Planning Meeting Agenda

12 May 2026 at 1pm

COPACC Meeting Rooms 1 & 2

Colac Otway SHIRE

COLAC OTWAY SHIRE COUNCIL PLANNING COMMITTEE MEETING

Tuesday 12 May 2026

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COLAC OTWAY SHIRE COUNCIL PLANNING COMMITTEE MEETING

NOTICE is hereby given that the next ***PLANNING COMMITTEE MEETING OF THE COLAC OTWAY SHIRE COUNCIL*** will be held at COPACC on Tuesday 12 May 2026 at 1:00 PM.

AGENDA

1 DECLARATION OF OPENING OF MEETING

OPENING PRAYER

Almighty God, we seek your
blessing and guidance in our
deliberations on behalf of the
people of the Colac Otway Shire.
Enable this Council's decisions to be
those that contribute to the true
welfare and betterment of our community.

AMEN

2 WELCOME AND ACKNOWLEDGEMENT OF COUNTRY

Colac Otway Shire acknowledges the original custodians and law makers of this land, their elders past and present.

RECORDING AND PUBLICATION OF MEETINGS

Please note: All Planning Committee meetings are live streamed and recorded when the meeting is held either at COPACC or online. When meetings are held in other locations, Council will endeavour to make an audio recording of the meeting for community access. Matters identified as confidential items in the Agenda will not be live streamed or recorded regardless of venue or mode.

By participating in open Planning meetings, individuals consent to the use and disclosure of the information they share at the meeting (including any personal and/or sensitive information).

As soon as practicable following each open Council and Planning Committee meeting, the live stream recording will be accessible on Council's website. Recordings are also taken to facilitate the preparation of the minutes of open Council and Planning Committee meetings and to ensure their accuracy. Recordings will be retained by Council for a period of four years.

As stated in the Governance Rules, other than an official Council recording, no video or audio recording of proceedings of Council Meetings will be permitted without specific approval by resolution of the relevant Planning Meeting.

This meeting will be livestreamed to the public via Council's YouTube channel (search Colac Otway Shire Council at www.youtube.com).

3 MEETING ADMINISTRATION

3.1 Present

3.2 Apologies

3.3 Confirmation of Minutes

RECOMMENDATION

That the Planning Committee confirm the minutes of the Planning Committee Meeting held on 10 March 2026.

3.4 Declarations of Interest

A Councillor who has declared a conflict of interest, must leave the meeting and remain outside the room while the matter is being considered, or any vote is taken.

Item: 4.1

PP118/2025-1 - 4-6 Woods Street Colac - Use and Development of Land for a Childcare Centre

ADDRESS AND PROPERTY DETAILS	4-6 Woods Street COLAC (Lot: 3 LP: 22541 V/F: 8566/518 Parish of Colac)	**APPLICATION NUMBER**	PP118/2025-1
PROPOSAL	Use and Development of Land for a Childcare Centre		

PERMIT TRIGGERS

Planning scheme clause	Matter for which a permit is required
32.08-2	Use of land for a Childcare Centre
32.08-10	Buildings and Works for a Section 2 use (Childcare Centre) under Clause 32.08-2

TRIGGER FOR DETERMINATION BY COMMITTEE	10 objections including one petition (15 signatories) received		
ZONE	General Residential Zone (GRZ1)	**OVERLAYS**	Nil
COVENANTS	No - Easement E-1 (2.012m wide) along the northern boundary set aside for drainage and sewerage purposes in favour of the Colac Otway Shire Council. No part of the proposal is located within this easement.		
CULTURAL HERITAGE	N/A		
OFFICER	Archna Rani	**GENERAL MANAGER**	Ian Seuren
DIVISION	Community and Economy		

ATTACHMENTS

1. P P 118 2025-1 - 4-6 Woods Street COLAC - Plans (CURREN T) [**4.1.1** - 4 pages]
2. P P 118 2025-1 - 4-6 Woods Street COLAC - Traffic Impact Statement R V 2 (CURREN T) [**4.1.2** - 46 pages]

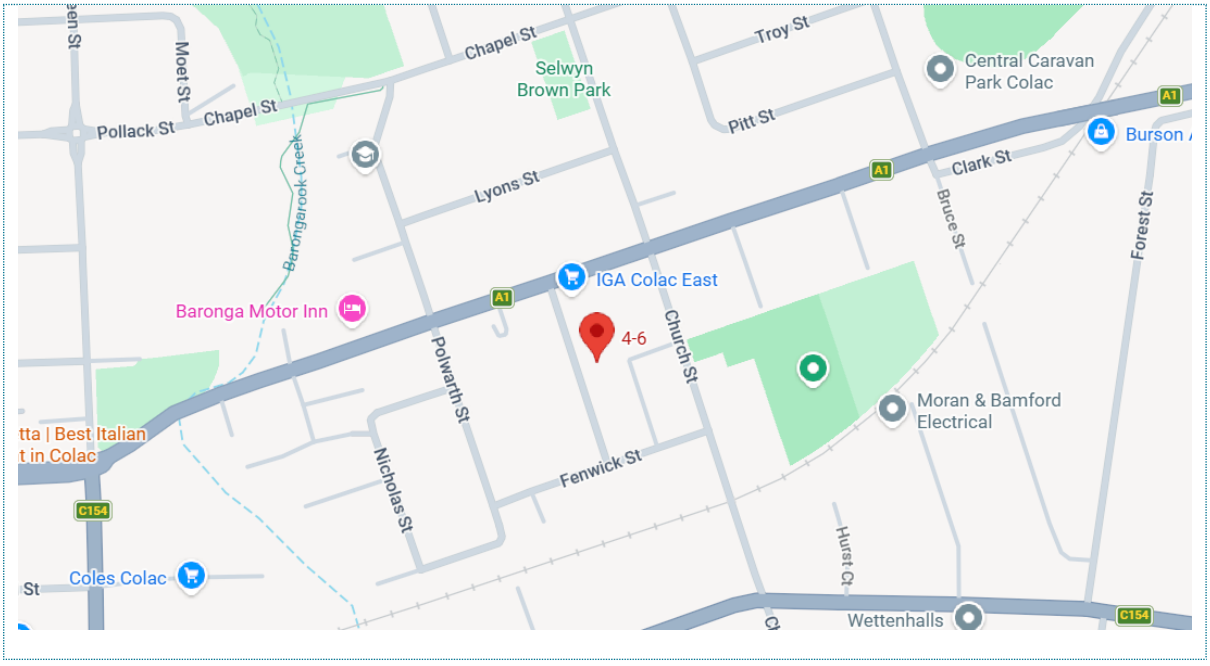
Item: 4.1

PP118/2025-1 - 4-6 Woods Street Colac - Use and Development of Land for a Childcare Centre

3. P P 118 2025-1 - 4-6 Woods Street COLAC - Traffic Enquiry Response [**4.1.3** - 12 pages]
4. P P 118 2025-1 - 4-6 Woods Street COLAC - SIDRA Analysis (Part of traffic assessment) - CURRENT [**4.1.4** - 12 pages]
5. P P 118 2025-1 - 4-6 Woods Street COLAC - Noise Impact Assessment (CURREN T) [**4.1.5** - 22 pages]
6. P P 118 2025-1- 4-6 Woods Street COLAC - Stormwater Management Report (CURREN T) [**4.1.6** - 21 pages]
7. P P 118 2025-1 - 4-6 Woods Street COLAC - Waste Management Report - V 3(CURREN T) [**4.1.7** - 8 pages]

1. LOCATION PLAN / AERIAL PHOTO

LOCATION PLAN



AERIAL PHOTO

2. RECOMMENDATION

That the Planning Committee resolves to issue a Notice of Decision to Grant a Permit for Use and Development of Land for a Childcare Centre at 4-6 Woods Street COLAC (Lot: 3 LP: 22541 V/F: 8566/518 Parish of Colac), subject to the following conditions:

Endorsed Plans

1. The use and development as shown on the endorsed plans must not be altered without the written consent of the Responsible Authority.

Restrictions on Use

2. The use hereby permitted must operate only between the hours of:

a) 6:30am to 6:30pm Monday to Friday inclusive and at no other times unless with the written consent of the Responsible Authority.

3. No more than 99 children may be present on the premises at any one time, unless otherwise approved in writing by the Responsible Authority.

