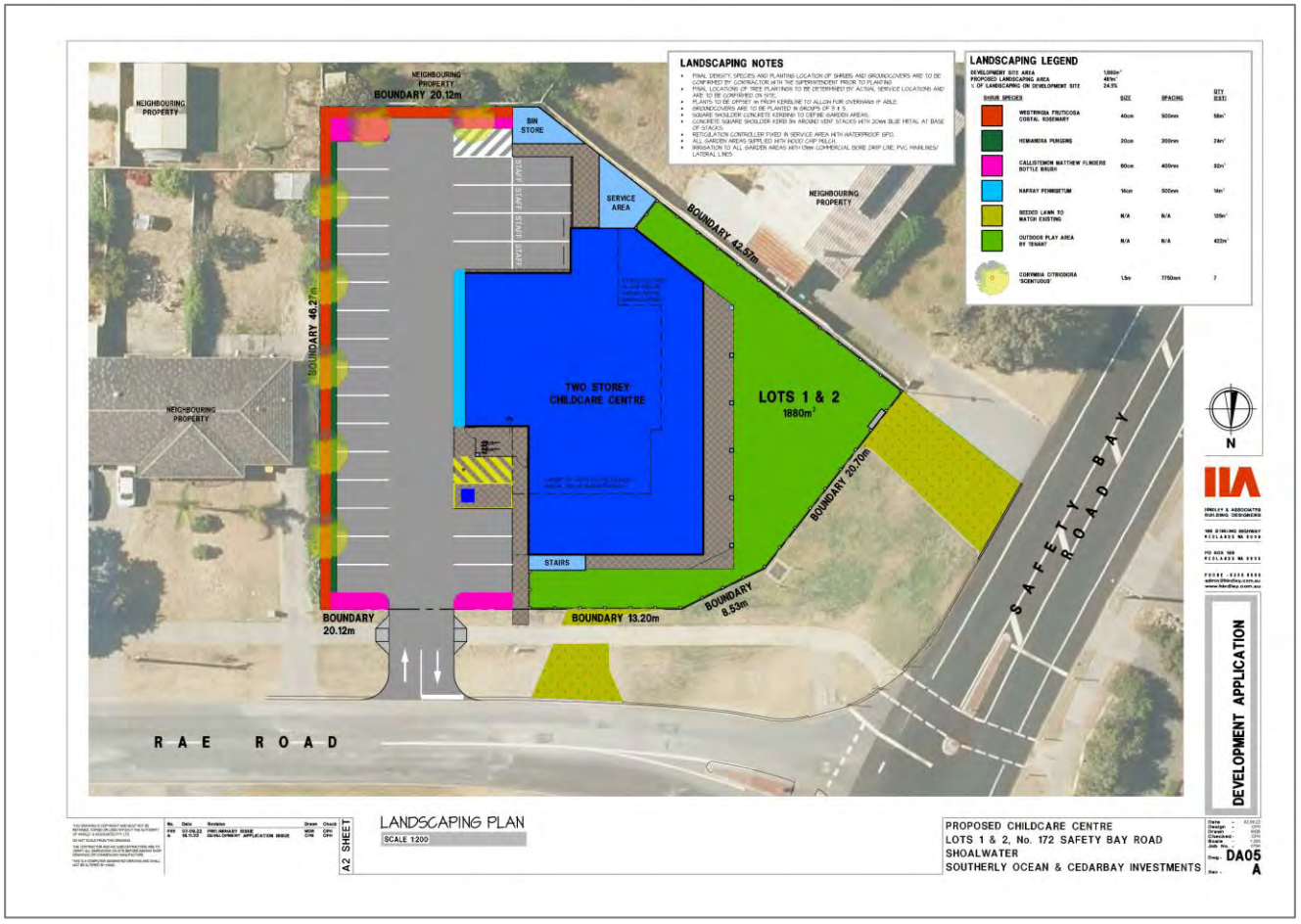



***Figure 1-2: Proposed Site Plan***

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

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

# 2. CRITERIA

Environmental noise in Western Australia is governed by the *Environmental Protection Act 1986*, through the *Environmental Protection (Noise) Regulations 1997* (the Regulations).

## 2.1. Regulations 7, 8 & 9

This group of regulations defines the prescribed standard for noise emissions applicable to child play, mechanical services and car door closing as follows:

*"**7. Prescribed standard for noise emissions***

*(1) Noise emitted from any premises or public place when received at other premises –*

(a) *must not cause, or significantly contribute to, a level of noise which exceeds the assigned level in respect of noise received at premises of that kind; and*

(b) *must be free of –*

*(i) tonality; and*

*(ii) impulsiveness; and*

*(iii) modulation,*

*when assessed under regulation 9.*

*(2) For the purposes of subregulation (1)(a), a noise emission is taken to significantly contribute to a level of noise if the noise emission … exceeds a value which is 5 dB below the assigned level."*

Tonality, impulsiveness and modulation are defined in regulation 9 (refer *Appendix C*). Under regulation 9(3), *"noise is to be taken to be free of these characteristics 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 |

Note: The above are cumulative to a maximum of 15dB.

The assigned levels (prescribed standards) for all premises are specified in regulation 8(3) and are shown in *Table 2-2*. The $L_{A10}$ assigned level is applicable to noises present for more than 10% of a representative assessment period, generally applicable to "steady-state" noise sources. The $L_{A1}$ is for short-term noise sources present for less than 10% and more than 1% of the time. The $L_{Amax}$ assigned level is applicable for incidental noise sources, present for less than 1% of the time.

***Table 2-2 Baseline Assigned Levels***

| Premises Receiving Noise | Time Of Day | Assigned Level (dB) | | |
|---|---|---|---|---|
| | | $L_{A10}$ | $L_{A1}$ | $L_{Amax}$ |
| Noise sensitive premises: highly sensitive area[1] | 0700 to 1900 hours Monday to Saturday (Day) | 45 + influencing factor | 55 + influencing factor | 65 + influencing factor |
| | 0900 to 1900 hours Sunday and public holidays (Sunday) | 40 + influencing factor | 50 + influencing factor | 65 + influencing factor |
| | 1900 to 2200 hours all days (Evening) | 40 + influencing factor | 50 + influencing factor | 55 + influencing factor |
| | 2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night) | 35 + influencing factor | 45 + influencing factor | 55 + influencing factor |
| Noise sensitive premises: any area other than highly sensitive area | All hours | 60 | 75 | 80 |
| Commercial Premises | All hours | 60 | 75 | 80 |
| Industrial and Utility Premises | All hours | 65 | 80 | 90 |

1. ***highly sensitive area*** means that area (if any) of noise sensitive premises comprising —
   (a) a building, or a part of a building, on the premises that is used for a noise sensitive purpose; and
   (b) any other part of the premises within 15 metres of that building or that part of the building.

The influencing factor (IF), in relation to noise received at noise sensitive premises, has been calculated as 3 dB, as determined in *Appendix B*. *Table 2-3* shows the assigned noise levels including the influencing factor and transport factor at the receiving locations.

***Table 2-3 Assigned Levels***

| Premises Receiving Noise | Time Of Day | Assigned Level (dB) | | |
|---|---|---|---|---|
| | | $L_{A10}$ | $L_{A1}$ | $L_{Amax}$ |
| Noise sensitive premises: highly sensitive area[1] | 0700 to 1900 hours Monday to Saturday (Day) | 48 | 58 | 68 |
| | 0900 to 1900 hours Sunday and public holidays (Sunday) | 43 | 53 | 68 |
| | 1900 to 2200 hours all days (Evening) | 43 | 53 | 58 |
| | 2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night) | 38 | 48 | 58 |
| Noise sensitive premises: any area other than highly sensitive area | All hours | 60 | 75 | 80 |
| 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*, which is 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 Environment Regulation. Acoustic consultants or other environmental consultants are not appointed as an *inspector* or *authorised person*. Therefore, whilst this assessment is based on a 4-hour RAP, which is assumed to be appropriate given the nature of the operations, this is to be used for guidance only.

## 2.2. Regulation 3

***"3. Regulations do not apply to certain noise emissions***

*(1) Nothing in these regulations applies to the following noise emissions –*

(a) *Noise emissions from the propulsion and braking systems of motor vehicles operating on a road;"*

The childcare centre car park is considered a road and therefore vehicle noise (propulsion and braking) is not assessed. Noise from vehicle doors however are assessed, since these are not part of the propulsion or braking system.

## 2.3. Regulation 14A

***"14A. Waste Collection and Other Works***

*(2) Regulation 7 does not apply to noise emitted in the course of carrying out class 1 works if –*

(a) *The works are carried out in the quietest reasonable and practicable manner; and*

(b) *The equipment used to carry out the works is the quietest reasonably available;*

*class 1 works means specified works carried out between -*

(a) *0700 hours and 1900 hours on any day that is not a Sunday or a public holiday; or*

(b) *0900 hours and 1900 hours on a Sunday or public holiday.*

*specified works means -*

(a) *The collection of waste; or*

(b) *The cleaning of a road or the drains for a road; or*

(c) *The cleaning of public places, including footpaths, cycle paths, car parks and beaches;"*

In the case where specified works are to be carried out outside of class 1, a noise management plan is to be prepared and approved by the CEO.

# 3. METHODOLOGY

Computer modelling has been used to predict the noise emissions from the development to all nearby receivers. The software used was *SoundPLAN 8.2* with the ISO 9613 algorithms (ISO 171534-3 improved method) selected, as they include the influence of wind and are considered appropriate given the relatively short source to receiver distances. Input data required in the model are listed below and discussed in *Section 3.1* to *Section 3.5*:

- Meteorological Information;
- Topographical data;
- Ground Absorption; and
- Source sound power levels.

## 3.1. Meteorological Conditions

Meteorological information utilised is provided in *Table 3-1* and is considered to represent worst-case conditions for noise propagation. At wind speeds greater than those shown, sound propagation may be further enhanced, however background noise from the wind itself and from local vegetation is likely to be elevated and dominate the ambient noise levels.

***Table 3-1: Modelling Meteorological Conditions***

| Parameter | Day (7.00am to 7.00pm) | Night (7.00pm to 7.00am) |
|---|---|---|
| Temperature (°C) | 20 | 15 |
| Humidity (%) | 50 | 50 |
| Wind Speed (m/s) | Up to 5 | Up to 5 |
| Wind Direction* | All | All |

* The modelling package allows for all wind directions to be modelled simultaneously.

It is generally considered that compliance with the assigned noise levels needs to be demonstrated for 98% of the time, during the day and night periods, for the month of the year in which the worst-case weather conditions prevail. In most cases, the above conditions occur for more than 2% of the time and therefore must be satisfied.

## 3.2. Topographical Data

Topographical data was adapted from publicly available information (e.g. *Google*) in the form of spot heights and combined with the site plan.

Surrounding existing buildings were also incorporated in the noise model, as these can provide noise shielding as well as reflection paths. Single storey buildings are modelled with a height of 3.5 metres and any double storey buildings identified assumed to be 6.0 metres in height with receivers 1.4 metres above floor level.

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

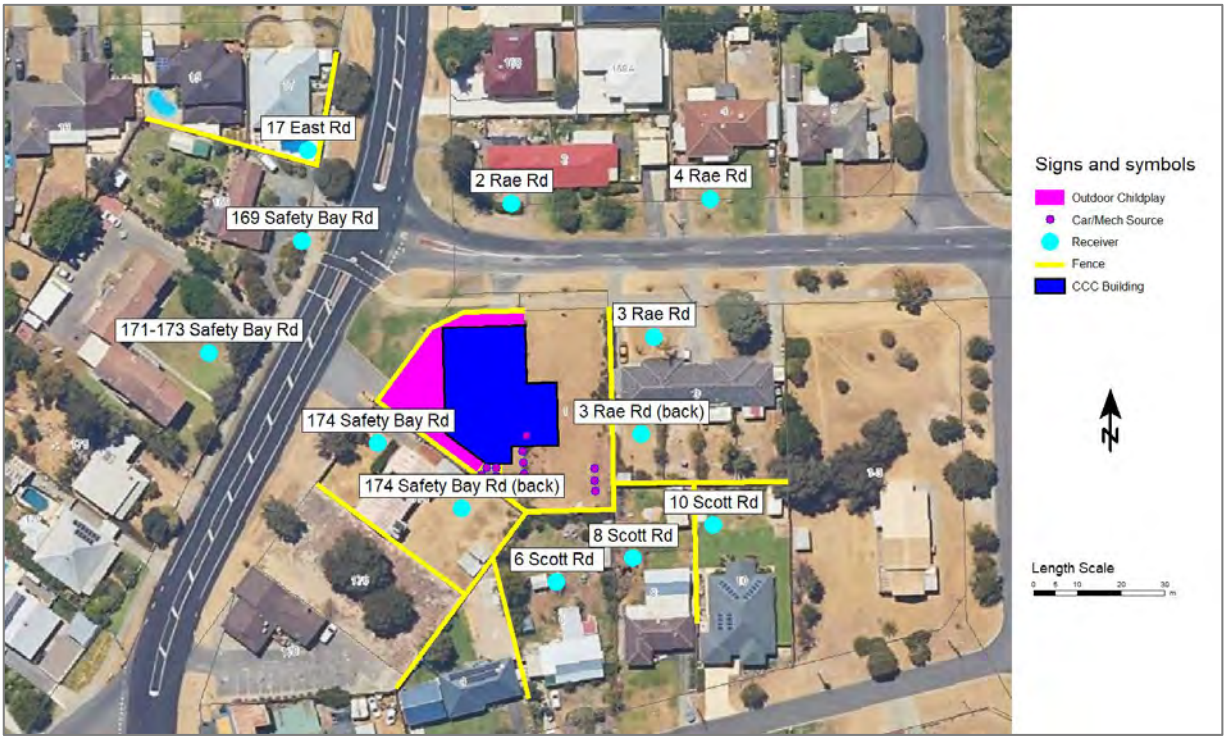



***Figure 3-1: Overview of Noise Model***

## 3.3. Fencing

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

The fencing along the site boundary has been modelled between 1.8 and 2.1 metres high along the site boundary as shown in *Figure 3-2*. The fences must be solid, free of gaps and of minimum surface mass 8 kg/m$^2$ (not including the section on the east side of the site boundary where single sheet *Colorbond* has been used in the model). Examples of suitable material include brick, limestone, concrete or double sheeted Colorbond. For areas where visual permeability is required, sound-rated plexiglass can be used.

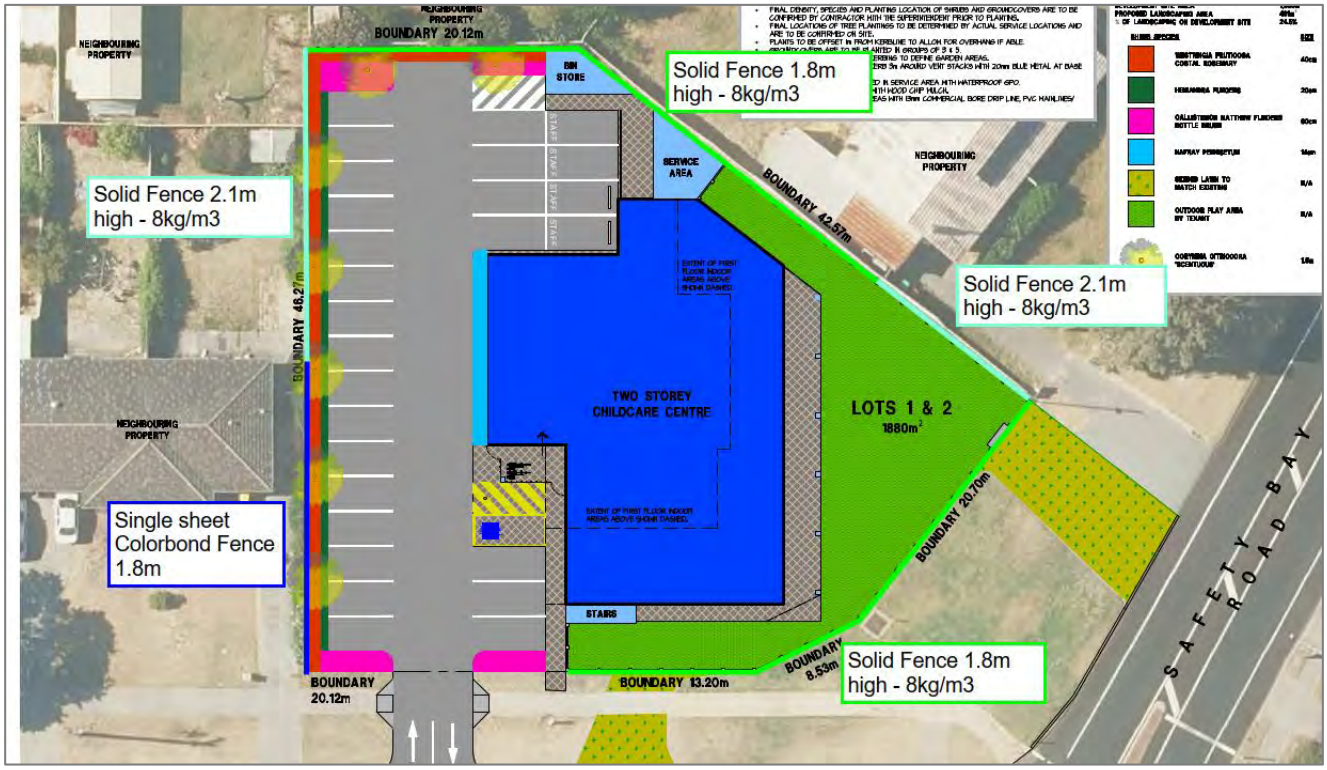



***Figure 3-2: Overview of Fences***

## 3.4. Ground Absorption

The ground absorption has been assumed to be 0.1 (10%) for the roads, 0.5 (50%) outside of the roads and 1.0 (100%) for the play areas, noting that 0.0 represents hard reflective surfaces such as water and 1.0 represents absorptive surfaces such as grass.

## 3.5. Source Sound Levels

The source sound power levels used in the modelling are provided in *Table 3-2*.

***Table 3-2: Source Sound Power Levels, dB***

| Description | Octave Band Centre Frequency (Hz) | | | | | | | | Overall dB(A) |
|---|---|---|---|---|---|---|---|---|---|
| | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | |
| Babies Play Aged 0-2 Years (10 kids), $L_{10}$ | 48 | 54 | 60 | 66 | 72 | 74 | 71 | 67 | **78** |
| Toddler Play Aged 2-3 Years (10 kids), $L_{10}$ | 61 | 67 | 73 | 79 | 81 | 78 | 74 | 70 | **85** |
| Kindy Play Aged 3+ Years (10 kids), $L_{10}$ | 64 | 70 | 75 | 81 | 83 | 80 | 76 | 72 | **87** |
| AC Plant, double fan unit (each), $L_{10}$ | 72 | 74 | 68 | 69 | 63 | 61 | 53 | 47 | **70** |
| Kitchen Exhaust Fan, $L_{10}$ | 50 | 64 | 61 | 70 | 69 | 66 | 62 | 50 | **73** |
| Closing Car Door (each), $L_{max}$ | 71 | 74 | 77 | 81 | 80 | 78 | 72 | 61 | **84** |

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

- Child play source levels are based on *Guideline for Childcare Centre Acoustic Assessments Version 3.0* produced by the Association of Australasian Acoustical Consultants (AAAC) published September 2020. Where the number of children for individual play areas is specified in the plans, these have been adjusted from the reference source levels using appropriate acoustical calculations. Outdoor child play was modelled as area sources at 1-metre above ground level. The sound power levels used in the model were scaled as follows:
  - 20 children aged 0-2 years = 81 dB(A);
  - 20 children aged 2-3 years = 88 dB(A);
  - 60 children aged 3+ years = 93 dB(A).
- Based on the AAAC Guideline 3.0, source sound power levels for AC condensing units were assumed. Medium sized (double fan) outdoor units were deemed appropriate with four (4) modelled as point sources in the services area.
- Other mechanical plant include one kitchen exhaust fan which was modelled as a point source approximately 0.5 metres above roof level. Toilet exhaust fans are assumed to be ceiling mounted types with no external plant and therefore negligible noise impact (not included in modelling).
- Car doors closing were modelled as a point source 1.0 metre above ground level. Since noise from a car door closing is a short-term event, only the $L_{Amax}$ level is applicable.

# 4. RESULTS AND ASSESSMENT

## 4.1. Outdoor Child Play Noise

The childcare development will host up to 100 children. It is noted play time is generally staggered and therefore not all children would be playing outside at once for extended periods of time. However, noise levels were conservatively predicted for all children playing simultaneously, as a worst-case scenario with the results provided and assessed in *Table 4-1*. The critical assigned noise level is during the day, as whilst the childcare centre will open at 6.30am, child play will not commence until after 7.00am. Noise from child play is not considered to contain annoying characteristics within the definition of the Regulations and therefore no adjustments are made to the predicted noise levels. A noise contour plot is also provided in *Figure 4-1* showing noise levels at ground floor.

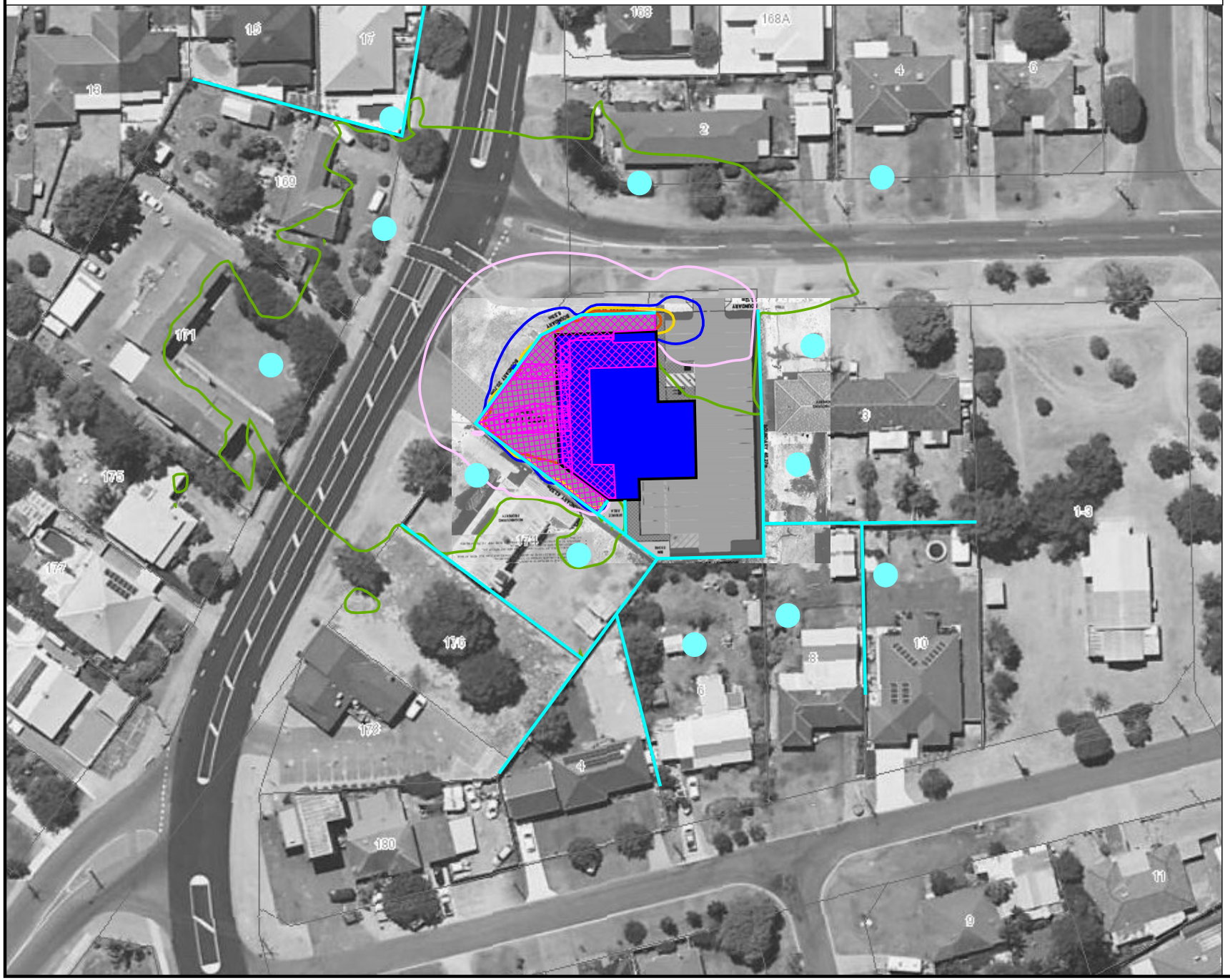
***Table 4-1: Child Play Noise Predicted Levels and Assessment, dB(A)***

| Receiver | Babies (0-2 yo) | Toddler (2-3 yo) | Kindy (3+ yo) | Total | Assigned Noise Level | Assessment |
|---|---|---|---|---|---|---|
| 2 Rae Rd | 45 | 28 | 38 | **44** | **48** | *Complies* |
| 3 Rae Rd* | 40 | 15 | 26 | **40** | **48** | *Complies* |
| 4 Rae Rd | 39 | 11 | 23 | **39** | **48** | *Complies* |
| 6 Scott Rd | 38 | 26 | 32 | **36** | **48** | *Complies* |
| 8 Scott Rd | 29 | 20 | 21 | **27** | **48** | *Complies* |
| 10 Scott Rd | 29 | 16 | 20 | **28** | **48** | *Complies* |
| 17 East Rd | 38 | 26 | 32 | **36** | **48** | *Complies* |
| 169 State Route 18 | 45 | 32 | 39 | **43** | **48** | *Complies* |
| 171-173 Safety Bay Rd | 45 | 32 | 40 | **44** | **48** | *Complies* |
| 174 Safety Bay Rd* | 48 | 37 | 44 | **45** | **48** | *Complies* |

*The highest noise level from predictions at multiple receivers were used in the assessment

Based on a conservative scenario of all 100 children playing outside simultaneously, the assessment demonstrates compliance is achieved during the day.

# *Figure 4-1 Child Play Noise Contour Plot (1.4m AGL), dB $L_{A10}$*




**Predicted Noise level**

= 43
= 48
= 53
= 58
= 63

Legend

Receiver
Outdoor Childplay
Fence
Childcare Centre

N

Scale 1:500

0 5 10 20 30 m

Project No: 22037217
Consultant: MN
Date: 17/11/2022
Algorithm: ISO 9613
SoundPLAN Version: 8.2

**Lloyd George Acoustics**
PO Box 717
HILLARYS WA 6923
(08) 9401 7770

## 4.2. Mechanical Plant Noise

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

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

| Receiver | Total | Total Adjusted | Assigned Noise Level | Assessment |
|---|---|---|---|---|
| 2 Rae Rd | 16 | **21** | **38** | *Complies* |
| 3 Rae Rd* | 28 | **33** | **38** | *Complies* |
| 4 Rae Rd | 21 | **26** | **38** | *Complies* |
| 6 Scott Rd | 32 | **37** | **38** | *Complies* |
| 8 Scott Rd | 29 | **34** | **38** | *Complies* |
| 10 Scott Rd | 27 | **32** | **38** | *Complies* |
| 17 East Rd | 12 | **17** | **38** | *Complies* |
| 169 State Route 18 | 16 | **21** | **38** | *Complies* |
| 171-173 Safety Bay Rd | 21 | **26** | **38** | *Complies* |
| 174 Safety Bay Rd* | 38 | **43** | **38** | +5 dB |

*The highest noise level from predictions at multiple receivers were used in the assessment

The calculations show compliance at all receiver locations except 174 Safety Bay Road where there is a predicted exceedance of 5 dB. It must be noted that the assessment is based on assumptions in relation to the number, location, size and type of mechanical plant. Therefore, once the mechanical plant has been designed and selected, noise is to be reviewed by a suitably qualified acoustical consultant.

# *Figure 4-2 Mechanical Plant Noise Contour Plot (1.4m AGL), dB $L_{A10}$*


**Predicted Noise level**

| | |
|---|---|
| | = 33 |
| | = 38 |
| | = 43 |
| | = 48 |
| | = 53 |

Legend

- Receiver
- Car/Mech Source
- Fence
- Childcare Centre

N

Scale 1:500

0 5 10 20 30 m

Project No: 22037217
Consultant: MN
Date: 17/11/2022
Algorithm: ISO 9613
SoundPLAN Version: 8.2

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## 4.3. Car Door Closing Noise

Predicted and assessed noise levels for car doors closing are provided in *Table 4-3* being the maximum noise level from the six pre-7am staff car bays at each receiver. The critical assigned noise level is during the night, as car door closings in the staff car bays are predicted to occur prior to 7.00am. An adjustment of + 10 dB is included for impulsiveness, since this may be present for such noise sources. A noise contour plot (non-cumulative max events) is also provided in *Figure 4-3* showing noise levels at ground floor.

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

| Receiver | Car Door | Total Adjusted | Assigned Noise Level | Assessment |
|---|---|---|---|---|
| 2 Rae Rd | 45 | **55** | **58** | *Complies* |
| 3 Rae Rd* | 48 | **58** | **58** | *Complies* |
| 4 Rae Rd | 34 | **44** | **58** | *Complies* |
| 6 Scott Rd | 48 | **58** | **58** | *Complies* |
| 8 Scott Rd | 46 | **56** | **58** | *Complies* |
| 10 Scott Rd | 40 | **50** | **58** | *Complies* |
| 17 East Rd | 24 | **34** | **58** | *Complies* |
| 169 State Route 18 | 24 | **34** | **58** | *Complies* |
| 171-173 Safety Bay Rd | 30 | **40** | **58** | *Complies* |
| 174 Safety Bay Rd* | 48 | **58** | **58** | *Complies* |

*The highest noise level from predictions at multiple receivers were used in the assessment

Noise from car doors closing in the nominated pre-7am staff bays is predicted to comply at all nearest receivers during the critical night period. Where parking occurs after 7am, bays are predicted to comply given the assigned level is increased by +10dB.

## 4.4. Indoor Child Play

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

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

# *Figure 4-3 Car Door Closing Noise Contour Plot (1.4m AGL), dB $L_{AMAX}$*


**Predicted Noise level**

| | |
|---|---|
| | = 43 |
| | = 48 |
| | = 53 |
| | = 58 |
| | = 63 |

Legend

- Receiver
- Car/Mech Source
- Fence
- Childcare Centre

N

Scale 1:500

0 5 10 20 30 m

Project No: 22037217
Consultant: MN
Date: 17/11/2022
Algorithm: ISO 9613
SoundPLAN Version: 8.2

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# 5. RECOMMENDATIONS

## 5.1. Child Play

The predicted noise from all children playing outside is compliant provided the fences shown on the DA Plans are constructed. These must be solid, free of gaps and of minimum surface mass 8 kg/$m^2$. Examples of suitable material include brick, limestone, concrete or double sheeted Colorbond. For areas where visual permeability is required, sound-rated plexiglass can be used.

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

- The behaviour and 'style of play' of children should be monitored to prevent particularly loud activity e.g. loud banging/crashing of objects, 'group' shouts/yelling;
- Favour soft finishes in the outdoor play area to minimise impact noise (e.g. soft grass, sand pit(s), rubber mats) over timber or plastic;
- Favour soft balls and rubber wheeled toys;
- Crying children should be taken inside to be comforted;
- Child play to be staggered where possible;
- No amplified music to be played outside;
- Any music played within the internal activity areas to be 'light' music with no significant bass content and played at a relatively low level;
- Car park drainage grates or similar to be plastic or metal with rubber gasket and secured to avoid excess banging.

## 5.2. Mechanical Plant

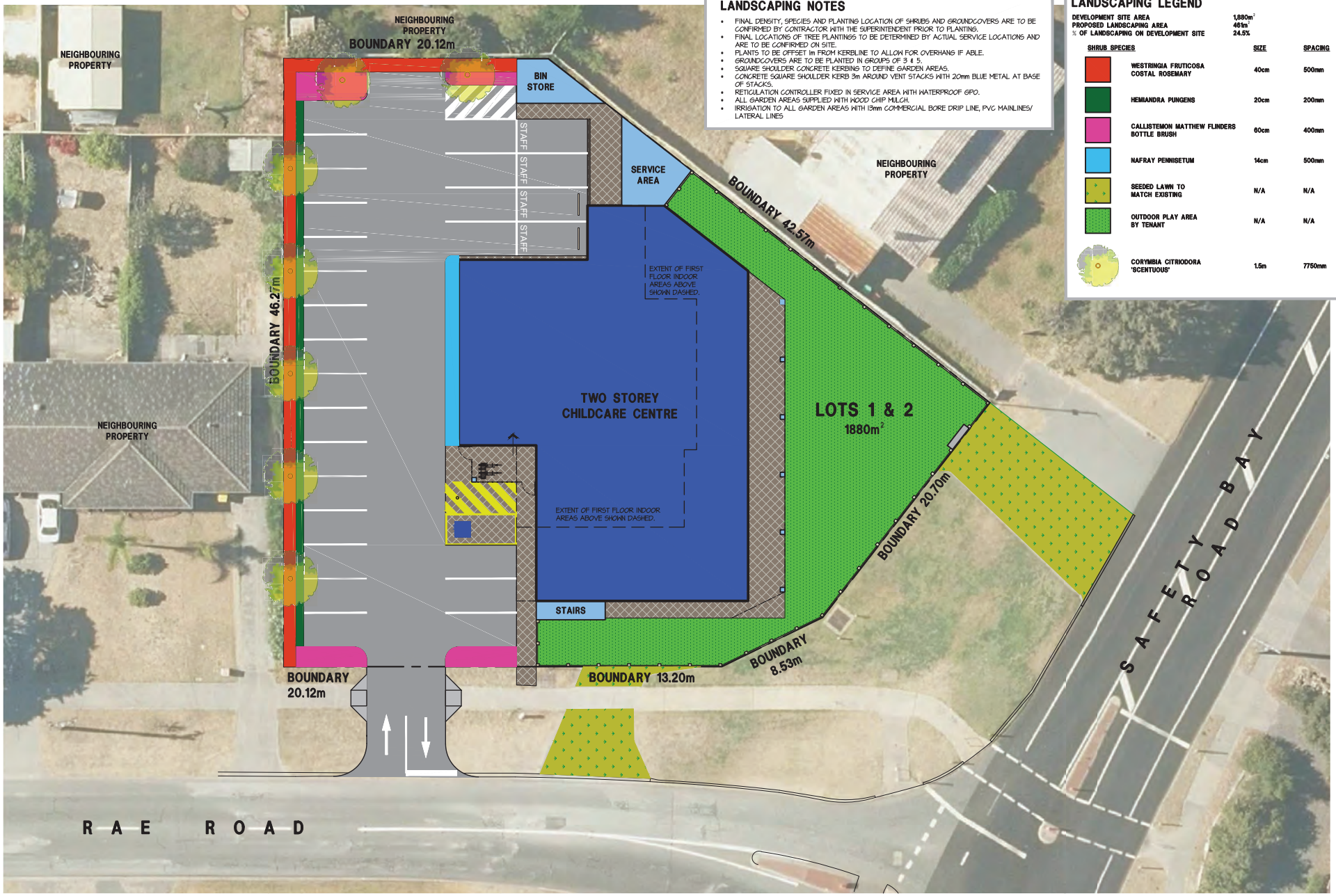
For mechanical plant, the following are recommended:

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

## 5.3. Car Doors

The predicted noise from car door closings is compliant provided the fences shown on the DA Plans are constructed and where the six nominated staff car parks are used before 7am. The fences must be solid and free of gaps. The fences must have a minimum surface mass of 8 kg/$m^2$ (not including the northern section of the east boundary fence). Examples of suitable material include brick, limestone, concrete or double sheeted Colorbond. For areas where visual permeability is required, sound-rated plexiglass can be used.

# Appendix A – Development Plans




## LANDSCAPING NOTES

- FINAL DENSITY, SPECIES AND PLANTING LOCATION OF SHRUBS AND GROUNDCOVERS ARE TO BE CONFIRMED BY CONTRACTOR WITH THE SUPERINTENDENT PRIOR TO PLANTING.
- FINAL LOCATIONS OF TREE PLANTINGS TO BE DETERMINED BY ACTUAL SERVICE LOCATIONS AND ARE TO BE CONFIRMED ON SITE.
- PLANTS TO BE OFFSET 1m FROM KERBLINE TO ALLOW FOR OVERHANG IF ABLE.
- GROUNDCOVERS ARE TO BE PLANTED IN GROUPS OF 3 & 5.
- SQUARE SHOULDER CONCRETE KERBING TO DEFINE GARDEN AREAS.
- CONCRETE SQUARE SHOULDER KERB 3m AROUND VENT STACKS WITH 20mm BLUE METAL AT BASE OF STACKS.
- RETICULATION CONTROLLER FIXED IN SERVICE AREA WITH WATERPROOF GPO.
- ALL GARDEN AREAS SUPPLIED WITH WOOD CHIP MULCH.
- IRRIGATION TO ALL GARDEN AREAS WITH 13mm COMMERCIAL BORE DRIP LINE, PVC MAINLINES/ LATERAL LINES

## LANDSCAPING LEGEND

| | |
|---|---|
| DEVELOPMENT SITE AREA | 1,880m² |
| PROPOSED LANDSCAPING AREA | 461m² |
| % OF LANDSCAPING ON DEVELOPMENT SITE | 24.5% |

| SHRUB SPECIES | SIZE | SPACING | QTY (EST) |
|---|---|---|---|
| WESTRINGIA FRUTICOSA COSTAL ROSEMARY | 40cm | 500mm | 58m² |
| HEMIANDRA PUNGENS | 20cm | 200mm | 24m² |
| CALLISTEMON MATTHEW FLINDERS BOTTLE BRUSH | 60cm | 400mm | 32m² |
| NAFRAY PENNISETUM | 14cm | 500mm | 14m² |
| SEEDED LAWN TO MATCH EXISTING | N/A | N/A | 135m² |
| OUTDOOR PLAY AREA BY TENANT | N/A | N/A | 422m² |
| CORYMBIA CITRIODORA 'SCENTUOUS' | 1.5m | 7750mm | 7 |

N

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| A | 14.11.22 | DEVELOPMENT APPLICATION ISSUE | CPH | CPH |

A2 SHEET

# LANDSCAPING PLAN

SCALE 1:200

PROPOSED CHILDCARE CENTRE
LOTS 1 & 2, No. 172 SAFETY BAY ROAD
SHOALWATER
SOUTHERLY OCEAN & CEDARBAY INVESTMENTS

| | |
|---|---|
| Date | 02.09.22 |
| Design | CPH |
| Drawn | MDB |
| Checked | CPH |
| Scale | 1:200 |
| Job No. | 0794 |
| Dwg | DA05 |
| Rev | A |


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A2 SHEET

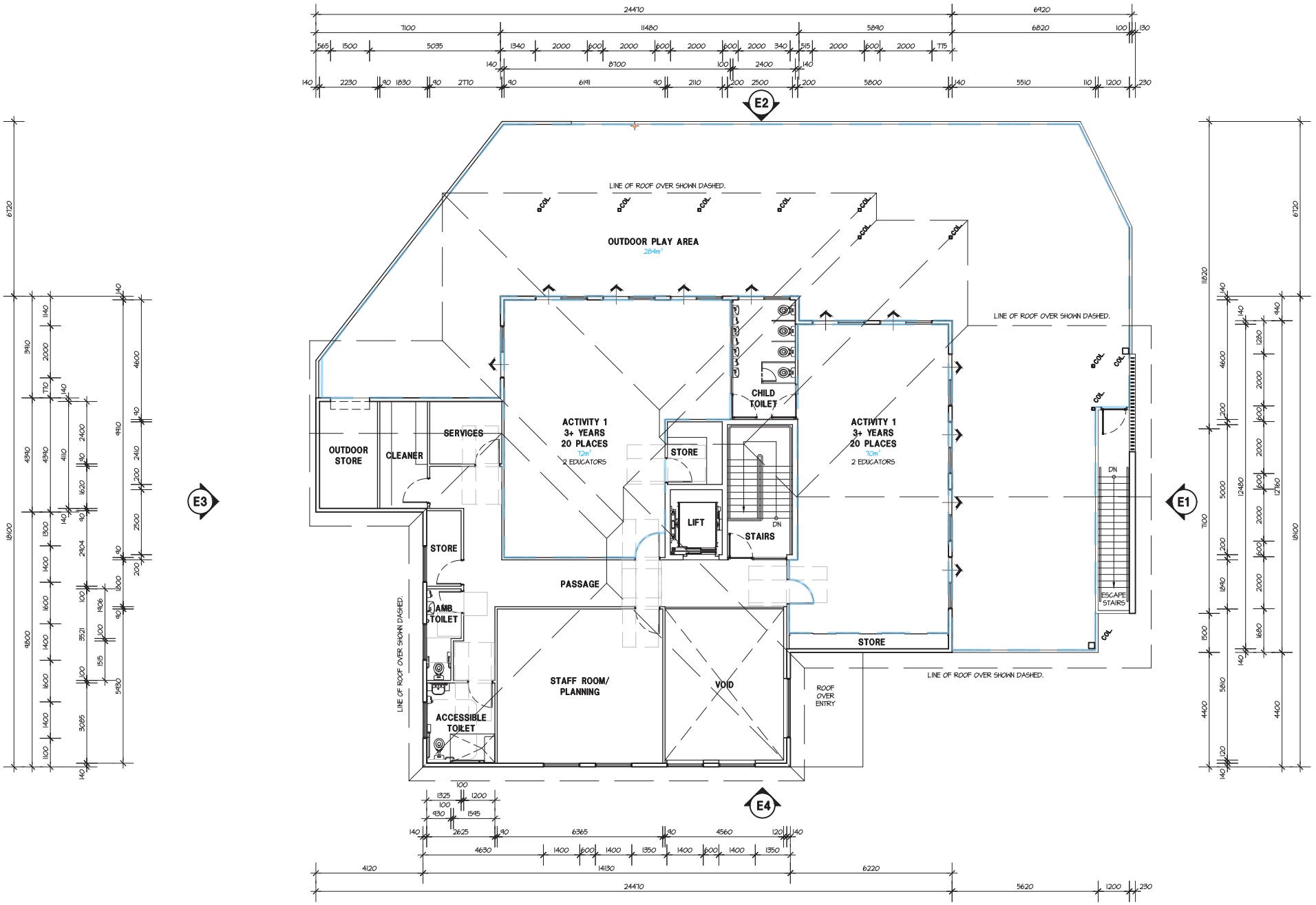
# PROPOSED GROUND FLOOR PLAN

SCALE 1:100

N

PROPOSED CHILDCARE CENTRE
LOTS 1 & 2, No. 172 SAFETY BAY ROAD
SHOALWATER
SOUTHERLY OCEAN & CEDARBAY INVESTMENTS

| | |
|---|---|
| Date | 02.09.22 |
| Design | CPH |
| Drawn | CPH |
| Checked | CPH |
| Scale | 1:100 |
| Job No. | 0794 |
| Dwg. | DA06 |
| Rev. | A |