Amenity

4. The use and development must be managed so that the amenity of the area is not detrimentally affected, through the:

a) transport of materials, goods or commodities to or from the land;
b) appearance of any building, works or materials;
c) emission of noise, artificial light, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, wastewater, waste products, grit or oil;
d) presence of vermin;

5. Lighting must be designed, baffled and located so as to prevent any adverse effect on adjoining land, to the satisfaction of the Responsible Authority.

6. *All security alarms or similar devices installed on the land must be of a silent type in accordance with any current standard published by Standards Australia International Limited and must be connected to a security service.*

7. *No external sound amplification equipment or loudspeakers are to be used for the purpose of announcement, broadcast, playing of music or similar purpose.*

Access

8. *Prior to the commencement of development, concrete vehicular access from the roadway to the property boundary must be upgraded in accordance with the endorsed plans to the satisfaction of the Responsible Authority.*

Construction Management Plan

9. *Prior to the commencement of any works relating to the development, unless otherwise approved in writing by the Responsible Authority, a Construction Management Plan must be submitted to and approved by the Responsible Authority. The Construction Management Plan must include, but not be limited to:*

    a) *Details of hours of construction.*

    b) *Details of the construction program and traffic management details.*

    c) *Details of:*
        i. *methods to contain runoff, sedimentation, dust and mud within the land; and*
        ii. *the method and frequency of clean up procedures to ensure the road reserves are kept safe and clean; and*
        iii. *how litter, concrete and other construction waste will be managed and disposed of, including how chemical contamination on site will be managed.*

    d) *Details of the movement of construction vehicles to and from the land to avoid traffic hazards in and around the subject site, including delivery and unloading points for construction goods and equipment.*

    e) *Details of parking facilities for construction workers.*

    f) *Intended measures to minimise noise nuisance and other amenity impacts from mechanical equipment and demolition/construction activities.*

    g) *Details of how vegetation and other natural features that are planned for retention will be protected and managed.*

    h) *Details of a liaison officer for contact by residents and the Responsible Authority in the event queries or problems are experienced.*

    i) *A photographic record of the road reserve in the vicinity of the site to capture the current condition of the public infrastructure, including any damaged infrastructure.*

10. *All works must be undertaken in accordance with the approved Construction Management Plan. The developer must ensure that all contractors are aware of*

the requirements of the approved Construction Management Plan and understand how to implement them.

Car Park Construction

11. Prior to the commencement of use or the occupation of the development, the area/s set aside for the parking of vehicles and access lanes as shown on the endorsed plans must be:

a) Constructed;

b) Properly formed to such levels that they can be used in accordance with the plans;

c) Surfaced with an all-weather seal coat;

d) Drained;

e) Line-marked to indicate each car space and all access lanes;

f) Clearly marked to show the direction of traffic along access lanes and driveways;

g) Properly illuminated for both pedestrians and vehicles, with lighting designed, baffled and located to prevent any adverse effect on adjoining land;

all to the satisfaction of the Responsible Authority.

The areas must be constructed, and drained to prevent diversion of flood or drainage waters, and maintained in a continuously useable condition to the satisfaction of the Responsible Authority.

Car spaces, access lanes and driveways must be kept available for these purposes at all times.

Loading/Unloading

12. Waste collection and waste servicing activities associated with the approved use must only occur between:

- ***Between 10.00am and 2.00pm Monday to Friday; or***
- ***Between 8.00am and 5.00pm on Saturdays***
- ***At not times on Sundays or public holiday***

unless otherwise agreed to in writing by the Responsible Authority.

Stormwater

13. All stormwater runoff from the development, including overflow from water storage, must be taken to a legal point of discharge to the satisfaction of the Responsible Authority.

14. Prior to the commencement of development, a Stormwater Management Plan must be submitted to and approved by the Responsible Authority. The Stormwater Management Plan must show how the developed site will be effectively drained without effecting the adjacent properties or causing detrimental downstream effects and must include:

i. Stormwater detention system designed by a qualified engineer, which must provide for a maximum site discharge rate equal to the pre-development 5 year storm (20% AEP) and detain the post development 10 year storm (10% AEP).

ii. Address the Stormwater treatment in accordance with Clause 20.3.1 of the Infrastructure Design Manual (IDM) standard.

iii. Details of all drainage works including any works required outside of the proposed site.

15. All works, including the stormwater detention system, must be undertaken in accordance with the approved Stormwater Management Plan to the satisfaction of the Responsible Authority.

Detention System Inspection

16. Within five (5) business days of the installation of the stormwater detention system, notice of its installation must be given to the Responsible Authority, an inspection must be requested, and the written approval of the Responsible Authority must be obtained prior to occupation of the development.

Landscaping

17. Prior to the commencement of development, a landscape plan to the satisfaction of the Responsible Authority must be submitted to and approved by the Responsible Authority. When approved, the plan will be endorsed and will then form part of the permit. The plan, which must be drawn to scale with dimensions, must show:

a) A survey (including botanical names) of all existing vegetation to be retained and/or removed.

b) Buildings and trees (including botanical names) on neighbouring properties within three metres of the boundary.

c) Details of surface finishes of pathways and driveways.

d) A planting schedule of all proposed trees, shrubs and ground covers, including botanical names, common names, sizes at maturity, and quantities of each plant around the northern, southern and eastern boundaries of the site.

An in-ground irrigation system is to be provided to all landscaped areas.

All species selected must be to the satisfaction of the Responsible Authority.

18. Prior to the commencement of the use hereby permitted, or by such later date as is approved by the Responsible Authority in writing, the landscaping works shown on the endorsed plans must be completed to the satisfaction of the Responsible Authority. The landscaping must thereafter be maintained to the satisfaction of the Responsible Authority, including that any dead, diseased, or damaged plants are to be replaced.

Noise Control

19. Noise levels emanating from the premises must not exceed those required to be met under the EPA Noise Control Guidelines Publication 1254.2 in relation to deliveries.

20. Noise levels emanating from the premises must not exceed as those stated in EPA Publication 1826 – Noise Limit and Assessment Protocol for the Control of Noise from Commercial, Industrial and Trade Premises and Entertainment Venues (Part 1, EPA Pub. 1826-P1). Day time, evening and nighttime noise limits are not to be exceeded.

21. Noise emissions associated with the childcare centre must comply with recommendations as specified in Noise Impact Assessment published by Engineering Sciences dated 24/07/2025 Reference J1117.1 and criteria outlined in the AAAC Guideline for Childcare Acoustic Assessment V3.0 and to minimise potential impacts on nearby noise-sensitive receivers.

Noise Management Plan

22. Prior to the commencement of the use hereby permitted, a noise management plan, prepared by a suitably qualified person, must be submitted to Council's Health Protection Unit and approved in writing by the Responsible Authority. The Noise Management Plan must provide details of appropriate sound attenuation measures as listed in the Noise Impact Assessment published by Engineering Sciences dated 24/07/2025 Reference J1117.1 contained in sections 5.4 and 5.5. The sound attenuation measures detailed within the noise management plan must be implemented and maintained to the satisfaction of the Responible Authority.

23. In the event the sound attenuation measures as listed in the Noise Impact Assessment published by Engineering Sciences dated 24/07/2025 Reference J1117.1 contained in sections 5.4 and 5.5 and as detailed within the noise management plan do not provide the level of noise attenuation as required, within six (6) months of the commencement of the use, unless an alternative timeframe is agreed in writing by the Responsible Authority, additional noise attenuation measures to achieve appropriate sound attenuation measures must be undertaken. Upon request by the Responsible Authority noise monitoring verification must be undertaken to demonstrate noise levels are achieved.

Expiry

24. This permit will expire if one of the following circumstances applies:

- ***a) The development is not commenced within three years of the date of this permit.***
- ***b) The development is not completed, and the use is not commenced within five years of the date of this permit.***

In accordance with section 69 of the Planning and Environment Act 1987, an application may be made to the Responsible Authority to extend the periods referred to in this condition.

Notes

1. This permit does not authorise the commencement of any building works. Prior to the commencement of development, it will also be necessary to obtain a building permit for the proposed building and works.

2. ***A works within road reserve permit is required prior to any works being undertaken on Council managed road reserves within the Colac Otway Shire.***

3. ***Prior to preparing drainage plans, a legal point of discharge (LPoD) must be obtained in accordance with Building Regulation 133. A copy of the LPOD, which incurs a fee in accordance with the Building Regulations, must be submitted with the engineering plans.***

4. ***Prior to the commencement of any works relating to the development allowed by this permit, build over easement permit will be required. All works must be carried out in accordance with conditions specified in the permit. A copy of the build over easement permit, which incurs a fee in accordance with the Building Regulations, must be submitted with the proposed plans.***

5. ***At least seven (7) days before any works start, an Asset Protection Permit must be obtained from Council. Council infrastructure must be maintained in a safe condition during the construction period. Any damage caused by these works to Council assets must be reinstated to the satisfaction of the Council prior to the completion of works.***

6. ***A planning permit will be required for any future Business Identification Signage at this premises.***

3. PROPOSAL

The proposal is summarised as follows:

- A single storey childcare building achieving a maximum height of 5.5m with a site coverage of 39.64%.
- The centre will accommodate 99 places and 21 staff at any one time.
- The building has a floor area of 572.6sqm and will be occupied by six children's rooms, staff and administration facilities, amenities, and a covered outdoor verandah.
- A total play area of 710sqm situated to the side and rear of the building.
- The provision of 21 onsite car spaces accessible from a new central crossover with a width of 5.5m.
- The building materials will feature a combination of brick, rendered finishes and wooden battens cladding, and slated Colourbond roof.
- The building will have setbacks of 19.4m from Woods Street, 4.18m from the northern boundary, 1.5 from the southern boundary and 8.9m from eastern (rear) boundary.
- A bin store area (11.5sqm) is provided along the northern boundary with a private contractor undertaking the waste collection.
- Operating hours from Monday to Friday, between 6:30am and 6:30pm.

Figure 1– Extract of the proposed site plan.

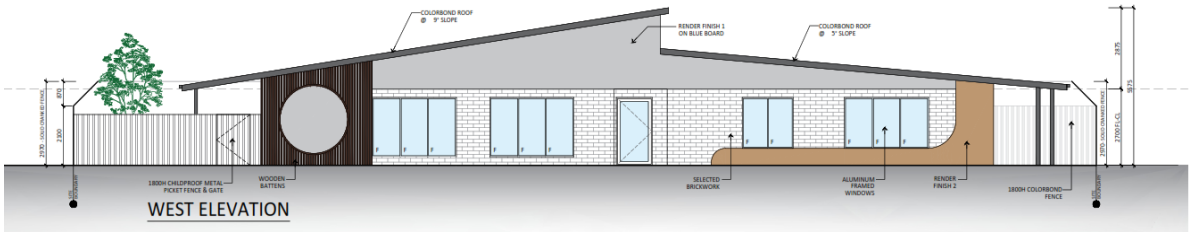


Figure 2 – Proposed western elevation

Traffic and Parking Generation

In terms of traffic generation, the application includes a Traffic Impact Assessment which notes that the proposed development is anticipated to generate the following level of traffic, with all traffic generated to and from Woods Street:

> *Based on data collected at a range of childcare centres, a traffic generation rate of 3 daily vehicle trips per child and 0.8 vehicle trips per child during peak hours has been adopted. The peak hours of childcare centres are typically morning (7:30 am – 8:30 am) and afternoon (4:30 pm – 5:30 pm).*
>
> *At full capacity, this equates to up to 300 vehicle trips per day (150 trips to the site and 150 trips away from the site), including 80 vehicle trips in each peak hour (i.e. 40 trips to the site and 40 trips away from the site).*

Under Clause 52.06-5, for a childcare centre the specified carparking rate is 1 car parking space to each employee and accordingly the proposal requires 21 on site car spaces. As 21 carparking spaces are provided, no reduction is being sought by the applicant.

4. SUBJECT LAND & SURROUNDINGS

Subject Site

The subject site is located within a General Residential Zone 1 (GRZ1) and is surrounded by a mixture of uses, including single dwellings, short stay accommodation, commercial and education facilities.

The site is formally known as 4-6 Woods Street, Colac and is a large allotment with a frontage of 36.4m to Woods Street, a depth of 54m and an overall site area of 1964sqm.

The site is occupied by a single-storey brick dwelling with a pitched tiled roof. An existing vehicle crossover provides access to a concrete driveway located along the middle of the site. This driveway leads to a detached garage located at the rear of the property, which is constructed with cement sheet cladding. The dwelling and garage is situated towards the southern portion of the site and the remaining part of the land remains vacant.

Surrounding area

The subject site abuts the following properties:

- 2 Woods Street (north) – this property comprises a single storey brick veneer dwelling with a driveway along the northern boundary.
- 62-66 Murray Street (portion of the northern boundary) – this property is within a Commercial 1 Zone and is occupied by an IGA supermarket and ancillary shops. Carparking areas are situated towards the east and south of the building ad a vacant portion (grassed) area directly abuts the subject site.
- 8 Woods Street (south) – comprises a large single storey dwellings with a large outbuilding in the rear and heavy vegetated front and rear yards.

To the rear (eastern boundaries) are the rear yards of the dwellings fronting Church Street and a unit fronting Murray Street. The remaining properties to the south and west are predominantly residential in nature and single storey dwellings.

The subject site is situated on the eastern side of Woods Street, a local road that runs north-south, connecting Murray Street East to the north and Fenwick Street to the south.

The site is also within proximity of Colac Primary School and the signalised pedestrian crossing adjacent to the IGA supermarket.

5. PLANNING SCHEME PROVISIONS

Planning Policy Framework

It is considered that the proposal generally meets the relevant objectives, strategies and policies of the Planning Policy Framework, notably Clauses 02.02 Vision, Clause 02.03-1 Settlement, Clause 02.03-6 Economic Development, Clause 02.03-8 Infrastructure, Clause 11.01-1S and 11.01-1R (Settlement), Clause 13.05-1S Noise Management, Clause 13.07-1S & 13.07-1L Land Use Compatibility, Clause 15.01-1S Urban Design, Clause 15.01-1L Colac Built Environment, Clause 15.01-2S & 15.01-2L (Building Design), Clause 15.01-5S (Neighbourhood Character), Clause 17.01-1R & 17.01-1L Diversified Economy – Geelong G2 and Clause 19.02-2S Education Facilities.

Clause 02.03-1 – Settlement
This policy seeks to support Colac's sustainable growth by promoting industrial and commercial development (particularly in east Colac), encouraging diverse residential growth, strengthening the CBD, protecting heritage and Lake Colac, improving recreational links and public open space, supporting secondary commercial centres, and enhancing Colac's identity as a 'Botanic Garden City' through improved amenity and streetscapes.

Clause 02.03-6 Economic Development
This policy acknowledges that Council will promote economic development by prioritising employment-generating uses.

Clause 13.05-1S Noise Management
This policy acknowledges that development should be designed and located to avoid adverse noise impacts, ensuring community amenity and human health are protected by minimising noise exposure to sensitive uses through appropriate siting, building design, urban design and land use separation.

Clause 13.07-1S & 13.07-1L Land Use Compatibility
Under these policies, Council seeks to protect community amenity, human health and safety by ensuring land uses are compatible, avoiding and minimising adverse off-site impacts through appropriate separation, siting, design and operational measures, and safeguarding commercial and industrial areas from encroachment that could compromise their effective and safe operation.

Clause 15.01-1S & 15.01-1L Colac Built Environment
These policies seek to ensure that development responds to its context and enhances local character, heritage, environmental qualities and climatic conditions, while contributing positively to community and cultural life. High-quality design should improve public realm amenity, safety, accessibility and inclusiveness, support walking, cycling and public transport, and ensure safe, well-designed interfaces between public and private spaces. Development, including landscaping and signage, should minimise adverse impacts on amenity, the natural and built environment, and transport networks, and promote good urban design, particularly along transport corridors.

Clause 17.01-1R & 17.01-1L Diversified Economy
Under these policies Council aims to strengthen the regional economy by building on competitive advantages such as tourism, agricultural land and key natural, social and economic assets, while supporting new and innovative businesses that generate employment within identified employment nodes. Growth across a diverse range of sectors – including health, education, retail, tourism, knowledge industries, and professional and technical services – will be encouraged, particularly where industries draw on and retain local skills.

Other relevant provisions

Colac 2050 Growth Plan

The Colac 2050 Growth Plan ('the Plan') was adopted in August 2019 and was introduced into the Colac Otway Planning Scheme by Amendment C97cola. This amendment updated planning policy to reflect the Growth Plan's key directions. The Plan is a long-term strategy which guides the location of new housing, associated servicing infrastructure (e.g. water, drainage), and open space for the township of Colac. As the population of Colac is expected to grow which in turn will see a higher demand for new childcare centres.