# PROPOSED FIRST FLOOR PLAN

SCALE 1:100



| No. | Date | Revision | Drawn | Check |
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| PRE | 02.09.22 | PRELIMINARY ISSUE | CPH | CPH |
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PROPOSED CHILDCARE CENTRE
LOTS 1 & 2, No. 172 SAFETY BAY ROAD
SHOALWATER
SOUTHERLY OCEAN & CEDARBAY INVESTMENTS

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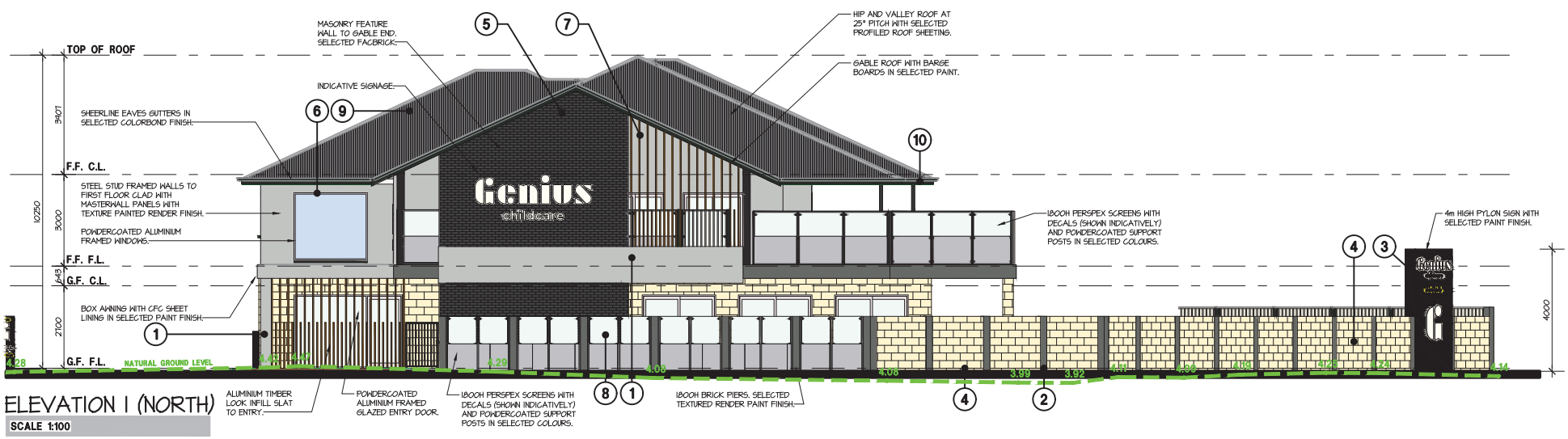
| Scale - | 1:100 |
| Job No. - | 0794 |
| Dwg - | DA07 |
| Rev - | A |




## ELEVATION 1 (NORTH)

SCALE 1:100


## ELEVATION 2 (WEST)

SCALE 1:100

### FINISHES SCHEDULE

1. DULUX PAINT - 'TRANQUIL RETREAT' TEXTURED FINISH **PAINT CODE - SN461**
2. DULUX PAINT - 'TEAHOUSE' TEXTURED FINISH **PAINT CODE - SN466**
3. DULUX PAINT - 'CB MONUMENT' TEXTURED FINISH
4. MIDLAND BRICK - 'BULLARA' STRETCHER BOND
5. MIDLAND BRICK - 'ESTILO NIRO METALICO' STRETCHER BOND
6. DULUX - POWDERCOAT DURALLOY 'SHALE GREY' MATTE FINISH
7. KNOTWOOD - ALUMINIUM BATTS 'NORWEGIAN BEECH'
8. PERSPEX WITH SUPPORT FRAMING IN POWDERCOAT 'BLACK'
9. CUSTOM ORB PROFILED SHEETING COLORBOND - 'SHALE GREY MATTE'
10. EAVES GUTTERS COLORBOND - 'MONUMENT'



| No. | Date | Revision | Drawn | Check |
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**DEVELOPMENT APPLICATION**

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**SHOALWATER**
**SOUTHERLY OCEAN & CEDARBAY INVESTMENTS**

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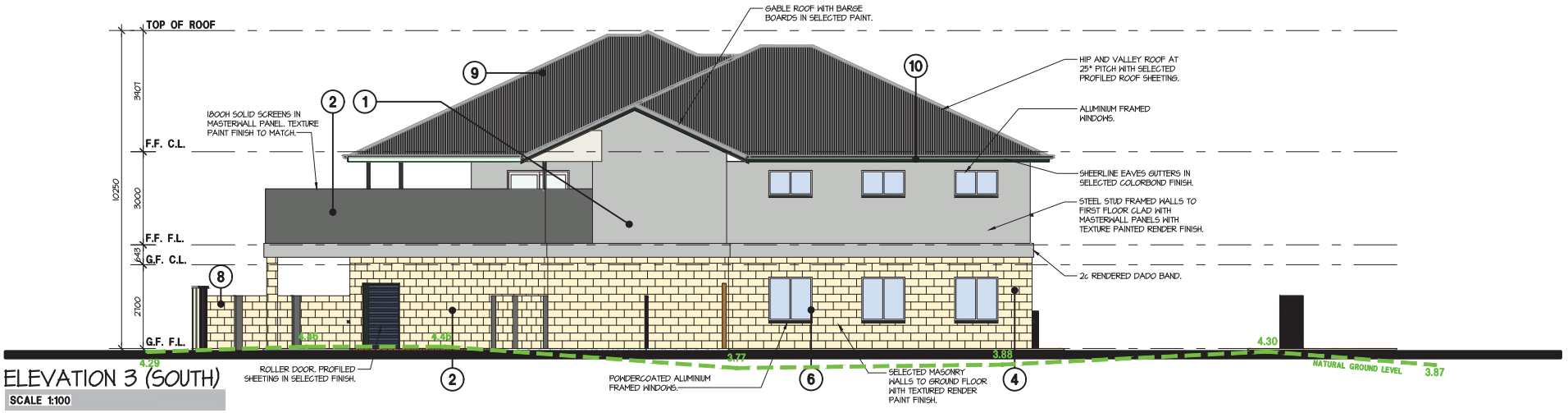
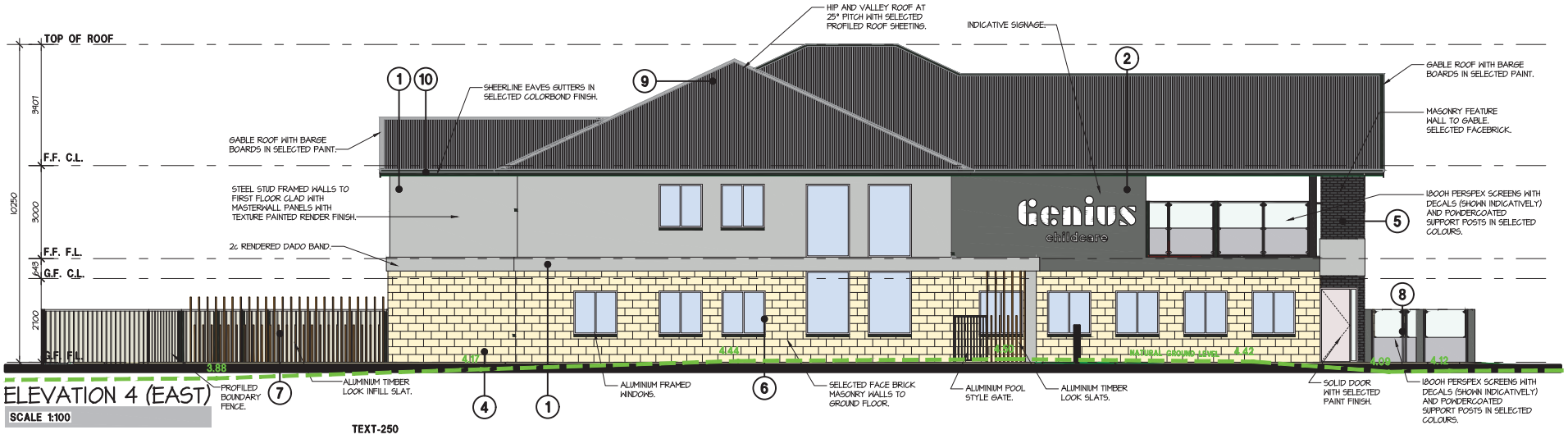
| Checked | - CPH |
| Scale | - 1:100 |
| Job No. | - 0794 |
| Dwg | - DA08 |
| Rev | - A |




## ELEVATION 3 (SOUTH)

SCALE 1:100




## ELEVATION 4 (EAST)

SCALE 1:100

TEXT-250

### FINISHES SCHEDULE

1. DULUX PAINT - 'TRANQUIL RETREAT' TEXTURED FINISH **PAINT CODE - SN461**
2. DULUX PAINT - 'TEAHOUSE' TEXTURED FINISH **PAINT CODE - SN466**
3. DULUX PAINT - 'CB MONUMENT' TEXTURED FINISH
4. MIDLAND BRICK - 'BULLARA' STRETCHER BOND
5. MIDLAND BRICK - 'ESTILO NIRO METALICO' STRETCHER BOND
6. DULUX - POWDERCOAT DURALLOY 'SHALE GREY' MATTE FINISH
7. KNOTWOOD - ALUMINIUM BATTS 'NORWEGIAN BEECH'
8. PERSPEX WITH SUPPORT FRAMING IN POWDERCOAT 'BLACK'
9. CUSTOM ORB PROFILED SHEETING COLORBOND - 'SHALE GREY MATTE'
10. EAVES GUTTERS COLORBOND - 'MONUMENT'



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SHOALWATER
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|---|---|
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| Checked | CPH |
| Scale | 1:100 |
| Job No. | 0794 |
| Dwg | DA09 |
| Rev | A |

# 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*:

$\%\ \text{Type A}_{100}$ = the percentage of industrial land within a100m radius of the premises receiving the noise

$\%\text{TypeA}_{450}$ = the percentage of industrial land within a 450m radius of the premises receiving the noise

$\%\ \text{Type B}_{100}$ = the percentage of commercial land within a100m radius of the premises receiving the noise

$\%\text{TypeB}_{450}$ = the percentage of commercial land within a 450m radius of the premises receiving the noise

+ Transport Factor (maximum of 6 dB)

= 2 for each secondary road (6,000 to 15,000 vpd) within 100m

= 2 for each major road (>15,000 vpd) within 450m

= 6 for each major road within 100m

The nearest noise sensitive premises are identified as:

- 2 Rae Rd
- 3 Rae Rd
- 4 Rae Rd
- 6 Scott Rd
- 8 Scott Rd
- 10 Scott Rd
- 17 East Rd
- 169 State Route 18
- 171-173 Safety Bay Rd
- 174 Safety Bay Rd

The calculation has been completed at the 174 Safety Bay Road receiver as this is considered the most sensitive receiver. *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.

***Table B-1: Percentage of Land Types within 100m and 450m Radii***

| Receiver | Land Type | Within 100m | Within 450m |
|---|---|---|---|
| All receivers | Type A - Industrial and Utility | 0 | 0 |
| | Type B – Commercial | 18% | 1% |

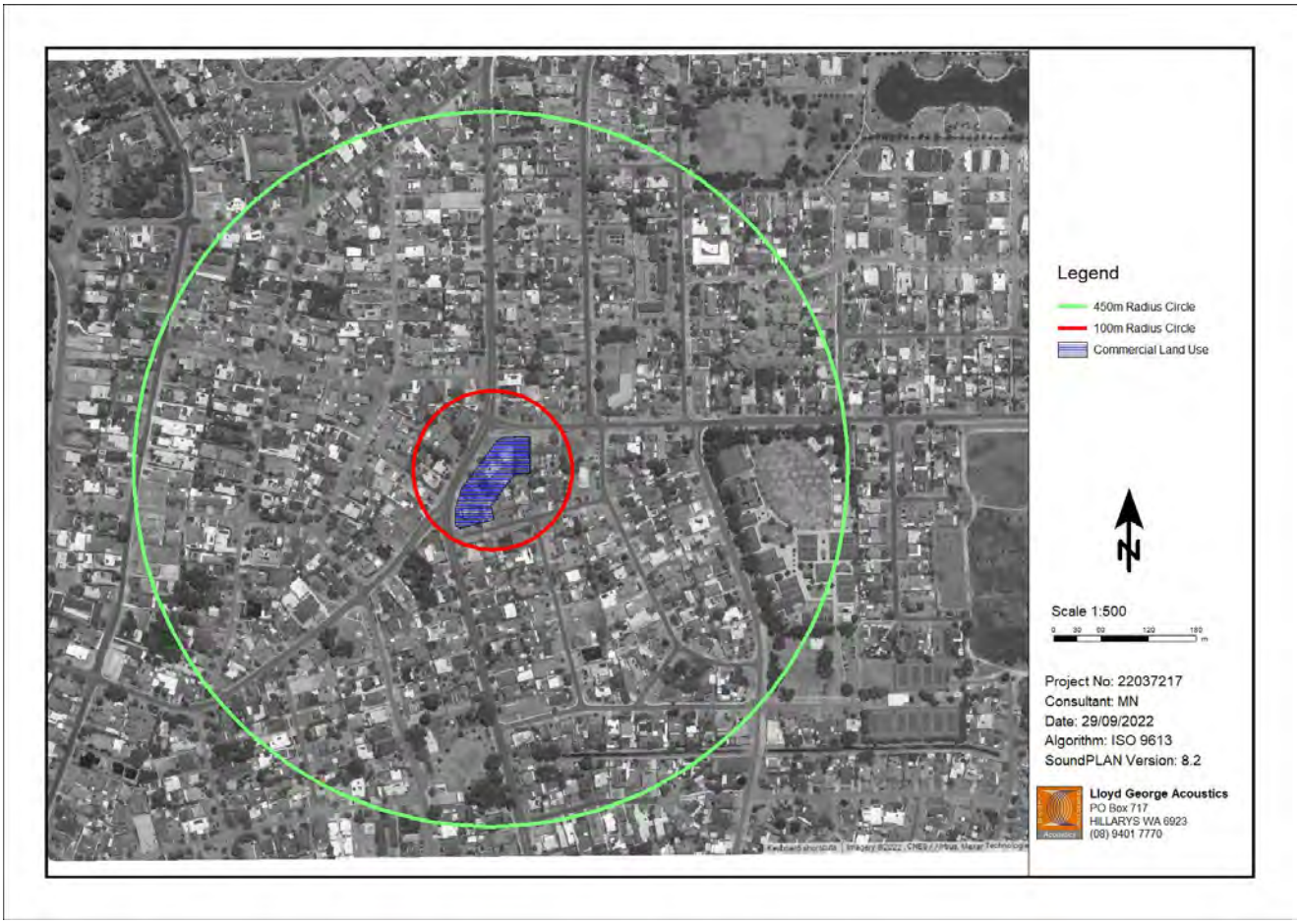



***Figure B-1: Land Types within 100m and 450m Radii of Nearest Sensitive Premises***

From the Main Roads WA Traffic Map (refer *Figure B-2*), *Figure B-1* shows the relevant roads and their traffic counts 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 (+ 2 dB) |
| All Receivers | - | Safety Bay Road<br>(6,599 2020/21 #5334) | - |

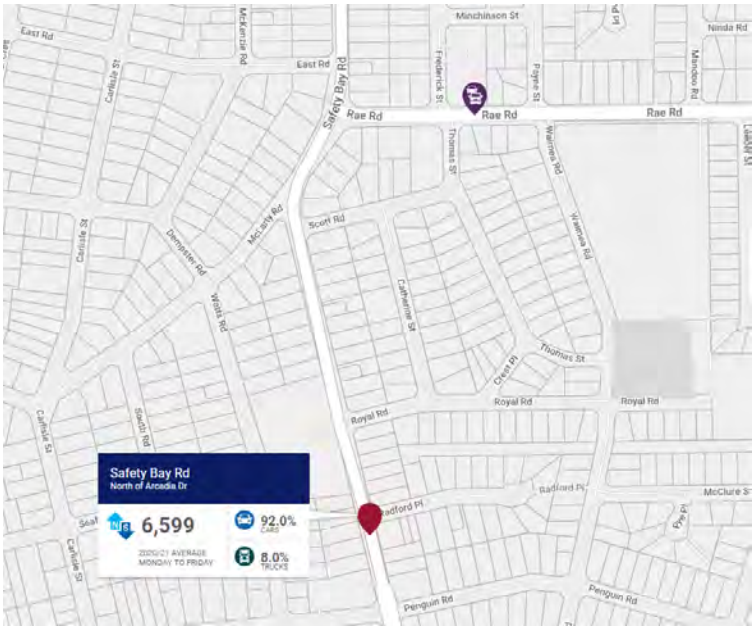



***Figure B-2: MRWA Published Traffic Data***

*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 |
|---|---|---|---|---|
| All Receivers | 0 | 1.0 | 2.0 | **3** |

The influencing factor calculated in *Table B-3* is combined with baseline assigned levels of *Table 2-2*, resulting in the project assigned levels provided in *Table 2-3*.

# Appendix C – Terminology

The following is an explanation of the terminology used throughout this report:

- **Decibel (dB)**

The decibel is the unit that describes the sound pressure levels of a noise source. It is a logarithmic scale referenced to the threshold of hearing.

- **A-Weighting**

An A-weighted noise level has been filtered in such a way as to represent the way in which the human ear perceives sound. This weighting reflects the fact that the human ear is not as sensitive to lower frequencies as it is to higher frequencies. An A-weighted sound level is described as $L_A$, dB.

- **Sound Power Level ($L_w$)**

Under normal conditions, a given sound source will radiate the same amount of energy, irrespective of its surroundings, being the sound power level. This is similar to a 1kW electric heater always radiating 1kW of heat. The sound power level of a noise source cannot be directly measured using a sound level meter but is calculated based on measured sound pressure level at known distances. Noise modelling incorporates source sound power levels as part of the input data.

- **Sound Pressure Level ($L_p$)**

The sound pressure level of a noise source is dependent upon its surroundings, being influenced by distance, ground absorption, topography, meteorological conditions etc. and is what the human ear actually hears. Using the electric heater analogy above, the heat will vary depending upon where the heater is located, just as the sound pressure level will vary depending on the surroundings. Noise modelling predicts the sound pressure level from the sound power levels taking into account ground absorption, barrier effects, distance etc.

- **$L_{ASlow}$**

This is the noise level in decibels, obtained using the A-frequency weighting and the S (slow) time weighting. Unless assessing modulation, all measurements use the slow time weighting characteristic.

- **$L_{AFast}$**

This is the noise level in decibels, obtained using the A-frequency weighting and the F (fast) time weighting. This is used when assessing the presence of modulation.

- **$L_{APeak}$**

This is the greatest absolute instantaneous sound pressure level in decibels using the A-frequency weighting.

- **$L_{Amax}$**

An $L_{Amax}$ level is the maximum A-weighted noise level during a particular measurement.

- **$L_{A1}$**

The $L_{A1}$ level is the A-weighted noise level exceeded for 1 percent of the measurement period and is considered to represent the average of the maximum noise levels measured.

- **$L_{A10}$**

The $L_{A10}$ level is the A-weighted noise level exceeded for 10 percent of the measurement period and is considered to represent the “intrusive” noise level.

- **$L_{A90}$**

The $L_{A90}$ level is the A-weighted noise level exceeded for 90 percent of the measurement period and is considered to represent the “background” noise level.

- **$L_{Aeq}$**

The equivalent steady state A-weighted sound level (“equal energy”) in decibels which, in a specified time period, contains the same acoustic energy as the time-varying level during the same period. It is considered to represent the “average” noise level.

- **One-Third-Octave Band**

Means a band of frequencies spanning one-third of an octave and having a centre frequency between 25 Hz and 20000 Hz inclusive.

- **Representative Assessment Period**

Means a period of time not less than 15 minutes, and not exceeding four hours, determined by an inspector or authorised person to be appropriate for the assessment of a noise emission, having regard to the type and nature of the noise emission.

- **$L_{Amax}$ assigned level**

Means an assigned level, which, measured as a $L_{ASlow}$ value, is not to be exceeded at any time.

- **$L_{A1}$ assigned level**

Means an assigned level, which, measured as a $L_{ASlow}$ value, is not to be exceeded for more than 1 percent of the representative assessment period.

- **$L_{A10}$ assigned level**

Means an assigned level, which, measured as a $L_{ASlow}$ value, is not to be exceeded for more than 10 percent of the representative assessment period.

- **Tonal Noise**

A tonal noise source can be described as a source that has a distinctive noise emission in one or more frequencies. An example would be whining or droning. The quantitative definition of tonality is:

– the presence in the noise emission of tonal characteristics where the difference between -

(a) the A-weighted sound pressure level in any one-third octave band; and

(b) the arithmetic average of the A-weighted sound pressure levels in the 2 adjacent one-third octave bands,

is greater than 3 dB when the sound pressure levels are determined as $L_{Aeq,T}$ levels where the time period T is greater than 10% of the representative assessment period, or greater than 8 dB at any time when the sound pressure levels are determined as $L_{A\ Slow}$ levels.

This is relatively common in most noise sources.

- **Modulating Noise**

A modulating source is regular, cyclic and audible and is present for at least 10% of the measurement period. The quantitative definition of modulation is:

– a variation in the emission of noise that —

(a) is more than 3 dB $L_{A\ Fast}$ or is more than 3 dB $L_{A\ Fast}$ in any one-third octave band; and

(b) is present for at least 10% of the representative assessment period; and

(c) is regular, cyclic and audible.

- **Impulsive Noise**

An impulsive noise source has a short-term banging, clunking or explosive sound. The quantitative definition of impulsiveness means:

– a variation in the emission of a noise where the difference between $L_{Apeak}$ and $L_{Amax}$ is more than 15 dB when determined for a single representative event.

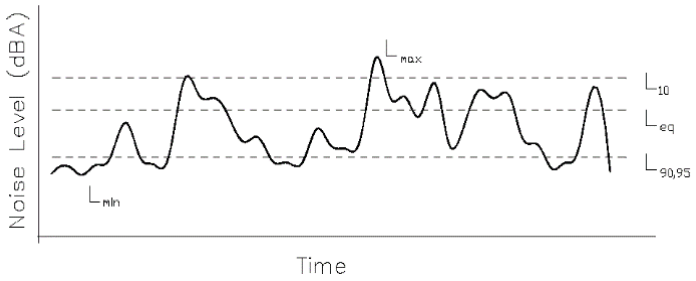
- **Major Road**

Is a road with an estimated average daily traffic count of more than 15,000 vehicles.

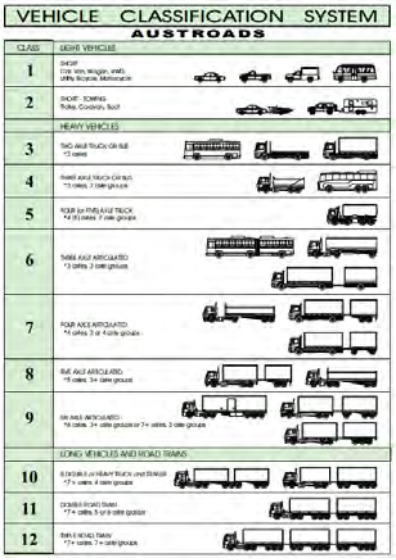
- **Secondary / Minor Road**

Is a road with an estimated average daily traffic count of between 6,000 and 15,000 vehicles.

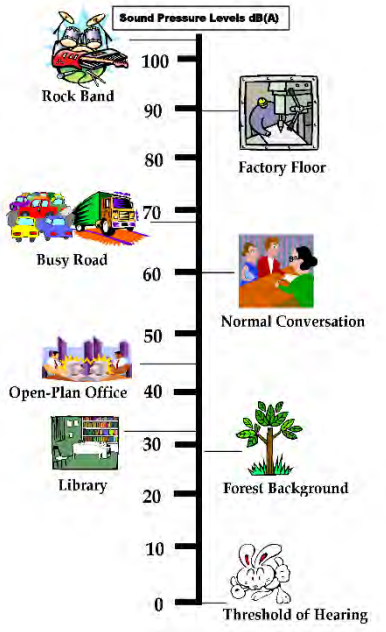
- **Chart of Noise Level Descriptors**




- **Austroads Vehicle Class**




- **Typical Noise Levels**




# Shoalwater Childcare Centre
# Lots 1 & 2, 172 Safety Bay Road, Shoalwater

## TRANSPORT IMPACT STATEMENT

email: info@flyt.com.au twitter.com/flytplan web: www.flyt.com.au

| PROJECT | 81113-729-FLYT-TRS-0002 Rev2 | | | |
|---|---|---|---|---|
| Revision | Description | Originator | Review | Date |
| 0 | Draft | MDR | CXS | 15/09/2022 |
| 1 | Final | MDR | CXS | 24/10/2022 |
| 2 | Revised Final | MDR | CXS | 17/02/2023 |

# Contents

# 1. INTRODUCTION

## 1.1 Development Proposals

This Transport Impact Statement (TIS) has been prepared by Flyt in support of the proposed development at Lots 1 and 2, No. 172 Safety Bay Road, Shoalwater for a childcare centre.

The proposed development can be summarised as comprising:

- Childcare Centre to accommodate 100 children
  - 8 children between the ages of 0-1 years
  - 12 children between the ages of 1-2 years
  - 20 children between the ages of 2-3 years
  - 60 children between the ages of 3-5 years
- Childcare Centre to be serviced under the following staff arrangements:
  - 15 educators (Monday-Friday, full-time)
  - Additional part-time educators covering staff breaks (Monday-Friday, 10am-3pm)
  - 1 chef (Monday-Friday, half day)
  - 1 centre area manager (visits site once or twice a week between 10am-3pm)

## 1.2 Site Context

The site of the proposed Shoalwater Childcare Centre is located at Lots 1 and 2, No. 172 Safety Bay Road, Shoalwater – the site is located on the southeast corner of the intersection of Safety Bay Road and Rae Road in Shoalwater. The site has boundaries with Safety Bay Road to the west and Rae Road to the north and is surrounded by predominantly residential properties as well as a restaurant and Safety Bay Primary School further east.

The proposed development is located on Lots 1 and 2 which are zoned Commercial under the City of Rockingham's Town Planning Scheme No. 2. The building on Lot 2 is currently used as a surf shop and Lot 1 is currently vacant. These lots are proposed to be amalgamated as part of this development.

The site of the proposed Shoalwater Childcare Centre is within 800m of Shoalwater Beach to the west, within 400m of Safety Bay Primary School further east and is within proximity to several public reserves. An aerial image showing the location of the subject site is shown in Figure 1.


*Figure 1 Location of the proposed Shoalwater Childcare Centre (source: Hindley and Associates Building Designers, 2022)*

## 1.3 Transport Impact Statement

This TIS has been prepared in accordance with the WA Planning Commission's (WAPC) *Transport Impact Assessment Guidelines – Volume 4 Individual Developments* (2016). The Guidelines promote a three level assessment process, where the required level of assessment is dependent on the likely level of impact, as follows (as shown in Figure 2):

- Low impact – less than 10 peak hour trips, no assessment required.
- Moderate impact – between 10 and 100 peak hour trips, Transport Impact Statement required.
- High impact – more than 100 peak hour trips, full Transport Impact Assessment required.

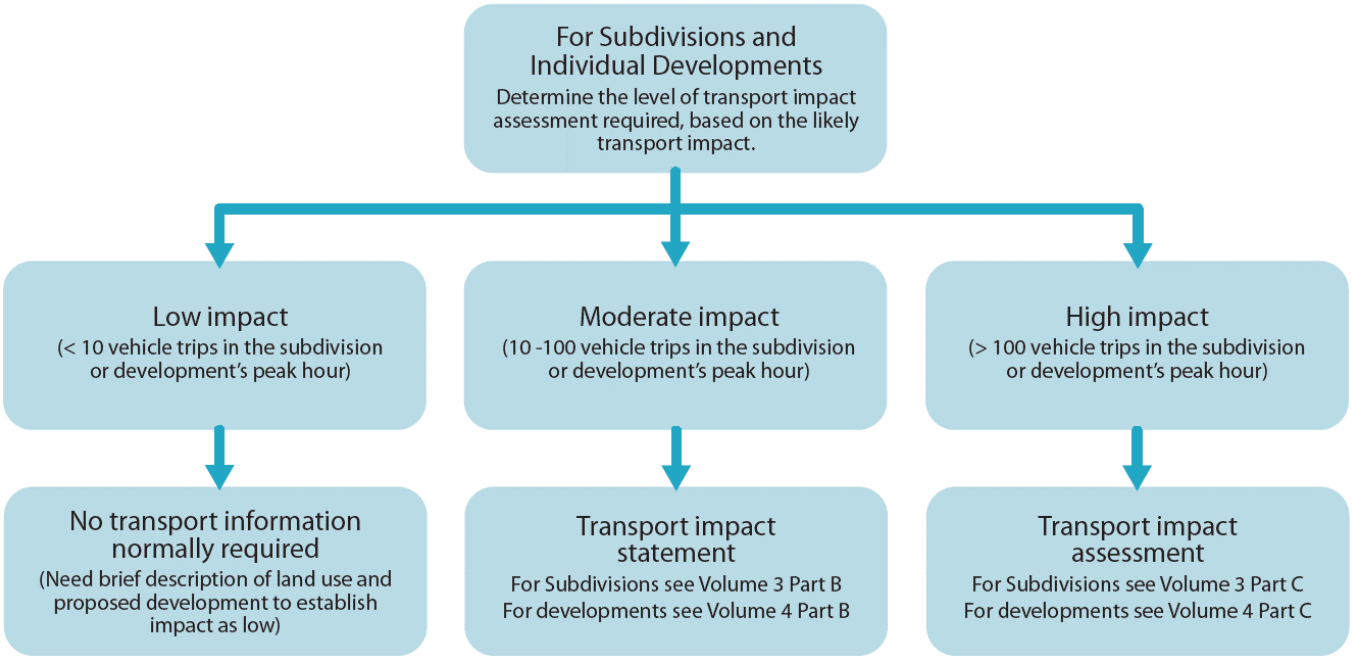



*Figure 2 Level of transport impact assessment required (source: WAPC Transport Impact Assessment Guidelines, 2016)*

As set out in this report, the traffic attributable to the proposed development has been determined to be less than 100 vehicle trips in the operating peak hour, therefore the required level of assessment is a TIS.

## 1.4 Report Structure

The report is structured as required by the *Transport Impact Assessment Guidelines* (WAPC, 2016), with the following sections:

- Proposed development
- Vehicle access and parking
- Provision for service vehicles
- Traffic volumes
- Frontage streets
- Public transport access
- Pedestrian access and amenity
- Bicycle access and amenity
- Site specific issues
- Safety issues
- Summary

# 2. PROPOSED DEVELOPMENT

The site of the proposed Shoalwater Childcare Centre is located at Lots 1 and 2, No. 172 Safety Bay Road, Shoalwater – the site is located on the southeast corner of the intersection of Safety Bay Road and Rae Road in Shoalwater.

The site has boundaries with Safety Bay Road to the west and Rae Road to the north and is surrounded by predominantly residential properties as well as a restaurant and Safety Bay Primary School further east – as shown in Figure 3.


*Figure 3 Detailed location of the proposed Shoalwater Childcare Centre (aerial image source: MetroMap)*

The proposed development of a Childcare Centre can be summarised as comprising:

- Childcare Centre to accommodate 100 children
  - 8 children between the ages of 0-1 years
  - 12 children between the ages of 1-2 years
  - 20 children between the ages of 2-3 years
  - 60 children between the ages of 3-5 years
- Childcare Centre to be serviced under the following staff arrangements:
  - 15 educators (Monday-Friday, full-time)
  - Additional part-time educators covering staff breaks (Monday-Friday, 10am-3pm)
  - 1 chef (Monday-Friday, half day)
  - 1 centre area manager (visits site once or twice a week between 10am-3pm)

Figure 4 shows the site plan for the proposed Shoalwater Childcare Centre. Figure 5 shows the subject sites ground floor plan and Figure 6 shows the subject sites first floor plan for the proposed Shoalwater Childcare Centre.

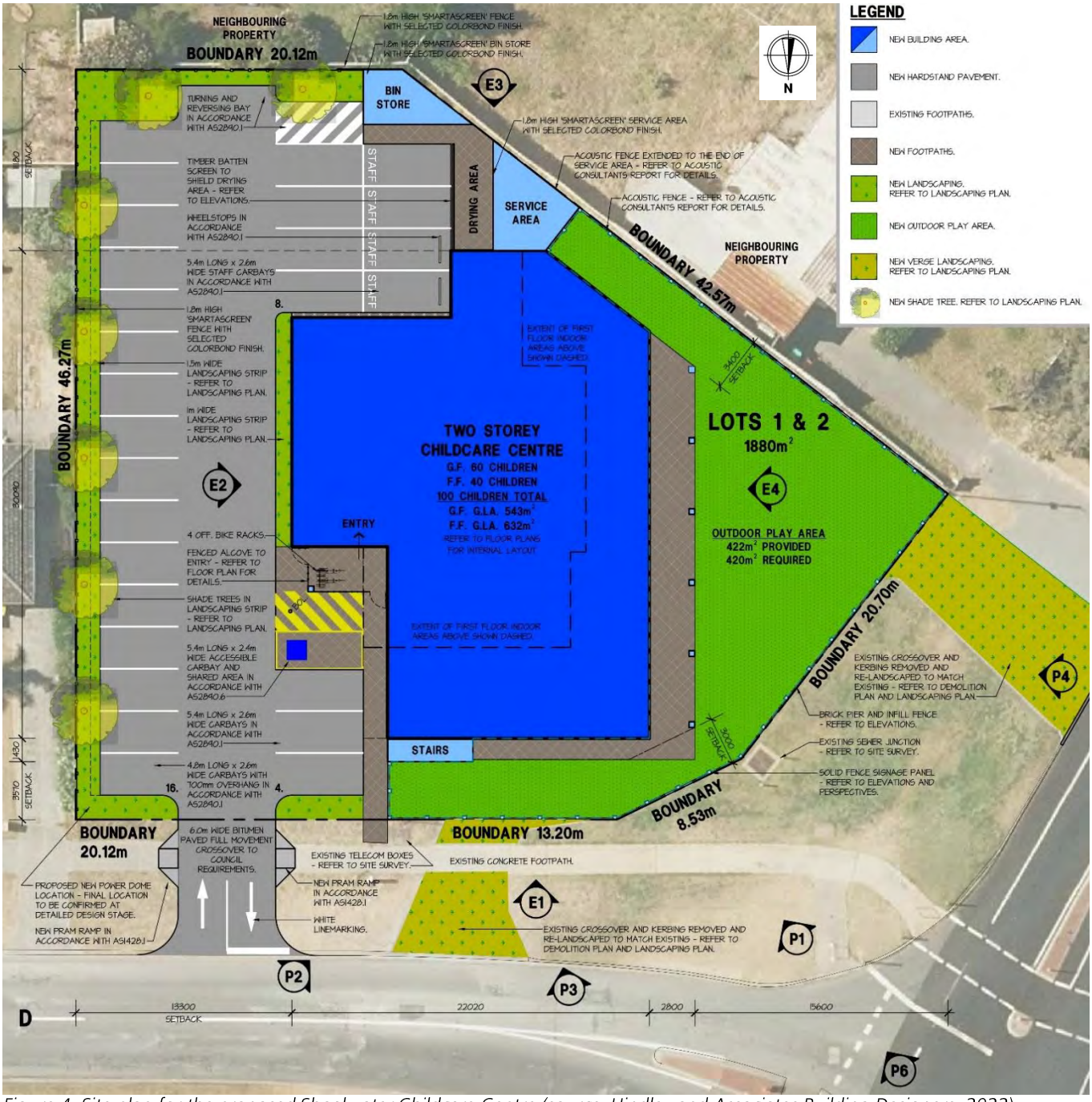



*Figure 4 Site plan for the proposed Shoalwater Childcare Centre (source: Hindley and Associates Building Designers, 2022)*

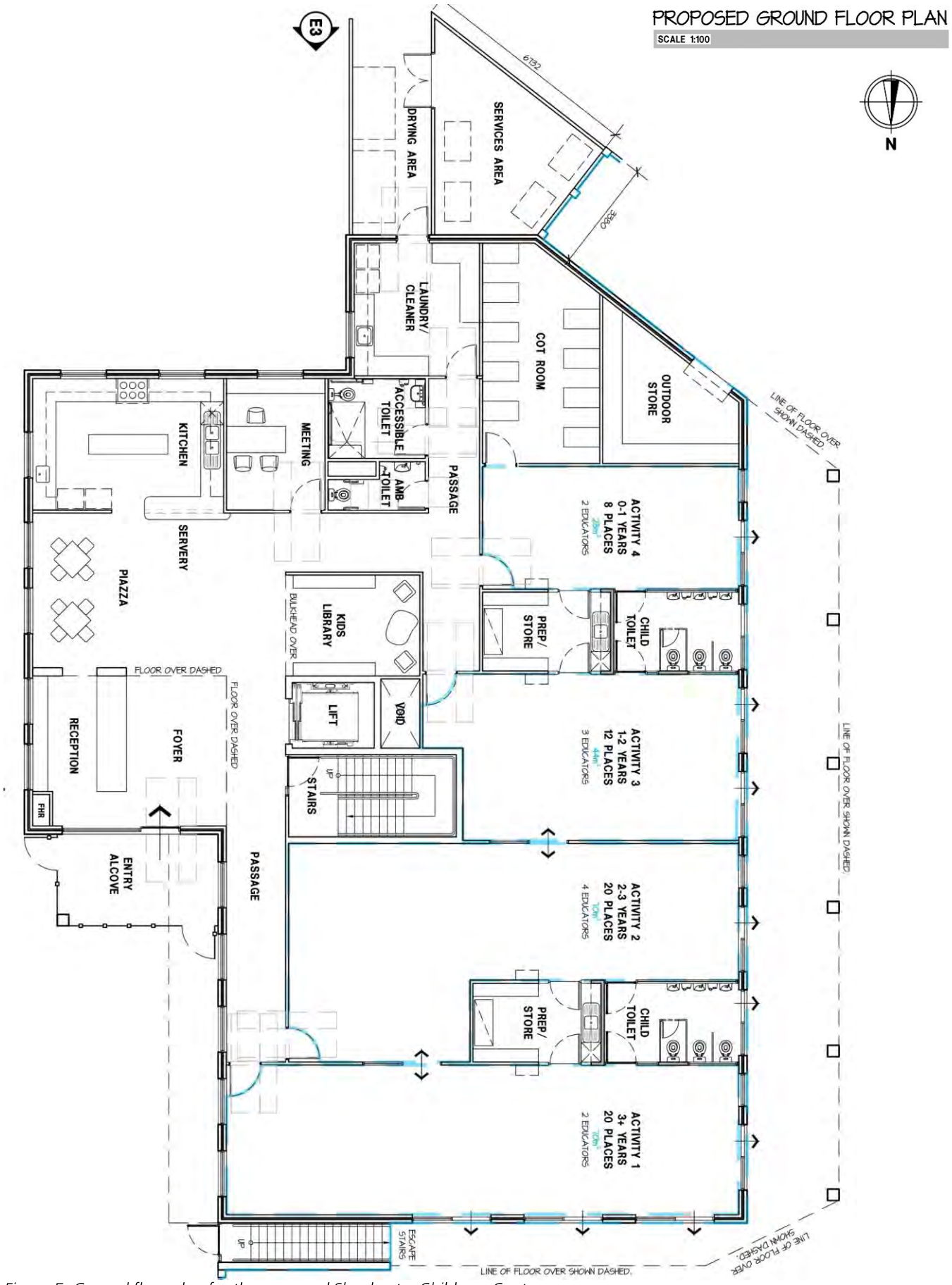



*Figure 5 Ground floor plan for the proposed Shoalwater Childcare Centre (source: Hindley and Associates Building Designers, 2022)*

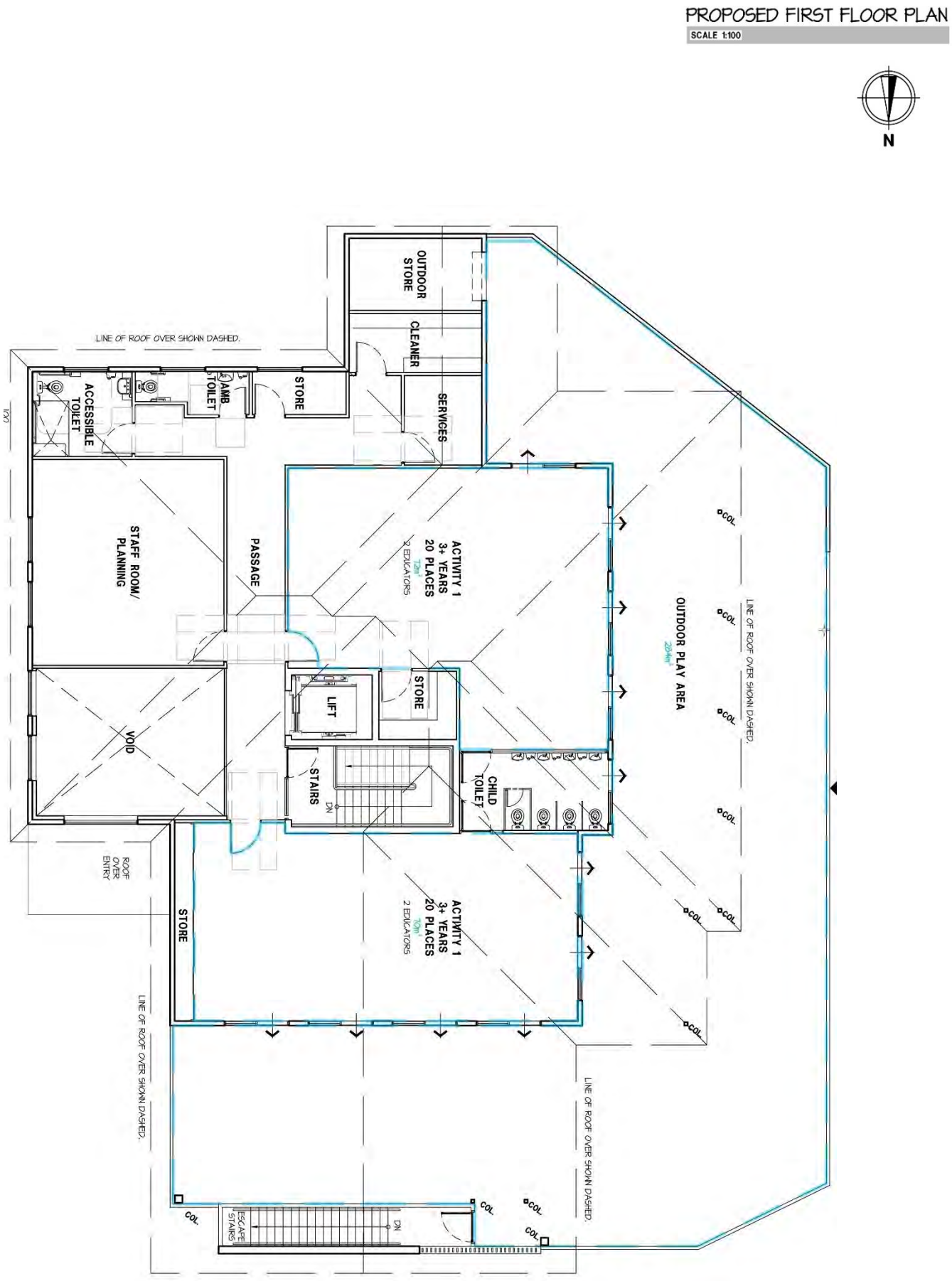



*Figure 6 First floor plan for the proposed Shoalwater Childcare Centre (source: Hindley and Associates Building Designers, 2022)*

# 3. VEHICLE ACCESS AND PARKING

## 3.1 Vehicle Access

The proposed Shoalwater Childcare Centre is located at Lot 1 and 2, No. 172 Safety Bay Road in Shoalwater. The site has boundaries with Safety Bay Road to the west and Rae Road to the north and is surrounded by predominantly residential properties as well as a restaurant and Safety Bay Primary School further east.