Relevant Planning Scheme amendments

N/A

6. REFERRALS

Internal Referrals

The application was referred internally to Council's Infrastructure Department, Health Protection Unit and Building Department and Waste Services. No objections were raised, subject to conditions being included on any permit issued.

External Referrals

Externally the application was referred to the Department of Transport. No objections or conditions were raised.

7. PUBLIC NOTIFICATION & RESPONSE

COMMUNICATION

Public notification occurred by letters to surrounding properties and site notice displayed for a period of 14 days. Ten (10) objections including one petition (15 signatories) were received. No letters of support were received.

A Consultation meeting with objectors was also held and copies of all objections/petition were provided to Councillors during the Submissions Committee on 14 April 2026.

A summary of the key concerns raised by the objectors is provided below:

1. **Traffic and Parking**
   - Significant increase in traffic during peak drop-off/pick-up times.
   - Existing congestion near Colac East Primary School and IGA will worsen.
   - Proposed number of parking spaces is inadequate for staff and parents.
   - Safety risks for school children and pedestrians.
   - Potential need for traffic management upgrades (e.g., road widening, traffic lights etc.).
   - Increased traffic on Princes Highway/Woods Street intersection will cause safety issues.

2. **Noise Impacts**
   - Current ambient noise levels already near EPA limits.
   - Childcare activities (outdoor play, drop-offs) will increase noise from 6:30am to 6:30pm.
   - Proposed acoustic measures (fencing, awnings) deemed insufficient.
   - Concerns about HVAC (Heating, Ventilation, and Air Conditioning) outdoor units and mechanical noise.
   - Impact on residents working from home and mental health.

3. **Waste Management**
   - Insufficient bin capacity and poor location near residential boundaries.
   - Odour, vermin, and visual impacts expected.
   - Waste collection trucks may conflict with parent vehicles.

4. **Amenity and Visual Impact**
   - Removal of boundary trees reduces privacy.
   - Security lighting and car headlights will cause light pollution.
   - Large-scale commercial use incompatible with residential character.

5. **Stormwater and Drainage**
   - No detailed drainage plan provided.
   - Increased impervious surfaces may cause flooding on adjacent properties.

6. **Design and Sustainability**
   - Lack of sustainable features (solar panels, rainwater harvesting, native landscaping).
   - No clear plans for fencing, aesthetics or lighting.
   - Risk of unattractive boundary treatments affecting property values.

7. **Property Values and Liveability**
   - Anticipated decline in property values due to noise, traffic, and visual intrusion.
   - Health and wellbeing concerns linked to increased noise and light pollution.
   - The proposal is inconsistent with General Residential Zone as it introduces commercial activity, traffic, noise, and waste impacts which are incompatible with the residential character.

8. **Alternative and More Appropriate Locations**
   - A 110-place childcare centre has been proposed at 60–70 Wallace Street, approximately 800 metres from Woods Street, located on commercially zoned land.
   - No demonstrated need for a large-scale childcare centre in a narrow residential street.

The points raised by the objectors are considered with the Officer Assessment section of this report.

8. OFFICER'S ASSESSMENT

The subject site is located in the GRZ1 and one of the key purposes of this zone is to allow educational, recreational, religious, community and a limited range of other non-residential uses to serve local community needs in appropriate locations. In accordance with Clause 32.08-2 and 32.08-10, a planning permit is required to use and develop the land for a childcare centre (Section 2 Use). Given the non-residential nature, the application will be assessed on following decision guidelines under the clause 32.08-14.

Whether the use or development is compatible with residential use.

Site attributes

The proposal is considered to be consistent with the purpose of the zone, which seeks to allow a range of community uses within a residential setting where they provide a clear benefit to the local and broader community.

The site is appropriately located close to the Colac Central Business District and benefits from proximity to Colac Primary School. It is also adjacent to land zoned Commercial 1 (62–66 Murray Street), which is used for an IGA supermarket. This context demonstrates that the site is positioned at the interface of residential, educational, and commercial activities and is therefore well suited to accommodate a use such as a childcare centre.

The site benefits from convenient access to public transport, open space, and key services, including:

- 98m to the nearest bus stop (Colac Primary School / Princes Highway).
- 500m to Barongarook Creek and the associated reserve.
- 850m to Colac Plaza (Coles).
- 1.9kms to Colac Railway Station.

These attributes ensure the proposed childcare centre is highly accessible for families and staff, and is capable of serving both the immediate neighbourhood and the broader community. Its close proximity to Colac Primary School also creates opportunities for synergies associated with early childhood education and care.

It is also well established that childcare centres are commonly located within residential zones, similar to primary schools, as they are community-based uses that are intended to serve local catchments.

Noise impacts

The proposal includes the construction of a 2.1m high acoustic barrier fence along the part north, south and full east (rear) boundary to minimise any adverse noise impacts on the surrounding properties. A *Noise Impact Assessment* published by *Engineering Sciences* dated 24/07/2025 Reference J1117.1, was submitted with the application which noted:

> "W*ith the adoption of the noise management strategies outlined in Section 5.5, the proposed development is not expected to result in adverse noise impacts on surrounding residential receivers".*

This application was referred to Council's Health Protection Unit, who did not object to the proposal, subject to conditions outlined in the officer recommendation. Considering the proposed noise control measures and hours of operation, the proposal would not cause any material detrimental impact to the surrounding properties and amenity conditions have been included in the officer recommendation.

In light of the above, it is considered that the proposed use and development would be compatible with surrounding existing residential use.

Whether the use generally serves local community needs.

Clause 19.02-2S (Education Facilities) seeks to assist the integration of education and early childhood facilities with local and regional communities. Strategies to achieve this include the following:

- *Consider demographic trends, existing and future demand requirements, and the integration of facilities into communities in planning for the location of education and early childhood facilities.*
- *Locate childcare, kindergarten and primary school facilities to maximise access by public transport and safe walking and cycling routes.*
- *Ensure childcare, kindergarten and primary school and secondary school facilities provide safe vehicular drop-off zones.*
- *Ensure streets and accessways adjoining education and early childhood facilities are designed to encourage safe bicycle and pedestrian access.*

Future demand

As outlined above, the Colac 2050 Growth Plan is a long term strategic framework that guides the location of future housing, associated servicing infrastructure (including water and drainage), and open space for the township of Colac. The level of growth anticipated under the Plan is expected to result in a net increase in population over time, which will in turn place additional demand on existing and future childcare facilities. In this context, the proposal is considered to support both current and projected community needs, and makes a positive contribution toward meeting the childcare requirements of the local and broader Colac community.

Also as outlined above regarding the site's attributes, the proposed childcare centre will comply the strategies outlined in Clause 19.02-2S.

The scale and intensity of the use and development.

The childcare centre will operate from Monday to Friday, between 6:30am and 6:30pm, and closed on weekends (Saturday and Sunday). The hours of operation are considered acceptable given the nature of the business, where it is usual that children get dropped off/collected by parents heading to/from their workplaces.

Limiting operations to weekdays ensures that adjoining residential properties will not experience activity associated with the development during weekends, thereby preserving residential amenity and supporting reasonable enjoyment of nearby dwellings. An appropriate condition has been included in the recommendation section of this report to restrict the hours of operation to those specified above.

The childcare centre would accommodate a maximum of 99 children with 21 staff members. Whilst it is noted that children playing outside the facility within the rear yard are likely to contribute to additional noise levels in the immediate and surrounding area, it is noted that these would generally be during workdays and during business hours. It is also acknowledged that the children would also be indoors for long periods of the day.

As noted, the proposal includes the construction of a 2.1m high acoustic barrier fence along the part north, south and full east (rear) boundary to minimise any adverse noise impact on the surrounding properties. It is unlikely that the proposed childcare centre will cause any unreasonable noise impacts apart from children playing which is no different to a primary school.

This application was referred to Council's Health Protection Unit (HPU) who did not raise any objection subject to the conditions included in the recommendation section of this report.

The design, height, setback and appearance of the proposed buildings and works.

The single storey childcare building achieves a height of 5.57m, with a front setback of 19.4m, a rear setback of 8.9m and side setbacks of 4.18m (north) and 1.5m (south).

The proposed front setback of 19.4 metres exceeds that of the adjoining properties, which have front setbacks of 5.6 metres at 2 Woods Street and 8.52 metres at 8 Woods Street. The increased setback allows for onsite car parking within the front portion of the site, as well as a 2m landscaped buffer along the frontage.

The development results in a maximum site coverage of 39.64%. The proposed siting of the building is modest relative to the size of the lot, achieves a low site coverage outcome, and

provides generous setbacks from adjoining residential dwellings. This siting response assists in minimising amenity impacts, including visual bulk and scale.

Such an outcome would have been more difficult to achieve if the site were developed for a multi-unit residential development, where higher site coverage and reduced setbacks would typically be expected. In this respect, the proposal represents a considered and appropriate built form outcome for the site and surrounding residential context.

The proposed construction material and colour is consistent with the surrounding area with the building materials being muted and non-reflective – Colourbond 'woodland grey', Brickwork 'white', Render finish 'Colourbond – shale gray, smooth caramel, monument'.

The proposed landscaping.

The subject site is not significantly vegetated. The proposal includes removal of three (3) existing trees on the site and under the GRZ1 a planning permit is not required for tree removal. Similar exemptions are offered under the transitional provisions for Clause 52.37 Boundary (Canopy Tree).

A suitable condition in the officer recommendation has been included to ensure landscaping is provided around the boundaries of the site and a planting schedule of all proposed trees, shrubs and ground covers is provided. It is noted that given the siting of the building, there is adequate opportunities for landscaping to occur throughout the site.

The provision of car and bicycle parking and associated accessways.

Objectors have raised concerns in relation to traffic, onsite parking, stormwater and drainage. The proposed use has met the car parking rate specified in the planning scheme for a childcare centre and therefore a reduction is not being sought.

Council's Infrastructure Department acknowledges the concerns raised by adjoining and nearby landowners regarding the potential for increased on-street parking demand, higher traffic volumes, pedestrian safety, and congestion at the Murray Street and Woods Street intersection.

In response, it is noted that the proposal complies with the planning scheme parking requirements and provides an appropriate car parking layout. On this basis, there are no traffic or parking grounds to refuse the application.

Sufficient on-street parking capacity exists in the immediate street network to accommodate any potential overflow parking. It is considered that the development will have minimal impact on existing on-street parking demand, and any on-street parking associated with the proposal is expected to be short stay in nature, without materially affecting traffic conditions or residential amenity.

In relation to the Murray Street / Woods Street intersection, the application was referred under Section 55 of the *Planning and Environment Act 1987* and Clause 66.02-11 of the Planning Scheme to the Department of Transport and Council's Infrastructure Department. No objection was raised by either referral authority.

In support of this proposal, the applicant provided a Traffic Impact Assessment by O'Brien Traffic, dated 24 February 2026 (Version - 27593 TIARv2) plus an addendum letter dated 03

September 2025. The Traffic Impact Assessment, dated 24 February 2026 (Version - 27593 TIARv2) notes on page 11 that:

> "*the additional traffic generated by the proposed development (300 daily trips, including 80 two-way trips during AM and PM peak hours) is anticipated to have no significant adverse impact on Woods Street or the surrounding road network"*

Further to the concerns raised by objectors, the applicant submit a Signalised and Unsignalised Intersection Design and Research Aid (SIDRA, dated 14 November 2025) analysis to ascertain how the intersection would operate during peak periods. The submitted analysis notes on page 4 that:

> *"The intersection of Murray Street and Woods Street will continue to operate efficiently with the addition of traffic generated by the proposed childcare centre. All approaches are expected to maintain low Degrees of Saturation, minimal delays, and short queue lengths during the peak periods. On this basis, the proposed development is not expected to have any material impact on intersection performance".*

In terms of on street parking and traffic volumes, Woods Street is classified as an Access Street, which can accommodate on street parking on both sides and has the capacity to service up to 2,500 vehicles per day. While some increase in peak-hour traffic is expected compared to existing conditions, it remains within acceptable limits.

As part of this application, the existing crossover is proposed to be widened to allow simultaneous entry and exit of vehicles. A condition to this effect has been recommended within this report. It is considered that the proposed use and development of land would not cause material detriment to traffic congestion, parking or road safety issues within the immediate and surrounding area.

In relation to concerns raises relating to stormwater and drainage, Council's Infrastructure Department has recommended conditions, which have been included within the recommendation section of this report.

The subject site is considered to be appropriately connected to the public transport. Footpaths are existing on both sides of Woods Street for safe walking and cycling routes.

Any proposed loading and refuse collection facilities.

Clause 65.01 of the Planning Scheme states that before deciding on an application, the responsible authority must consider the adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.

It is generally considered that childcare centres do not typically generate regular loading or loading activities other than waste collection. Food deliveries are expected to occur using vans outside of peak drop-off and pick-up times, and these vans will be able to be park within the carparking area.

The Waste Management Plan (dated 24/02/2026) submitted anticipates that for 100 students, 750 litres/per of garbage would be generated per week and 250 litres/per of recycling. Accordingly, two (2) green waste bins (each capacity 240 Litres), two (2) general waste bins (each capacity 240 Litres) and two (2) recycling bins (capacity 240 litres and 120 litres) are proposed to be provided on the site.

The submitted Waste Management Plan advises on page 6 that:

> *"It is noted that, once operational, the development will utilise private waste collection services through a waste contractor. Therefore, the applicant shall engage a private waste contractor for once-a-week collection of waste (Garbage and recycling).*
>
> *The collection will typically be undertaken outside the operational hours of the childcare centre. The proposed waste collection vehicle for this site is a low-profile rear loading small rigid collection vehicle (6.4m long with 3.5m head clearance requirement). The anticipated manoeuvrability conditions of the small rigid waste collection vehicle have been investigated using a swept path assessment. …*
>
> *Swept path analysis provided demonstrates that a Small Rigid Vehicle (SRV) would be able to enter the car park, turn around and then exit in a forward direction. The proposed loading arrangements are therefore considered adequate to accommodate the loading needs of the proposed development."*

The submitted waste management report was referred to Council's Waste Services Department who did not object to the proposal.

To assist with screening the proposed waste collection area (which is proposed to be located adjacent to the northern boundary – adjoining with 2 Woods Street), the proposal includes construction of a 1.8m height Colourbond screening fence. The proposed waste collection area is considered to be accessible for waste collection. The appropriate condition in the officer's recommendation will ensure that surrounding amenity is preserved.

The safety, efficiency and amenity effects of traffic to be generated by the proposal.

Given that the proposal meets the required number of off street car parking spaces and in conjunction with the Traffic Impact Assessment and Waste Management Plan, it is considered that that proposal would not cause any impact on the amenity of surrounding properties.

On balance, the proposed use and development of site for a childcare centre is considered acceptable under the General Residential Zone.

Property Values and Liveability

Concerns raised by objectors in relation to a potential reduction in surrounding property values. The planning system is concerned with the use and development of land, rather than economic impacts on individual property values. Accordingly, any potential effect on property values is not a material planning consideration.