It is proposed that all vehicle access to the site would be via a crossover on Rae Road. The crossover would be located approximately 41m from the intersection with Safety Bay Road, which is the furthest possible position for the access point.

It is noted that the proposal will result in the net reduction of crossovers to the road network, as well as the establishment of a crossover to Rae Road which is further away from the Safety Bay Road intersection than the crossover for the existing site.

It is proposed that the crossover would be 6m wide and permit two-way vehicle access to the on-site car park and bin store.

Figure 7 shows the vehicle access arrangements for the proposed Shoalwater Childcare Centre.

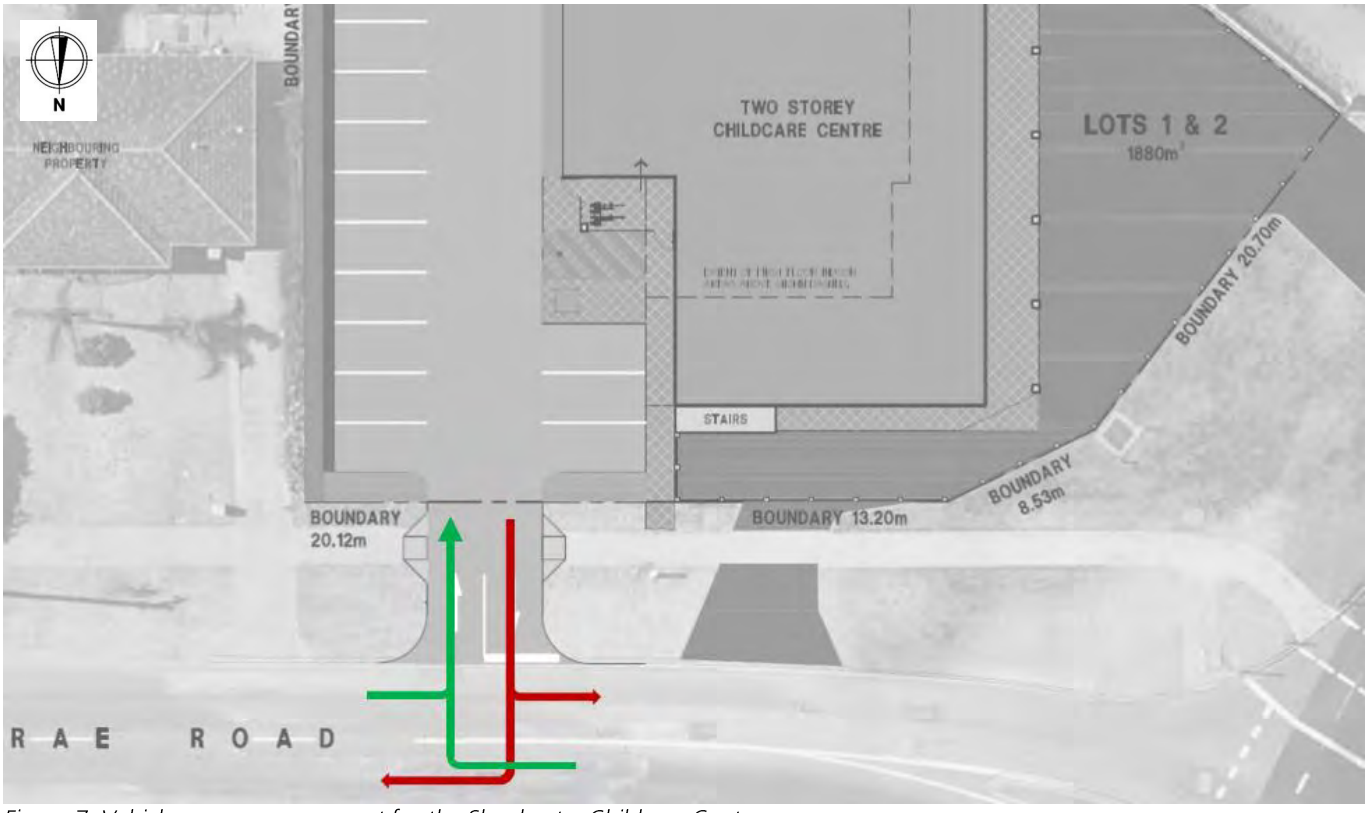



*Figure 7 Vehicle access arrangement for the Shoalwater Childcare Centre (base plan source: Hindley and Associates Building Designers, 2022)*

Figure 8 to Figure 11 show the routes of vehicle access to the proposed Shoalwater Childcare Centre site from the surrounding road network.


*Figure 8 View along Safety Bay Road southbound on approach to Rae Road (source: Google Streetview)*


*Figure 9 View along Safety Bay Road northbound on approach to Rae Road – the subject site is shown on the right (source: Google Streetview)*


*Figure 10 View along Rae Road westbound on approach to Safety Bay Road – the subject site is shown on the left (source: Google Streetview)*


*Figure 11 Southbound view from Safety Bay Road intersection with Rae Road – subject site is the Seabreeze building in view and vacant lot to the left of the Seabreeze building (source: Google Streetview)*

## 3.2 On-Site Parking

The City of Rockingham Local Planning Policy No. 3.3.5 *Child Care Premises* (July 2019) outlines that a Traffic Impact Statement/Assessment is required to support Development Applications for new Childcare Centres, in-line with the requirements of WAPC's *Transport Impact Assessment Guidelines – Volume 4 Individual Developments* (2016).

The Local Planning Policy also states that the proposed Childcare Centre should make provision for parking bays in accordance with the standards and requirements of the City's Town Planning Scheme No.2.

The City's Town Planning Scheme No.2 outlines the following off-street car parking requirements for Childcare Centres within the City:

> *"Child Care Premises – minimum car parking requirement*
>
> - *1 bay per staff member*
> - *1 bay per 8 children attending"*

Based on the above requirements under the Town Planning Scheme the proposed Shoalwater Childcare Centre has the following minimum off-street car parking requirements:

- Staff parking = 15 bays required for 15 full-time staff
  = Additional part-time/occasional staff to utilise parent parking outside of peak drop-off/pick-up periods
- Parent parking = 13 bays required

TOTAL PARKING = 28 bays required

The proposed Shoalwater Childcare Centre has a total of 28 on-site car parking bays. It is proposed that the on-site car parking bays are allocated as follows:

- Staff parking = 15 bays allocated for staff parking with 7 bays along the eastern boundary of the parking area and 8 bays to the south of the Childcare Centre building utilising four tandem bays.
- Parent parking = 13 bays allocated for parent pick-up/drop-off with 9 bays along the eastern boundary of the parking area and 4 bays to the north of the Childcare Centre building (including 1 ACROD bay and associated shared space adjacent to the entry to the Childcare Centre).

The provision of 15 staff bays meets the requirement for full-time room ratio educators. It should be noted that these educators do not arrive and depart from the site at the same time. The first staff begin arriving between 6:00-6:30am, and then continually arrive in 15-30 minute intervals until 9:30am. The centre is fully staffed until 3:00-3:30pm when the first staff start completing their shift and departing the site. This means not all 15 staff bays are occupied at the same time.

In addition, not all staff are expected to drive to the site. Some staff are likely to car pool, use public transport or cycle. In this regard, it is noted that the 551 bus route runs along Safety Bay Road and connects to Rockingham Station. The site is serviced by public transport.

Additional support staff would attend the site over the course of a day to perform various support functions. These staff are not present at the site for a whole day and are typically in attendance outside of the peak pick-up / drop-off periods and when the car park is significantly underused.

Typically, the drop-off or pick-up of children from Childcare Centres takes between 10-15 minutes. Using an average time of 12½ minutes for drop-off or pick-up – the 12 parent parking bays on-site (excluding the 1 ACROD bay) would turnover approximately 4.8 times during the peak hour and accommodate approximately 57 vehicle movements –

therefore accommodating the expected peak hour parent parking demand (see Section 5.2 for details of the development proposals estimated peak hour vehicle trip generation).

Figure 12 shows the allocation of car parking across the proposed Shoalwater Childcare Centre site.

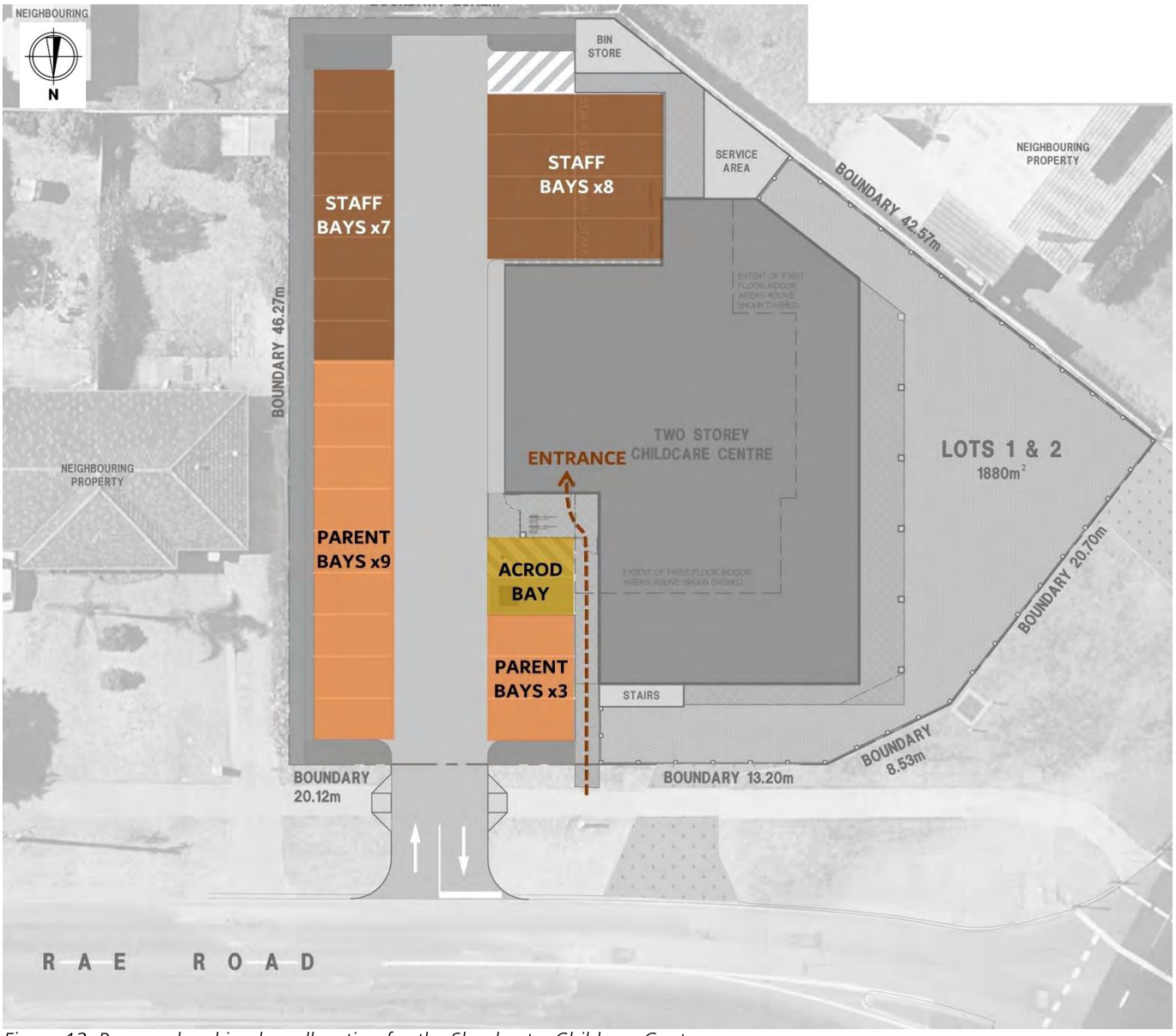



*Figure 12 Proposed parking bay allocation for the Shoalwater Childcare Centre (base plan source: Hindley and Associates Building Designers, 2022)*

## 3.3 Off-Site Parking

No off-site parking is proposed as part of the Development Application for the proposed Shoalwater Childcare Centre facility.

# 4. PROVISION FOR SERVICE VEHICLES

The proposed Shoalwater Childcare Centre's bin store is located in the southwest corner of the on-site car park.

It is proposed that servicing of the site will be by private waste collection outside of the Childcare Centre's operating hours. As such, there will be no parked cars within the site's car park when the waste collection occurs.

The private waste contractor currently operates 8.0m long vehicles, to ensure the site is future proofed to accommodate slightly larger waste collection vehicles in the private waste contractor fleet changes – swept path analysis has been completed for both an 8.0m long vehicle (Figure 13) and 8.8m long vehicle (Figure 14).

The swept path analysis shows that the site accommodates both 8.0m and 8.8m long vehicles entering and exiting the site in forward gear, with sufficient room to manoeuvre within the site to back-up to the bin store in the southwest corner of the on-site car park.

- Waste collection vehicle would access the site from Rae Road.
- Waste collection vehicle would drive into the on-site car park in forward gear along the aisle in the car park.
- Waste collection vehicle would drive into the empty tandem parking bays and reverse back to the bin store and service the bins.
- Waste collection vehicle would then drive out of the site in a forwards gear onto Rae Road.

The proposed routing of the waste collection vehicle movements to access and egress the site, would limit any impact on neighbouring residential properties.

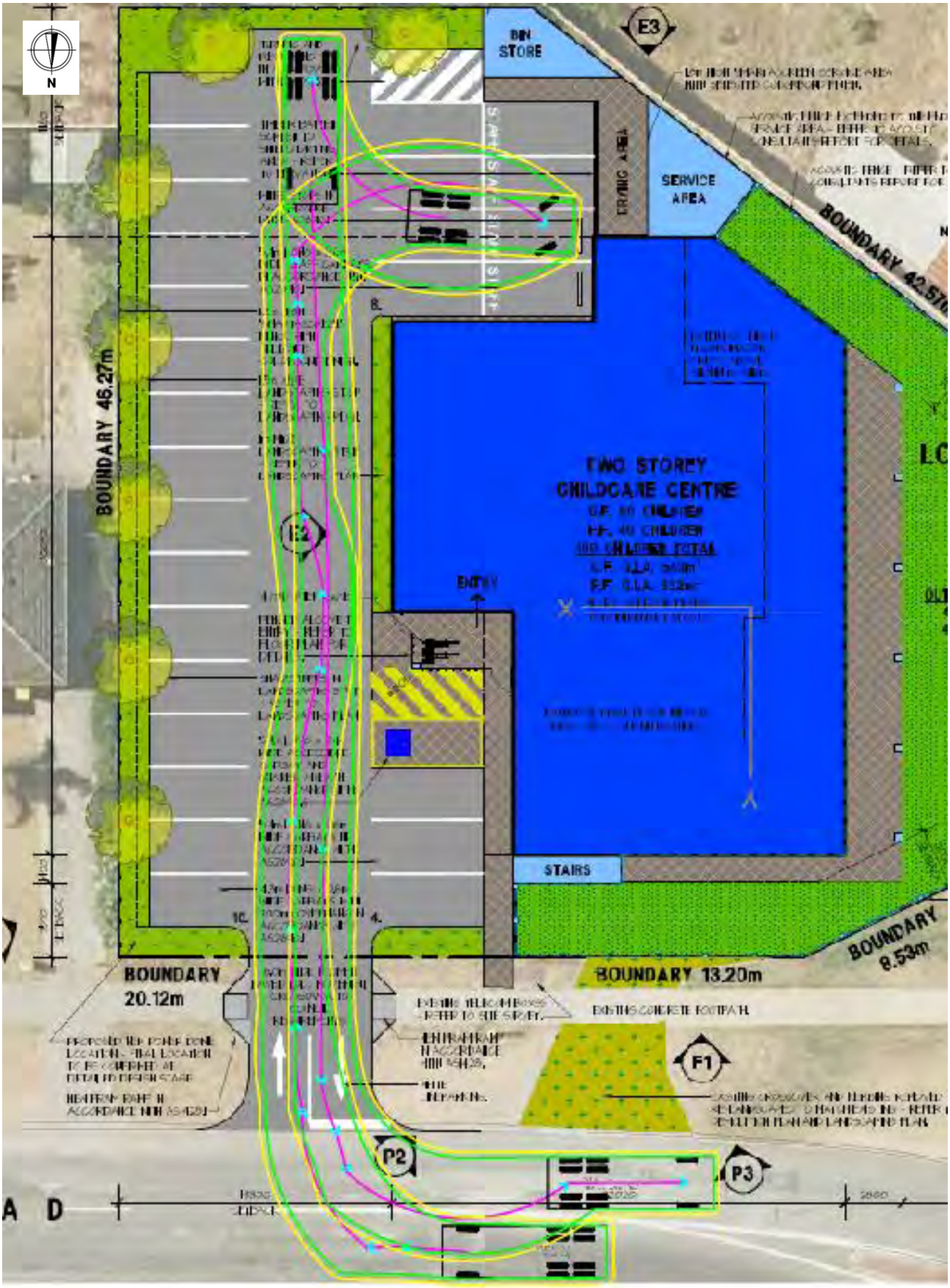



*Figure 13 Swept path analysis for an 8.0m long waste collection vehicle accessing the proposed Shoalwater Childcare Centre site (base plan source: Hindley and Associates Building Designers, 2022)*

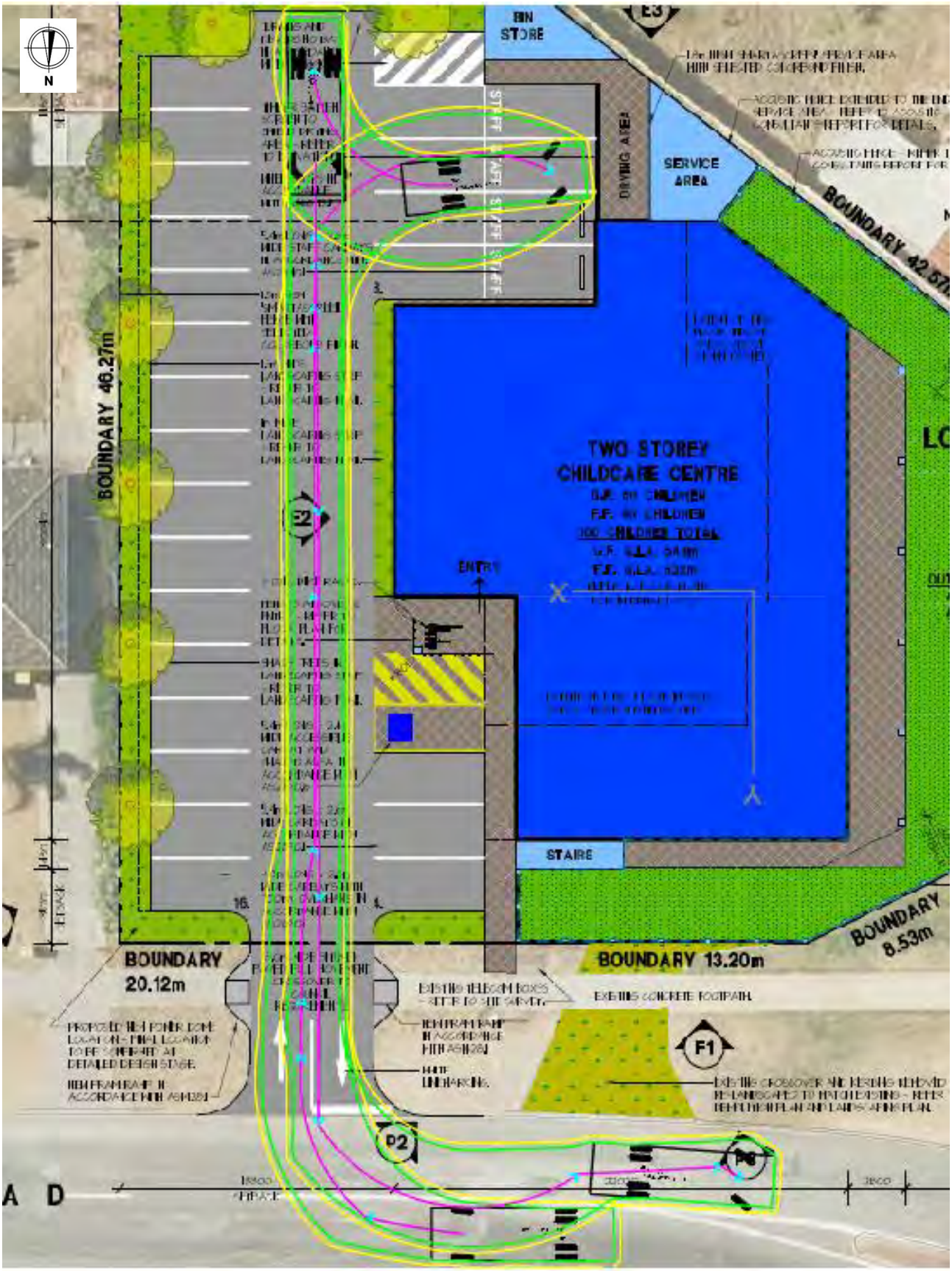



*Figure 14 Swept path analysis for an 8.8m long waste collection vehicle accessing the proposed Shoalwater Childcare Centre site (base plan source: Hindley and Associates Building Designers, 2022)*

# 5. TRAFFIC VOLUMES

## 5.1 Existing Traffic Generated by Proposed Site

The site of the proposed Shoalwater Childcare Centre is located at Lots 1 and 2, No. 172 Safety Bay Road, Shoalwater – the site is located on the southeast corner of the intersection of Safety Bay Road and Rae Road in Shoalwater. The site has boundaries with Safety Bay Road to the west and Rae Road to the north and is surrounded by predominantly residential properties as well as a restaurant and Safety Bay Primary School further east.

The site of the proposed Childcare Centre is currently used as a surf shop and would generate a very small number of trips across the day. The surf shop opens at 10.00am each day therefore any trips generated from this development would not be present on the network during the AM peak travel time for the Childcare Centre.

To support this TIS twenty-four (24) MetroMap historical aerial images were assessed between 30 March 2017 and 24 March 2022. These images showed that a maximum of five cars were parked in the surf shop car park on Monday 31 December 2018 and that typically there are two vehicles parking in the surf shop car park on any given day – which would appear to be staff.

Given the very low number of vehicles shown to be accessing Lot 2, and that none of these trips would be present on the network during the AM peak travel times for the Childcare Centre, no trips have been deducted from the trip generation for the subject site.

## 5.2 Trip Generation of Proposed Development

For the purpose of trip generation assessment, the Childcare Centre is assumed to operate with 17 staff and 100 registered children. The following assumptions have been made in relation to traffic that would be generated by this proposal.

- The Childcare Centre's anticipated operating hours are from 6:30am to 6:30pm.
    - It is anticipated that child drop-off's will occur over an extending period between 6:30am-9:30am – with the **AM peak hour** for drop-off's between **7:30am-8:30am**.
    - It is anticipated that child pick-up's will occur over an extending period between 3:30pm-6:30pm – with the **PM peak hour** for pick-up's between **4:30pm-5:30pm**.

- The Childcare Centre will operate with the following staffing arrangements:
    - 15 staff would work on-site Monday-Friday in a full-time educator role.
    - Additional staff would work on-site Monday-Friday in a part-time role – typically working half day 10am-3pm.
    - 1 staff would work on-site once or twice a week as a visiting area manager – between 10am-3pm.
    - A conservative assumption has been made that 15 staff will independently drive to the site each day and some staff will car pool or use public transport. This may not be the case in operation with more staff potentially car pooling or use public transport.

    - The 15 full-time educator staff would be required on-site Monday-Friday to care for the full complement of 100 children – this is based on a required ratio of educators per child.
    - The additional part-time staff would be required on-site Monday-Friday during the middle of the day.
    - The area manager will typically visit the site once or twice a week during the middle of the day.

    - The 15 full-time staff will be provided on-site car parking with 15 car parking bays available for staff along the eastern boundary of the parking area and 8 bays to the south of the Childcare Centre building utilising four tandem bays.

- The additional part-time staff will utilise parent parking outside of peak drop-off/pick-up periods for children.
- The area manager will utilise parent parking outside of peak drop-off/pick-up periods for children.

- The Childcare Centre's anticipated operating hours are from 6:30am to 6:30pm – it is expected that 2 members of staff would be rostered to start work during the developments AM peak hour and finish work during the development PM peak hour, with all other staff travelling to or from the site outside of the development peak hours.

- The Childcare Centre will cater for 100 registered children:
  - At a range of childcare centres across Perth that Flyt have surveyed, typically:
    - 15% of children are walked to the childcare centre by parents and do not generate a vehicle trip. These children are either walked from their home within a walkable catchment of the childcare centre or they use public transport services to access the childcare centre.
    - 25% of children are from families with more than one child attending the childcare centre – therefore 25% of the children generate 0.5 inbound vehicles trips and 0.5 outbound vehicle trips (assuming these families have two children attending the childcare centre).
    - 60% of children generate 1 inbound vehicle trip and 1 outbound vehicle trip.
    - Of those children arriving at the childcare centre by private vehicle, typically:
      - 55% of children are dropped off during the AM peak hour
      - 50% of children are picked-up during the PM peak hour

Based on maximum attendance at the Childcare Centre on a given weekday and applying the typical childcare centre mode splits outlined above, it is estimated that a maximum total of 82 vehicle trips to/from the site will occur during the developments AM peak hour and 74 vehicle trips to/from the site will occur during the development PM peak hour – as outlined in Table 1.

*Table 1 Proposed Childcare Centre development peak hour vehicle trips based on the proposed operations of the Childcare Centre*

| Type of User | Total On-Site | Number Generating Vehicle Trips | AM Peak Hour Vehicle Movements | | | PM Peak Hour Vehicle Movements | | |
|---|---|---|---|---|---|---|---|---|
| | | | IN | OUT | TOTAL | IN | OUT | TOTAL |
| Staff (full-time) | 15 | 15 (1.0 trips) | 2 | 0 | 2 | 0 | 2 | 2 |
| Staff (part-time) | 2 | 2 (1.0 trips) | 0 | 0 | 0 | 0 | 0 | 0 |
| Children | 100 | 15 (0.0 trips) | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 25 (0.5 trips) | 7 | 7 | 14 | 6 | 6 | 12 |
| | | 60 (1.0 trips) | 33 | 33 | 66 | 30 | 30 | 60 |
| Total Staff & Children | 117 | 15 (0.0 trips) | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 25 (0.5 trips) | 7 | 7 | 14 | 6 | 6 | 12 |
| | | 77 (1.0 trips) | 35 | 33 | 68 | 30 | 32 | 62 |
| **TOTAL VEHICLE TRIPS** | | | **42** | **40** | **82** | **36** | **38** | **74** |

## 5.3 Traffic Impacts of Proposed Development

The proposed Shoalwater Childcare Centre is unlikely to generate significant additional vehicle trips on the road network – many of the vehicle trips to drop-off and pick-up children from the Childcare Centre would be part of a linked trip already being made. The majority of linked trips will be part of the parents commute to their place of work.

The proposed Childcare Centre will generate more vehicle movements during the developments AM peak hour (more concentrated child drop-off activity) as opposed to during the developments PM peak hour (more dispersed child pick-up activity).

As outlined in Section 3.2, the 12 parent parking bays on-site (excluding the 1 ACROD bay) would turnover approximately 4.8 times during the peak hour and accommodate approximately 57 vehicle movements. As such, the number of parent parking bays on-site would be sufficient to accommodate the expected peak hour vehicle trip generation. In summary:

- The level of vehicle trips generated by the proposed Shoalwater Childcare Centre is focused on generation of vehicle trips associated with children drop-off and pick-up movements. Staff movements are generally outside of peak periods as the educators have to be on-site to cater for the arrival of children and they cannot leave the facility until certain ratios of educators to children are achieved. In addition, some staff are likely to use alternate forms of transport, such as car pooling, public transport or cycling.
- Some drop-off and pick-up movements will be undertaken by foot or involve trips with multiple children being dropped-off or picked-up. In addition, not all movements will be made in the development AM or PM peak hour.
- The majority of traffic movements generated by the site are expected to be a slight redistribution of existing trips on the network as part of a linked trip – primarily as part of a parents existing commute and/or school drop-off/pick-up of older children.

## 5.4 Safety Bay Road and Rae Road Intersection Assessment

### 5.4.1 Modelled Scenarios

To determine the impacts of the proposed Shoalwater Childcare Centre vehicle trips at the Safety Bay Road and Rae Road intersection, traffic modelling was undertaken for the intersection in SIDRA Intersection 9.0 Plus version 9.0.3.9771 for the following scenarios:

- 2023 Base
- 2023 Shoalwater Childcare Centre Opening
- 2033 Base
- 2033 Shoalwater Childcare Centre 10 Year Post Opening

### 5.4.2 Modelled Time Periods

For each scenario traffic modelling was undertaken for the following time periods:

- AM Period
    - 6:30am-7:30am
    - 7:30am-8:30am
    - 8:30am-9:30am
- PM Period
    - 3:30pm-4:30pm
    - 4:30pm-5:30pm
    - 5:30pm-6:30pm

### 5.4.3 Modelling of Traffic Warden Controlled School Crossing

It should be noted that on the day of the traffic data collection the traffic warden controlled school crossing at the intersection was unmanned with no traffic warden present – as such school children crossed Safety Bay Road unaided. Administration staff at Safety Bay Primary School (located 400m to the east of the intersection) confirmed to Flyt that a traffic warden is usually present to assist children and parents to cross Safety Bay Road before and after school.

Video footage from the day of the traffic data collection was reviewed to determine the operation of the school crossing during the AM and PM periods and to enable assumptions to be made as to the time vehicles would be stopped to allow children to cross Safety Bay Road if a traffic warden had have been present.

During the AM period there was crossing activity from school children and their parents between 8:15am-8:45am (the nearby Safety Bay Primary School day starts at 8:45am) and PM period crossing activity between 3:00pm-3:30pm (the nearby Safety Bay Primary School day ends at 3:00pm).

On the day of the traffic data collection (with no traffic warden present), vehicles stopped to allow children to cross the road 5 times during each of the 30 minute periods of school children crossing activity – with vehicles being stopped in both directions for an average of 10 seconds for each crossing.

There were an additional 5 occasions during each 30 minute period of school children crossing activity where vehicles did not stop to allow children to cross the road and children were required to wait for gaps in traffic before they could crossed the road in two stages via the median refuge island. If a traffic warden had been present, there would have been a total of 10 occasions during each 30 minute period of school children crossing activity were traffic would have been stopped for 10 seconds at a time – i.e. representing a 1 minute 40 second closure of the intersection during the 30 minute period of school children crossing activity (8:15am-8:45am and 3:00pm-3:30pm).

The impacts of a 1 minute and 40 second closure of the intersection during these 30 minute periods has been reflected in the traffic modelling as a signalised pedestrian crossing with timing to reflect the observed use of the school crossing.

### 5.4.4 Modelled Base Scenario Traffic Volumes

The modelled 2023 Base scenario vehicle turning volumes at the intersection are based on traffic count data collected at the Safety Bay Road and Rae Road intersection on Tuesday 7 February 2023 between 6:30am-9:30am and 3:30pm-6:30pm.

The modelled 2033 Base scenario turning volumes are based on the 2023 traffic count data collected at the intersection with an annual traffic growth rate applied to reflect traffic volumes 10 years in the future. A 1.0% per annum growth factor has been applied to the 2023 traffic count data – reflecting a 10.0% growth in traffic between 2023 and 2033.

The 1.0% per annum growth factor is based upon historic annual traffic growth (pre-Covid pandemic impacts of travel behaviour) for the local area that has been determined based on a review of the Main Roads WA Traffic Maps portal and available traffic data. The following two local sites had historic traffic data available:

- Safety Bay Road south of Parkin Street
    - 2017/18 = 7,334 vehicles per day
    - 2018/19 = 7,441 vehicles per day
    - 1.50% annual growth
- Safety Bay Road west of Malibu Road
    - 2017/18 = 12,613 vehicles per day
    - 2018/19 = 12,555 vehicles per day
    - -0.50% annual growth
- Average annual growth of the two traffic data site
    - 1.0% annual growth

### 5.4.5 Modelled Shoalwater Childcare Centre Scenario Traffic Volumes

The modelled Shoalwater Childcare Centre scenarios (2023 and 2033) are based on the vehicle turning volumes used in the Base Scenarios (see Section 5.4.4) plus the addition of the Shoalwater Childcare Centre related vehicle trips.

For the purposes of undertaking a conservative assessment of the impacts of the Childcare Centre traffic at the Safety Bay Road and Rae Road intersection – it has been assumed that all Childcare Centre related vehicle trips are new trips on the road network and not a linked trip as part of an existing trip being made – this is a conservative assumption with additional context outlined in Section 5.3.

In addition, for the purposes of undertaking a conservative assessment of the impacts of the Childcare Centre traffic at the Safety Bay Road and Rae Road intersection – it has been assumed that 75% of all inbound and outbound vehicle trips generated by the Childcare Centre would pass through the Safety Bay Road and Rae Road intersection – this is considered a conservative assumption given the limited residential and commercial development to the west of the proposed Childcare Centre site between Safety Bay Road and the ocean, with the majority of local residential development and strategic destinations (Rockingham City Centre, Rockingham Station and Kwinana Freeway) being located to the east of the proposed Childcare Centre site.

Based on maximum attendance at the Childcare Centre on a given weekday and applying the typical childcare centre mode splits outlined in Section 5.2, it is estimated that a maximum total of 82 vehicle trips to/from the site will occur during the developments AM peak hour (7:30am-8:30am – 55% of children are dropped off during the AM peak hour) and 74 vehicle trips to/from the site will occur during the development PM peak hour (4:30pm-5:30pm 50% of children are picked-up during the PM peak hour).

Based on activity at a range of childcare centres across Perth that Flyt have surveyed, typically the following peak period vehicle trip activity is observed for parent drop-off or pick-up:

- AM Period
  - 6:30am-7:30am - 25% of child drop-off vehicle trip activity
  - 7:30am-8:30am - 55% of child drop-off vehicle trip activity
  - 8:30am-9:30am - 20% of child drop-off vehicle trip activity
- PM Period
  - 3:30pm-4:30pm - 30% of child pick-up vehicle trip activity
  - 4:30pm-5:30pm - 50% of child pick-up vehicle trip activity
  - 5:30pm-6:30pm - 20% of child pick-up vehicle trip activity

The total inbound and outbound vehicle trips generated by the proposed Shoalwater Childcare Centre during the AM period (6:30am-9:30am) are shown in Table 2 and during the PM period (3:30pm-6:30pm) are shown in Table 3. Both tables also show the total number of vehicle trips expected to travel through the Safety Bay Road and Rae Road intersection (75% of all inbound and outbound vehicle trips generated by the Childcare Centre).

The distribution of inbound and outbound vehicle trips accessing the proposed Shoalwater Childcare Centre site through the Safety Bay Road and Rae Road intersection, are based on the existing proportions of vehicle turning movement volumes at the intersection.