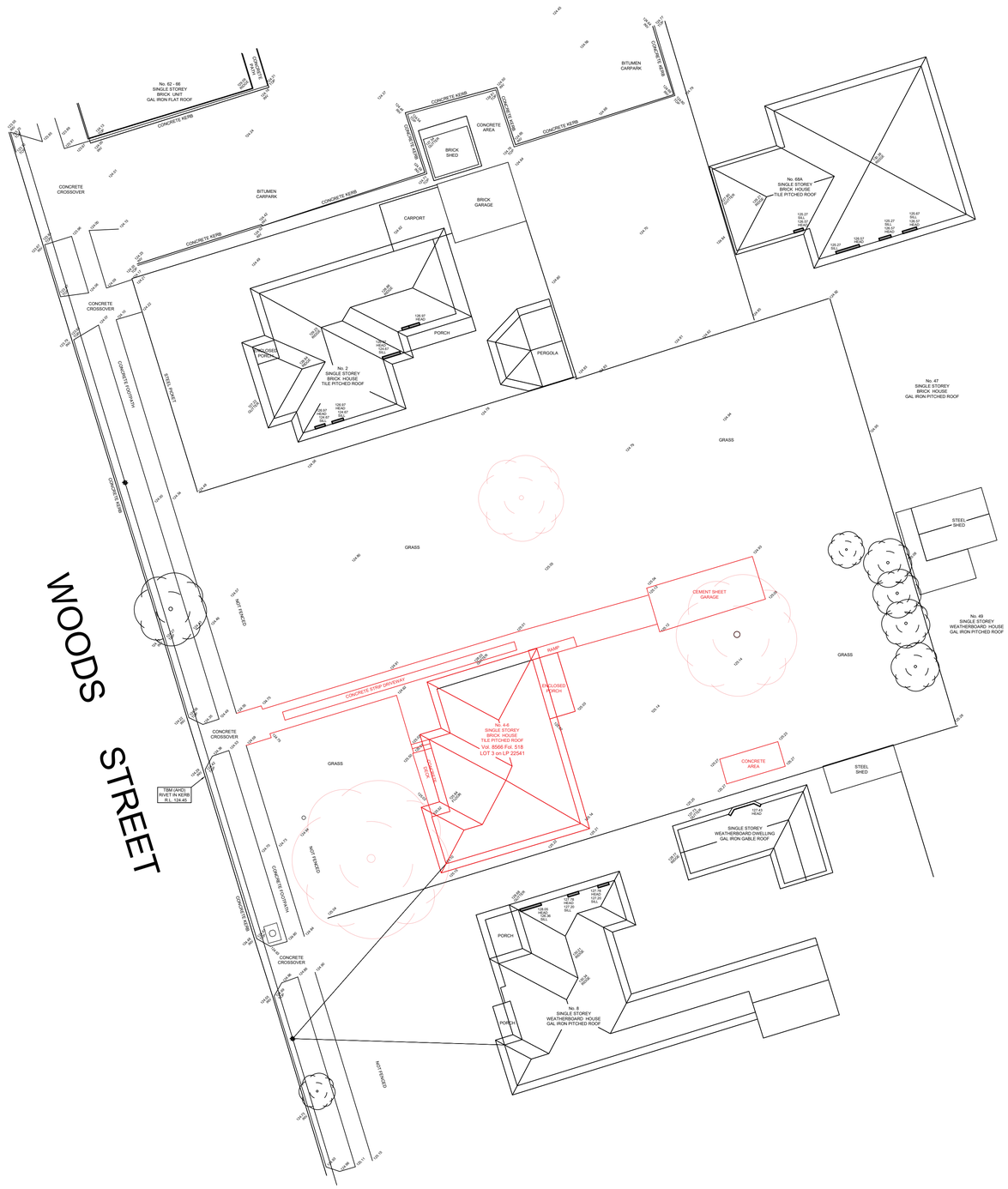
9. OFFICER DIRECT OR INDIRECT INTEREST

No officer declared an interest under the *Local Government Act 2020* in the preparation of this report.

TREES TO BE REMOVED

TREES TO BE RETAINED

TO BE DEMOLISHED



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REVISIONS:

NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY
01	17.01.2025	FLOOR PLAN	AJ				
02	08.04.2025	FP CHANGES	AJ				
03	16.04.2025	TP SET	AR				
04	28.04.2025	TP CHANGES	AJ				
05	19.05.2025	ROOF PLAN	AJ				
06	10.06.2025	ACOUSTIC AWNING FENCE	AJ				
07	08.08.2025	TP CHANGES	AJ				

CLIENT	:	
BUILDER	:	
PROJECT	:	**4-6 WOODS STREET COLAC**
DRAWING	:	NEIGHBORHOOD PLAN

DATE	:	19.02.2026
SCALE	:	1:200 @ A1
DRAWN	:	AR
CHECKED	:	GD
JOB NO	:	TP 240065

DRG # 01

REV #

SITE ANALYSIS

SITE AREA	1965.00 SQM
GROUND FLOOR AREA	572.60 SQM
COVERED VERANDAH	206.40 SQM
SITE COVERAGE	39.64 %
TOTAL AREA	779.00 SQM
OUTDOOR PLAY AREA	710.00 SQM
CARPARK AREA	566.00 SQM
CARPARKING	21 SPACES