*Table 2 Proposed Childcare Centre development AM period vehicle trips based on the proposed operations of the Childcare Centre*

| Type of User | Total On-Site | Number Generating Vehicle Trips | 6:30am-7:30am | | | 7:30am-8:30am | | | 8:30am-9:30am | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | IN | OUT | TOTAL | IN | OUT | TOTAL | IN | OUT | TOTAL |
| Staff (full-time) | 15 | 15 (1.0 trips) | 11 | 0 | 11 | 2 | 0 | 2 | 2 | 0 | 2 |
| Staff (part-time) | 2 | 2 (1.0 trips) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Children | 100 | 15 (0.0 trips) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 25 (0.5 trips) | 3 | 3 | 6 | 7 | 7 | 14 | 3 | 3 | 6 |
| | | 60 (1.0 trips) | 15 | 15 | 30 | 33 | 33 | 66 | 12 | 12 | 24 |
| Total Staff & Children | 117 | 15 (0.0 trips) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 25 (0.5 trips) | 3 | 3 | 6 | 7 | 7 | 14 | 3 | 3 | 6 |
| | | 77 (1.0 trips) | 26 | 15 | 41 | 35 | 33 | 68 | 14 | 12 | 26 |
| TOTAL VEHICLE TRIPS | | | **29** | **18** | **47** | **42** | **40** | **82** | **17** | **15** | **32** |
| *75% of development vehicle trips through Safety Bay Road and Rae Road intersection* | | | *22* | *14* | *36* | *32* | *30* | *62* | *13* | *11* | *24* |

*Table 3 Proposed Childcare Centre development PM period vehicle trips based on the proposed operations of the Childcare Centre*

| Type of User | Total On-Site | Number Generating Vehicle Trips | 3:30pm-4:30pm | | | 4:30pm-5:30pm | | | 5:30pm-6:30pm | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | IN | OUT | TOTAL | IN | OUT | TOTAL | IN | OUT | TOTAL |
| Staff (full-time) | 15 | 15 (1.0 trips) | 0 | 2 | 2 | 0 | 2 | 2 | 0 | 11 | 11 |
| Staff (part-time) | 2 | 2 (1.0 trips) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Children | 100 | 15 (0.0 trips) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 25 (0.5 trips) | 4 | 4 | 8 | 6 | 6 | 12 | 3 | 3 | 6 |
| | | 60 (1.0 trips) | 18 | 18 | 36 | 30 | 30 | 60 | 12 | 12 | 24 |
| Total Staff & Children | 117 | 15 (0.0 trips) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 25 (0.5 trips) | 4 | 4 | 8 | 6 | 6 | 12 | 3 | 3 | 6 |
| | | 77 (1.0 trips) | 18 | 20 | 38 | 30 | 32 | 62 | 12 | 23 | 35 |
| TOTAL VEHICLE TRIPS | | | **22** | **24** | **46** | **36** | **38** | **74** | **15** | **26** | **41** |
| *75% of development vehicle trips through Safety Bay Road and Rae Road intersection* | | | *17* | *18* | *35* | *27* | *29* | *56* | *11* | *20* | *31* |

### 5.4.6 Modelled Traffic Volumes

Modelled traffic turning movement diagrams for each scenario and time period are provided across the following figures:

- AM Period
  - 2023 Base – Figure 15
  - 2023 Shoalwater Childcare Centre Opening – Figure 16
  - 2033 Base – Figure 17
  - 2033 Shoalwater Childcare Centre 10 Year Post Opening – Figure 18
- PM Period
  - 2023 Base – Figure 19
  - 2023 Shoalwater Childcare Centre Opening – Figure 20
  - 2033 Base – Figure 21
  - 2033 Shoalwater Childcare Centre 10 Year Post Opening – Figure 22

## 2023 AM Period

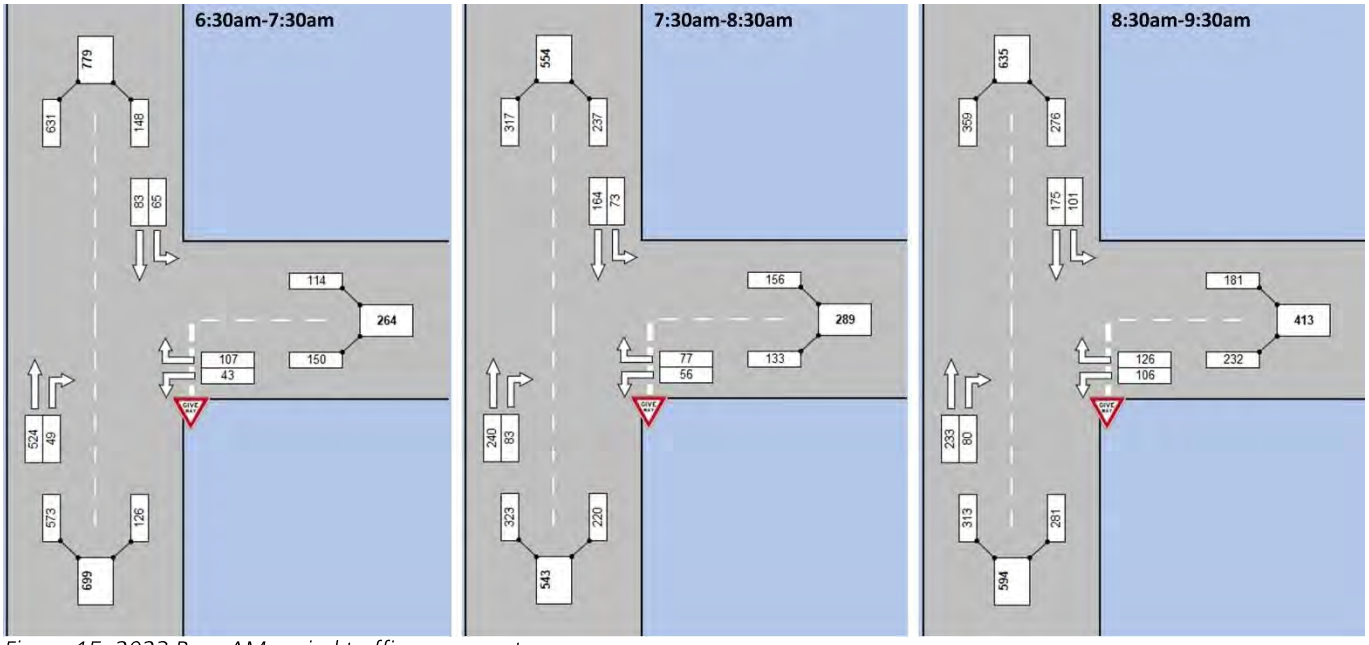



*Figure 15 2023 Base AM period traffic movements*

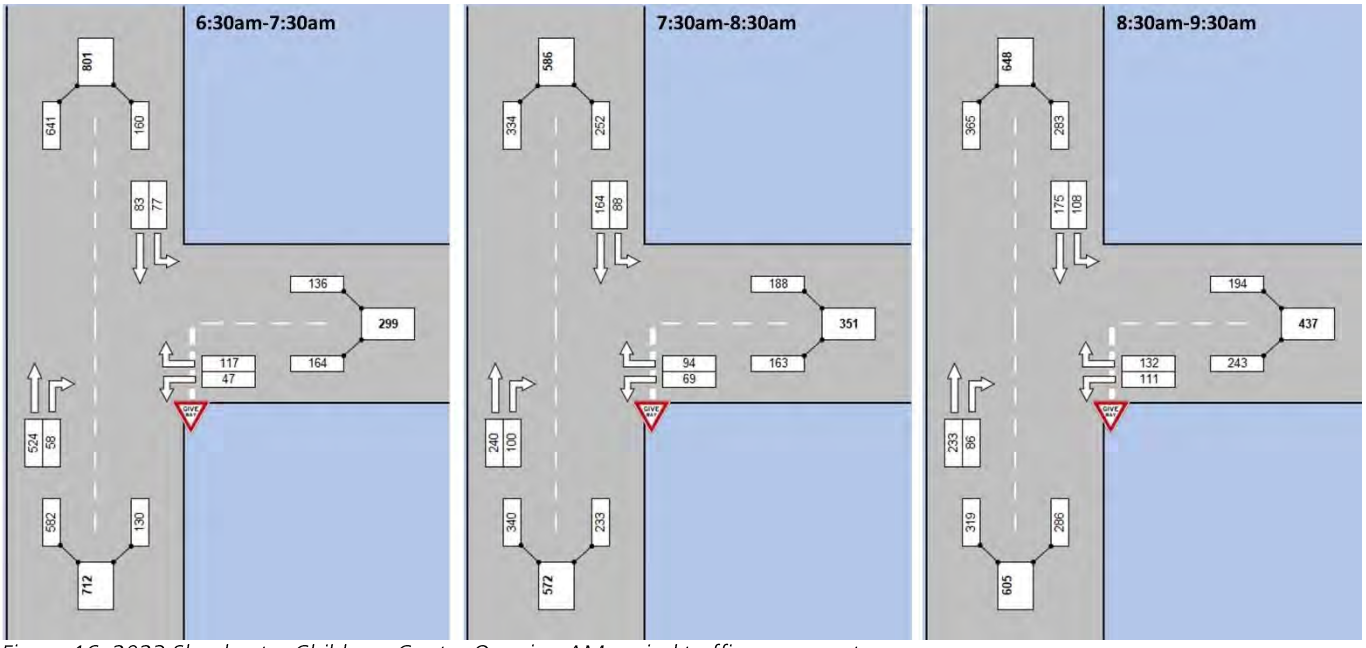



*Figure 16 2023 Shoalwater Childcare Centre Opening AM period traffic movements*

## 2033 AM Period

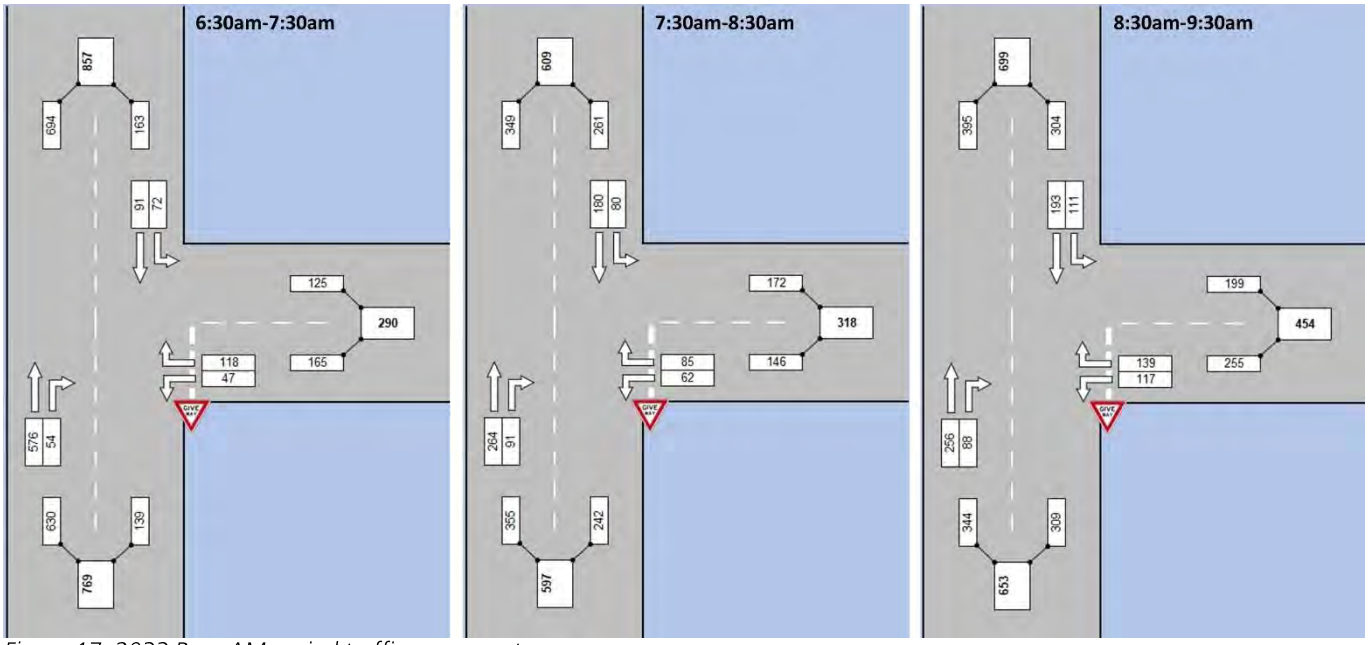



*Figure 17 2033 Base AM period traffic movements*

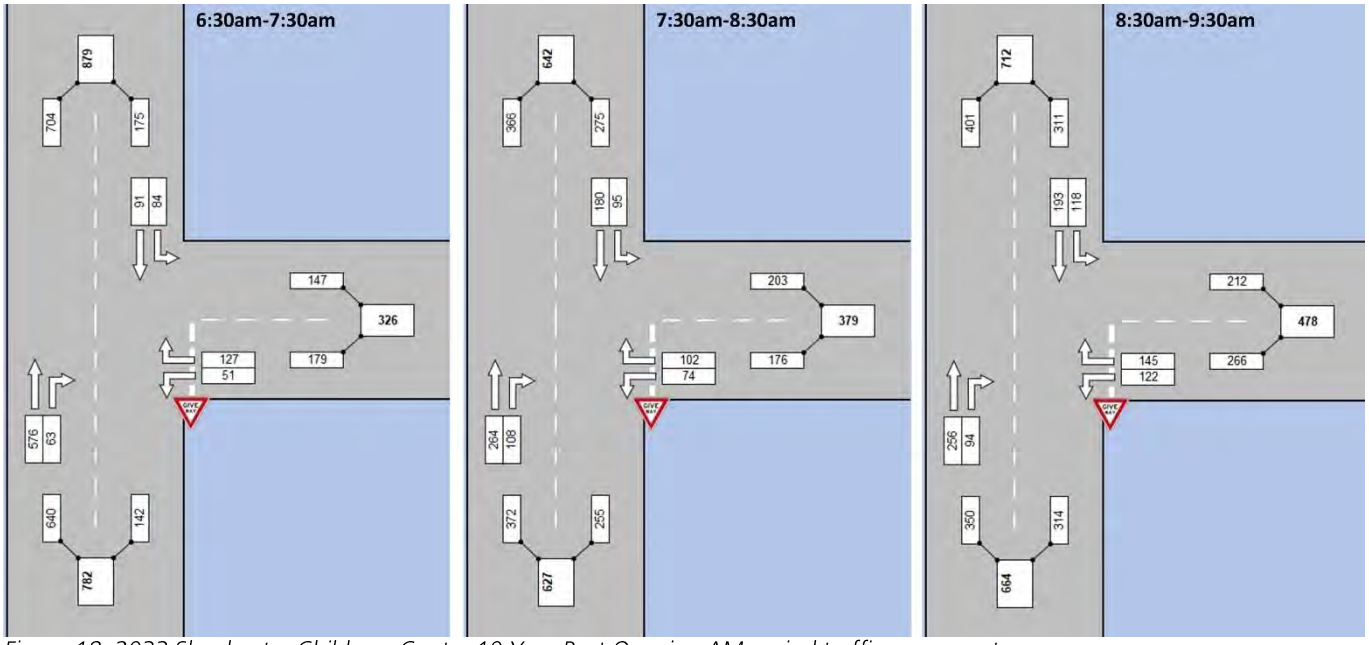



*Figure 18 2033 Shoalwater Childcare Centre 10 Year Post Opening AM period traffic movements*

## 2023 PM Period

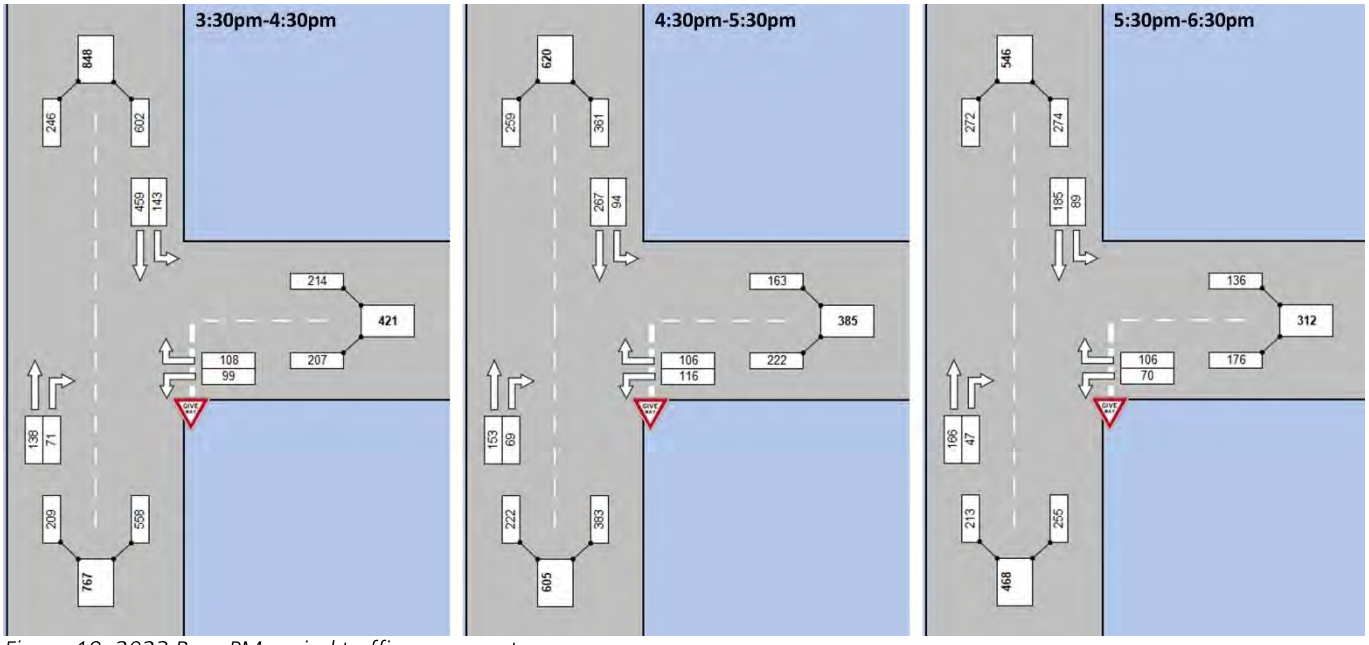



*Figure 19 2023 Base PM period traffic movements*

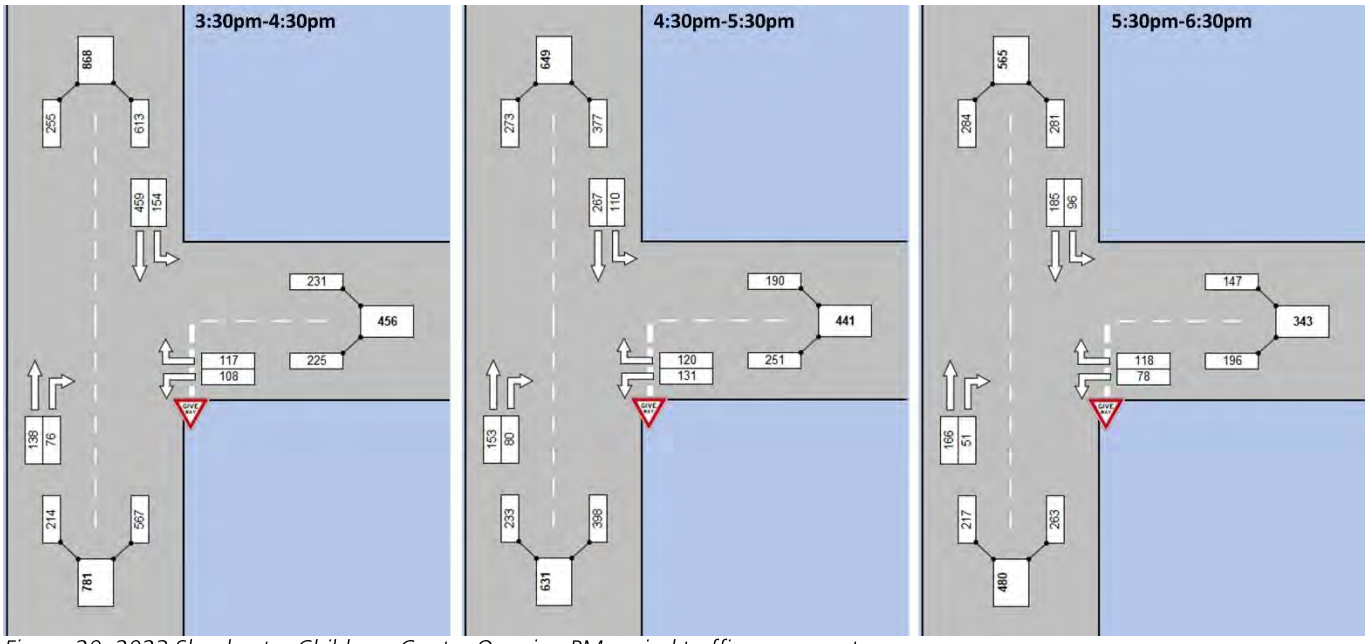



*Figure 20 2023 Shoalwater Childcare Centre Opening PM period traffic movements*

## 2033 PM Period

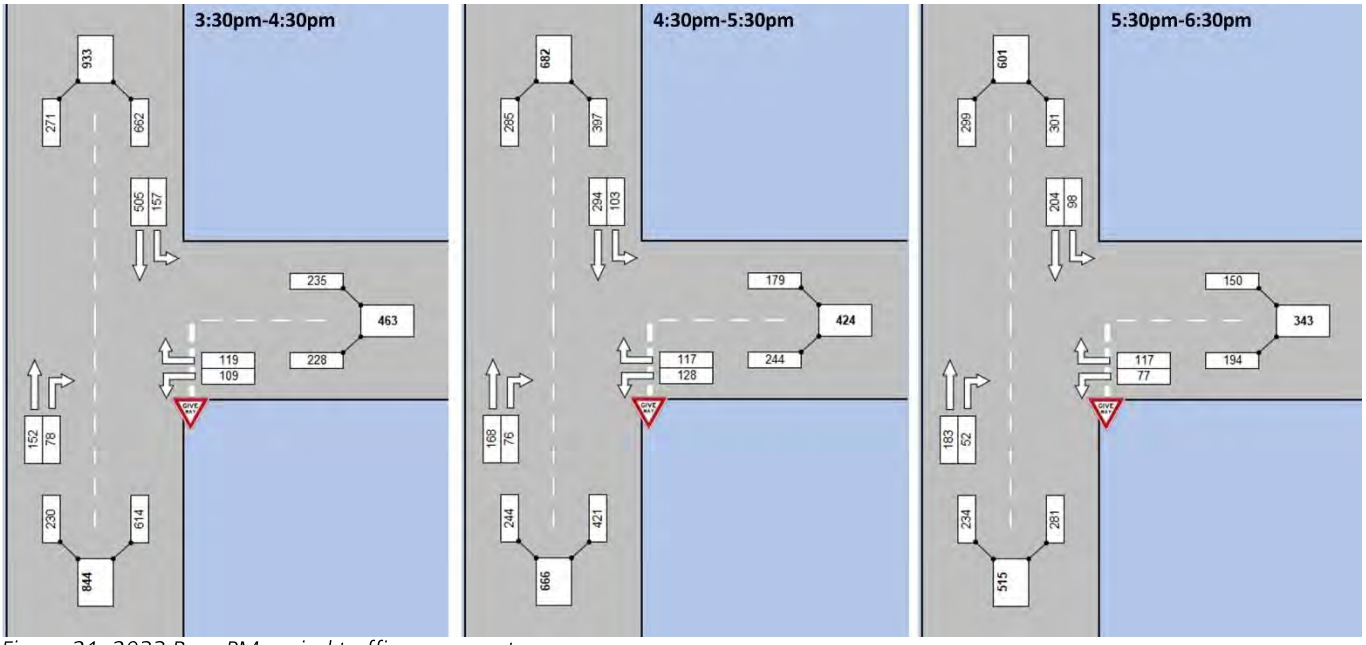



*Figure 21 2033 Base PM period traffic movements*

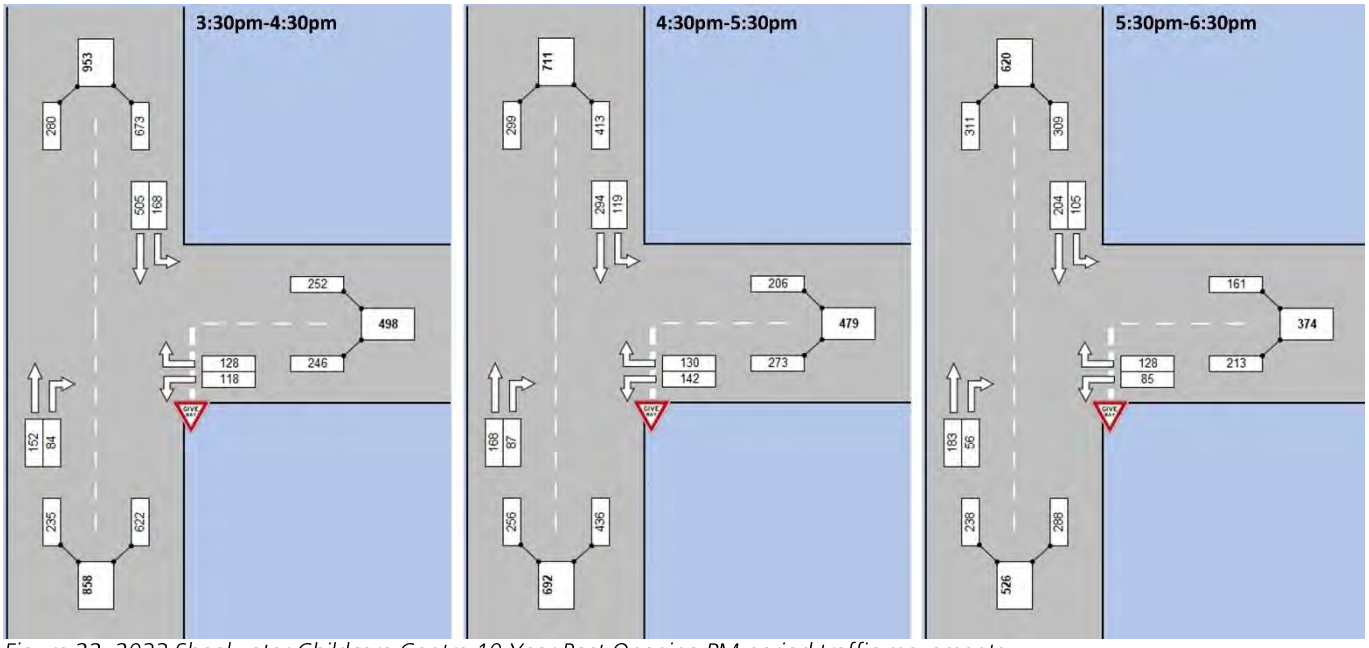



*Figure 22 2033 Shoalwater Childcare Centre 10 Year Post Opening PM period traffic movements*

### 5.4.7 Vehicle Classification

Vehicle classification data for Main Roads WA count sites 5534 (Safety Bay Road north of Arcadia Drive) and 5535 (Rae Road east of Safety Bay Road) from 2020/2021 was used to split up the non-development forecast traffic into the appropriate vehicle types for input to SIDRA. The peak hour vehicle classifications for each direction of traffic are summarised in Table 4. Peak period childcare development traffic was assumed to be 100% light vehicles (Class 1).

*Table 4 Vehicle Classification Profile for Safety Bay Road and Rae Road Traffic*

| Direction | Peak Hour | Vehicle Classification | | | | |
|---|---|---|---|---|---|---|
| | | Class 1 | Class 2 | Class 3-5 | Class 6-9 | Class 10 |
| Safety Bay Rd - northbound | AM Peak | 92.0% | 1.2% | 6.2% | 0.6% | 0.0% |
| | PM Peak | 93.3% | 1.0% | 5.7% | 0.0% | 0.0% |
| Safety Bay Rd - southbound | AM Peak | 87.0% | 1.9% | 9.8% | 1.3% | 0.0% |
| | PM Peak | 91.5% | 0.8% | 7.7% | 0.0% | 0.0% |
| Rae Rd - eastbound | AM Peak | 93.0% | 1.8% | 4.8% | 0.4% | 0.0% |
| | PM Peak | 96.6% | 0.7% | 2.5% | 0.3% | 0.0% |
| Rae Rd - westbound | AM Peak | 91.7% | 1.8% | 6.0% | 0.5% | 0.0% |
| | PM Peak | 94.6% | 0.7% | 4.7% | 0.0% | 0.0% |

Figure 23 shows the Austroads vehicle classification and typical vehicle configuration for each vehicle class.

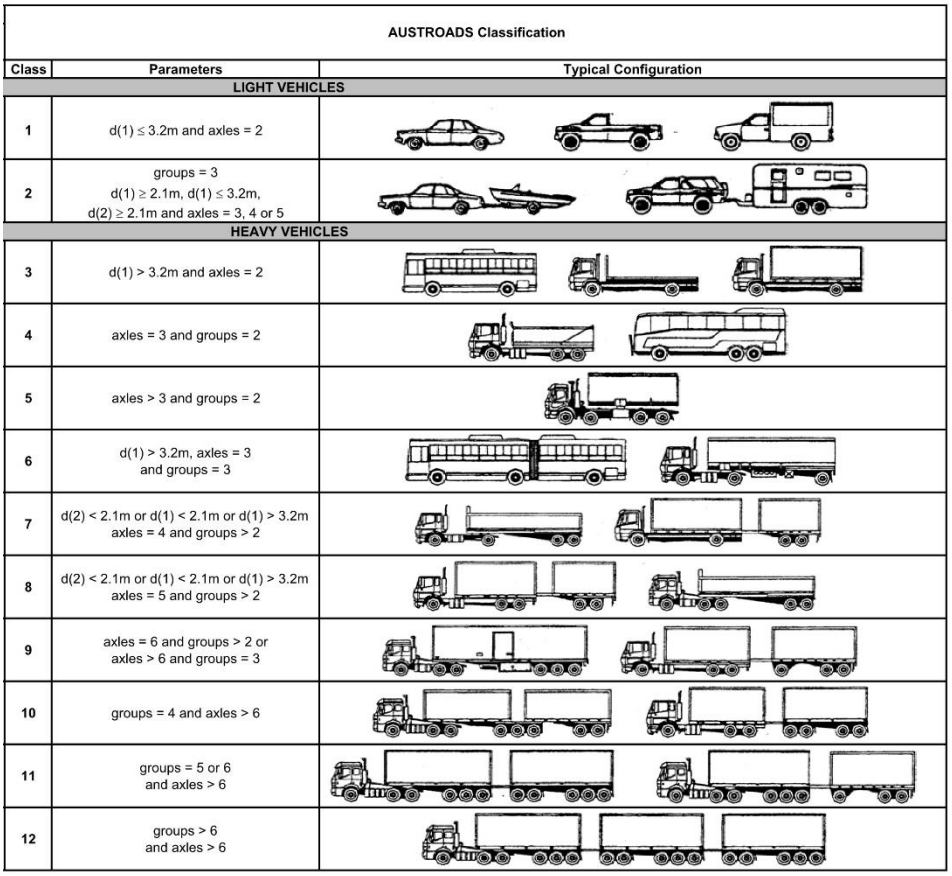



*Figure 23 Austroads vehicle classification and typical vehicle configuration for each vehicle class*

### 5.4.8 Model Outcomes – Base Year

The intersection of Safety Bay Road with Rae Road with existing traffic volumes was found to operate at a level of service (LoS) A for all three hours of AM period. The addition of the forecast traffic associated with the Shoalwater Childcare Centre was found to decrease the LoS on the Rae Road approach from A to B, between 6:30am-7:30am, with no change to the LoS in the other two hours of the AM period. The SIDRA Network LoS outputs for the 2023 AM peak period with and without the development traffic is shown in Figure 24. Detailed Movement Summary SIDRA can be found in Appendix A.

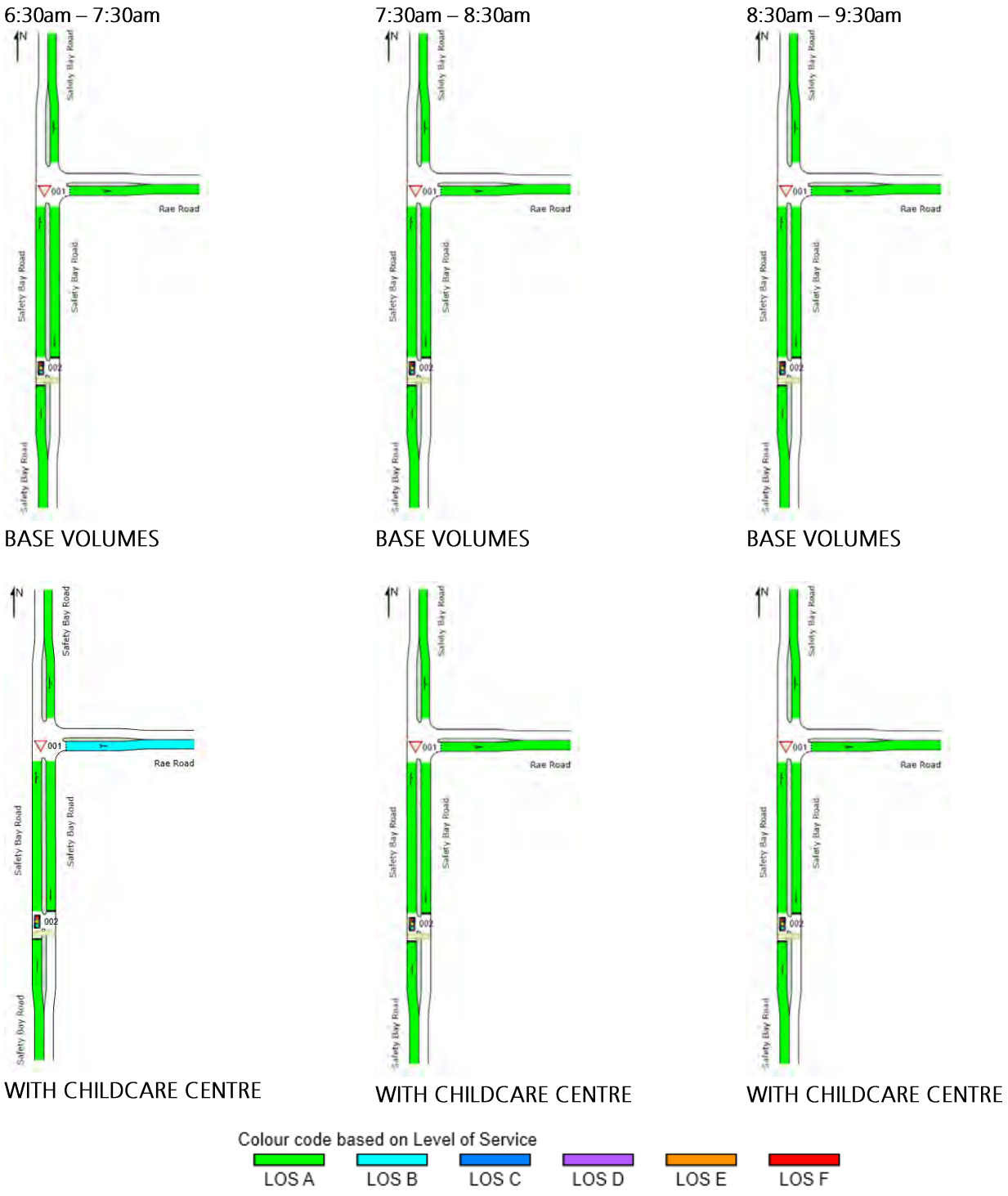



*Figure 24 2023 AM Period SIDRA Network Output*

For the three hours of the PM period, the intersection of Safety Bay Road with Rae Road with existing traffic volumes was found to operate at a LoS A, with the Rae Road approach operating at a LoS B between 3:30pm-4:30pm, and at a LoS A for the remaining two hours. The addition of the forecast traffic associated with the Shoalwater Childcare Centre has no impact to the predicted LoS for each approach. The SIDRA Network LoS outputs for the 2023 PM period with and without the development traffic is shown in Figure 25. Detailed Movement Summary SIDRA can be found in Appendix A.

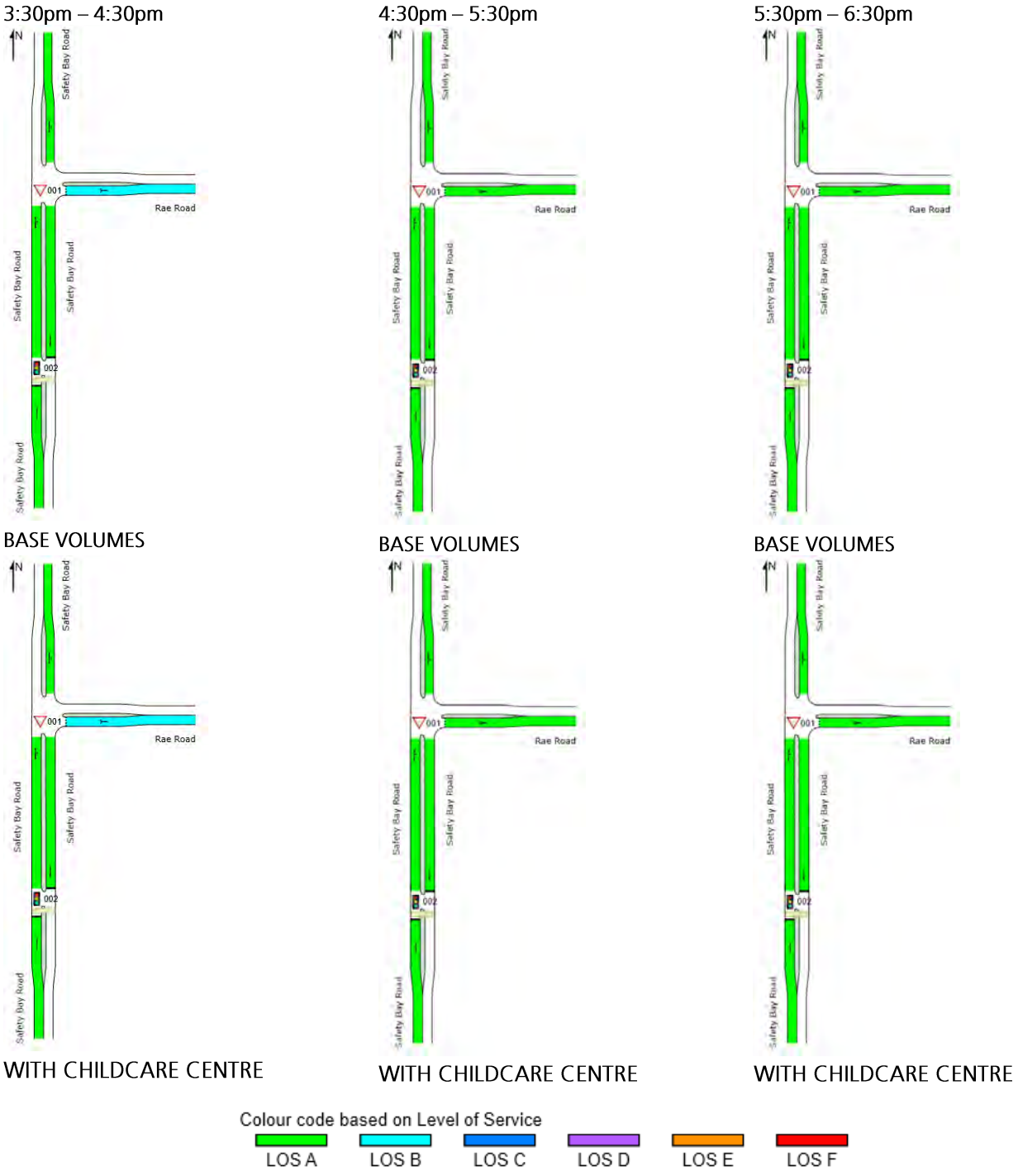



*Figure 25 2023 PM Period SIDRA Network Output*

The proposed Shoalwater Childcare Centre development is forecast to generate 82 vehicle trips during the developments AM peak hour and 74 trips over the developments PM peak hour. SIDRA Network modelling of the T-intersection between Safety Bay Road and Rae Road (and the traffic warden controlled school crossing of Safety Bay Road immediately to the south of Rae Road) has shown that these volumes can be accommodated by the existing road network.

### 5.4.9 Model Outcomes – 2033

For the three hours of the AM period, the intersection of Safety Bay Road with Rae Road with projected 2033 traffic volumes was found to operate at a LoS A, with the Rae Road approach operating at a LoS B between 6:30am-7:30am and at a LoS A for the remaining two hours. The addition of the forecast traffic associated with the Shoalwater Childcare Centre has no impact to the predicted LoS for each approach. The SIDRA Network LoS outputs for the 2033 AM period with and without the development traffic is shown in Figure 26. Detailed Movement Summary SIDRA can be found in Appendix A.

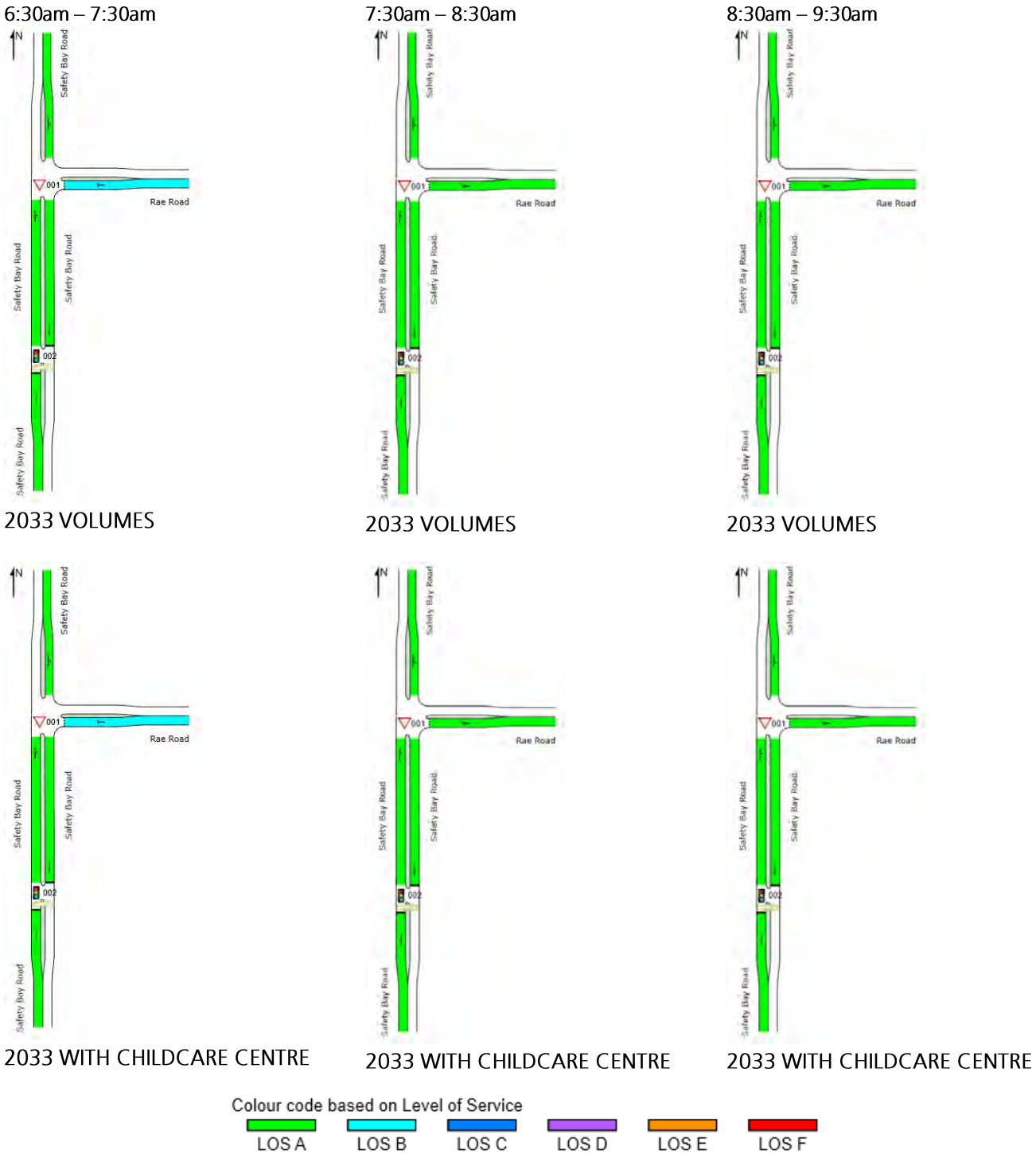



*Figure 26 2033 AM Period SIDRA Network Output*

For the three hours of the PM period, the intersection of Safety Bay Road with Rae Road with projected 2033 traffic volumes was found to operate at a LoS A, with the Rae Road approach operating at a LoS B between 3:30pm-4:30pm and at a LoS A for the remaining two hours. The addition of the forecast traffic associated with the Shoalwater Childcare Centre has no impact to the predicted LoS for each approach. The SIDRA Network LoS outputs for the 2033 PM peak period with and without the development traffic is shown in Figure 27. Detailed Movement Summary SIDRA can be found in Appendix A.

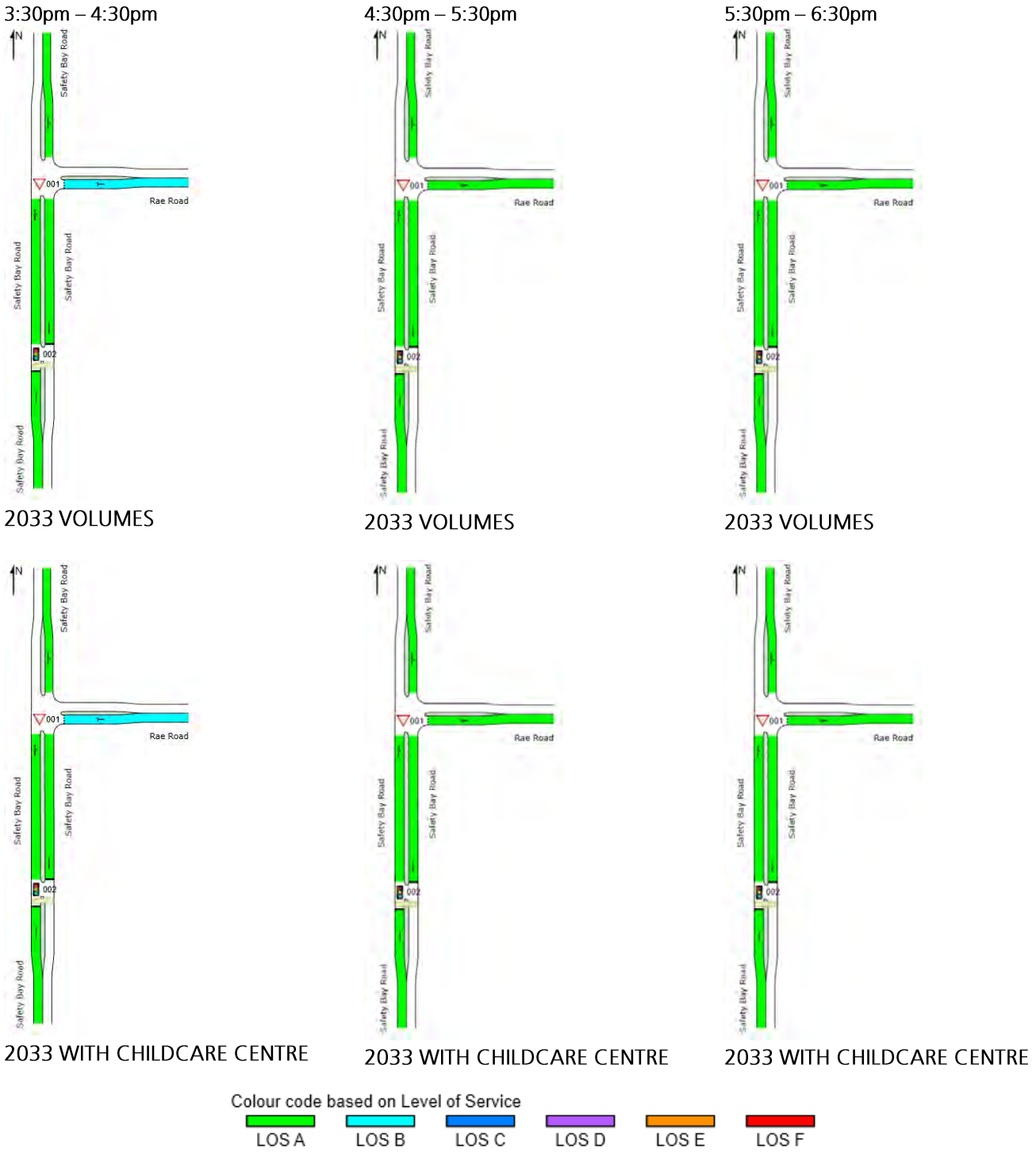



*Figure 27 2033 PM Period SIDRA Network Output*

SIDRA Network modelling of the T- intersection between Safety Bay Road and Rae Road (and the traffic warden controlled school crossing of Safety Bay Road immediately to the south of Rae Road) with 2033 projected volumes has shown that the forecast traffic volumes for the proposed childcare development can be accommodated by the existing road network.

# 6. FRONTAGE STREETS

## 6.1 Road Network Hierarchy

The proposed Shoalwater Childcare Centre has a northern boundary to Rae Road and an eastern boundary to Safety Bay Road. Both of these roads are categorised as Distributor A Roads under the Main Roads WA road network hierarchy.

McLarty Avenue which runs west from Safety Bay Road is a Local Distributor Road as well as Arcadia Drive, Boundary Road, and Hawkes Street which are situated in the wider area. All other roads in proximity of the proposed Shoalwater Childcare Centre site are categorised as Access Roads under the Main Roads WA road network hierarchy.

The road hierarchy surrounding the proposed Shoalwater Childcare Centre site is shown in Figure 28.


*Figure 28 Road hierarchy surrounding the proposed Shoalwater Childcare Centre site (source: Main Roads WA)*

## 6.2 Road Network Speed Limits

Safety Bay Road and Rae Road both have a posted speed limit of 60km/h. Most streets in vicinity of the proposed Shoalwater Childcare Centre site operate under a typical default 50km/h urban speed limit.

The proposed Shoalwater Childcare Centre site is located within close proximity to the Safety Bay Primary School, meaning that a section of Rae Road and Waimea Road to the east of the site operate under a School Zone speed limit of 40km/h Monday to Friday 7.30-9.00am and 2.30-4.00pm during the school terms.

The speed zoning surrounding the proposed Shoalwater Childcare Centre site is shown in Figure 29.


*Figure 29 Posted speed limit surrounding the proposed Shoalwater Childcare Centre site (source: Main Roads WA)*

# 7. PUBLIC TRANSPORT ACCESS

## 7.1 Existing Public Transport Services

The proposed Shoalwater Childcare Centre site is accessible by public transport – with Bus Route 551 providing direct access to the site.

- Bus Route 551
  - Route 551 runs in a circular route beginning at Watts Road and ending at Rockingham Station. The bus route travels along McLarty Road to Safety Bay Road travelling past the subject site.
  - Route 551 provides connections to residential catchments of Peron to the north and Safety Bay to the east as well as to Rockingham Centre. It also travels past Anzac Park, Rockingham Visitors Centre, the Rockingham Museum, Rockingham Montessori School, Rockingham Aquatic Centre and the Mike Barnett Sports Club.
  - Weekday bus services operate between 5.30am and 10.00pm operating on a 30 minute frequency during peak travel times and 60 minute frequency outside of these times.
  - Saturday bus services operate between 6am and 10.45pm – operating on a 60 minute frequency.
  - Sunday bus services operate between 8am and 6pm – operating on a 60 minute frequency.

From the entrance of the proposed Shoalwater Childcare Center, Bus Route 551 services can be accessed with a short 80m walk (1 minute walk time) to the bus stop on Safety Bay Road which travels in a southbound direction. Bus stops for routes 552 and 553 are located on Watts Road 700m south of the subject site and could also be used to access the site with a short 10 minute walk from Watts Road to Rae Road.

Figure 30 shows the location of the proposed Shoalwater Childcare Centre site in relation to local bus routes.

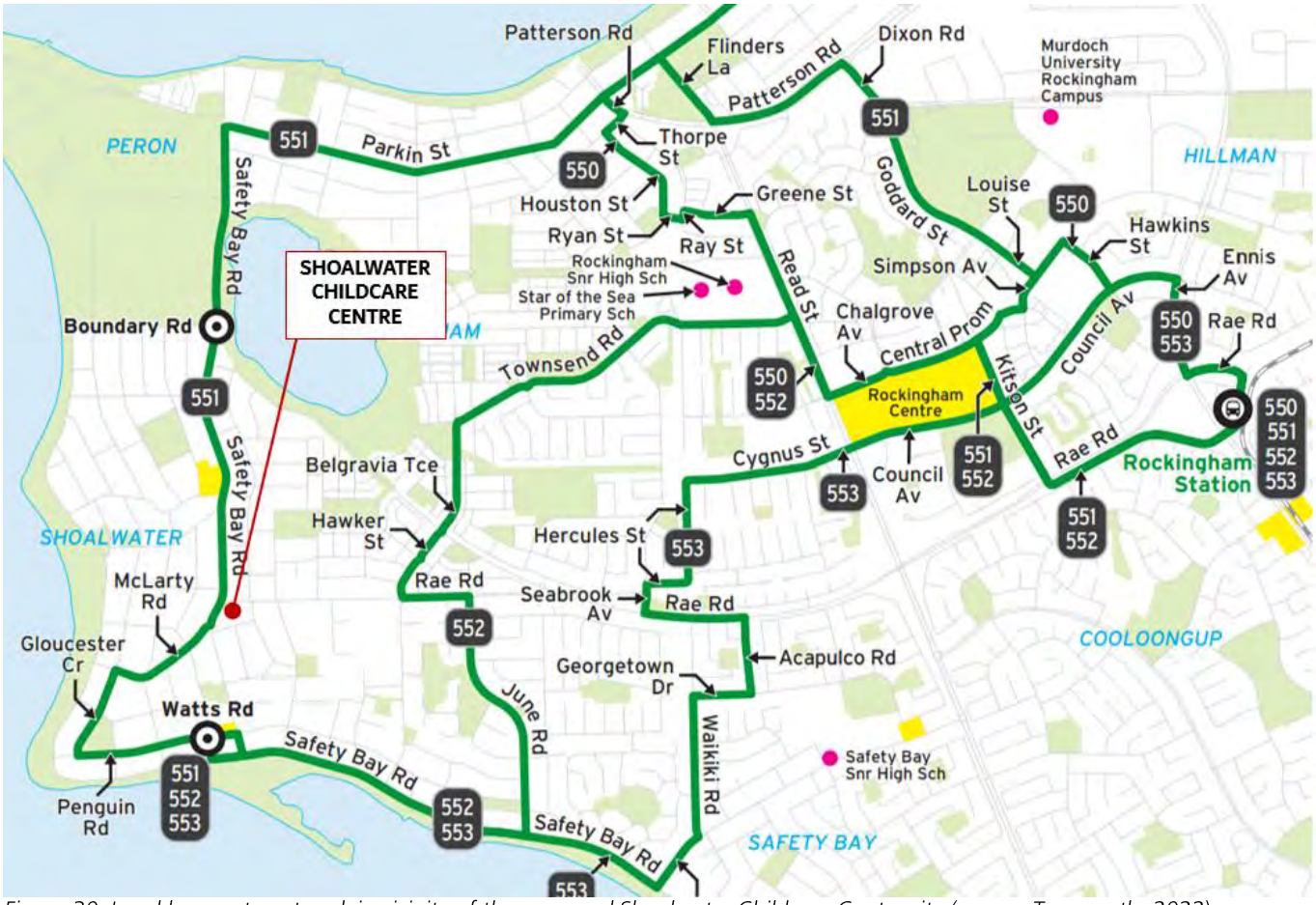



*Figure 30 Local bus route network in vicinity of the proposed Shoalwater Childcare Centre site (source: Transperth, 2022)*

# 8. PEDESTRIAN ACCESS AND AMENITY

## 8.1 Existing Pedestrian Network

The area surrounding the Shoalwater Childcare Centre has an average level of pedestrian connectivity with footpaths on one side of Rae Road, Safety Bay Road, Frederick Street, Waimea Road and Payne Street only. People walking along all other streets will need to walk on-road.

The Walk Score walkability assessment tool considers the proposed Shoalwater Childcare Centre site to be "very-walkable" where most errands can be completed on foot. There are several destinations with a walkable catchment from the site, including Lions Park and Shoalwater Foreshore, Shoalwater IGA, Safety Bay Primary School, Safety Bay Tennis Club, Safety Bay Health Foods Store and The Bay Patisserie, as well as a cluster of shops, cafes and a Post Office at Watts Road. The 15-minute walkable catchment is shown in Figure 31.

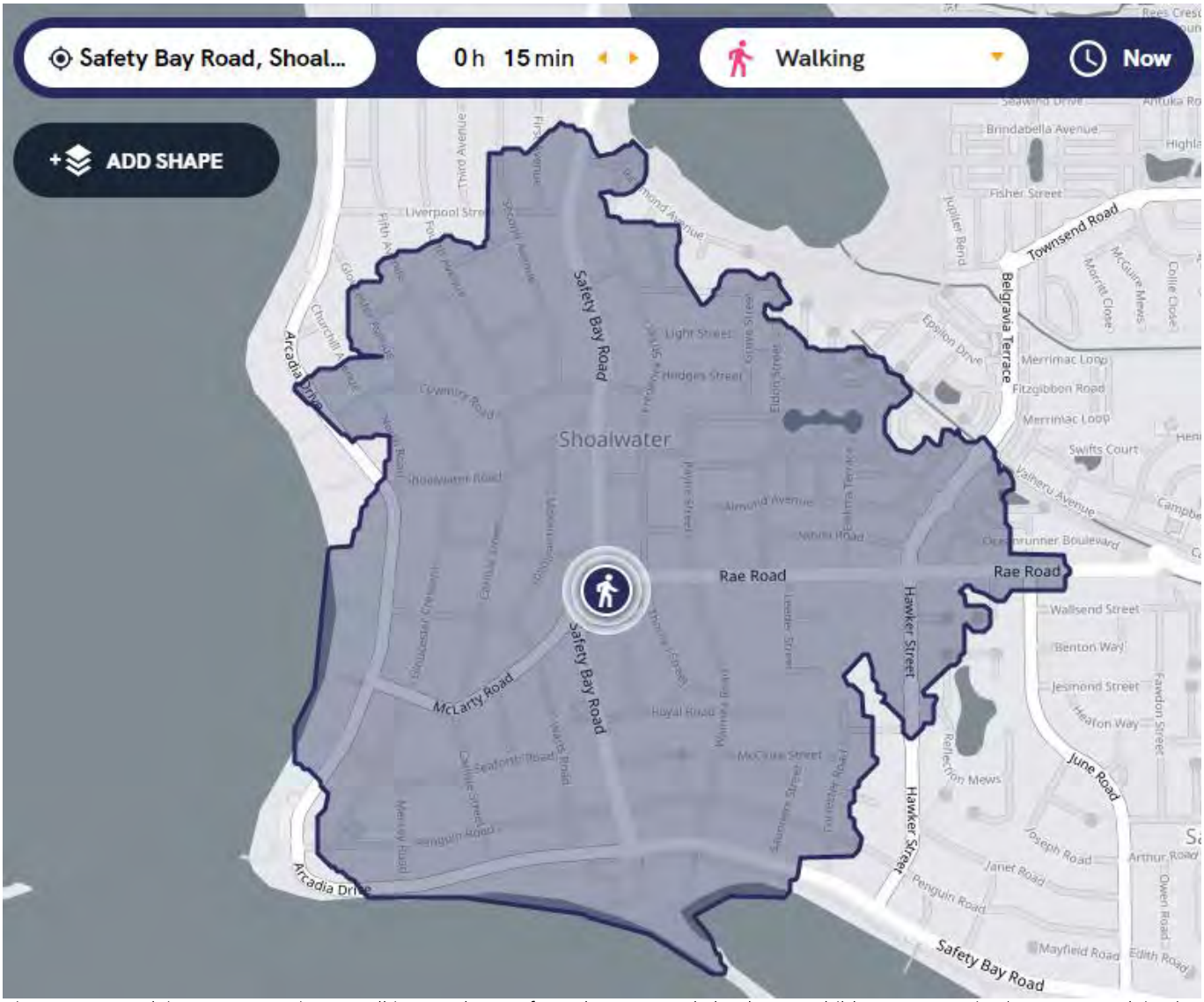



*Figure 31 TravelTime Map 15 minute walking catchment from the proposed Shoalwater Childcare Centre site (source: TravelTime)*

The proposed Shoalwater Childcare Centre site is located within close proximity to the Safety Bay Primary School, meaning that speeds on Rae Road to the east of Frederick Street reduce from 50km/h to 40km/h between 7.30-9.00am and 2.30-4.00pm during school terms.

There is also a traffic warden located at the children's crossing on the corner of Safety Bay Road and Rae Road which ensures traffic comes to a complete stop to allow parents and children to cross the road safely.

The Department of Planning, Lands and Heritage (DPLH) recently released the Urban Tree Canopy Dashboard which provides an interactive snapshot of the extent of tree canopy coverage across the Perth and Peel regions. The urban tree canopy is an essential part of creating healthy, liveable neighbourhoods, where more dense and mature tree canopies can support active travel along walking and cycling paths.

The Perth Metropolitan area has an average of 12% canopy cover from trees over 3m tall in street blocks. In 2018, the street blocks in the suburb of Shoalwater had 8% canopy cover from trees over 3m tall, resulting in 92% of the street block area without any canopy cover – as shown in Figure 32.

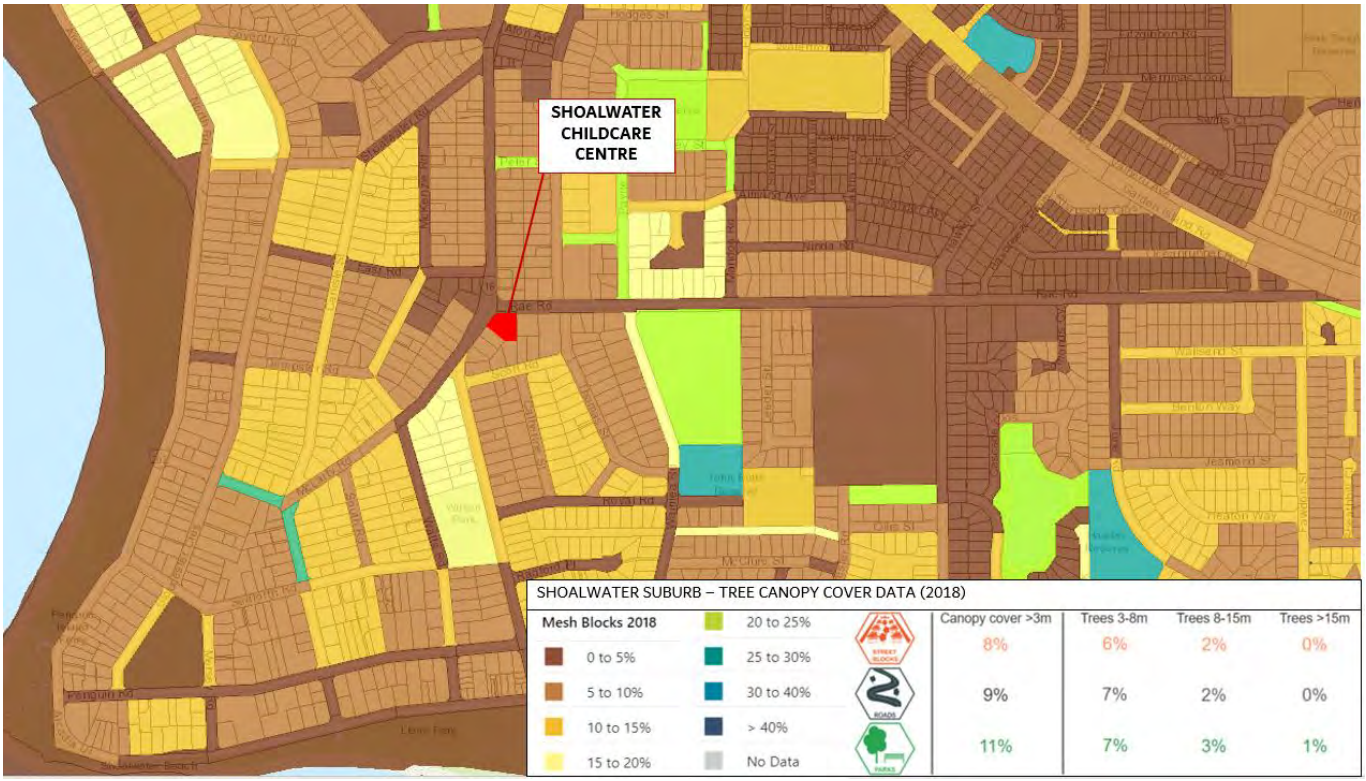



*Figure 32 Shoalwater urban tree canopy (source: Department of Planning, Lands and Heritage)*

The low street block tree canopy cover with trees greater than 3m high, is reflective of the style of development and build-out of the Shoalwater suburb. Google Streetview shows that tree planting has occurred recently along Rae Road and over time these will grow and mature and increase the tree canopy cover.

## 8.2 Development Proposal

Accessing the proposed development by walking would occur along the existing footpath located along the frontage of the subject site on Rae Road. The development proposal for the Shoalwater Childcare Centre includes a footpath which runs between the Childcare Centre entrance and the footpath on Rae Road.

Figure 33 shows the location of the proposed connecting footpath.

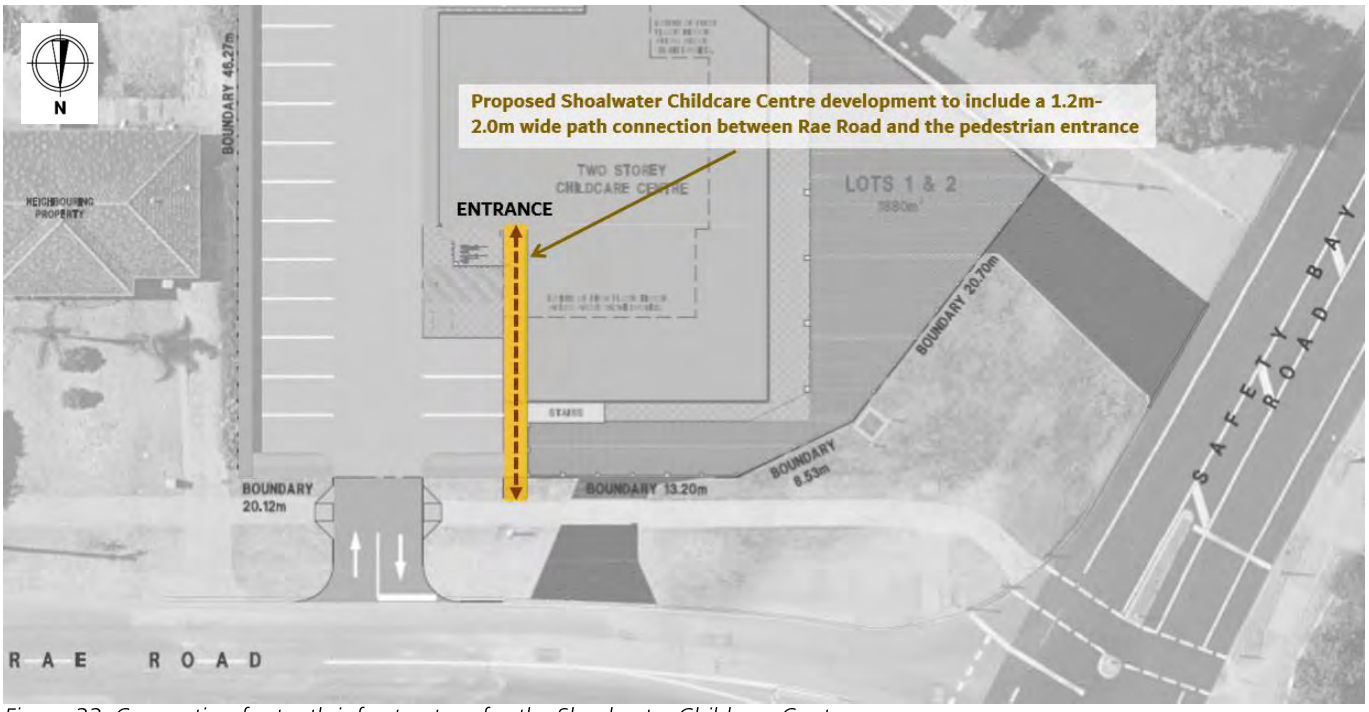



*Figure 33 Connecting footpath infrastructure for the Shoalwater Childcare Centre (base plan source: Hindley and Associates Building Designers, 2022)*

# 9. BICYCLE ACCESS AND AMENITY

## 9.1 Existing Cycle Network

The proposed Shoalwater Childcare Centre site has good bicycle accessibility via existing formal cycling routes. The existing cycle network in proximity of the proposed Childcare Centre is shown in Figure 34.

Safety Bay Road has 2m wide on-road painted cycle lanes and McLarty Avenue is identified as a local bike friendly route and Rae Road currently has an existing 1.8m shared path. Waimea Road to the east of the site has an existing 1.8m shared path and is also identified as a local bike friendly route.

It should be noted that the streets to the north of the site feature paths on at least one side of the street. With cycling permitted on footpaths (with cyclists required to travel safely along the footpath paying due care and attention to pedestrians) this ensures children can be biked to the Childcare Centre using off-road routes via the local footpath network from the north. Streets to the south of Rae Road do not have footpaths (with the exception of Waimea Road) and cyclists will be required to mix with traffic and travel on-road.

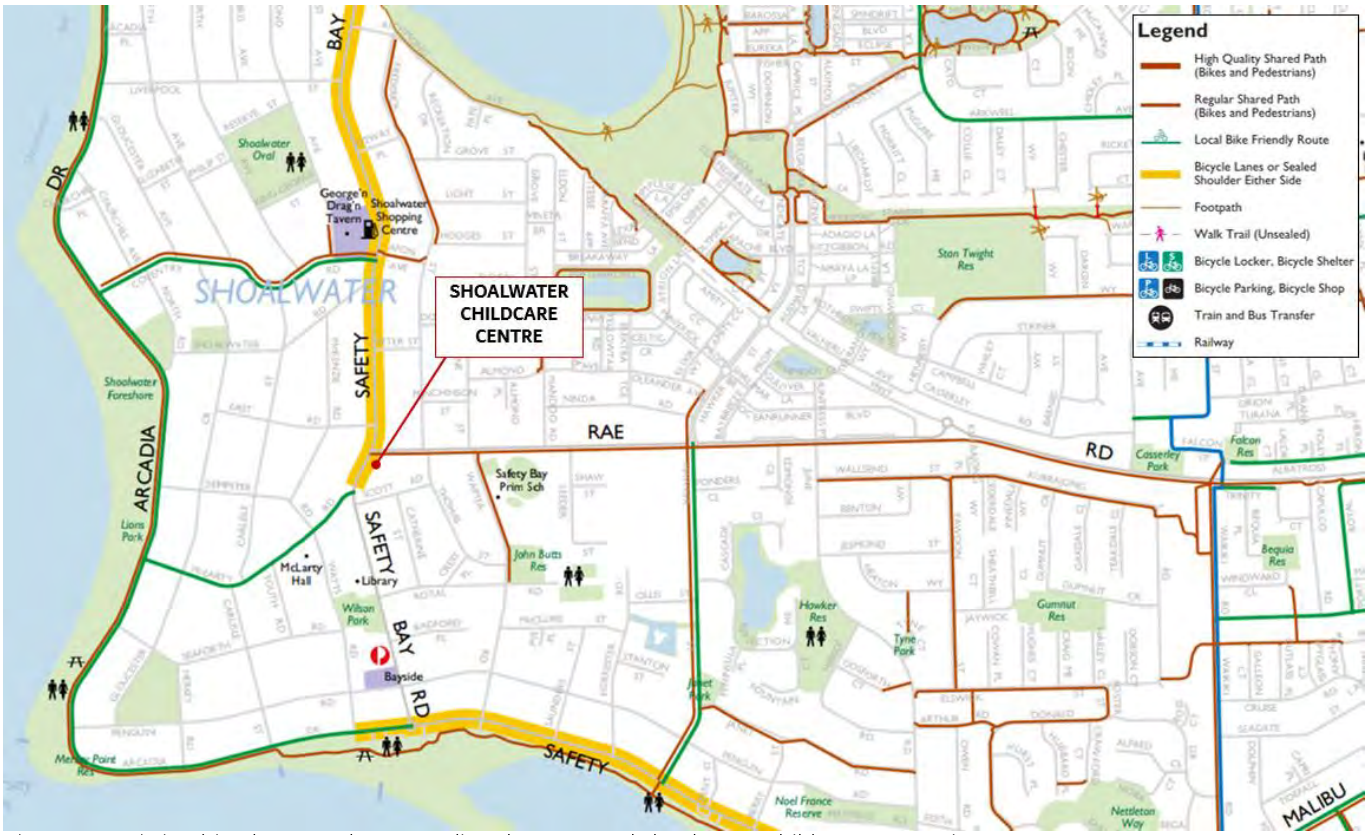



*Figure 34 Existing bicycle network surrounding the proposed Shoalwater Childcare Centre site (source: Department of Transport, Cockburn and Rockingham Map, 2016)*

A heatmap of cycle activity in the vicinity of the proposed Shoalwater Childcare Centre site is shown in Figure 35. The heatmap is produced by cyclists tracking their trips using the commercial product Strava.

The heatmap shows the highest levels of cycling in the local area along Arcadia Drive which follows the coast – as well as high use on Safety Bay Road. There is slightly less use along Rae Road with the lowest levels along the local access roads.


*Figure 35 Strava heatmap for cycling in vicinity of the proposed Shoalwater Childcare Centre site (source: Strava)*

## 9.2 Future Cycle Network

Between 2018-2020 the Department of Transport worked with 33 local governments across Perth and Peel on the Long Term Cycle Network (LTCN) project. The LTCN project has been a collaboration between State and local governments to agree on an aspirational network of bicycle routes that link parks, schools, community facilities and transport services, to make cycling a convenient and viable option for more people and more journeys.

The aim of the project was to develop an aspirational blueprint to ensure State and local governments work together towards the delivery of one continuous cycling network providing additional transport options, recreational opportunities and support for tourism and commercial activity.

In June 2020 the City of Rockingham Council endorsed their LTCN – from July 2020 the LTCN is eligible for the City to seek grant funding support from DoT to deliver bicycle infrastructure along the identified routes – as shown in Figure 36.

The identified LTCN (Figure 36) shows the long-term goal to create a Primary Route from Rockingham Station along Rae Road to Safety Bay Road and north to the foreshore, as well as travelling along the coastline. A Secondary Route is proposed along Hawke Street to the east of the site.

As part of the LTCN project, the City of Rockingham recently secured funding to construct a 7km shared path beginning at Rockingham Station and running along Rae Road, Garden Island Highway and Safety Bay Road towards the Esplanade on the Rockingham Foreshore, creating a crucial east-west link between the station and the foreshore. The progression of this path (and others identified in the LTCN) present the greatest opportunity to support cycling in the area.

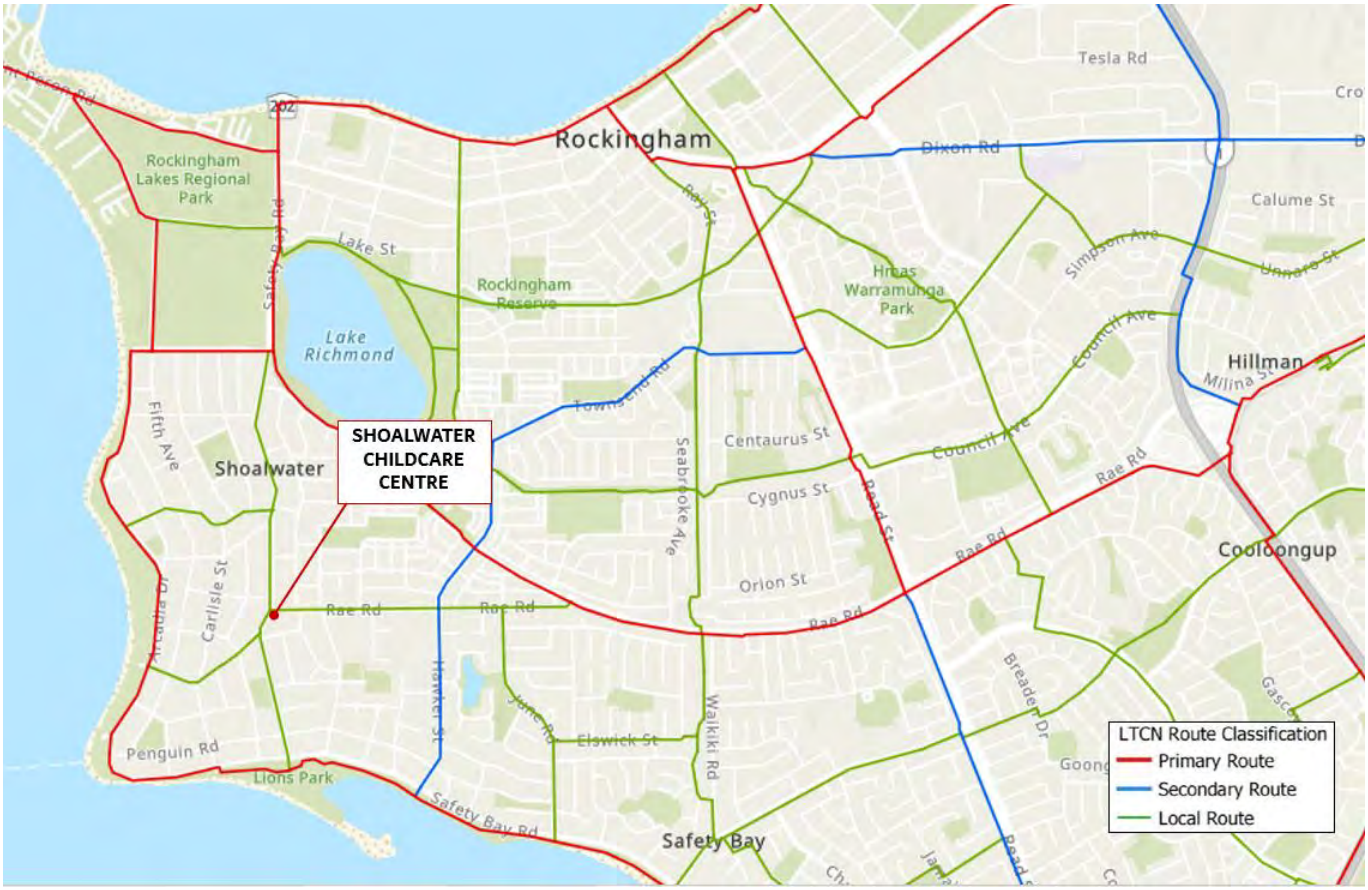



*Figure 36 Long Term Cycle Network in vicinity of the proposed Shoalwater Childcare Centre (source: Department of Transport)*

## 9.3 Development Proposal

As part of the development of the Shoalwater Childcare Centre, four bike parking racks will be provided at the entrance to the facility. These bike parking racks will be able to be used by staff or by parents travelling with their child.

The four bicycle parking racks will be provided at the entrance to the Childcare Centre within the fenced alcove meaning they will be secure across the day. The location of the bicycle parking spaces is shown in Figure 37.

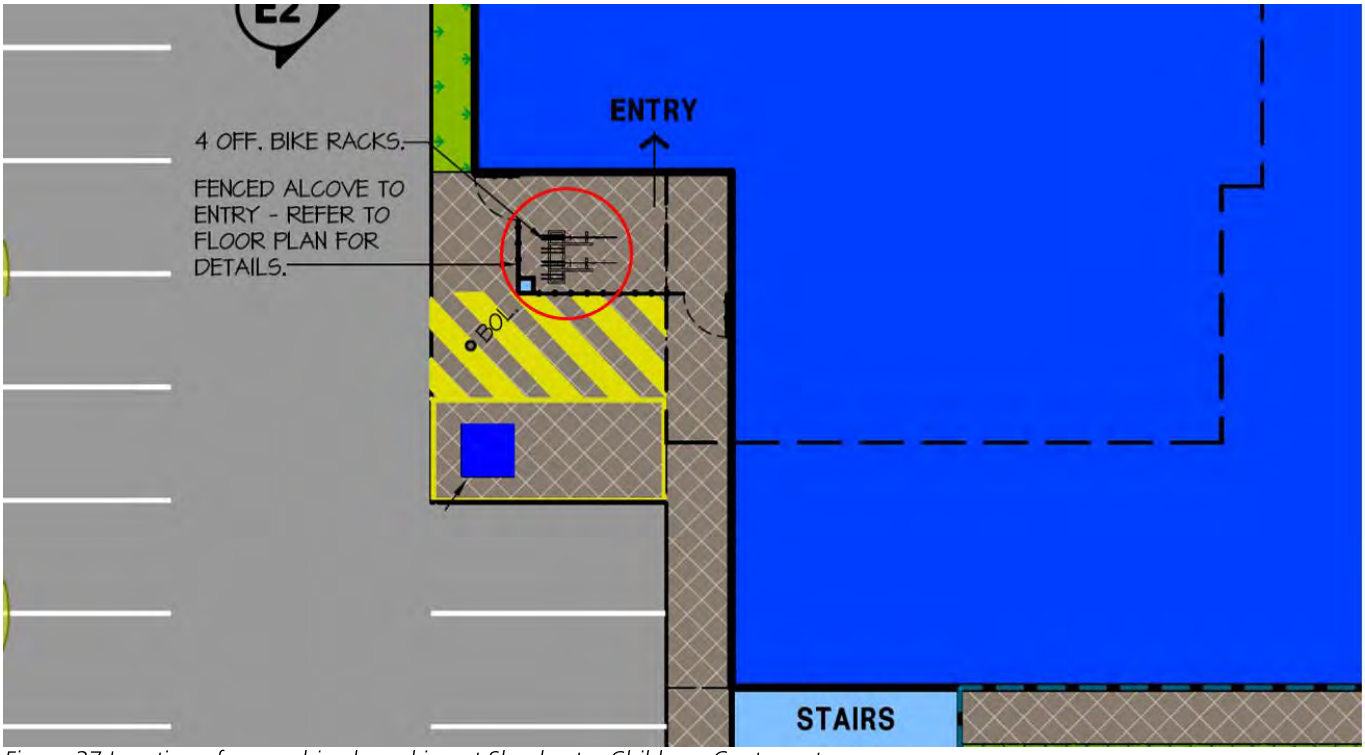



*Figure 37 Location of secure bicycle parking at Shoalwater Childcare Centre entrance (base plan source: Hindley and Associates Building Designers, 2022)*

# 10. SITE SPECIFIC ISSUES

There are no additional site specific issues that are required to be addressed as part of this TIS.

# 11. SAFETY ISSUES

## 11.1 Crash History

In the five-year period ending November 2020, there were 15 reported crashes along Safety Bay Road and Rae Road in proximity of the site of the proposed Shoalwater Childcare Centre:

- Rae Road x2 crashes
  - x1 intersection crash at Rae Road and Frederick Street – collision between two vehicles resulting in major vehicle property damage.
  - x1 intersection crash at Rae Road and Waimea Street – collision between two vehicles resulting in major vehicle property damage.
- Safety Bay Road x13 crashes
  - x3 intersection crashes at Rae Road and Safety Bay Road – collision between two vehicles with one resulting in minor vehicle property damage and two resulting in major vehicle property damage.
  - x1 intersection crash at McLarty Road and Safety Bay Road and Smirk Road – collision between vehicle and object resulting in hospital treatment.
  - x9 midblock crashes to the north and south of Rae Road – with one resulting in requiring medical attention and eight resulting in major vehicle property damage.

Figure 38 shows the recorded location of the reported crashes (blue dots) in relation to the proposed Shoalwater Childcare Centre site.

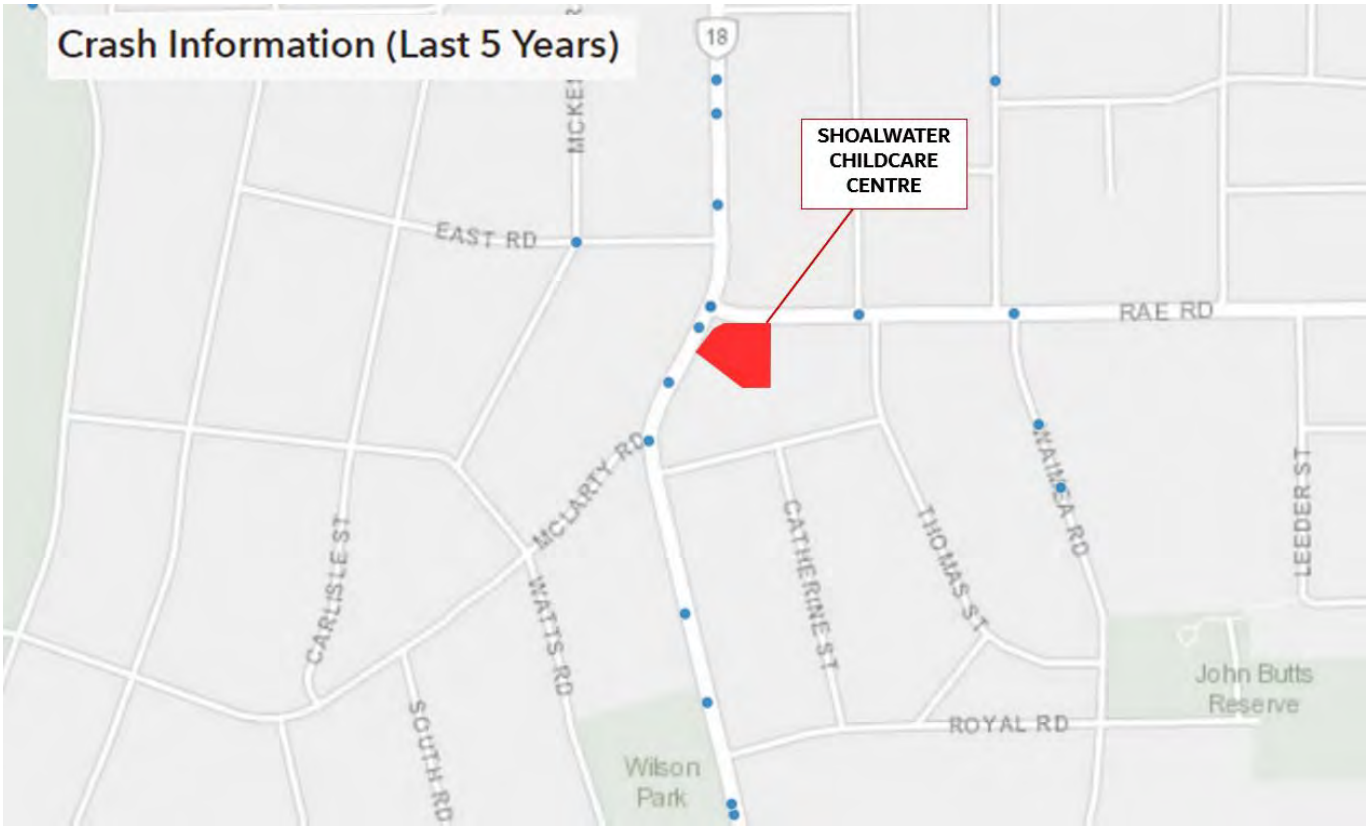



*Figure 38 Crash Summary for five-year period ending November 2020 in proximity to the proposed Shoalwater Childcare Centre site (source: Main Roads WA)*

# 12. SUMMARY

## 12.1 Development Proposals

This Transport Impact Statement (TIS) has been prepared by Flyt in support of the proposed development at Lots 1 and 2, No. 172 Safety Bay Road, Shoalwater for a childcare centre.

The proposed development can be summarised as comprising:

- Childcare Centre to accommodate 100 children
  - 8 children between the ages of 0-1 years
  - 12 children between the ages of 1-2 years
  - 20 children between the ages of 2-3 years
  - 60 children between the ages of 3-5 years
- Childcare Centre to be serviced under the following staff arrangements:
  - 15 educators (Monday-Friday, full-time)
  - Additional part-time educators covering staff breaks (Monday-Friday, 10am-3pm)
  - 1 chef (Monday-Friday, half day)
  - 1 centre area manager (visits site once or twice a week between 10am-3pm)

## 12.2 Vehicle Access and Parking

The proposed Shoalwater Childcare Centre is located at Lots 1 and 2, No. 172 Safety Bay Road Shoalwater.

The site has boundaries with Safety Bay Road to the west, Rae Road to the north, a restaurant and residential properties to the south and Safety Bay Primary School further east.

It is proposed that all vehicle access to the site would be via a crossover on Rae Road. The crossover would be located approximately 41m from the intersection with Safety Bay Road, which is the furthest possible position for the access point.

It is noted that the proposal will result in the net reduction of crossovers to the road network, as well as the establishment of a crossover to Rae Road which is further away from the Safety Bay Road intersection than the crossover for the existing site.

Under the City of Rockingham Town Planning Scheme No.2 the proposed Shoalwater Childcare Centre is required to have the following minimum off-street car parking bays:

- Staff parking = 15 bays required for 15 full-time staff
  = Additional part-time/occasional staff to utilise parent parking outside of peak drop-off/pick-up periods
- Parent parking = 13 bays required

  TOTAL PARKING = 28 bays required

The proposed Shoalwater Childcare Centre has a total of 28 on-site car parking bays. It is proposed that the on-site car parking bays are allocated as follows:

- Staff parking = 15 bays allocated for staff parking with 7 bays along the eastern boundary of the parking area and 8 bays to the south of the Childcare Centre building utilising four tandem bays.
- Parent parking = 13 bays allocated for parent pick-up/drop-off with 9 bays along the eastern boundary of the parking area and 4 bays to the north of the Childcare Centre building (including 1 ACROD bay and associated shared space adjacent to the entry to the Childcare Centre).

## 12.3 Provision for Service Vehicles

The proposed Shoalwater Childcare Centre's bin store is in the southwest corner of the on-site car park.

It is proposed that servicing of the site will be by private waste collection outside of the Childcare Centre's operating hours. As such, there will be no parked cars within the site's car park when the waste collection occurs.

The private waste contractor currently operates 8.0m long vehicles, to ensure the site is future proofed to accommodate slightly larger waste collection vehicles in the private waste contractor fleet changes – swept path analysis has been completed for both an 8.0m long vehicle and 8.8m long vehicle.

The swept path analysis shows that the site accommodates both 8.0m and 8.8m long vehicles entering and exiting the site in forward gear, with sufficient room to manoeuvre within the site to back-up to the bin store in the southwest corner of the on-site car park.

## 12.4 Traffic Impact

The proposed Shoalwater Childcare Centre it estimated to generate a maximum total of 82 vehicle trips to/from the site during the developments AM peak hour (7:30am-8:30am) and 74 vehicle trips to/from the site will occur during the development PM peak hour (4:30pm-5:30pm).

The Childcare Centre is unlikely to generate significant additional vehicle trips on the road network – many of the vehicle trips to drop-off and pick-up children from the Childcare Centre would be part of a linked trip already being made. The majority of linked trip will be part of the parents commute to their place of work and/or school drop-off/pick-up of older children.

The Childcare Centre will generate more vehicle movements during the developments AM peak hour (more concentrated child drop-off activity) as opposed to during the developments PM peak hour (more dispersed child pick-up activity).

The 12 parent parking bays on-site (excluding the 1 ACROD bay) would turnover approximately 4.8 times during the peak hour and accommodate approximately 57 vehicle movements. As such, the number of parent parking bays on-site would be sufficient to accommodate the expected peak hour vehicle trip generation.

The level of vehicle trips generated by the proposed Shoalwater Childcare Centre is focused on generation of vehicle trips associated with children drop-off and pick-up movements. Staff movements are generally outside of peak periods as the educators have to be on-site to cater for the arrival of children and they cannot leave the facility until certain ratios of educators to children are achieved. In addition, some staff are likely to use alternate forms of transport, such as car pooling, public transport or cycling.

Some drop-off and pick-up movements will be undertaken by foot or involve trips with multiple children being dropped-off or picked-up. In addition, not all movements will be made in the development AM or PM peak hour.

The majority of traffic movements generated by the site are expected to be a slight redistribution of existing trips on the network as part of a linked trip – primarily as part of a parents existing commute and/or school drop-off/pick-up of older children.

SIDRA Network modelling of the T- intersection between Safety Bay Road and Rae Road (and the traffic warden controlled school crossing of Safety Bay Road immediately to the south of Rae Road) with existing 2023 and projected 2033 volumes has shown that the forecast traffic volumes associated with the proposed Shoalwater Childcare Centre development can be accommodated by the existing road network.

## 12.5 Public Transport Access

The proposed Shoalwater Childcare Centre site is accessible by public transport – with Bus Route 551 providing direct access to the site and bus routes 552 and 553 located within a 700m walk.

From the entrance of the proposed Shoalwater Childcare Center, Bus Route 551 services can be accessed with a short 80m walk (approximately 1 minute walk time) to the bus stop on Safety Bay Road.

Bus Services

- Routes 551 operates between Watts Road and Rockingham Station. The bus route travels along McLarty Road to Safety Bay Road travelling past the subject site.
- Route 551 provides connections to residential catchments of Peron to the north and Safety Bay to the east as well as to Rockingham Centre. It also travels past Anzac Park, Rockingham Visitors Centre, the Rockingham Museum, Rockingham Montessori School, Rockingham Aquatic Centre and the Mike Barnett Sports Club.

## 12.6 Pedestrian Access

The area surrounding the Shoalwater Childcare Centre has an average level of pedestrian connectivity with footpaths on one side of Rae Road, Safety Bay Road, Frederick Street, Waimea Road and Payne Street only. People walking along all other streets will need to walk on-road.

The Walk Score walkability assessment tool considers the proposed Shoalwater Childcare Centre site to be "very-walkable" where most errands can be completed on foot. There are several destinations with a 15-minute walkable catchment from the site, including Lions Park and Shoalwater Foreshore, Shoalwater IGA, Safety Bay Primary School, Safety Bay Tennis Club, Safety Bay Health Foods Store and The Bay Patisserie, as well as a cluster of shops, cafes and the Post office at Watts Road.

Accessing the proposed development by walking would occur along the existing footpath located along the frontage of the subject site on Rae Road. The development proposal for the Shoalwater Childcare Centre includes a footpath which runs between the Childcare Centre entrance and the footpath on Rae Road.

## 12.7 Cycling Access

The proposed Shoalwater Childcare Centre site has good bicycle accessibility via existing formal cycling routes.

Safety Bay Road has 2m wide on-road painted cycle lanes, and McLarty Avenue is identified as a local bike friendly route and Rae Road currently has an existing 1.8m shared path. Waimea Road to the east of the site has an existing 1.8m shared path and is also identified as a local bike friendly route.

It should be noted that the streets to the north of the site feature paths on at least one side of the street. With cycling permitted on footpaths (with cyclists required to travel safely along the footpath paying due care and attention to pedestrians) this ensures children can be biked to the Childcare Centre using off-road routes via the local footpath network from the north. Streets to the south of Rae Road do not have footpaths (with the exception of Waimea Road) and cyclists will be required to mix with traffic and travel on-road.

As part of the development of the Shoalwater Childcare Centre, four bike parking racks will be provided at the entrance to the facility. These bike parking racks will be able to be used by staff or by parents travelling with their child. The four bicycle parking racks will be provided at the entrance to the Childcare Centre within the fenced alcove meaning they will be secure across the day.

# APPENDIX A – SIDRA OUTPUTS

# 2023 Movement Summaries

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd Base AM 1 (Site Folder: 2023 Base AM)]

## Network: N001 [2023 Base AM 1 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2023 volumes
AM Peak 1 6:30 - 7:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 552 | 8.0 | 552 | 8.0 | 0.331 | 0.1 | LOS A | 0.5 | 3.5 | 0.07 | 0.05 | 0.07 | 55.5 |
| 3 | R2 | 52 | 6.1 | 52 | 6.1 | 0.331 | 2.9 | LOS A | 0.5 | 3.5 | 0.07 | 0.05 | 0.07 | 44.4 |
| Approach | | 603 | 7.9 | 603 | 7.9 | 0.331 | 0.3 | NA | 0.5 | 3.5 | 0.07 | 0.05 | 0.07 | 53.4 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 45 | 9.3 | 45 | 9.3 | 0.284 | 6.3 | LOS A | 0.9 | 7.3 | 0.34 | 0.69 | 0.38 | 27.0 |
| 6 | R2 | 113 | 8.4 | 113 | 8.4 | 0.284 | 11.3 | LOS B | 0.9 | 7.3 | 0.34 | 0.69 | 0.38 | 28.0 |
| Approach | | 158 | 8.7 | 158 | 8.7 | 0.284 | 9.9 | LOS A | 0.9 | 7.3 | 0.34 | 0.69 | 0.38 | 27.8 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 68 | 6.2 | 68 | 6.2 | 0.118 | 3.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.25 | 0.00 | 43.9 |
| 8 | T1 | 87 | 13.3 | 87 | 13.3 | 0.118 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.25 | 0.00 | 40.7 |
| Approach | | 156 | 10.1 | 156 | 10.1 | 0.118 | 1.7 | NA | 0.0 | 0.0 | 0.00 | 0.25 | 0.00 | 42.9 |
| All Vehicles | | 917 | 8.4 | 917 | 8.4 | 0.331 | 2.2 | NA | 0.9 | 7.3 | 0.10 | 0.19 | 0.11 | 40.5 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd Base AM 2 (Site Folder: 2023 Base AM)]

## Network: N002 [2023 Base AM 2 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2023 volumes
AM Peak 2 7:30 - 8:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 253 | 7.9 | 253 | 7.9 | 0.202 | 0.5 | LOS A | 0.7 | 5.3 | 0.22 | 0.14 | 0.22 | 47.0 |
| 3 | R2 | 87 | 7.2 | 87 | 7.2 | 0.202 | 3.3 | LOS A | 0.7 | 5.3 | 0.22 | 0.14 | 0.22 | 41.0 |
| Approach | | 340 | 7.7 | 340 | 7.7 | 0.202 | 1.2 | NA | 0.7 | 5.3 | 0.22 | 0.14 | 0.22 | 44.4 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 59 | 7.1 | 59 | 7.1 | 0.228 | 6.3 | LOS A | 0.6 | 4.4 | 0.37 | 0.68 | 0.37 | 30.8 |
| 6 | R2 | 81 | 7.8 | 81 | 7.8 | 0.228 | 8.7 | LOS A | 0.6 | 4.4 | 0.37 | 0.68 | 0.37 | 30.9 |
| Approach | | 140 | 7.5 | 140 | 7.5 | 0.228 | 7.7 | LOS A | 0.6 | 4.4 | 0.37 | 0.68 | 0.37 | 30.8 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 77 | 5.5 | 77 | 5.5 | 0.143 | 3.9 | LOS A | 0.9 | 7.2 | 0.00 | 0.18 | 0.00 | 45.6 |
| 8 | T1 | 173 | 12.8 | 173 | 12.8 | 0.143 | 0.0 | LOS A | 0.9 | 7.2 | 0.00 | 0.18 | 0.00 | 44.8 |
| Approach | | 249 | 10.5 | 249 | 10.5 | 0.143 | 1.2 | NA | 0.9 | 7.2 | 0.00 | 0.18 | 0.00 | 45.3 |
| All Vehicles | | 729 | 8.7 | 729 | 8.7 | 0.228 | 2.4 | NA | 0.9 | 7.2 | 0.18 | 0.26 | 0.18 | 39.6 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd Base AM 3 (Site Folder: 2023 Base AM)]

## Network: N003 [2023 Base AM 3 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2023 volumes
AM Peak 3 8:30 - 9:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 245 | 8.2 | 245 | 8.2 | 0.199 | 0.6 | LOS A | 0.7 | 5.3 | 0.24 | 0.15 | 0.24 | 46.0 |
| 3 | R2 | 84 | 7.5 | 84 | 7.5 | 0.199 | 3.5 | LOS A | 0.7 | 5.3 | 0.24 | 0.15 | 0.24 | 40.5 |
| Approach | | 329 | 8.0 | 329 | 8.0 | 0.199 | 1.3 | NA | 0.7 | 5.3 | 0.24 | 0.15 | 0.24 | 43.6 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 112 | 8.5 | 112 | 8.5 | 0.413 | 7.2 | LOS A | 1.4 | 10.9 | 0.41 | 0.73 | 0.51 | 28.9 |
| 6 | R2 | 133 | 8.7 | 133 | 8.7 | 0.413 | 10.1 | LOS B | 1.4 | 10.9 | 0.41 | 0.73 | 0.51 | 29.4 |
| Approach | | 244 | 8.6 | 244 | 8.6 | 0.413 | 8.7 | LOS A | 1.4 | 10.9 | 0.41 | 0.73 | 0.51 | 29.2 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 106 | 6.9 | 106 | 6.9 | 0.167 | 3.9 | LOS A | 1.4 | 11.4 | 0.00 | 0.21 | 0.00 | 44.6 |
| 8 | T1 | 184 | 12.6 | 184 | 12.6 | 0.167 | 0.0 | LOS A | 1.4 | 11.4 | 0.00 | 0.21 | 0.00 | 43.0 |
| Approach | | 291 | 10.5 | 291 | 10.5 | 0.167 | 1.4 | NA | 1.4 | 11.4 | 0.00 | 0.21 | 0.00 | 44.0 |
| All Vehicles | | 864 | 9.0 | 864 | 9.0 | 0.413 | 3.4 | NA | 1.4 | 11.4 | 0.21 | 0.33 | 0.24 | 36.6 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd Opening AM 1 (Site Folder: 2023 Childcare Opening AM)]

## Network: N004 [2023 Opening AM 1 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2023 base + childcare volumes
AM Peak 1 6:30 - 7:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 552 | 8.0 | 552 | 8.0 | 0.338 | 0.1 | LOS A | 0.6 | 4.2 | 0.08 | 0.05 | 0.08 | 54.7 |
| 3 | R2 | 61 | 5.2 | 61 | 5.2 | 0.338 | 3.0 | LOS A | 0.6 | 4.2 | 0.08 | 0.05 | 0.08 | 44.4 |
| Approach | | 613 | 7.7 | 613 | 7.7 | 0.338 | 0.4 | NA | 0.6 | 4.2 | 0.08 | 0.05 | 0.08 | 52.5 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 49 | 8.5 | 49 | 8.5 | 0.320 | 6.5 | LOS A | 1.1 | 8.4 | 0.35 | 0.70 | 0.41 | 26.5 |
| 6 | R2 | 123 | 7.7 | 123 | 7.7 | 0.320 | 11.7 | LOS B | 1.1 | 8.4 | 0.35 | 0.70 | 0.41 | 27.6 |
| Approach | | 173 | 7.9 | 173 | 7.9 | 0.320 | 10.2 | LOS B | 1.1 | 8.4 | 0.35 | 0.70 | 0.41 | 27.3 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 81 | 5.2 | 81 | 5.2 | 0.128 | 3.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.27 | 0.00 | 43.6 |
| 8 | T1 | 87 | 13.3 | 87 | 13.3 | 0.128 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.27 | 0.00 | 39.5 |
| Approach | | 168 | 9.4 | 168 | 9.4 | 0.128 | 1.9 | NA | 0.0 | 0.0 | 0.00 | 0.27 | 0.00 | 42.4 |
| All Vehicles | | 954 | 8.1 | 954 | 8.1 | 0.338 | 2.4 | NA | 1.1 | 8.4 | 0.12 | 0.21 | 0.13 | 39.6 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd Opening AM 2 (Site Folder: 2023 Childcare Opening AM)]

## Network: N005 [2023 Opening AM 2 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2023 base + childcare volumes
AM Peak 2 7:30 - 8:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 253 | 7.9 | 253 | 7.9 | 0.215 | 0.6 | LOS A | 0.8 | 6.3 | 0.26 | 0.17 | 0.26 | 45.3 |
| 3 | R2 | 105 | 6.0 | 105 | 6.0 | 0.215 | 3.3 | LOS A | 0.8 | 6.3 | 0.26 | 0.17 | 0.26 | 40.7 |
| Approach | | 358 | 7.4 | 358 | 7.4 | 0.215 | 1.4 | NA | 0.8 | 6.3 | 0.26 | 0.17 | 0.26 | 43.1 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 73 | 5.8 | 73 | 5.8 | 0.282 | 6.3 | LOS A | 0.8 | 5.6 | 0.38 | 0.68 | 0.39 | 30.4 |
| 6 | R2 | 99 | 6.4 | 99 | 6.4 | 0.282 | 9.0 | LOS A | 0.8 | 5.6 | 0.38 | 0.68 | 0.39 | 30.6 |
| Approach | | 172 | 6.1 | 172 | 6.1 | 0.282 | 7.9 | LOS A | 0.8 | 5.6 | 0.38 | 0.68 | 0.39 | 30.5 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 93 | 4.5 | 93 | 4.5 | 0.152 | 3.9 | LOS A | 1.0 | 7.9 | 0.00 | 0.20 | 0.00 | 45.4 |
| 8 | T1 | 173 | 12.8 | 173 | 12.8 | 0.152 | 0.0 | LOS A | 1.0 | 7.9 | 0.00 | 0.20 | 0.00 | 43.3 |
| Approach | | 265 | 9.9 | 265 | 9.9 | 0.152 | 1.4 | NA | 1.0 | 7.9 | 0.00 | 0.20 | 0.00 | 44.5 |
| All Vehicles | | 795 | 7.9 | 795 | 7.9 | 0.282 | 2.8 | NA | 1.0 | 7.9 | 0.20 | 0.29 | 0.20 | 38.5 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd Opening AM 3 (Site Folder: 2023 Childcare Opening AM)]

## Network: N006 [2023 Opening AM 3 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2023 base + childcare volumes
AM Peak 3 8:30 - 9:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 245 | 8.2 | 245 | 8.2 | 0.204 | 0.6 | LOS A | 0.7 | 5.7 | 0.26 | 0.15 | 0.26 | 45.3 |
| 3 | R2 | 91 | 7.0 | 91 | 7.0 | 0.204 | 3.5 | LOS A | 0.7 | 5.7 | 0.26 | 0.15 | 0.26 | 40.4 |
| Approach | | 336 | 7.8 | 336 | 7.8 | 0.204 | 1.4 | NA | 0.7 | 5.7 | 0.26 | 0.15 | 0.26 | 43.1 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 117 | 8.1 | 117 | 8.1 | 0.434 | 7.3 | LOS A | 1.5 | 11.8 | 0.41 | 0.74 | 0.53 | 28.5 |
| 6 | R2 | 139 | 8.3 | 139 | 8.3 | 0.434 | 10.3 | LOS B | 1.5 | 11.8 | 0.41 | 0.74 | 0.53 | 29.2 |
| Approach | | 256 | 8.2 | 256 | 8.2 | 0.434 | 8.9 | LOS A | 1.5 | 11.8 | 0.41 | 0.74 | 0.53 | 28.9 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 114 | 6.5 | 114 | 6.5 | 0.171 | 3.9 | LOS A | 1.5 | 11.6 | 0.00 | 0.22 | 0.00 | 44.5 |
| 8 | T1 | 184 | 12.6 | 184 | 12.6 | 0.171 | 0.0 | LOS A | 1.5 | 11.6 | 0.00 | 0.22 | 0.00 | 42.5 |
| Approach | | 298 | 10.2 | 298 | 10.2 | 0.171 | 1.5 | NA | 1.5 | 11.6 | 0.00 | 0.22 | 0.00 | 43.8 |
| All Vehicles | | 889 | 8.8 | 889 | 8.8 | 0.434 | 3.6 | NA | 1.5 | 11.8 | 0.22 | 0.34 | 0.25 | 36.2 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd Base PM 1 (Site Folder: 2023 Base PM )]

## Network: N013 [2023 Base PM 1 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2023 volumes
PM Peak 1 15:30 - 16:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 145 | 6.5 | 145 | 6.5 | 0.165 | 2.2 | LOS A | 0.8 | 6.0 | 0.45 | 0.25 | 0.45 | 33.5 |
| 3 | R2 | 75 | 2.8 | 75 | 2.8 | 0.165 | 5.6 | LOS A | 0.8 | 6.0 | 0.45 | 0.25 | 0.45 | 35.8 |
| Approach | | 220 | 5.3 | 220 | 5.3 | 0.165 | 3.4 | NA | 0.8 | 6.0 | 0.45 | 0.25 | 0.45 | 34.7 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 104 | 6.1 | 104 | 6.1 | 0.486 | 9.8 | LOS A | 1.5 | 11.0 | 0.59 | 0.92 | 0.87 | 24.8 |
| 6 | R2 | 114 | 5.6 | 114 | 5.6 | 0.486 | 13.1 | LOS B | 1.5 | 11.0 | 0.59 | 0.92 | 0.87 | 26.3 |
| Approach | | 218 | 5.8 | 218 | 5.8 | 0.486 | 11.5 | LOS B | 1.5 | 11.0 | 0.59 | 0.92 | 0.87 | 25.6 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 151 | 3.5 | 151 | 3.5 | 0.349 | 3.9 | LOS A | 6.8 | 51.6 | 0.00 | 0.14 | 0.00 | 47.1 |
| 8 | T1 | 483 | 8.5 | 483 | 8.5 | 0.349 | 0.0 | LOS A | 6.8 | 51.6 | 0.00 | 0.14 | 0.00 | 47.5 |
| Approach | | 634 | 7.3 | 634 | 7.3 | 0.349 | 0.9 | NA | 6.8 | 51.6 | 0.00 | 0.14 | 0.00 | 47.3 |
| All Vehicles | | 1072 | 6.6 | 1072 | 6.6 | 0.486 | 3.6 | NA | 6.8 | 51.6 | 0.21 | 0.32 | 0.27 | 35.7 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd Base PM 2 (Site Folder: 2023 Base PM )]

## Network: N014 [2023 Base PM 2 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2023 volumes
PM Peak 2 16:30 - 17:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 161 | 7.2 | 161 | 7.2 | 0.146 | 0.8 | LOS A | 0.6 | 4.3 | 0.31 | 0.19 | 0.31 | 42.5 |
| 3 | R2 | 73 | 2.9 | 73 | 2.9 | 0.146 | 3.8 | LOS A | 0.6 | 4.3 | 0.31 | 0.19 | 0.31 | 40.4 |
| Approach | | 234 | 5.9 | 234 | 5.9 | 0.146 | 1.8 | NA | 0.6 | 4.3 | 0.31 | 0.19 | 0.31 | 41.5 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 122 | 5.2 | 122 | 5.2 | 0.394 | 7.4 | LOS A | 1.2 | 9.2 | 0.45 | 0.75 | 0.55 | 29.4 |
| 6 | R2 | 112 | 5.7 | 112 | 5.7 | 0.394 | 9.5 | LOS A | 1.2 | 9.2 | 0.45 | 0.75 | 0.55 | 29.9 |
| Approach | | 234 | 5.4 | 234 | 5.4 | 0.394 | 8.4 | LOS A | 1.2 | 9.2 | 0.45 | 0.75 | 0.55 | 29.7 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 99 | 3.2 | 99 | 3.2 | 0.209 | 3.9 | LOS A | 2.9 | 21.6 | 0.00 | 0.15 | 0.00 | 46.9 |
| 8 | T1 | 281 | 8.2 | 281 | 8.2 | 0.209 | 0.0 | LOS A | 2.9 | 21.6 | 0.00 | 0.15 | 0.00 | 46.7 |
| Approach | | 380 | 6.9 | 380 | 6.9 | 0.209 | 1.0 | NA | 2.9 | 21.6 | 0.00 | 0.15 | 0.00 | 46.8 |
| All Vehicles | | 847 | 6.2 | 847 | 6.2 | 0.394 | 3.3 | NA | 2.9 | 21.6 | 0.21 | 0.33 | 0.24 | 37.3 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd Base PM 3 (Site Folder: 2023 Base PM )]

## Network: N015 [2023 Base PM 3 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2023 volumes
PM Peak 3 17:30 - 18:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 175 | 7.2 | 175 | 7.2 | 0.131 | 0.4 | LOS A | 0.4 | 2.9 | 0.20 | 0.12 | 0.20 | 48.2 |
| 3 | R2 | 49 | 4.3 | 49 | 4.3 | 0.131 | 3.3 | LOS A | 0.4 | 2.9 | 0.20 | 0.12 | 0.20 | 42.4 |
| Approach | | 224 | 6.6 | 224 | 6.6 | 0.131 | 1.0 | NA | 0.4 | 2.9 | 0.20 | 0.12 | 0.20 | 45.9 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 74 | 5.7 | 74 | 5.7 | 0.274 | 6.4 | LOS A | 0.7 | 5.5 | 0.38 | 0.68 | 0.38 | 31.4 |
| 6 | R2 | 112 | 5.7 | 112 | 5.7 | 0.274 | 8.0 | LOS A | 0.7 | 5.5 | 0.38 | 0.68 | 0.38 | 31.4 |
| Approach | | 185 | 5.7 | 185 | 5.7 | 0.274 | 7.4 | LOS A | 0.7 | 5.5 | 0.38 | 0.68 | 0.38 | 31.4 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 94 | 3.4 | 94 | 3.4 | 0.159 | 3.9 | LOS A | 1.2 | 9.1 | 0.00 | 0.19 | 0.00 | 46.1 |
| 8 | T1 | 195 | 8.1 | 195 | 8.1 | 0.159 | 0.0 | LOS A | 1.2 | 9.1 | 0.00 | 0.19 | 0.00 | 44.4 |
| Approach | | 288 | 6.6 | 288 | 6.6 | 0.159 | 1.3 | NA | 1.2 | 9.1 | 0.00 | 0.19 | 0.00 | 45.4 |
| All Vehicles | | 698 | 6.3 | 698 | 6.3 | 0.274 | 2.8 | NA | 1.2 | 9.1 | 0.16 | 0.30 | 0.16 | 38.9 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd Opening PM 1 (Site Folder: 2023 Childcare Opening PM )]

## Network: N016 [2023 Opening PM 1 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2023 base + childcare volumes
PM Peak 1 15:30 - 16:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 145 | 6.5 | 145 | 6.5 | 0.172 | 2.4 | LOS A | 0.9 | 6.4 | 0.47 | 0.26 | 0.47 | 32.7 |
| 3 | R2 | 80 | 2.6 | 80 | 2.6 | 0.172 | 5.7 | LOS A | 0.9 | 6.4 | 0.47 | 0.26 | 0.47 | 35.4 |
| Approach | | 225 | 5.1 | 225 | 5.1 | 0.172 | 3.6 | NA | 0.9 | 6.4 | 0.47 | 0.26 | 0.47 | 34.1 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 114 | 5.6 | 114 | 5.6 | 0.531 | 10.2 | LOS B | 1.6 | 12.0 | 0.60 | 0.95 | 0.94 | 24.1 |
| 6 | R2 | 123 | 5.1 | 123 | 5.1 | 0.531 | 13.7 | LOS B | 1.6 | 12.0 | 0.60 | 0.95 | 0.94 | 25.8 |
| Approach | | 237 | 5.3 | 237 | 5.3 | 0.531 | 12.0 | LOS B | 1.6 | 12.0 | 0.60 | 0.95 | 0.94 | 25.1 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 160 | 3.3 | 160 | 3.3 | 0.354 | 3.9 | LOS A | 6.9 | 52.2 | 0.00 | 0.14 | 0.00 | 47.0 |
| 8 | T1 | 483 | 8.5 | 483 | 8.5 | 0.354 | 0.0 | LOS A | 6.9 | 52.2 | 0.00 | 0.14 | 0.00 | 47.1 |
| Approach | | 643 | 7.2 | 643 | 7.2 | 0.354 | 1.0 | NA | 6.9 | 52.2 | 0.00 | 0.14 | 0.00 | 47.0 |
| All Vehicles | | 1105 | 6.4 | 1105 | 6.4 | 0.531 | 3.9 | NA | 6.9 | 52.2 | 0.23 | 0.34 | 0.30 | 34.9 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd Opening PM 2 (Site Folder: 2023 Childcare Opening PM )]

## Network: N017 [2023 Opening PM 2 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2023 base + childcare volumes
PM Peak 2 16:30 - 17:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 161 | 7.2 | 161 | 7.2 | 0.157 | 1.0 | LOS A | 0.7 | 5.0 | 0.34 | 0.21 | 0.34 | 40.9 |
| 3 | R2 | 84 | 2.5 | 84 | 2.5 | 0.157 | 3.9 | LOS A | 0.7 | 5.0 | 0.34 | 0.21 | 0.34 | 39.8 |
| Approach | | 245 | 5.6 | 245 | 5.6 | 0.157 | 2.0 | NA | 0.7 | 5.0 | 0.34 | 0.21 | 0.34 | 40.3 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 138 | 4.6 | 138 | 4.6 | 0.449 | 7.7 | LOS A | 1.4 | 10.7 | 0.47 | 0.78 | 0.61 | 28.6 |
| 6 | R2 | 126 | 5.0 | 126 | 5.0 | 0.449 | 10.1 | LOS B | 1.4 | 10.7 | 0.47 | 0.78 | 0.61 | 29.4 |
| Approach | | 264 | 4.8 | 264 | 4.8 | 0.449 | 8.9 | LOS A | 1.4 | 10.7 | 0.47 | 0.78 | 0.61 | 29.0 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 116 | 2.7 | 116 | 2.7 | 0.218 | 3.9 | LOS A | 3.0 | 22.2 | 0.00 | 0.17 | 0.00 | 46.7 |
| 8 | T1 | 281 | 8.2 | 281 | 8.2 | 0.218 | 0.0 | LOS A | 3.0 | 22.2 | 0.00 | 0.17 | 0.00 | 45.5 |
| Approach | | 397 | 6.6 | 397 | 6.6 | 0.218 | 1.1 | NA | 3.0 | 22.2 | 0.00 | 0.17 | 0.00 | 46.1 |
| All Vehicles | | 906 | 5.8 | 906 | 5.8 | 0.449 | 3.6 | NA | 3.0 | 22.2 | 0.23 | 0.36 | 0.27 | 36.3 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd Opening PM 3 (Site Folder: 2023 Childcare Opening PM )]

## Network: N018 [2023 Opening PM 3 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2023 base + childcare volumes
PM Peak 3 17:30 - 18:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 175 | 7.2 | 175 | 7.2 | 0.134 | 0.4 | LOS A | 0.4 | 3.1 | 0.21 | 0.13 | 0.21 | 47.5 |
| 3 | R2 | 54 | 3.9 | 54 | 3.9 | 0.134 | 3.3 | LOS A | 0.4 | 3.1 | 0.21 | 0.13 | 0.21 | 42.2 |
| Approach | | 228 | 6.5 | 228 | 6.5 | 0.134 | 1.1 | NA | 0.4 | 3.1 | 0.21 | 0.13 | 0.21 | 45.3 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 82 | 5.1 | 82 | 5.1 | 0.306 | 6.4 | LOS A | 0.9 | 6.4 | 0.39 | 0.69 | 0.40 | 31.2 |
| 6 | R2 | 124 | 5.1 | 124 | 5.1 | 0.306 | 8.2 | LOS A | 0.9 | 6.4 | 0.39 | 0.69 | 0.40 | 31.3 |
| Approach | | 206 | 5.1 | 206 | 5.1 | 0.306 | 7.5 | LOS A | 0.9 | 6.4 | 0.39 | 0.69 | 0.40 | 31.2 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 101 | 3.1 | 101 | 3.1 | 0.163 | 3.9 | LOS A | 1.3 | 9.5 | 0.00 | 0.20 | 0.00 | 45.9 |
| 8 | T1 | 195 | 8.1 | 195 | 8.1 | 0.163 | 0.0 | LOS A | 1.3 | 9.5 | 0.00 | 0.20 | 0.00 | 43.8 |
| Approach | | 296 | 6.4 | 296 | 6.4 | 0.163 | 1.3 | NA | 1.3 | 9.5 | 0.00 | 0.20 | 0.00 | 45.1 |
| All Vehicles | | 731 | 6.1 | 731 | 6.1 | 0.306 | 3.0 | NA | 1.3 | 9.5 | 0.18 | 0.31 | 0.18 | 38.3 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# 2033 Movement Summaries

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd 2033 Base AM 1 (Site Folder: 2033 Base AM)]

## Network: N007 [2033 Base AM 1 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2033 volumes
AM Peak 1 6:30 - 7:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 606 | 8.0 | 606 | 8.0 | 0.366 | 0.1 | LOS A | 0.5 | 4.2 | 0.08 | 0.05 | 0.08 | 55.2 |
| 3 | R2 | 57 | 7.4 | 57 | 7.4 | 0.366 | 3.1 | LOS A | 0.5 | 4.2 | 0.08 | 0.05 | 0.08 | 43.8 |
| Approach | | 663 | 7.9 | 663 | 7.9 | 0.366 | 0.4 | NA | 0.5 | 4.2 | 0.08 | 0.05 | 0.08 | 53.0 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 49 | 8.5 | 49 | 8.5 | 0.372 | 7.0 | LOS A | 1.3 | 9.7 | 0.38 | 0.73 | 0.49 | 24.9 |
| 6 | R2 | 124 | 8.5 | 124 | 8.5 | 0.372 | 13.1 | LOS B | 1.3 | 9.7 | 0.38 | 0.73 | 0.49 | 26.3 |
| Approach | | 174 | 8.5 | 174 | 8.5 | 0.372 | 11.4 | LOS B | 1.3 | 9.7 | 0.38 | 0.73 | 0.49 | 26.0 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 76 | 5.6 | 76 | 5.6 | 0.147 | 3.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.25 | 0.00 | 44.0 |
| 8 | T1 | 96 | 13.2 | 96 | 13.2 | 0.147 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.25 | 0.00 | 40.6 |
| Approach | | 172 | 9.8 | 172 | 9.8 | 0.147 | 1.7 | NA | 0.0 | 0.0 | 0.00 | 0.25 | 0.00 | 42.9 |
| All Vehicles | | 1008 | 8.4 | 1008 | 8.4 | 0.372 | 2.5 | NA | 1.3 | 9.7 | 0.12 | 0.20 | 0.13 | 39.3 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.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Project: C:\Users\Claire\Dropbox (Flyt Pty Ltd)\Flyt Pty Ltd Team Folder\Projects\81113-729 - Shoalwater Childcare Centre\3_Project Docs\Modelling\Computer Models\Sidra\Shoalwater Childcare.sip9

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd 2033 Base AM 2 (Site Folder: 2033 Base AM)]

## Network: N008 [2033 Base AM 2 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2033 volumes
AM Peak 2 7:30 - 8:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 278 | 7.6 | 278 | 7.6 | 0.223 | 0.5 | LOS A | 0.8 | 6.0 | 0.24 | 0.14 | 0.24 | 46.3 |
| 3 | R2 | 96 | 6.6 | 96 | 6.6 | 0.223 | 3.4 | LOS A | 0.8 | 6.0 | 0.24 | 0.14 | 0.24 | 40.9 |
| Approach | | 374 | 7.3 | 374 | 7.3 | 0.223 | 1.3 | NA | 0.8 | 6.0 | 0.24 | 0.14 | 0.24 | 43.9 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 65 | 8.1 | 65 | 8.1 | 0.267 | 6.4 | LOS A | 0.7 | 5.3 | 0.40 | 0.69 | 0.40 | 30.0 |
| 6 | R2 | 89 | 8.2 | 89 | 8.2 | 0.267 | 9.3 | LOS A | 0.7 | 5.3 | 0.40 | 0.69 | 0.40 | 30.3 |
| Approach | | 155 | 8.2 | 155 | 8.2 | 0.267 | 8.1 | LOS A | 0.7 | 5.3 | 0.40 | 0.69 | 0.40 | 30.2 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 84 | 6.3 | 84 | 6.3 | 0.157 | 3.9 | LOS A | 1.2 | 9.4 | 0.00 | 0.18 | 0.00 | 45.5 |
| 8 | T1 | 189 | 12.8 | 189 | 12.8 | 0.157 | 0.0 | LOS A | 1.2 | 9.4 | 0.00 | 0.18 | 0.00 | 44.8 |
| Approach | | 274 | 10.8 | 274 | 10.8 | 0.157 | 1.2 | NA | 1.2 | 9.4 | 0.00 | 0.18 | 0.00 | 45.2 |
| All Vehicles | | 802 | 8.7 | 802 | 8.7 | 0.267 | 2.6 | NA | 1.2 | 9.4 | 0.19 | 0.26 | 0.19 | 39.1 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd 2033 Base AM 3 (Site Folder: 2033 Base AM)]

## Network: N009 [2033 Base AM 3 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2033 volumes
AM Peak 3 8:30 - 9:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 269 | 7.8 | 269 | 7.8 | 0.220 | 0.7 | LOS A | 0.8 | 6.2 | 0.26 | 0.15 | 0.26 | 44.9 |
| 3 | R2 | 93 | 6.8 | 93 | 6.8 | 0.220 | 3.7 | LOS A | 0.8 | 6.2 | 0.26 | 0.15 | 0.26 | 40.3 |
| Approach | | 362 | 7.6 | 362 | 7.6 | 0.220 | 1.4 | NA | 0.8 | 6.2 | 0.26 | 0.15 | 0.26 | 42.9 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 123 | 8.5 | 123 | 8.5 | 0.482 | 7.8 | LOS A | 1.8 | 14.1 | 0.45 | 0.77 | 0.62 | 27.3 |
| 6 | R2 | 146 | 8.6 | 146 | 8.6 | 0.482 | 11.3 | LOS B | 1.8 | 14.1 | 0.45 | 0.77 | 0.62 | 28.2 |
| Approach | | 269 | 8.6 | 269 | 8.6 | 0.482 | 9.7 | LOS A | 1.8 | 14.1 | 0.45 | 0.77 | 0.62 | 27.9 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 117 | 7.2 | 117 | 7.2 | 0.186 | 3.9 | LOS A | 1.8 | 14.0 | 0.00 | 0.21 | 0.00 | 44.5 |
| 8 | T1 | 203 | 13.5 | 203 | 13.5 | 0.186 | 0.0 | LOS A | 1.8 | 14.0 | 0.00 | 0.21 | 0.00 | 42.9 |
| Approach | | 320 | 11.2 | 320 | 11.2 | 0.186 | 1.4 | NA | 1.8 | 14.0 | 0.00 | 0.21 | 0.00 | 43.9 |
| All Vehicles | | 952 | 9.1 | 952 | 9.1 | 0.482 | 3.8 | NA | 1.8 | 14.1 | 0.23 | 0.35 | 0.28 | 35.6 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd 10 Yr Post Opening AM 1 (Site Folder: 2033 Childcare 10 yrs Post Opening AM)]

## Network: N010 [2033 10 Yrs Post Opening AM 1 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2033 base + childcare volumes
AM Peak 1 6:30 - 7:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 606 | 8.0 | 606 | 8.0 | 0.372 | 0.1 | LOS A | 0.6 | 4.9 | 0.09 | 0.05 | 0.09 | 54.3 |
| 3 | R2 | 66 | 6.3 | 66 | 6.3 | 0.372 | 3.1 | LOS A | 0.6 | 4.9 | 0.09 | 0.05 | 0.09 | 43.9 |
| Approach | | 673 | 7.8 | 673 | 7.8 | 0.372 | 0.4 | NA | 0.6 | 4.9 | 0.09 | 0.05 | 0.09 | 52.1 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 54 | 7.8 | 54 | 7.8 | 0.418 | 7.3 | LOS A | 1.5 | 11.2 | 0.39 | 0.74 | 0.53 | 24.2 |
| 6 | R2 | 135 | 7.8 | 135 | 7.8 | 0.418 | 13.7 | LOS B | 1.5 | 11.2 | 0.39 | 0.74 | 0.53 | 25.8 |
| Approach | | 188 | 7.8 | 188 | 7.8 | 0.418 | 11.9 | LOS B | 1.5 | 11.2 | 0.39 | 0.74 | 0.53 | 25.4 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 88 | 4.8 | 88 | 4.8 | 0.159 | 3.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.27 | 0.00 | 43.7 |
| 8 | T1 | 96 | 13.2 | 96 | 13.2 | 0.159 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.27 | 0.00 | 39.5 |
| Approach | | 184 | 9.1 | 184 | 9.1 | 0.159 | 1.9 | NA | 0.0 | 0.0 | 0.00 | 0.27 | 0.00 | 42.5 |
| All Vehicles | | 1045 | 8.1 | 1045 | 8.1 | 0.418 | 2.8 | NA | 1.5 | 11.2 | 0.13 | 0.21 | 0.15 | 38.3 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd 10 Yr Post Opening AM 2 (Site Folder: 2033 Childcare 10 yrs Post Opening AM)]

## Network: N011 [2033 10 Yrs Post Opening AM 2 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2033 base + childcare volumes
AM Peak 2 7:30 - 8:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 278 | 7.6 | 278 | 7.6 | 0.237 | 0.6 | LOS A | 0.9 | 7.1 | 0.28 | 0.17 | 0.28 | 44.6 |
| 3 | R2 | 114 | 5.6 | 114 | 5.6 | 0.237 | 3.5 | LOS A | 0.9 | 7.1 | 0.28 | 0.17 | 0.28 | 40.5 |
| Approach | | 392 | 7.0 | 392 | 7.0 | 0.237 | 1.5 | NA | 0.9 | 7.1 | 0.28 | 0.17 | 0.28 | 42.7 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 79 | 6.7 | 79 | 6.7 | 0.325 | 6.7 | LOS A | 1.0 | 7.2 | 0.41 | 0.71 | 0.46 | 29.2 |
| 6 | R2 | 107 | 6.9 | 107 | 6.9 | 0.325 | 9.9 | LOS A | 1.0 | 7.2 | 0.41 | 0.71 | 0.46 | 29.7 |
| Approach | | 186 | 6.8 | 186 | 6.8 | 0.325 | 8.6 | LOS A | 1.0 | 7.2 | 0.41 | 0.71 | 0.46 | 29.5 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 100 | 5.3 | 100 | 5.3 | 0.166 | 3.9 | LOS A | 1.3 | 10.0 | 0.00 | 0.20 | 0.00 | 45.2 |
| 8 | T1 | 189 | 12.8 | 189 | 12.8 | 0.166 | 0.0 | LOS A | 1.3 | 10.0 | 0.00 | 0.20 | 0.00 | 43.5 |
| Approach | | 289 | 10.2 | 289 | 10.2 | 0.166 | 1.4 | NA | 1.3 | 10.0 | 0.00 | 0.20 | 0.00 | 44.5 |
| All Vehicles | | 867 | 8.0 | 867 | 8.0 | 0.325 | 3.0 | NA | 1.3 | 10.0 | 0.21 | 0.29 | 0.22 | 37.9 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd 10 Yr Post Opening AM 3 (Site Folder: 2033 Childcare 10 yrs Post Opening AM)]

## Network: N012 [2033 10 Yrs Post Opening AM 3 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2033 base + childcare volumes
AM Peak 3 8:30 - 9:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 269 | 7.8 | 269 | 7.8 | 0.226 | 0.7 | LOS A | 0.9 | 6.6 | 0.28 | 0.16 | 0.28 | 44.2 |
| 3 | R2 | 99 | 6.4 | 99 | 6.4 | 0.226 | 3.7 | LOS A | 0.9 | 6.6 | 0.28 | 0.16 | 0.28 | 40.1 |
| Approach | | 368 | 7.4 | 368 | 7.4 | 0.226 | 1.5 | NA | 0.9 | 6.6 | 0.28 | 0.16 | 0.28 | 42.4 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 128 | 8.2 | 128 | 8.2 | 0.505 | 8.0 | LOS A | 2.0 | 15.3 | 0.45 | 0.78 | 0.65 | 26.9 |
| 6 | R2 | 153 | 8.3 | 153 | 8.3 | 0.505 | 11.6 | LOS B | 2.0 | 15.3 | 0.45 | 0.78 | 0.65 | 27.9 |
| Approach | | 281 | 8.2 | 281 | 8.2 | 0.505 | 10.0 | LOS A | 2.0 | 15.3 | 0.45 | 0.78 | 0.65 | 27.5 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 124 | 6.8 | 124 | 6.8 | 0.190 | 3.9 | LOS A | 1.8 | 14.2 | 0.00 | 0.22 | 0.00 | 44.4 |
| 8 | T1 | 203 | 13.5 | 203 | 13.5 | 0.190 | 0.0 | LOS A | 1.8 | 14.2 | 0.00 | 0.22 | 0.00 | 42.5 |
| Approach | | 327 | 10.9 | 327 | 10.9 | 0.190 | 1.5 | NA | 1.8 | 14.2 | 0.00 | 0.22 | 0.00 | 43.7 |
| All Vehicles | | 977 | 8.8 | 977 | 8.8 | 0.505 | 3.9 | NA | 2.0 | 15.3 | 0.24 | 0.36 | 0.29 | 35.2 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd 2033 Base PM 1 (Site Folder: 2033 Base PM )]

## Network: N019 [2033 Base PM 1 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2033 volumes
PM Peak 1 15:30 - 16:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 160 | 7.2 | 160 | 7.2 | 0.193 | 2.8 | LOS A | 1.0 | 7.6 | 0.50 | 0.26 | 0.50 | 30.9 |
| 3 | R2 | 82 | 3.8 | 82 | 3.8 | 0.193 | 6.4 | LOS A | 1.0 | 7.6 | 0.50 | 0.26 | 0.50 | 34.1 |
| Approach | | 242 | 6.1 | 242 | 6.1 | 0.193 | 4.0 | NA | 1.0 | 7.6 | 0.50 | 0.26 | 0.50 | 32.4 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 115 | 5.5 | 115 | 5.5 | 0.593 | 11.5 | LOS B | 1.8 | 13.1 | 0.66 | 1.01 | 1.12 | 22.2 |
| 6 | R2 | 125 | 5.9 | 125 | 5.9 | 0.593 | 15.8 | LOS C | 1.8 | 13.1 | 0.66 | 1.01 | 1.12 | 24.1 |
| Approach | | 240 | 5.7 | 240 | 5.7 | 0.593 | 13.8 | LOS B | 1.8 | 13.1 | 0.66 | 1.01 | 1.12 | 23.3 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 165 | 3.2 | 165 | 3.2 | 0.384 | 3.9 | LOS A | 8.1 | 61.5 | 0.00 | 0.14 | 0.00 | 47.2 |
| 8 | T1 | 532 | 8.5 | 532 | 8.5 | 0.384 | 0.0 | LOS A | 8.1 | 61.5 | 0.00 | 0.14 | 0.00 | 47.5 |
| Approach | | 697 | 7.3 | 697 | 7.3 | 0.384 | 0.9 | NA | 8.1 | 61.5 | 0.00 | 0.14 | 0.00 | 47.4 |
| All Vehicles | | 1179 | 6.7 | 1179 | 6.7 | 0.593 | 4.2 | NA | 8.1 | 61.5 | 0.24 | 0.34 | 0.33 | 33.8 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd 2033 Base PM 2 (Site Folder: 2033 Base PM )]

## Network: N020 [2033 Base PM 2 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2033 volumes
PM Peak 2 16:30 - 17:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 177 | 7.1 | 177 | 7.1 | 0.164 | 1.0 | LOS A | 0.7 | 5.1 | 0.33 | 0.19 | 0.33 | 41.2 |
| 3 | R2 | 80 | 2.6 | 80 | 2.6 | 0.164 | 4.0 | LOS A | 0.7 | 5.1 | 0.33 | 0.19 | 0.33 | 39.9 |
| Approach | | 257 | 5.7 | 257 | 5.7 | 0.164 | 1.9 | NA | 0.7 | 5.1 | 0.33 | 0.19 | 0.33 | 40.6 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 135 | 5.5 | 135 | 5.5 | 0.458 | 8.0 | LOS A | 1.5 | 11.0 | 0.49 | 0.80 | 0.66 | 28.0 |
| 6 | R2 | 123 | 5.1 | 123 | 5.1 | 0.458 | 10.6 | LOS B | 1.5 | 11.0 | 0.49 | 0.80 | 0.66 | 28.9 |
| Approach | | 258 | 5.3 | 258 | 5.3 | 0.458 | 9.3 | LOS A | 1.5 | 11.0 | 0.49 | 0.80 | 0.66 | 28.5 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 108 | 3.9 | 108 | 3.9 | 0.231 | 3.9 | LOS A | 3.4 | 25.9 | 0.00 | 0.15 | 0.00 | 46.8 |
| 8 | T1 | 309 | 8.5 | 309 | 8.5 | 0.231 | 0.0 | LOS A | 3.4 | 25.9 | 0.00 | 0.15 | 0.00 | 46.8 |
| Approach | | 418 | 7.3 | 418 | 7.3 | 0.231 | 1.0 | NA | 3.4 | 25.9 | 0.00 | 0.15 | 0.00 | 46.8 |
| All Vehicles | | 933 | 6.3 | 933 | 6.3 | 0.458 | 3.6 | NA | 3.4 | 25.9 | 0.23 | 0.34 | 0.27 | 36.3 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd 2033 Base PM 3 (Site Folder: 2033 Base PM )]

## Network: N021 [2033 Base PM 3 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2033 volumes
PM Peak 3 17:30 - 18:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 193 | 6.6 | 193 | 6.6 | 0.143 | 0.4 | LOS A | 0.4 | 3.2 | 0.21 | 0.13 | 0.21 | 47.7 |
| 3 | R2 | 55 | 1.9 | 55 | 1.9 | 0.143 | 3.4 | LOS A | 0.4 | 3.2 | 0.21 | 0.13 | 0.21 | 43.0 |
| Approach | | 247 | 5.5 | 247 | 5.5 | 0.143 | 1.1 | NA | 0.4 | 3.2 | 0.21 | 0.13 | 0.21 | 45.9 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 81 | 6.5 | 81 | 6.5 | 0.314 | 6.6 | LOS A | 0.9 | 6.8 | 0.41 | 0.71 | 0.44 | 30.6 |
| 6 | R2 | 123 | 5.1 | 123 | 5.1 | 0.314 | 8.5 | LOS A | 0.9 | 6.8 | 0.41 | 0.71 | 0.44 | 30.8 |
| Approach | | 204 | 5.7 | 204 | 5.7 | 0.314 | 7.8 | LOS A | 0.9 | 6.8 | 0.41 | 0.71 | 0.44 | 30.8 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 94 | 3.4 | 94 | 3.4 | 0.170 | 3.9 | LOS A | 1.5 | 11.7 | 0.00 | 0.17 | 0.00 | 46.3 |
| 8 | T1 | 215 | 8.8 | 215 | 8.8 | 0.170 | 0.0 | LOS A | 1.5 | 11.7 | 0.00 | 0.17 | 0.00 | 45.1 |
| Approach | | 308 | 7.2 | 308 | 7.2 | 0.170 | 1.2 | NA | 1.5 | 11.7 | 0.00 | 0.17 | 0.00 | 45.8 |
| All Vehicles | | 760 | 6.2 | 760 | 6.2 | 0.314 | 2.9 | NA | 1.5 | 11.7 | 0.18 | 0.30 | 0.18 | 38.5 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd 10 Yr Post Opening PM 1 (Site Folder: 2033 Childcare 10 yrs Post Opening PM)]

## Network: N022 [2033 10 Yrs Post Opening PM 1 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2033 base + childcare volumes
PM Peak 1 15:30 - 16:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 160 | 7.2 | 160 | 7.2 | 0.201 | 3.0 | LOS A | 1.1 | 8.0 | 0.52 | 0.28 | 0.52 | 30.2 |
| 3 | R2 | 87 | 3.6 | 87 | 3.6 | 0.201 | 6.5 | LOS A | 1.1 | 8.0 | 0.52 | 0.28 | 0.52 | 33.6 |
| Approach | | 247 | 6.0 | 247 | 6.0 | 0.201 | 4.2 | NA | 1.1 | 8.0 | 0.52 | 0.28 | 0.52 | 31.9 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 124 | 5.1 | 124 | 5.1 | 0.644 | 12.3 | LOS B | 1.9 | 14.2 | 0.67 | 1.05 | 1.24 | 21.3 |
| 6 | R2 | 135 | 5.5 | 135 | 5.5 | 0.644 | 16.8 | LOS C | 1.9 | 14.2 | 0.67 | 1.05 | 1.24 | 23.4 |
| Approach | | 259 | 5.3 | 259 | 5.3 | 0.644 | 14.6 | LOS B | 1.9 | 14.2 | 0.67 | 1.05 | 1.24 | 22.5 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 175 | 3.0 | 175 | 3.0 | 0.389 | 3.9 | LOS A | 8.2 | 62.2 | 0.00 | 0.14 | 0.00 | 47.1 |
| 8 | T1 | 532 | 8.5 | 532 | 8.5 | 0.389 | 0.0 | LOS A | 8.2 | 62.2 | 0.00 | 0.14 | 0.00 | 47.1 |
| Approach | | 706 | 7.2 | 706 | 7.2 | 0.389 | 1.0 | NA | 8.2 | 62.2 | 0.00 | 0.14 | 0.00 | 47.1 |
| All Vehicles | | 1213 | 6.5 | 1213 | 6.5 | 0.644 | 4.6 | NA | 8.2 | 62.2 | 0.25 | 0.36 | 0.37 | 32.8 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd 10 Yr Post Opening PM 2 (Site Folder: 2033 Childcare 10 yrs Post Opening PM)]

## Network: N023 [2033 10 Yrs Post Opening PM 2 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2033 base + childcare volumes
PM Peak 2 16:30 - 17:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 177 | 7.1 | 177 | 7.1 | 0.175 | 1.2 | LOS A | 0.8 | 5.8 | 0.37 | 0.22 | 0.37 | 39.7 |
| 3 | R2 | 92 | 2.3 | 92 | 2.3 | 0.175 | 4.1 | LOS A | 0.8 | 5.8 | 0.37 | 0.22 | 0.37 | 39.2 |
| Approach | | 268 | 5.5 | 268 | 5.5 | 0.175 | 2.2 | NA | 0.8 | 5.8 | 0.37 | 0.22 | 0.37 | 39.5 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 151 | 4.9 | 151 | 4.9 | 0.518 | 8.5 | LOS A | 1.7 | 12.6 | 0.50 | 0.83 | 0.74 | 27.1 |
| 6 | R2 | 138 | 4.6 | 138 | 4.6 | 0.518 | 11.3 | LOS B | 1.7 | 12.6 | 0.50 | 0.83 | 0.74 | 28.2 |
| Approach | | 288 | 4.7 | 288 | 4.7 | 0.518 | 9.8 | LOS A | 1.7 | 12.6 | 0.50 | 0.83 | 0.74 | 27.7 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 125 | 3.4 | 125 | 3.4 | 0.240 | 3.9 | LOS A | 3.5 | 26.6 | 0.00 | 0.16 | 0.00 | 46.5 |
| 8 | T1 | 309 | 8.5 | 309 | 8.5 | 0.240 | 0.0 | LOS A | 3.5 | 26.6 | 0.00 | 0.16 | 0.00 | 45.6 |
| Approach | | 435 | 7.0 | 435 | 7.0 | 0.240 | 1.1 | NA | 3.5 | 26.6 | 0.00 | 0.16 | 0.00 | 46.1 |
| All Vehicles | | 992 | 5.9 | 992 | 5.9 | 0.518 | 3.9 | NA | 3.5 | 26.6 | 0.25 | 0.37 | 0.31 | 35.3 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 001 [Safety Bay Rd / Rae Rd 10 Yr Post Opening PM 3 (Site Folder: 2033 Childcare 10 yrs Post Opening PM)]

## Network: N024 [2033 10 Yrs Post Opening PM 3 (Network Folder: General)]

Safety Bay Rd / Rae Rd
2033 base + childcare volumes
PM Peak 3 17:30 - 18:30
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Safety Bay Road | | | | | | | | | | | | | | |
| 2 | T1 | 193 | 6.6 | 193 | 6.6 | 0.147 | 0.5 | LOS A | 0.5 | 3.4 | 0.22 | 0.13 | 0.22 | 47.0 |
| 3 | R2 | 59 | 1.8 | 59 | 1.8 | 0.147 | 3.4 | LOS A | 0.5 | 3.4 | 0.22 | 0.13 | 0.22 | 42.7 |
| Approach | | 252 | 5.4 | 252 | 5.4 | 0.147 | 1.2 | NA | 0.5 | 3.4 | 0.22 | 0.13 | 0.22 | 45.3 |
| East: Rae Road | | | | | | | | | | | | | | |
| 4 | L2 | 89 | 5.9 | 89 | 5.9 | 0.347 | 6.8 | LOS A | 1.1 | 8.0 | 0.42 | 0.72 | 0.47 | 30.2 |
| 6 | R2 | 136 | 4.7 | 136 | 4.7 | 0.347 | 8.8 | LOS A | 1.1 | 8.0 | 0.42 | 0.72 | 0.47 | 30.5 |
| Approach | | 225 | 5.1 | 225 | 5.1 | 0.347 | 8.0 | LOS A | 1.1 | 8.0 | 0.42 | 0.72 | 0.47 | 30.4 |
| North: Safety Bay Road | | | | | | | | | | | | | | |
| 7 | L2 | 101 | 3.1 | 101 | 3.1 | 0.174 | 3.9 | LOS A | 1.6 | 12.1 | 0.00 | 0.18 | 0.00 | 46.2 |
| 8 | T1 | 215 | 8.8 | 215 | 8.8 | 0.174 | 0.0 | LOS A | 1.6 | 12.1 | 0.00 | 0.18 | 0.00 | 44.5 |
| Approach | | 316 | 7.0 | 316 | 7.0 | 0.174 | 1.3 | NA | 1.6 | 12.1 | 0.00 | 0.18 | 0.00 | 45.5 |
| All Vehicles | | 793 | 6.0 | 793 | 6.0 | 0.347 | 3.1 | NA | 1.6 | 12.1 | 0.19 | 0.32 | 0.20 | 37.8 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# Environmental Noise Assessment - Childcare Centre

## Lots 1 & 2 (#172) Safety Bay Road, Shoalwater

**Reference: 22037217-01A**

Prepared for:
Southerly Ocean Pty Ltd & Cedarbay Investments Pty Ltd

# Reference: 22037217-01A


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| Date | Rev | Description | Author | Verified |
|---|---|---|---|---|
| 17-Nov-22 | 0 | Issued to Client | Matt Nolan | Matt Moyle |
| 31-Jan-23 | A | Updated car door noise assessment and noise walls | Matt Nolan | - |

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# EXECUTIVE SUMMARY

Lloyd George Acoustics was engaged by Southerly Ocean Pty Ltd & Cedarbay Investments Pty Ltd to undertake a noise assessment for a proposed childcare centre (CCC) to be located at Lots 1 & 2 (#172) Safety Bay Road, Shoalwater. This report considered noise emissions from the proposed childcare centre to surrounding properties by way of noise modelling of child play, mechanical plant and car door closings.

The predicted noise from all children playing outside and car door closings are considered compliant provided the fences shown on the DA Plans are constructed. This includes a fence that varies between 1.8 and 2.1 metres high along the site boundary. These fences must be solid and free of gaps. The fences must have a minimum surface mass of 8 kg/$m^2$. Examples of suitable material include brick, limestone, concrete or double sheeted *Colorbond*. For areas where visual permeability is required, sound-rated plexiglass can be used.

Mechanical plant noise was also calculated to be compliant except at the residential receiver to the west. Once the plant has been designed and selected, this should be further reviewed to ensure compliance prior to Building Permit.

# 1. INTRODUCTION

Lloyd George Acoustics was engaged by Southerly Ocean Pty Ltd & Cedarbay Investments Pty Ltd to undertake an environmental noise assessment for a proposed childcare centre to be located at Lots 1 & 2 (#172) Safety Bay Road, Shoalwater (refer *Figure* 1-1) with the site plan shown in *Figure 1-2* and full Development Application (DA) plans provided in *Appendix A*. The purpose of this report is to consider noise emissions from the proposed childcare centre to surrounding properties.


***Figure 1-1: Subject Site Location (Source: DPLH PlanWA)***

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

- Six internal teaching spaces capable of accommodating up to 100 children, grouped as follows:
  - Activity 1 (one teaching space on Ground Floor and two on Level 1): 60 places for children aged 3+ years;
  - Activity 2: 20 places for children aged 2-3 years;
  - Activity 3: 12 places for children aged 1-2 years;
  - Activity 4: 8 places for children aged 0-1 years.
- Outdoor play areas;
- Amenities and associated mechanical plant such as:
  - Kitchen exhaust fan assumed to be located on roof above;
  - Air-conditioning (AC) plant, assumed to located on the ground in the designated yard as shown on the DA Plans;
- Car parking on the east side of the lot.

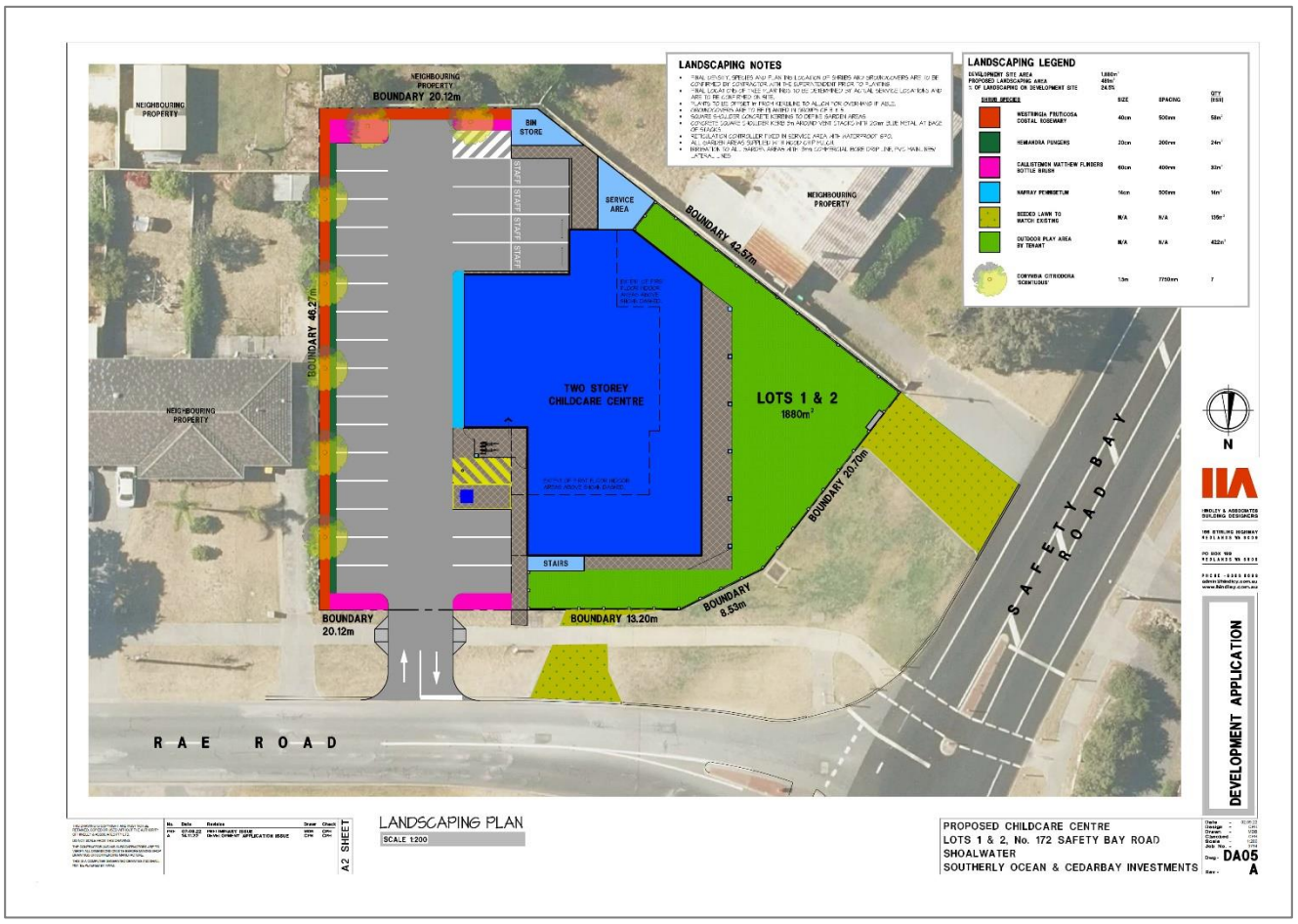



***Figure 1-2: Proposed Site Plan***

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

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

# 2. CRITERIA

Environmental noise in Western Australia is governed by the *Environmental Protection Act 1986*, through the *Environmental Protection (Noise) Regulations 1997* (the Regulations).

## 2.1. Regulations 7, 8 & 9

This group of regulations defines the prescribed standard for noise emissions applicable to child play, mechanical services and car door closing as follows:

*"**7. Prescribed standard for noise emissions***

*(1) Noise emitted from any premises or public place when received at other premises –*

(a) *must not cause, or significantly contribute to, a level of noise which exceeds the assigned level in respect of noise received at premises of that kind; and*

(b) *must be free of –*

*(i) tonality; and*

*(ii) impulsiveness; and*

*(iii) modulation,*

*when assessed under regulation 9.*

*(2) For the purposes of subregulation (1)(a), a noise emission is taken to significantly contribute to a level of noise if the noise emission … exceeds a value which is 5 dB below the assigned level."*

Tonality, impulsiveness and modulation are defined in regulation 9 (refer *Appendix C*). Under regulation 9(3), *"noise is to be taken to be free of these characteristics 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 |

Note: The above are cumulative to a maximum of 15dB.

The assigned levels (prescribed standards) for all premises are specified in regulation 8(3) and are shown in *Table 2-2*. The $L_{A10}$ assigned level is applicable to noises present for more than 10% of a representative assessment period, generally applicable to "steady-state" noise sources. The $L_{A1}$ is for short-term noise sources present for less than 10% and more than 1% of the time. The $L_{Amax}$ assigned level is applicable for incidental noise sources, present for less than 1% of the time.

***Table 2-2 Baseline Assigned Levels***

| Premises Receiving Noise | Time Of Day | Assigned Level (dB) | | |
|---|---|---|---|---|
| | | $L_{A10}$ | $L_{A1}$ | $L_{Amax}$ |
| Noise sensitive premises: highly sensitive area[1] | 0700 to 1900 hours Monday to Saturday (Day) | 45 + influencing factor | 55 + influencing factor | 65 + influencing factor |
| | 0900 to 1900 hours Sunday and public holidays (Sunday) | 40 + influencing factor | 50 + influencing factor | 65 + influencing factor |
| | 1900 to 2200 hours all days (Evening) | 40 + influencing factor | 50 + influencing factor | 55 + influencing factor |
| | 2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night) | 35 + influencing factor | 45 + influencing factor | 55 + influencing factor |
| Noise sensitive premises: any area other than highly sensitive area | All hours | 60 | 75 | 80 |
| Commercial Premises | All hours | 60 | 75 | 80 |
| Industrial and Utility Premises | All hours | 65 | 80 | 90 |

1. ***highly sensitive area*** means that area (if any) of noise sensitive premises comprising —
   (a) a building, or a part of a building, on the premises that is used for a noise sensitive purpose; and
   (b) any other part of the premises within 15 metres of that building or that part of the building.

The influencing factor (IF), in relation to noise received at noise sensitive premises, has been calculated as 3 dB, as determined in *Appendix B*. *Table 2-3* shows the assigned noise levels including the influencing factor and transport factor at the receiving locations.

***Table 2-3 Assigned Levels***

| Premises Receiving Noise | Time Of Day | Assigned Level (dB) | | |
|---|---|---|---|---|
| | | $L_{A10}$ | $L_{A1}$ | $L_{Amax}$ |
| Noise sensitive premises: highly sensitive area[1] | 0700 to 1900 hours Monday to Saturday (Day) | 48 | 58 | 68 |
| | 0900 to 1900 hours Sunday and public holidays (Sunday) | 43 | 53 | 68 |
| | 1900 to 2200 hours all days (Evening) | 43 | 53 | 58 |
| | 2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night) | 38 | 48 | 58 |
| Noise sensitive premises: any area other than highly sensitive area | All hours | 60 | 75 | 80 |
| 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*, which is 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 Environment Regulation. Acoustic consultants or other environmental consultants are not appointed as an *inspector* or *authorised person*. Therefore, whilst this assessment is based on a 4-hour RAP, which is assumed to be appropriate given the nature of the operations, this is to be used for guidance only.

## 2.2. Regulation 3

***"3. Regulations do not apply to certain noise emissions***

*(1) Nothing in these regulations applies to the following noise emissions –*

(a) *Noise emissions from the propulsion and braking systems of motor vehicles operating on a road;"*

The childcare centre car park is considered a road and therefore vehicle noise (propulsion and braking) is not assessed. Noise from vehicle doors however are assessed, since these are not part of the propulsion or braking system.

## 2.3. Regulation 14A

***"14A. Waste Collection and Other Works***

*(2) Regulation 7 does not apply to noise emitted in the course of carrying out class 1 works if –*

(a) *The works are carried out in the quietest reasonable and practicable manner; and*

(b) *The equipment used to carry out the works is the quietest reasonably available;*

*class 1 works means specified works carried out between -*

(a) *0700 hours and 1900 hours on any day that is not a Sunday or a public holiday; or*

(b) *0900 hours and 1900 hours on a Sunday or public holiday.*

*specified works means -*

(a) *The collection of waste; or*

(b) *The cleaning of a road or the drains for a road; or*

(c) *The cleaning of public places, including footpaths, cycle paths, car parks and beaches;"*

In the case where specified works are to be carried out outside of class 1, a noise management plan is to be prepared and approved by the CEO.

# 3. METHODOLOGY

Computer modelling has been used to predict the noise emissions from the development to all nearby receivers. The software used was *SoundPLAN 8.2* with the ISO 9613 algorithms (ISO 171534-3 improved method) selected, as they include the influence of wind and are considered appropriate given the relatively short source to receiver distances. Input data required in the model are listed below and discussed in *Section 3.1* to *Section 3.5*:

- Meteorological Information;
- Topographical data;
- Ground Absorption; and
- Source sound power levels.

## 3.1. Meteorological Conditions

Meteorological information utilised is provided in *Table 3-1* and is considered to represent worst-case conditions for noise propagation. At wind speeds greater than those shown, sound propagation may be further enhanced, however background noise from the wind itself and from local vegetation is likely to be elevated and dominate the ambient noise levels.

***Table 3-1: Modelling Meteorological Conditions***

| Parameter | Day (7.00am to 7.00pm) | Night (7.00pm to 7.00am) |
|---|---|---|
| Temperature (°C) | 20 | 15 |
| Humidity (%) | 50 | 50 |
| Wind Speed (m/s) | Up to 5 | Up to 5 |
| Wind Direction* | All | All |

* The modelling package allows for all wind directions to be modelled simultaneously.

It is generally considered that compliance with the assigned noise levels needs to be demonstrated for 98% of the time, during the day and night periods, for the month of the year in which the worst-case weather conditions prevail. In most cases, the above conditions occur for more than 2% of the time and therefore must be satisfied.

## 3.2. Topographical Data

Topographical data was adapted from publicly available information (e.g. *Google*) in the form of spot heights and combined with the site plan.

Surrounding existing buildings were also incorporated in the noise model, as these can provide noise shielding as well as reflection paths. Single storey buildings are modelled with a height of 3.5 metres and any double storey buildings identified assumed to be 6.0 metres in height with receivers 1.4 metres above floor level.

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

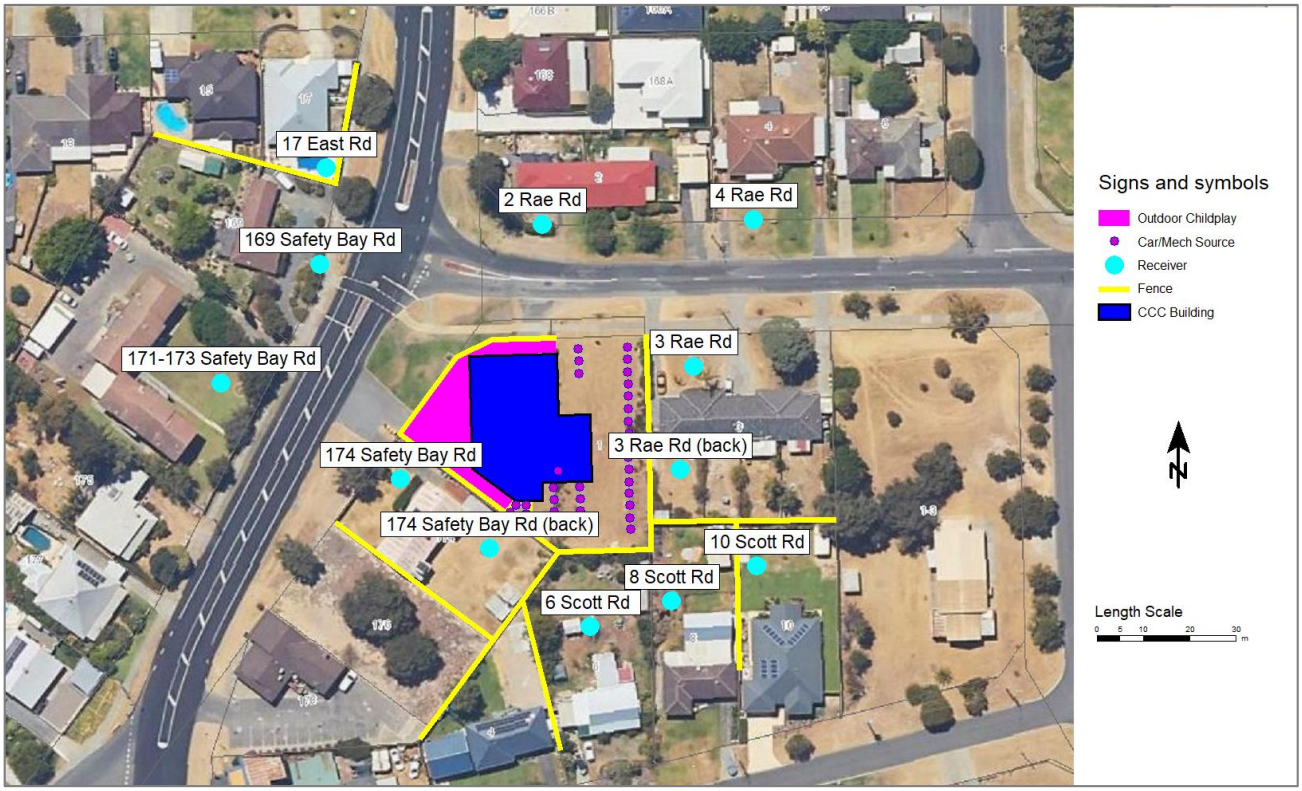



***Figure 3-1: Overview of Noise Model***

## 3.3. Fencing

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

The fencing along the site boundary has been modelled between 1.8 and 2.1 metres high along the site boundary as shown in *Figure 3-2*. The fences must be solid, free of gaps and of minimum surface mass 8 kg/m$^2$. Examples of suitable material include brick, limestone, concrete or double sheeted Colorbond. For areas where visual permeability is required, sound-rated plexiglass can be used.

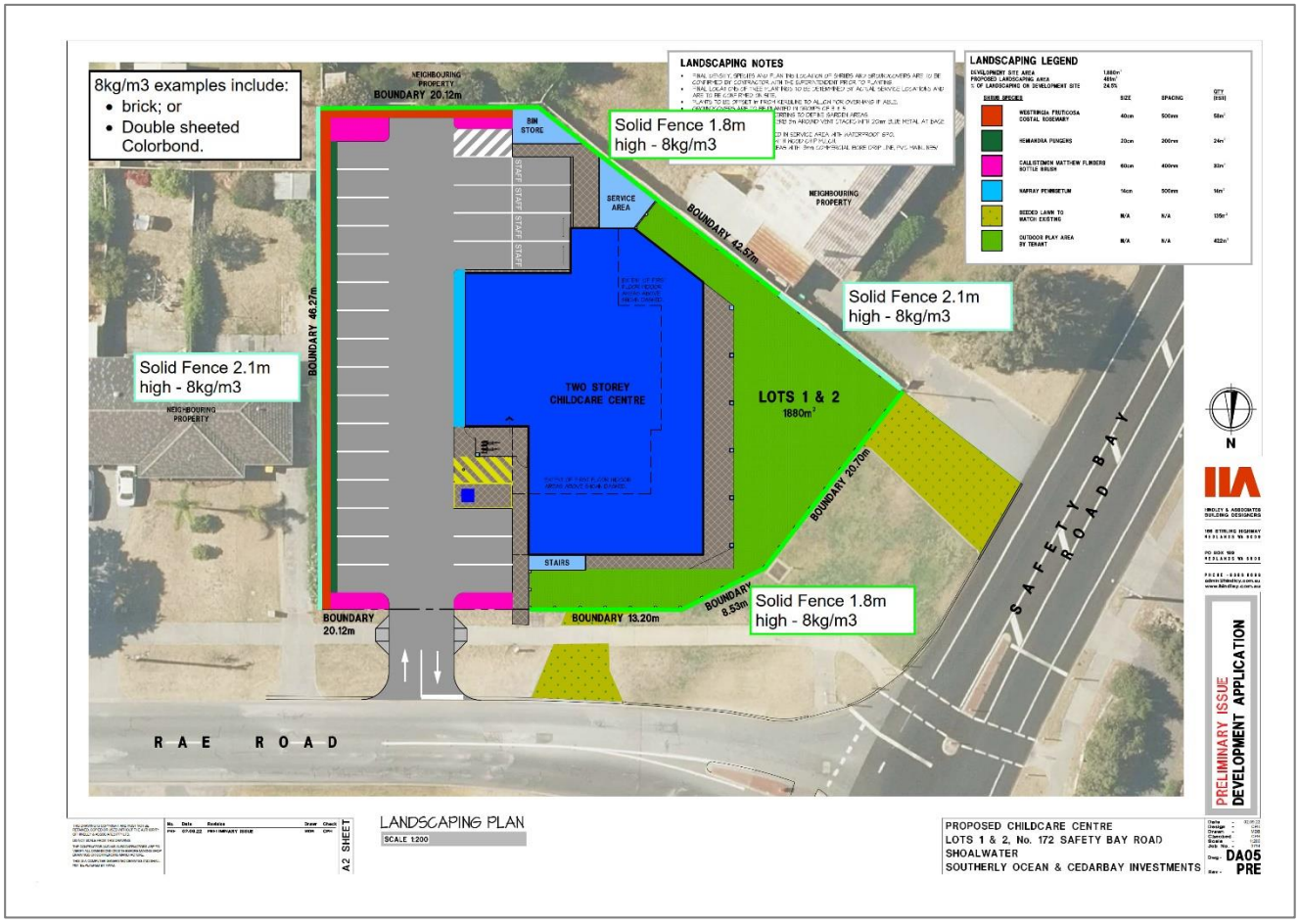



***Figure 3-2: Overview of Fences***

## 3.4. Ground Absorption

The ground absorption has been assumed to be 0.1 (10%) for the roads, 0.5 (50%) outside of the roads and 1.0 (100%) for the play areas, noting that 0.0 represents hard reflective surfaces such as water and 1.0 represents absorptive surfaces such as grass.

## 3.5. Source Sound Levels

The source sound power levels used in the modelling are provided in *Table 3-2*.

***Table 3-2: Source Sound Power Levels, dB***

| Description | Octave Band Centre Frequency (Hz) | | | | | | | | Overall dB(A) |
|---|---|---|---|---|---|---|---|---|---|
| | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | |
| Babies Play Aged 0-2 Years (10 kids), $L_{10}$ | 48 | 54 | 60 | 66 | 72 | 74 | 71 | 67 | **78** |
| Toddler Play Aged 2-3 Years (10 kids), $L_{10}$ | 61 | 67 | 73 | 79 | 81 | 78 | 74 | 70 | **85** |
| Kindy Play Aged 3+ Years (10 kids), $L_{10}$ | 64 | 70 | 75 | 81 | 83 | 80 | 76 | 72 | **87** |
| AC Plant, double fan unit (each), $L_{10}$ | 72 | 74 | 68 | 69 | 63 | 61 | 53 | 47 | **70** |

| Description | Octave Band Centre Frequency (Hz) | | | | | | | | Overall dB(A) |
|---|---|---|---|---|---|---|---|---|---|
| | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | |
| Kitchen Exhaust Fan, $L_{10}$ | 50 | 64 | 61 | 70 | 69 | 66 | 62 | 50 | **73** |
| Closing Car Door (each), $L_{max}$ | 71 | 74 | 77 | 81 | 80 | 78 | 72 | 61 | **84** |

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

- Child play source levels are based on *Guideline for Childcare Centre Acoustic Assessments Version 3.0* produced by the Association of Australasian Acoustical Consultants (AAAC) published September 2020. Where the number of children for individual play areas is specified in the plans, these have been adjusted from the reference source levels using appropriate acoustical calculations. Outdoor child play was modelled as area sources at 1-metre above ground level. The sound power levels used in the model were scaled as follows:
  - 20 children aged 0-2 years = 81 dB(A);
  - 20 children aged 2-3 years = 88 dB(A);
  - 60 children aged 3+ years = 93 dB(A).
- Based on the AAAC Guideline 3.0, source sound power levels for AC condensing units were assumed. Medium sized (double fan) outdoor units were deemed appropriate with four (4) modelled as point sources in the services area.
- Other mechanical plant include one kitchen exhaust fan which was modelled as a point source approximately 0.5 metres above roof level. Toilet exhaust fans are assumed to be ceiling mounted types with no external plant and therefore negligible noise impact (not included in modelling).
- Car doors closing were modelled as a point source 1.0 metre above ground level. Since noise from a car door closing is a short-term event, only the $L_{Amax}$ level is applicable.

# 4. RESULTS AND ASSESSMENT

## 4.1. Outdoor Child Play Noise

The childcare development will host up to 100 children. It is noted play time is generally staggered and therefore not all children would be playing outside at once for extended periods of time. However, noise levels were conservatively predicted for all children playing simultaneously, as a worst-case scenario with the results provided and assessed in *Table 4-1*. The critical assigned noise level is during the day, as whilst the childcare centre will open at 6.30am, child play will not commence until after 7.00am. Noise from child play is not considered to contain annoying characteristics within the definition of the Regulations and therefore no adjustments are made to the predicted noise levels. A noise contour plot is also provided in *Figure 4-1* showing noise levels at ground floor.

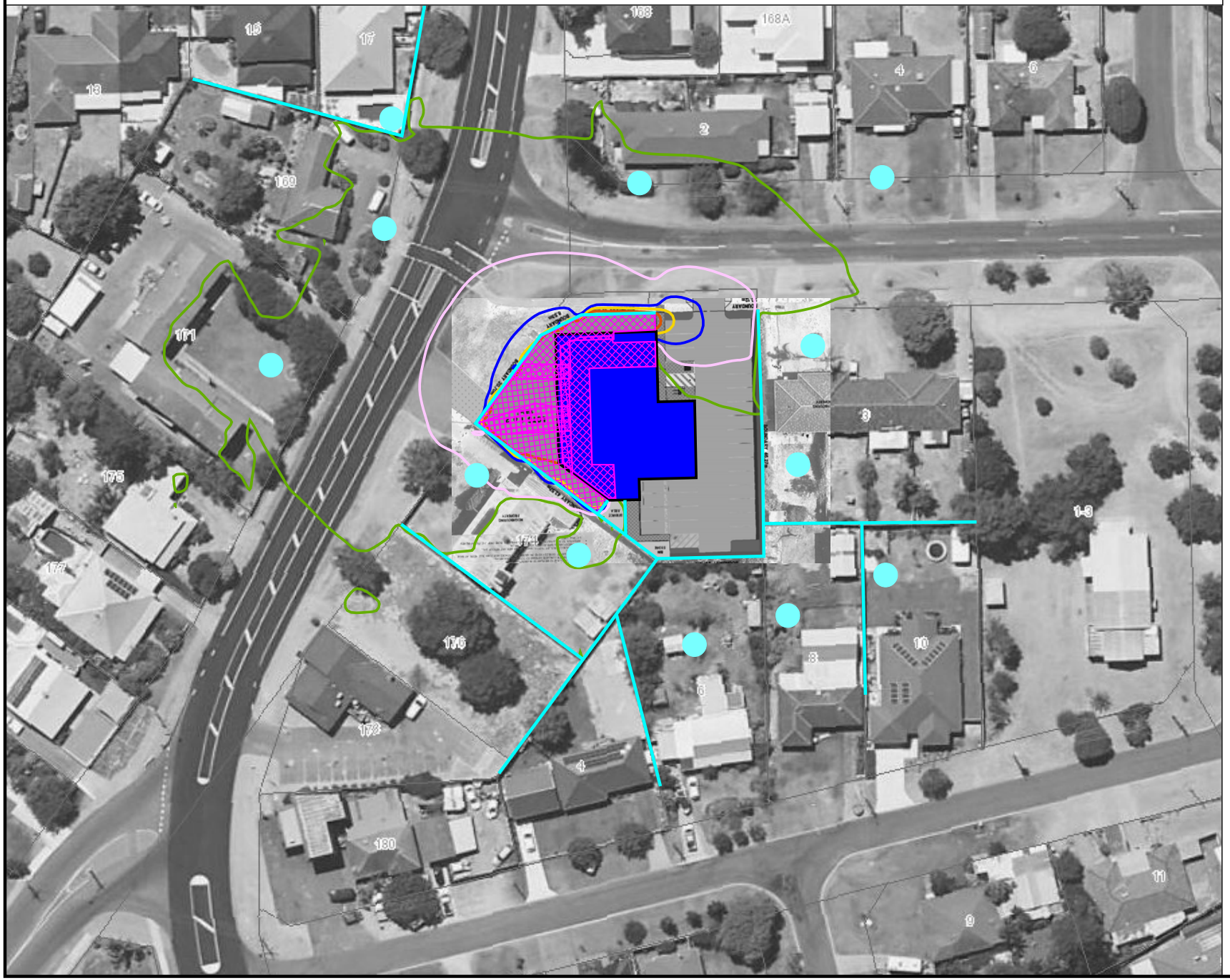
***Table 4-1: Child Play Noise Predicted Levels and Assessment, dB(A)***

| Receiver | Babies (0-2 yo) | Toddler (2-3 yo) | Kindy (3+ yo) | Total | Assigned Noise Level | Assessment |
|---|---|---|---|---|---|---|
| 2 Rae Rd | 45 | 28 | 38 | **44** | **48** | *Complies* |
| 3 Rae Rd* | 40 | 15 | 26 | **40** | **48** | *Complies* |
| 4 Rae Rd | 39 | 11 | 23 | **39** | **48** | *Complies* |
| 6 Scott Rd | 38 | 26 | 32 | **36** | **48** | *Complies* |
| 8 Scott Rd | 29 | 20 | 21 | **27** | **48** | *Complies* |
| 10 Scott Rd | 29 | 16 | 20 | **28** | **48** | *Complies* |
| 17 East Rd | 38 | 26 | 32 | **36** | **48** | *Complies* |
| 169 State Route 18 | 45 | 32 | 39 | **43** | **48** | *Complies* |
| 171-173 Safety Bay Rd | 45 | 32 | 40 | **44** | **48** | *Complies* |
| 174 Safety Bay Rd* | 48 | 37 | 44 | **45** | **48** | *Complies* |

*The highest noise level from predictions at multiple receivers were used in the assessment

Based on a conservative scenario of all 100 children playing outside simultaneously, the assessment demonstrates compliance is achieved during the day.

# *Figure 4-1 Child Play Noise Contour Plot (1.4m AGL), dB $L_{A10}$*




**Predicted Noise level**

= 43
= 48
= 53
= 58
= 63

Legend

Receiver
Outdoor Childplay
Fence
Childcare Centre

N

Scale 1:500

0 5 10 20 30 m

Project No: 22037217
Consultant: MN
Date: 17/11/2022
Algorithm: ISO 9613
SoundPLAN Version: 8.2

**Lloyd George Acoustics**
PO Box 717
HILLARYS WA 6923
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## 4.2. Mechanical Plant Noise

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

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

| Receiver | Total | Total Adjusted | Assigned Noise Level | Assessment |
|---|---|---|---|---|
| 2 Rae Rd | 16 | **21** | **38** | *Complies* |
| 3 Rae Rd* | 28 | **33** | **38** | *Complies* |
| 4 Rae Rd | 21 | **26** | **38** | *Complies* |
| 6 Scott Rd | 32 | **37** | **38** | *Complies* |
| 8 Scott Rd | 29 | **34** | **38** | *Complies* |
| 10 Scott Rd | 27 | **32** | **38** | *Complies* |
| 17 East Rd | 12 | **17** | **38** | *Complies* |
| 169 State Route 18 | 16 | **21** | **38** | *Complies* |
| 171-173 Safety Bay Rd | 21 | **26** | **38** | *Complies* |
| 174 Safety Bay Rd* | 38 | **43** | **38** | +5 dB |

*The highest noise level from predictions at multiple receivers were used in the assessment

The calculations show compliance at all receiver locations except 174 Safety Bay Road where there is a predicted exceedance of 5 dB. It must be noted that the assessment is based on assumptions in relation to the number, location, size and type of mechanical plant. Therefore, once the mechanical plant has been designed and selected, noise is to be reviewed by a suitably qualified acoustical consultant.

# *Figure 4-2 Mechanical Plant Noise Contour Plot (1.4m AGL), dB $L_{A10}$*


**Predicted Noise level**

| | |
|---|---|
| | = 33 |
| | = 38 |
| | = 43 |
| | = 48 |
| | = 53 |

Legend

- Receiver
- Car/Mech Source
- Fence
- Childcare Centre

N

Scale 1:500

0 5 10 20 30 m

Project No: 22037217
Consultant: MN
Date: 17/11/2022
Algorithm: ISO 9613
SoundPLAN Version: 8.2

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## 4.3. Car Door Closing Noise

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

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

| Receiver | Car Door | Total Adjusted | Assigned Noise Level | Assessment |
|---|---|---|---|---|
| 2 Rae Rd | 47 | **57** | **58** | *Complies* |
| 3 Rae Rd* | 48 | **58** | **58** | *Complies* |
| 4 Rae Rd | 42 | **52** | **58** | *Complies* |
| 6 Scott Rd | 48 | **58** | **58** | *Complies* |
| 8 Scott Rd | 46 | **56** | **58** | *Complies* |
| 10 Scott Rd | 40 | **50** | **58** | *Complies* |
| 17 East Rd | 32 | **42** | **58** | *Complies* |
| 169 State Route 18 | 40 | **50** | **58** | *Complies* |
| 171-173 Safety Bay Rd | 32 | **42** | **58** | *Complies* |
| 174 Safety Bay Rd* | 48 | **58** | **58** | *Complies* |

*The highest noise level from predictions at multiple receivers were used in the assessment

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

## 4.4. Indoor Child Play

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

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

# *Figure 4-3 Car Door Closing Noise Contour Plot (1.4m AGL), dB $L_{AMAX}$*


**Predicted Noise level**

= 40
= 50
= 60

Legend

- Receiver
- Car/Mech Source
- Fence
- Childcare Centre

N

Scale 1:500

0 5 10 20 30 m

Project No: 22037217
Consultant: MN
Date: 31/01/2023
Algorithm: ISO 9613
SoundPLAN Version: 8.2

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# 5. RECOMMENDATIONS

## 5.1. Child Play

The predicted noise from all children playing outside is compliant provided the fences shown on the DA Plans are constructed. These must be solid, free of gaps and of minimum surface mass 8 kg/$m^2$. Examples of suitable material include brick, limestone, concrete or double sheeted Colorbond. For areas where visual permeability is required, sound-rated plexiglass can be used.

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

- The behaviour and 'style of play' of children should be monitored to prevent particularly loud activity e.g. loud banging/crashing of objects, 'group' shouts/yelling;
- Favour soft finishes in the outdoor play area to minimise impact noise (e.g. soft grass, sand pit(s), rubber mats) over timber or plastic;
- Favour soft balls and rubber wheeled toys;
- Crying children should be taken inside to be comforted;
- Child play to be staggered where possible;
- No amplified music to be played outside;
- Any music played within the internal activity areas to be 'light' music with no significant bass content and played at a relatively low level;
- Car park drainage grates or similar to be plastic or metal with rubber gasket and secured to avoid excess banging.

## 5.2. Mechanical Plant

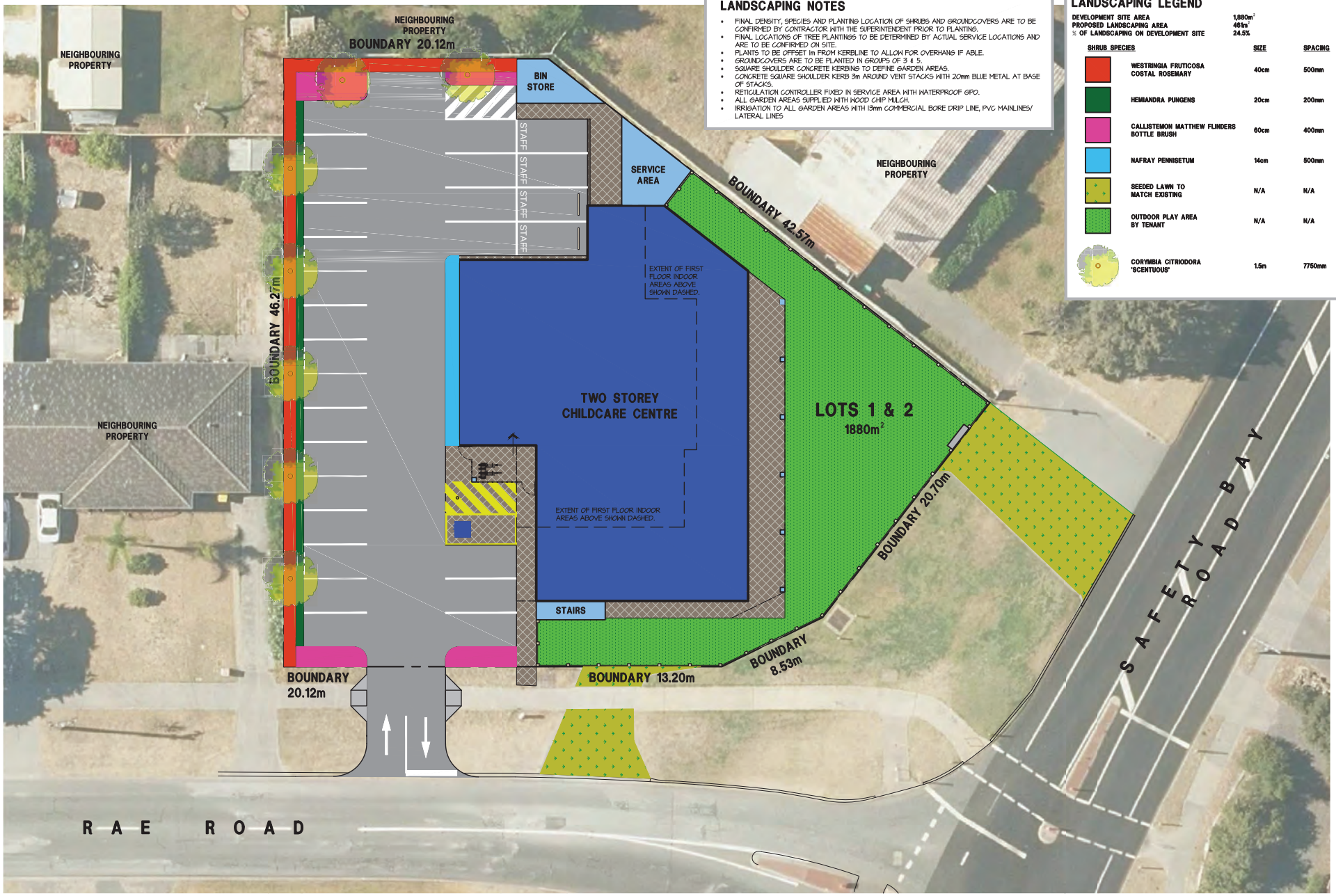
For mechanical plant, the following are recommended:

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

## 5.3. Car Doors

The predicted noise from car door closings is compliant provided the fences shown on the DA Plans are constructed. The fences must be solid and free of gaps. The fences must have a minimum surface mass of 8 kg/$m^2$. Examples of suitable material include brick, limestone, concrete or double sheeted Colorbond. For areas where visual permeability is required, sound-rated plexiglass can be used.

# Appendix A – Development Plans




## LANDSCAPING NOTES

- FINAL DENSITY, SPECIES AND PLANTING LOCATION OF SHRUBS AND GROUNDCOVERS ARE TO BE CONFIRMED BY CONTRACTOR WITH THE SUPERINTENDENT PRIOR TO PLANTING.
- FINAL LOCATIONS OF TREE PLANTINGS TO BE DETERMINED BY ACTUAL SERVICE LOCATIONS AND ARE TO BE CONFIRMED ON SITE.
- PLANTS TO BE OFFSET 1m FROM KERBLINE TO ALLOW FOR OVERHANG IF ABLE.
- GROUNDCOVERS ARE TO BE PLANTED IN GROUPS OF 3 & 5.
- SQUARE SHOULDER CONCRETE KERBING TO DEFINE GARDEN AREAS.
- CONCRETE SQUARE SHOULDER KERB 3m AROUND VENT STACKS WITH 20mm BLUE METAL AT BASE OF STACKS.
- RETICULATION CONTROLLER FIXED IN SERVICE AREA WITH WATERPROOF GPO.
- ALL GARDEN AREAS SUPPLIED WITH WOOD CHIP MULCH.
- IRRIGATION TO ALL GARDEN AREAS WITH 13mm COMMERCIAL BORE DRIP LINE, PVC MAINLINES/ LATERAL LINES

## LANDSCAPING LEGEND

| | | |
|---|---|---|
| DEVELOPMENT SITE AREA | 1,880m² | |
| PROPOSED LANDSCAPING AREA | 461m² | |
| % OF LANDSCAPING ON DEVELOPMENT SITE | 24.5% | |

| SHRUB SPECIES | SIZE | SPACING | QTY (EST) |
|---|---|---|---|
| WESTRINGIA FRUTICOSA COSTAL ROSEMARY | 40cm | 500mm | 58m² |
| HEMIANDRA PUNGENS | 20cm | 200mm | 24m² |
| CALLISTEMON MATTHEW FLINDERS BOTTLE BRUSH | 60cm | 400mm | 32m² |
| NAFRAY PENNISETUM | 14cm | 500mm | 14m² |
| SEEDED LAWN TO MATCH EXISTING | N/A | N/A | 135m² |
| OUTDOOR PLAY AREA BY TENANT | N/A | N/A | 422m² |
| CORYMBIA CITRIODORA 'SCENTUOUS' | 1.5m | 7750mm | 7 |

N

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A2 SHEET

# LANDSCAPING PLAN

SCALE 1:200

PROPOSED CHILDCARE CENTRE
LOTS 1 & 2, No. 172 SAFETY BAY ROAD
SHOALWATER
SOUTHERLY OCEAN & CEDARBAY INVESTMENTS

| | |
|---|---|
| Date - | 02.09.22 |
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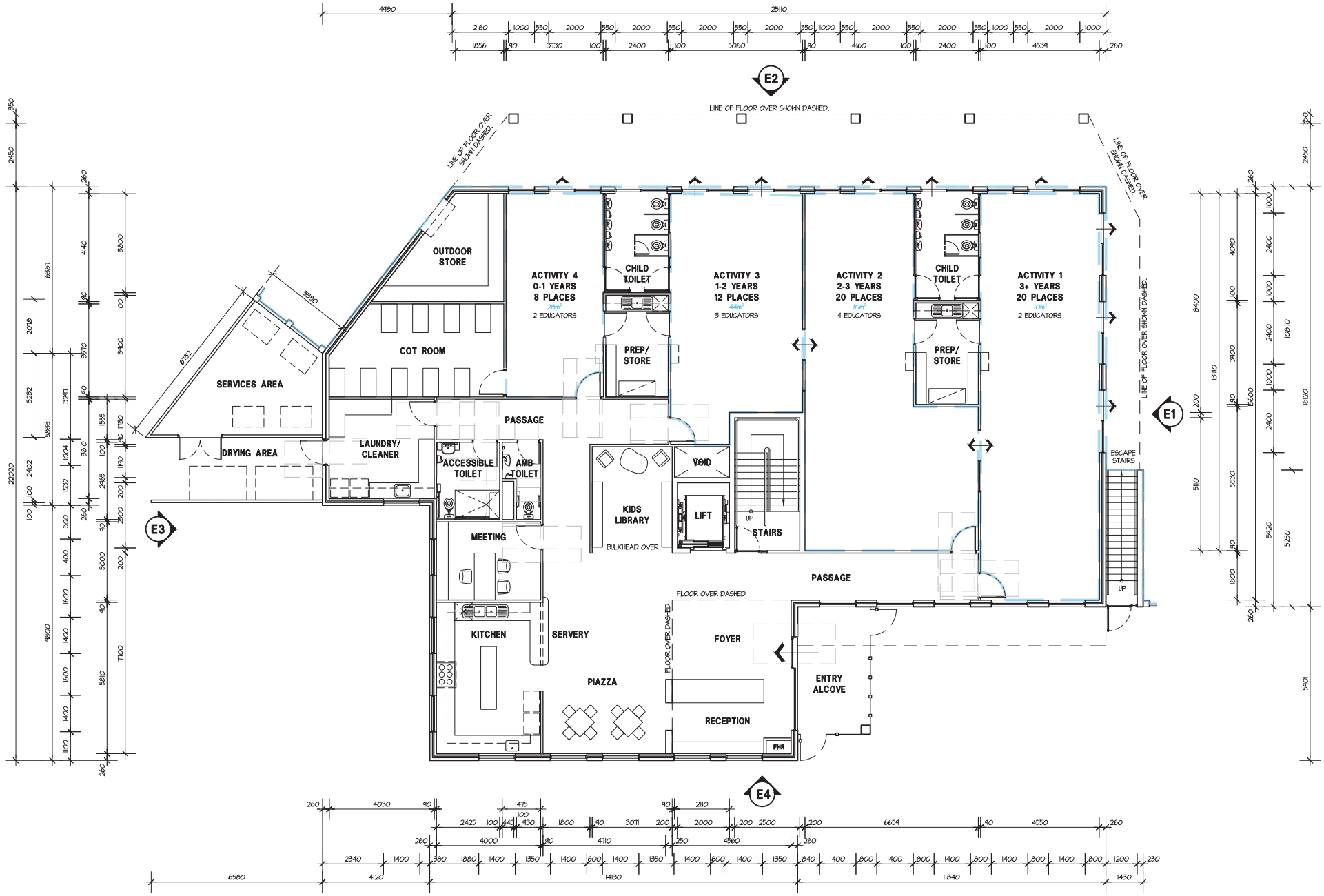
| Scale - | 1:200 |
| Job No. - | 0794 |
| Dwg - | DA05 |
| Rev - | A |

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# PROPOSED GROUND FLOOR PLAN

SCALE 1:100

N

PROPOSED CHILDCARE CENTRE
LOTS 1 & 2, No. 172 SAFETY BAY ROAD
SHOALWATER
SOUTHERLY OCEAN & CEDARBAY INVESTMENTS

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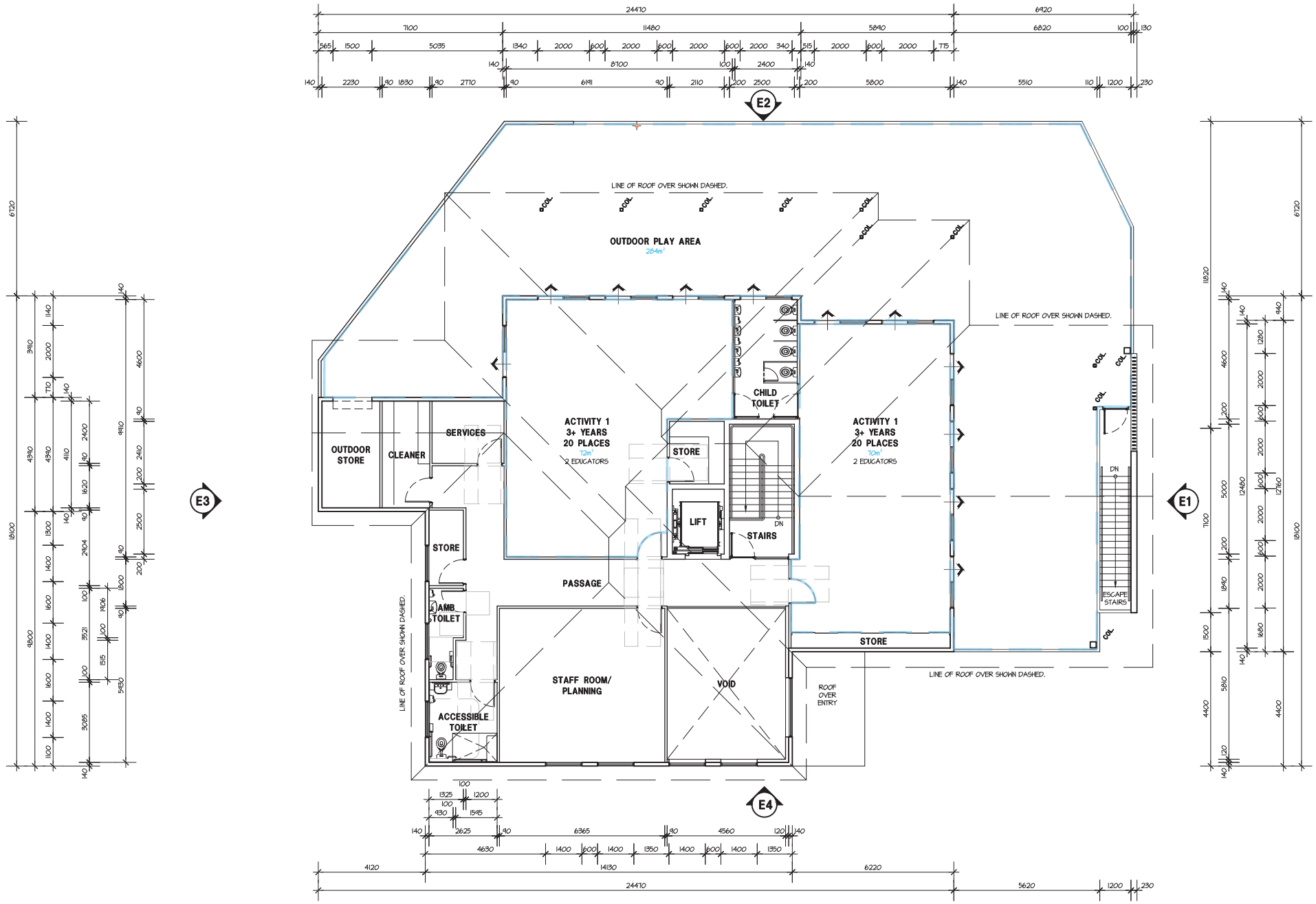
| Scale | 1:100 |
| Job No. | 0794 |
| Dwg. | DA06 |
| Rev. | A |




# PROPOSED FIRST FLOOR PLAN

SCALE 1:100

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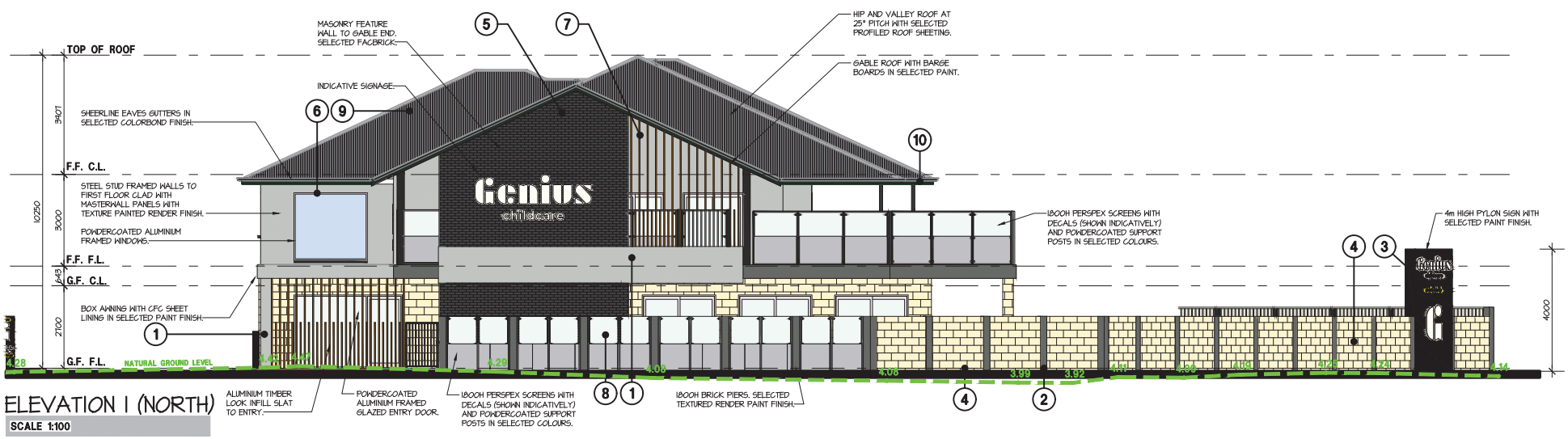
| Job No. - | 0794 |
| Dwg - | DA07 |
| Rev - | A |




## ELEVATION 1 (NORTH)

SCALE 1:100


## ELEVATION 2 (WEST)

SCALE 1:100

### FINISHES SCHEDULE

1. DULUX PAINT - 'TRANQUIL RETREAT' TEXTURED FINISH **PAINT CODE - SN461**
2. DULUX PAINT - 'TEAHOUSE' TEXTURED FINISH **PAINT CODE - SN466**
3. DULUX PAINT - 'CB MONUMENT' TEXTURED FINISH
4. MIDLAND BRICK - 'BULLARA' STRETCHER BOND
5. MIDLAND BRICK - 'ESTILO NIRO METALICO' STRETCHER BOND
6. DULUX - POWDERCOAT DURALLOY 'SHALE GREY' MATTE FINISH
7. KNOTWOOD - ALUMINIUM BATTS 'NORWEGIAN BEECH'
8. PERSPEX WITH SUPPORT FRAMING IN POWDERCOAT 'BLACK'
9. CUSTOM ORB PROFILED SHEETING COLORBOND - 'SHALE GREY MATTE'
10. EAVES GUTTERS COLORBOND - 'MONUMENT'



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|---|---|---|---|---|
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PROPOSED CHILDCARE CENTRE
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SHOALWATER
SOUTHERLY OCEAN & CEDARBAY INVESTMENTS

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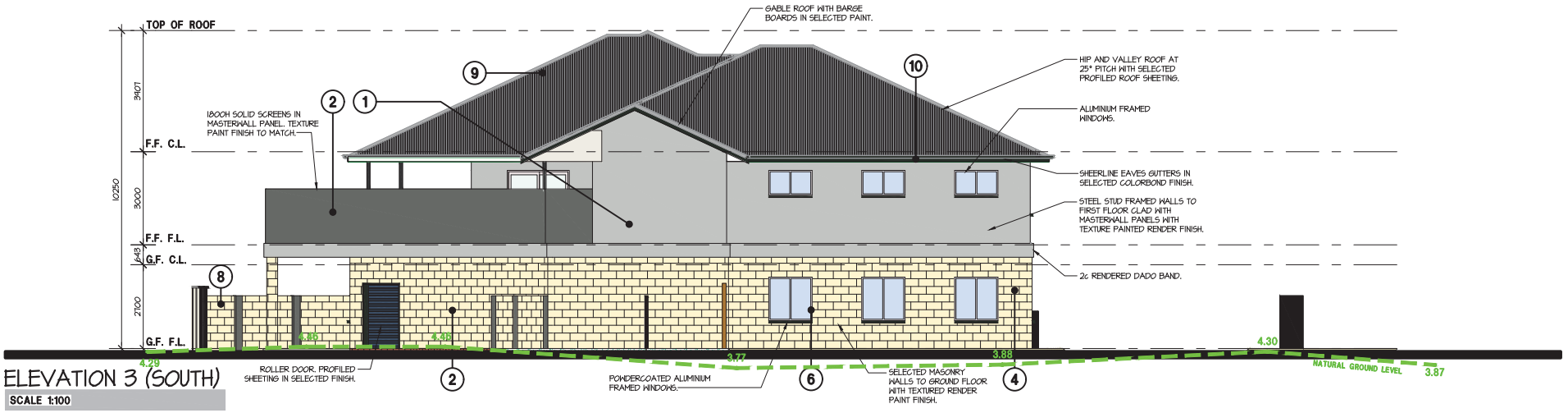
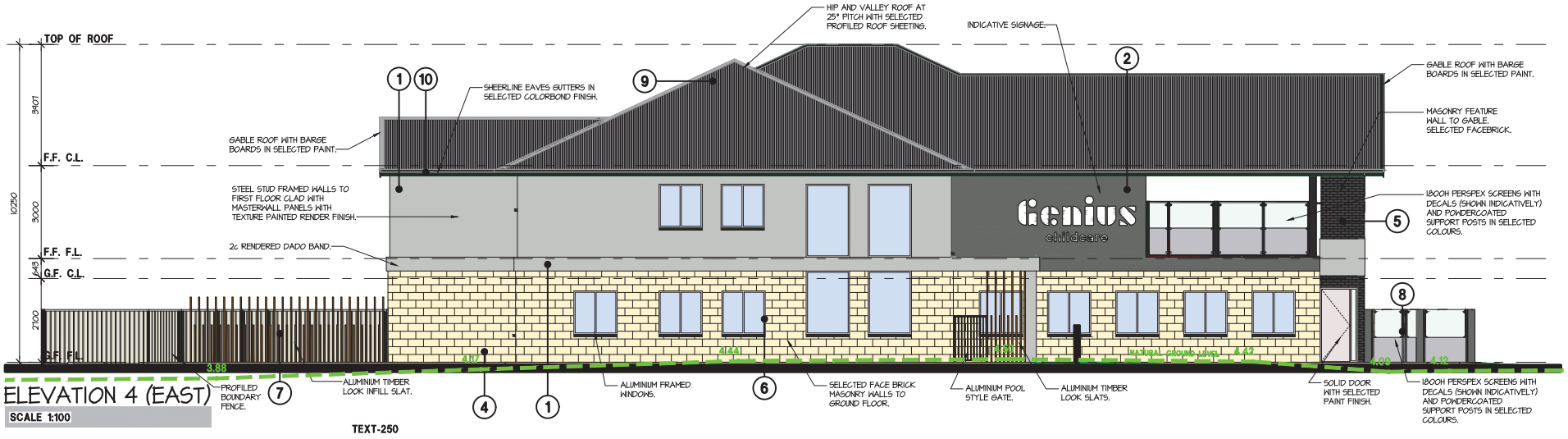



## ELEVATION 3 (SOUTH)

SCALE 1:100




## ELEVATION 4 (EAST)

SCALE 1:100

TEXT-250

### FINISHES SCHEDULE

1. DULUX PAINT - 'TRANQUIL RETREAT' TEXTURED FINISH **PAINT CODE - SN461**
2. DULUX PAINT - 'TEAHOUSE' TEXTURED FINISH **PAINT CODE - SN466**
3. DULUX PAINT - 'CB MONUMENT' TEXTURED FINISH
4. MIDLAND BRICK - 'BULLARA' STRETCHER BOND
5. MIDLAND BRICK - 'ESTILO NIRO METALICO' STRETCHER BOND
6. DULUX - POWDERCOAT DURALLOY 'SHALE GREY' MATTE FINISH
7. KNOTWOOD - ALUMINIUM BATTS 'NORWEGIAN BEECH'
8. PERSPEX WITH SUPPORT FRAMING IN POWDERCOAT 'BLACK'
9. CUSTOM ORB PROFILED SHEETING COLORBOND - 'SHALE GREY MATTE'
10. EAVES GUTTERS COLORBOND - 'MONUMENT'



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DEVELOPMENT APPLICATION

PROPOSED CHILDCARE CENTRE
LOTS 1 & 2, No. 172 SAFETY BAY ROAD
SHOALWATER
SOUTHERLY OCEAN & CEDARBAY INVESTMENTS

| | |
|---|---|
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| Drawn | - CPH |
| Checked | - CPH |
| Scale | - 1:100 |
| Job No. | - 0794 |
| Dwg | - DA09 |
| Rev | - A |

# 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*:

$\%\ \text{Type A}_{100}$ = the percentage of industrial land within a100m radius of the premises receiving the noise

$\%\ \text{Type A}_{450}$ = the percentage of industrial land within a 450m radius of the premises receiving the noise

$\%\ \text{Type B}_{100}$ = the percentage of commercial land within a100m radius of the premises receiving the noise

$\%\ \text{Type B}_{450}$ = the percentage of commercial land within a 450m radius of the premises receiving the noise

+ Transport Factor (maximum of 6 dB)

= 2 for each secondary road (6,000 to 15,000 vpd) within 100m

= 2 for each major road (> 15,000 vpd) within 450m

= 6 for each major road within 100m

The nearest noise sensitive premises are identified as:

- 2 Rae Rd
- 3 Rae Rd
- 4 Rae Rd
- 6 Scott Rd
- 8 Scott Rd
- 10 Scott Rd
- 17 East Rd
- 169 State Route 18
- 171-173 Safety Bay Rd
- 174 Safety Bay Rd

The calculation has been completed at the 174 Safety Bay Road receiver as this is considered the most sensitive receiver. *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.

***Table B-1: Percentage of Land Types within 100m and 450m Radii***

| Receiver | Land Type | Within 100m | Within 450m |
|---|---|---|---|
| All receivers | Type A - Industrial and Utility | 0 | 0 |
| | Type B – Commercial | 18% | 1% |

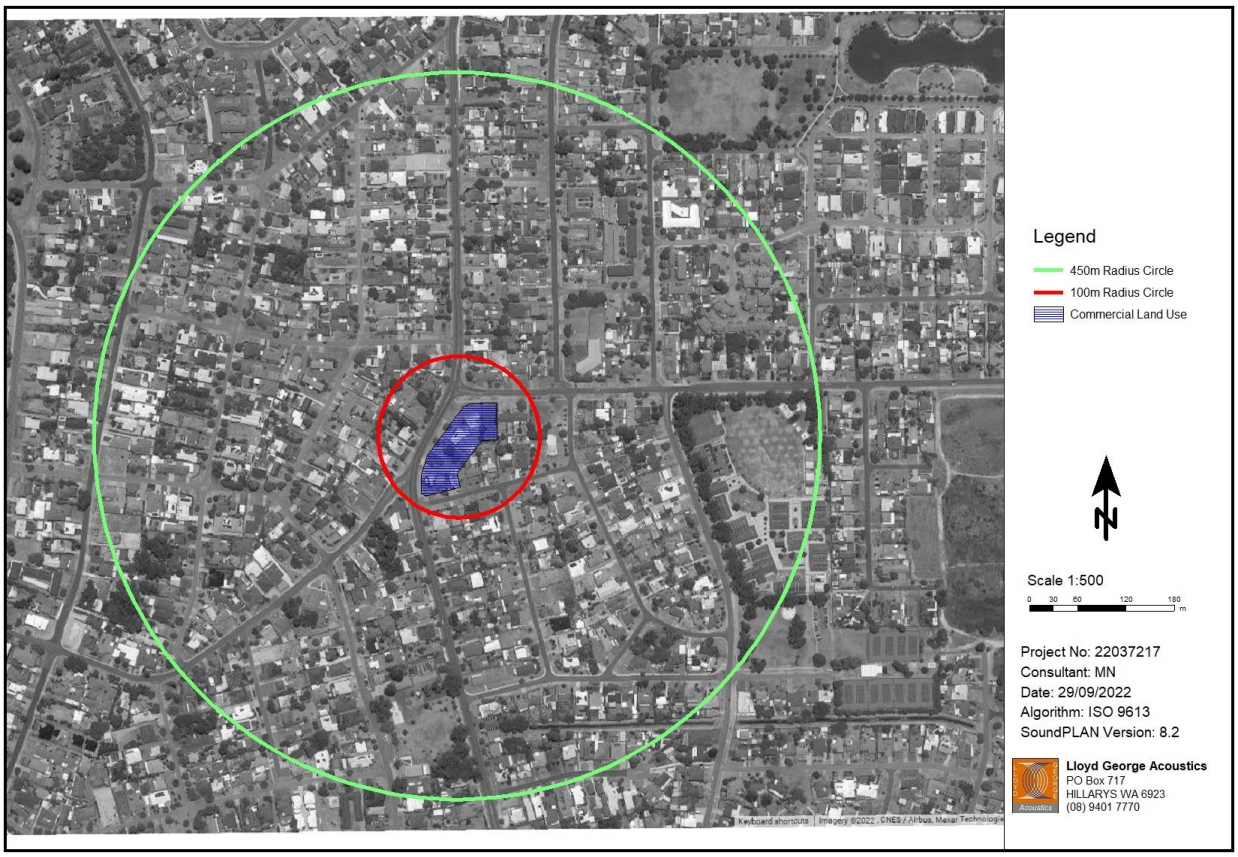



***Figure B-1: Land Types within 100m and 450m Radii of Nearest Sensitive Premises***

From the Main Roads WA Traffic Map (refer *Figure B-2*), *Figure B-1* shows the relevant roads and their traffic counts 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 (+ 2 dB) |
| All Receivers | - | Safety Bay Road<br>(6,599 2020/21 #5334) | - |

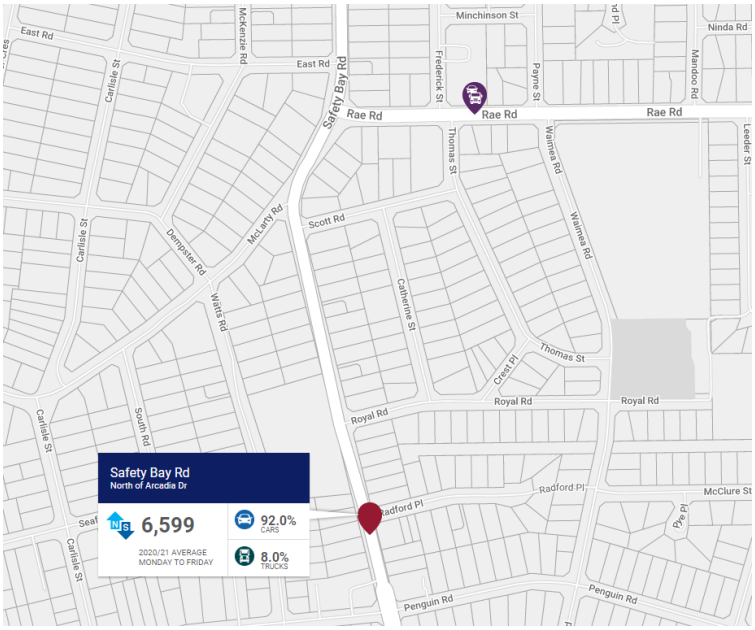



***Figure B-2: MRWA Published Traffic Data***

*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 |
|---|---|---|---|---|
| All Receivers | 0 | 1.0 | 2.0 | **3** |

The influencing factor calculated in *Table B-3* is combined with baseline assigned levels of *Table 2-2*, resulting in the project assigned levels provided in *Table 2-3*.

# Appendix C – Terminology

The following is an explanation of the terminology used throughout this report:

- **Decibel (dB)**

The decibel is the unit that describes the sound pressure levels of a noise source. It is a logarithmic scale referenced to the threshold of hearing.

- **A-Weighting**

An A-weighted noise level has been filtered in such a way as to represent the way in which the human ear perceives sound. This weighting reflects the fact that the human ear is not as sensitive to lower frequencies as it is to higher frequencies. An A-weighted sound level is described as $L_A$, dB.

- **Sound Power Level ($L_w$)**

Under normal conditions, a given sound source will radiate the same amount of energy, irrespective of its surroundings, being the sound power level. This is similar to a 1kW electric heater always radiating 1kW of heat. The sound power level of a noise source cannot be directly measured using a sound level meter but is calculated based on measured sound pressure level at known distances. Noise modelling incorporates source sound power levels as part of the input data.

- **Sound Pressure Level ($L_p$)**

The sound pressure level of a noise source is dependent upon its surroundings, being influenced by distance, ground absorption, topography, meteorological conditions etc. and is what the human ear actually hears. Using the electric heater analogy above, the heat will vary depending upon where the heater is located, just as the sound pressure level will vary depending on the surroundings. Noise modelling predicts the sound pressure level from the sound power levels taking into account ground absorption, barrier effects, distance etc.

- **$L_{ASlow}$**

This is the noise level in decibels, obtained using the A-frequency weighting and the S (slow) time weighting. Unless assessing modulation, all measurements use the slow time weighting characteristic.

- **$L_{AFast}$**

This is the noise level in decibels, obtained using the A-frequency weighting and the F (fast) time weighting. This is used when assessing the presence of modulation.

- **$L_{APeak}$**

This is the greatest absolute instantaneous sound pressure level in decibels using the A-frequency weighting.

- **$L_{Amax}$**

An $L_{Amax}$ level is the maximum A-weighted noise level during a particular measurement.

- **$L_{A1}$**

The $L_{A1}$ level is the A-weighted noise level exceeded for 1 percent of the measurement period and is considered to represent the average of the maximum noise levels measured.

- **$L_{A10}$**

The $L_{A10}$ level is the A-weighted noise level exceeded for 10 percent of the measurement period and is considered to represent the “intrusive” noise level.

- **$L_{A90}$**

The $L_{A90}$ level is the A-weighted noise level exceeded for 90 percent of the measurement period and is considered to represent the “background” noise level.

- **$L_{Aeq}$**

The equivalent steady state A-weighted sound level (“equal energy”) in decibels which, in a specified time period, contains the same acoustic energy as the time-varying level during the same period. It is considered to represent the “average” noise level.

- **One-Third-Octave Band**

Means a band of frequencies spanning one-third of an octave and having a centre frequency between 25 Hz and 20000 Hz inclusive.

- **Representative Assessment Period**

Means a period of time not less than 15 minutes, and not exceeding four hours, determined by an inspector or authorised person to be appropriate for the assessment of a noise emission, having regard to the type and nature of the noise emission.

- **$L_{Amax}$ assigned level**

Means an assigned level, which, measured as a $L_{ASlow}$ value, is not to be exceeded at any time.

- **$L_{A1}$ assigned level**

Means an assigned level, which, measured as a $L_{ASlow}$ value, is not to be exceeded for more than 1 percent of the representative assessment period.

- **$L_{A10}$ assigned level**

Means an assigned level, which, measured as a $L_{ASlow}$ value, is not to be exceeded for more than 10 percent of the representative assessment period.

- **Tonal Noise**

A tonal noise source can be described as a source that has a distinctive noise emission in one or more frequencies. An example would be whining or droning. The quantitative definition of tonality is:

– the presence in the noise emission of tonal characteristics where the difference between -

(a) the A-weighted sound pressure level in any one-third octave band; and

(b) the arithmetic average of the A-weighted sound pressure levels in the 2 adjacent one-third octave bands,

is greater than 3 dB when the sound pressure levels are determined as $L_{Aeq,T}$ levels where the time period T is greater than 10% of the representative assessment period, or greater than 8 dB at any time when the sound pressure levels are determined as $L_{A\ Slow}$ levels.

This is relatively common in most noise sources.

- **Modulating Noise**

A modulating source is regular, cyclic and audible and is present for at least 10% of the measurement period. The quantitative definition of modulation is:

– a variation in the emission of noise that —

(a) is more than 3 dB $L_{A\ Fast}$ or is more than 3 dB $L_{A\ Fast}$ in any one-third octave band; and

(b) is present for at least 10% of the representative assessment period; and

(c) is regular, cyclic and audible.

- **Impulsive Noise**

An impulsive noise source has a short-term banging, clunking or explosive sound. The quantitative definition of impulsiveness means:

– a variation in the emission of a noise where the difference between $L_{Apeak}$ and $L_{Amax}$ is more than 15 dB when determined for a single representative event.

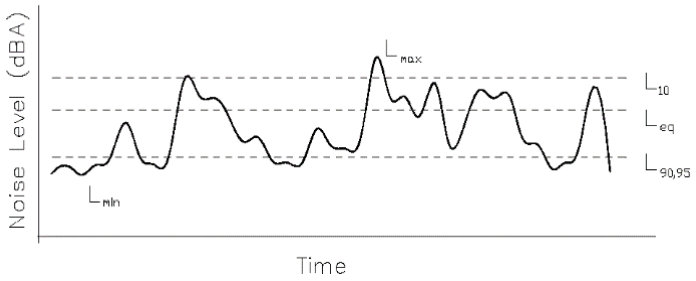
- **Major Road**

Is a road with an estimated average daily traffic count of more than 15,000 vehicles.

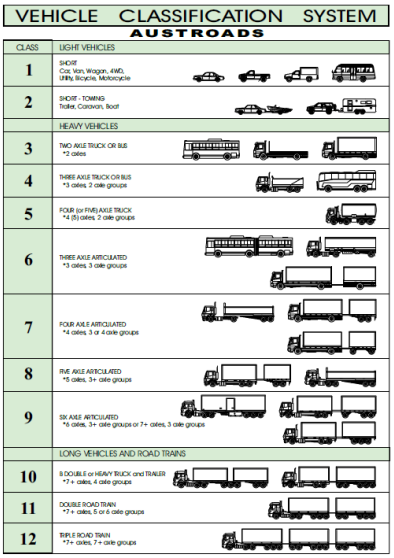
- **Secondary / Minor Road**

Is a road with an estimated average daily traffic count of between 6,000 and 15,000 vehicles.

- **Chart of Noise Level Descriptors**




- **Austroads Vehicle Class**




- **Typical Noise Levels**