HOURS OF OPERATION

MON-FRI	6:30AM TO 6:30PM
SATURDAY	CLOSED
SUNDAY	CLOSED

WASTE MANAGEMENT

NAPPY DISPOSAL BY DAILY CONTRACTOR
BIN DISPOSAL BY DAILY CONTRACTOR

CHILDREN ROOM 01

AREA	39.20 SQM
UNDER 3 YEAR OLD	12

CHILDREN ROOM 02

AREA	39.20 SQM
UNDER 3 YEAR OLD	12

CHILDREN ROOM 03

AREA	53.70 SQM
UNDER 3 YEAR OLD	16

CHILDREN ROOM 04

AREA	52.00 SQM
UNDER 3 YEAR OLD	15

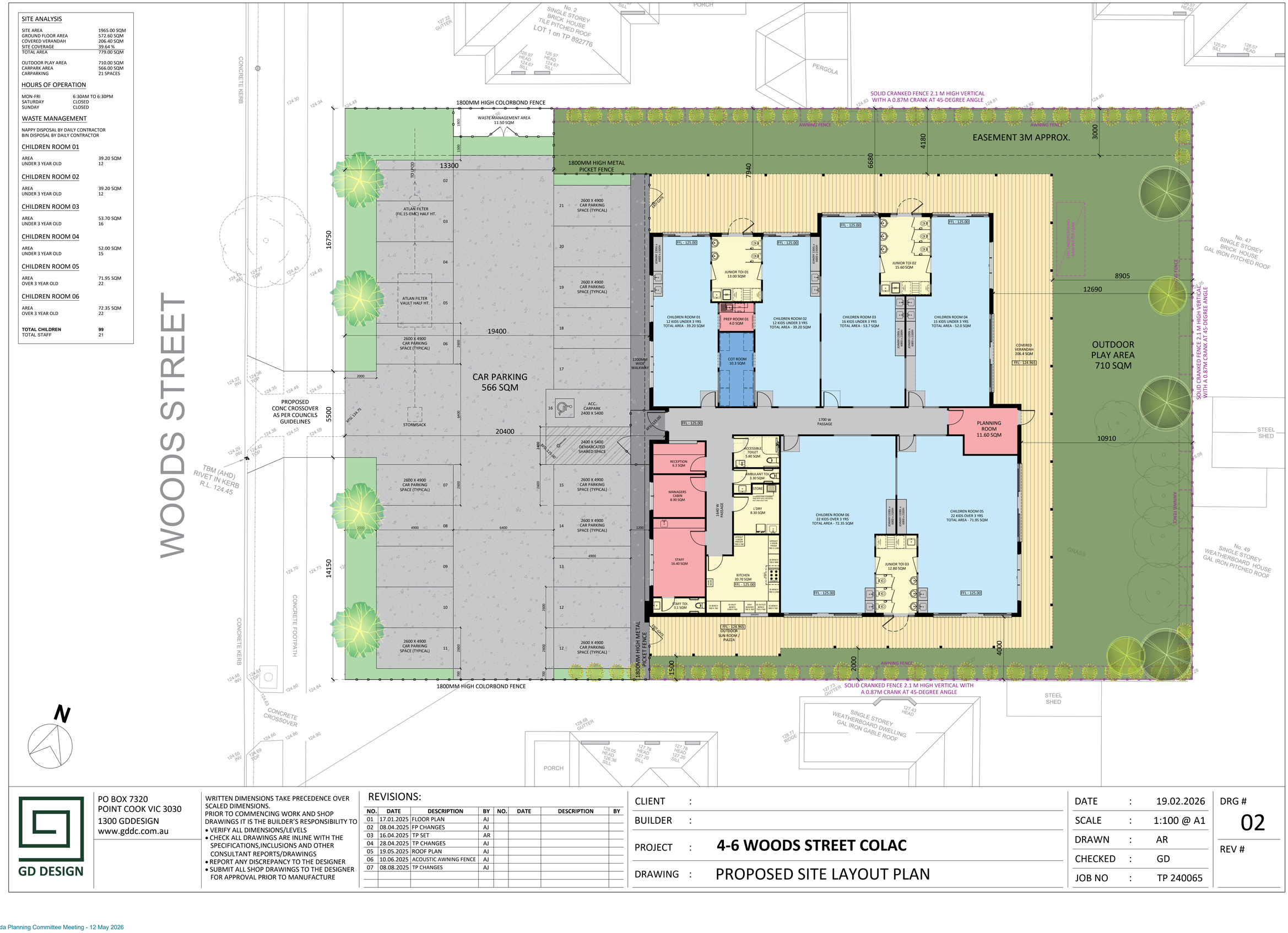
CHILDREN ROOM 05

AREA	71.95 SQM
OVER 3 YEAR OLD	22

CHILDREN ROOM 06

AREA	72.35 SQM
OVER 3 YEAR OLD	22

TOTAL CHILDREN	**99**
TOTAL STAFF	21



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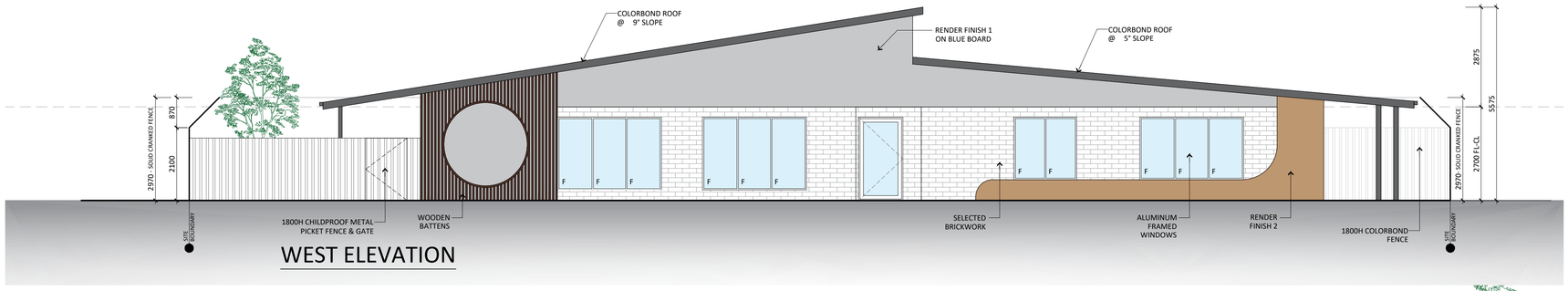
05	19.05.2025	ROOF PLAN	AJ				
06	10.06.2025	ACOUSTIC AWNING FENCE	AJ				
07	08.08.2025	TP CHANGES	AJ				

CLIENT	:	
BUILDER	:	
PROJECT	:	**4-6 WOODS STREET COLAC**
DRAWING	:	PROPOSED SITE LAYOUT PLAN

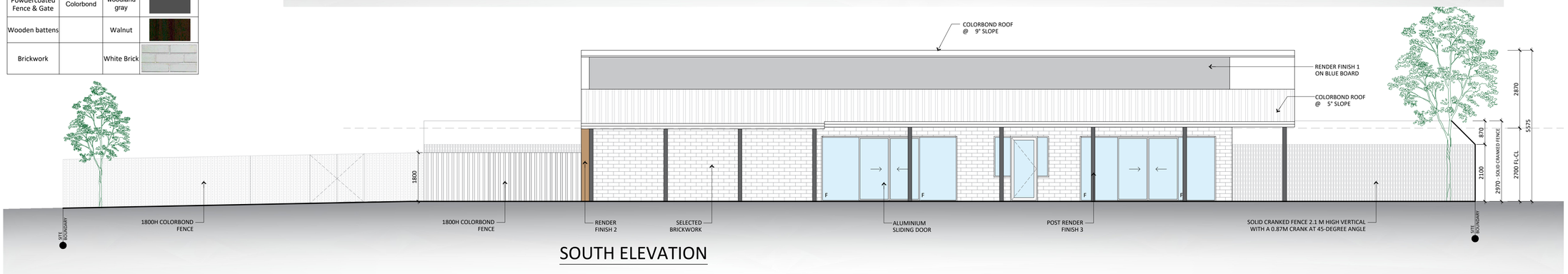
DATE	:	19.02.2026
SCALE	:	1:100 @ A1
DRAWN	:	AR
CHECKED	:	GD
JOB NO	:	TP 240065

DRG # 02
REV #

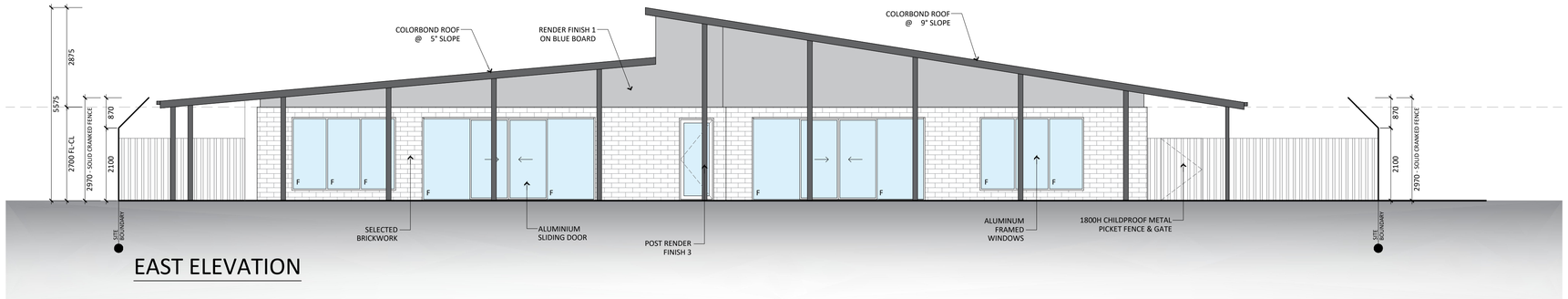
Exterior Finishes	Brand/ Manufacturer	Colour	Swatch
Roof	Colorbond	woodland gray	
Gutter	Colorbond	woodland gray	
Fascia	Colorbond	woodland gray	
Window and Door Frames	Colorbond	monument	
Render Finish 1	Colorbond	Shale Grey	
Render Finish 2	Colorbond	Smooth Caramel	
Render Finish 3	Colorbond	monument	
Powdercoated Fence & Gate	Colorbond	woodland gray	
Wooden battens		Walnut	
Brickwork		White Brick	



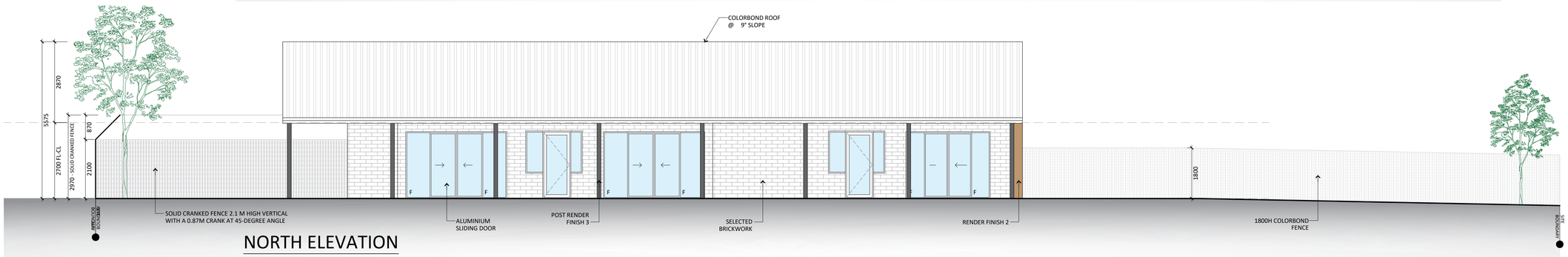
WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION



NORTH ELEVATION

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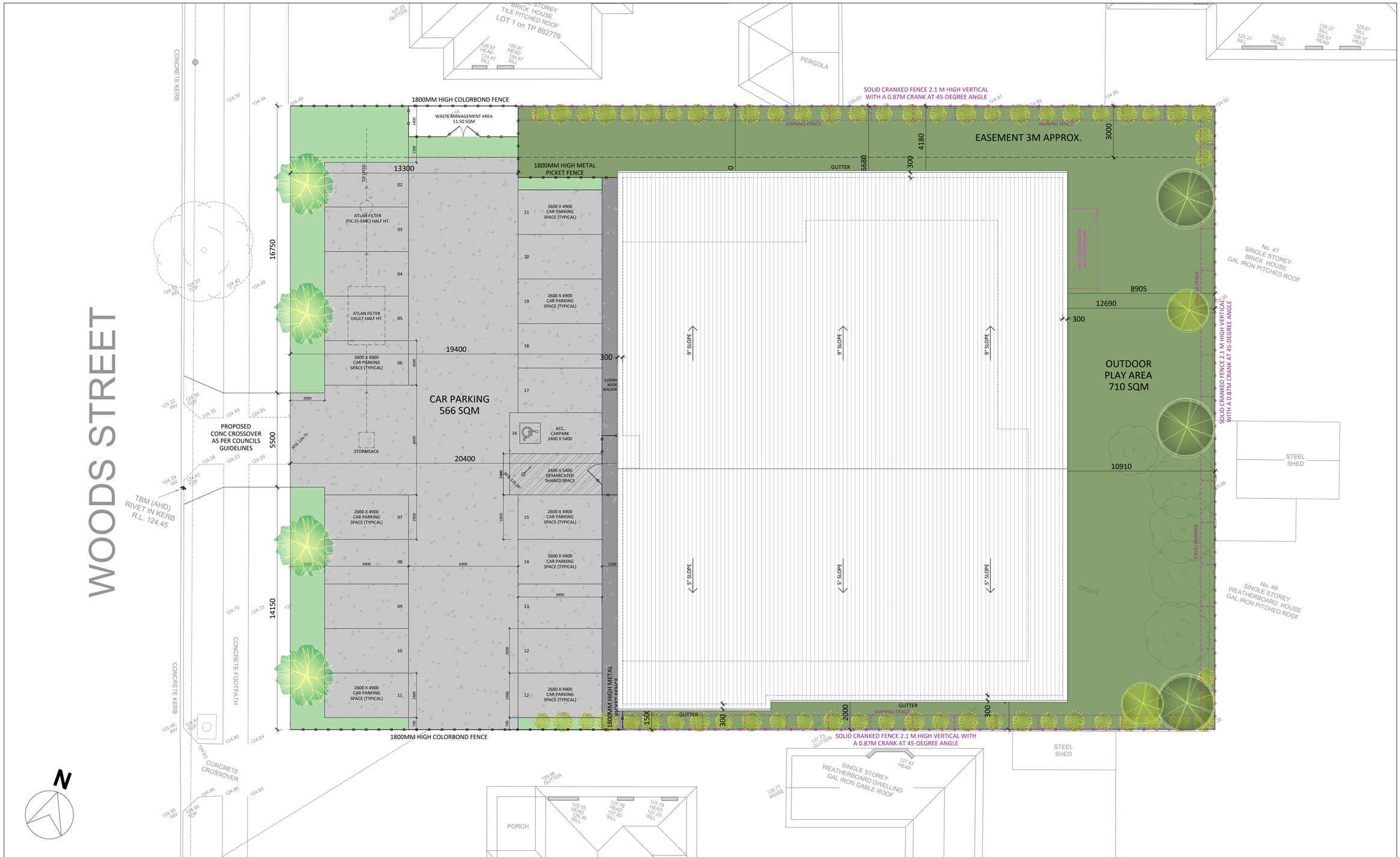
07	08.08.2025	TP CHANGES	AJ				

CLIENT :
BUILDER :
PROJECT : **4-6 WOODS STREET COLAC**
DRAWING : CHILDCARE ELEVATIONS

DATE : 19.02.2026
SCALE : 1:75 @ A1
DRAWN : AR
CHECKED : GD
JOB NO : TP 240065

DRG # 03
REV #



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07	08.08.2025	TP CHANGES	AJ				

CLIENT :
BUILDER :
PROJECT : **4-6 WOODS STREET COLAC**
DRAWING : ROOF PLAN

DATE : 19.02.2026
SCALE : 1:100 @ A1
DRAWN : AR
CHECKED : GD
JOB NO : TP 240065

DRG # 04
REV #

TRAFFIC IMPACT ASSESSMENT

PROPOSED CHILDCARE DEVELOPMENT

4-6 WOODS STREET, COLAC

24 FEBRUARY 2026

4-6 WOODS STREET, COLAC

CLIENT: Gulati Homes Pty Ltd

OBT JOB NUMBER: 27593

Suite 2.03, 789 Toorak Road
Hawthorn East, Victoria 3123

T: 61 3 9804 3610
W: obrientraffic.com

ABN 55 007 006 037

VERSION	DATE	ISSUE	PREPARED BY	REVIEWED BY
27593 TIAR	23 May 2025	Final	Urmila Karki	Chirag Safi
27593 TIARv2	24 February 2026	Revised Final	Matthew Lam	Chirag Safi

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1 INTRODUCTION

Gulati Homes Pty Ltd has engaged O'Brien Traffic to undertake a traffic impact assessment of a proposed childcare development at 4-6 Woods Street, Colac.

In the course of preparing this report:

- Plans prepared by GD Design (dated 19 February 2026) and relevant documentation have been examined;
- The subject site and surrounding area have been inspected via recent Nearmap aerial images and Google maps Streetview images; and
- The traffic and parking implications of the proposal have been assessed.

This revised report responds to the latest site plan and incorporates Council's feedback and Further Information Requests (RFIs) provided since the original report dated 23 May 2025.

2 EXISTING CONDITIONS

2.1 LOCATION AND LAND USE

The subject site is located on the eastern side of Woods Street, approximately 70m south of the Princes Highway in Colac. The location of the subject site and the surrounding area is shown in **Figure 1.** A recent aerial photograph is shown in **Figure 2**.

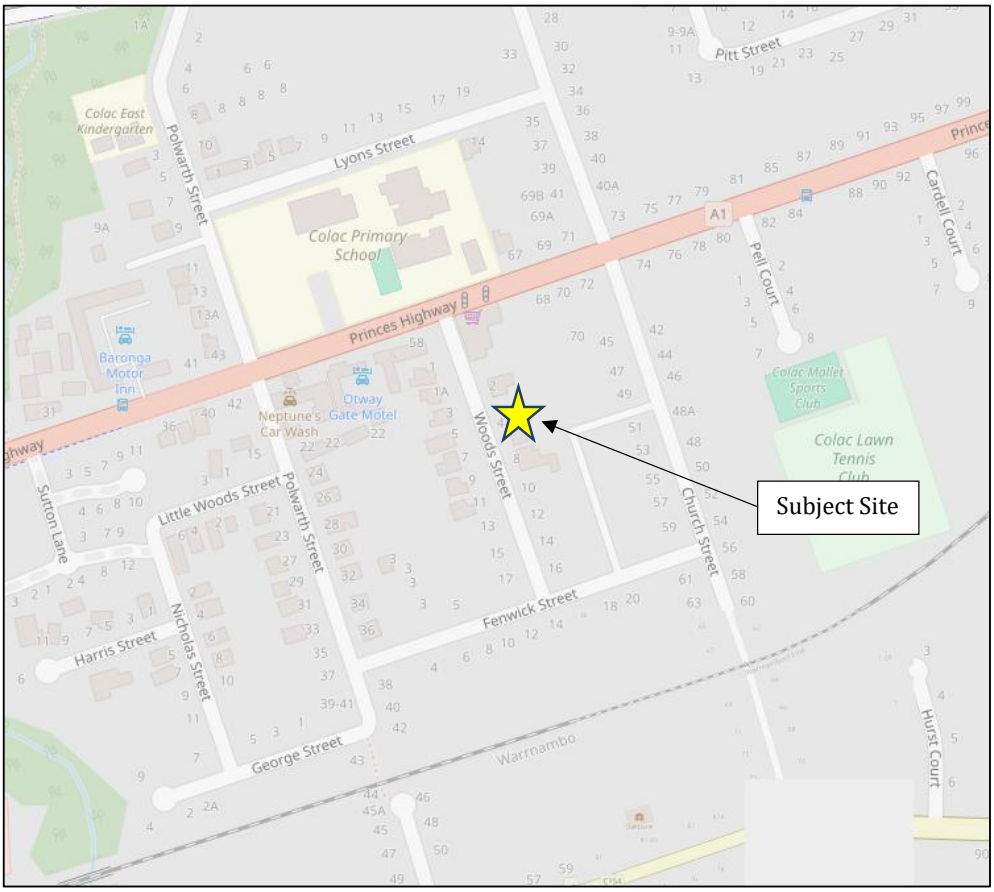


FIGURE 1: LOCATION OF SUBJECT SITE

FIGURE 2: AERIAL PHOTO OF SUBJECT SITE

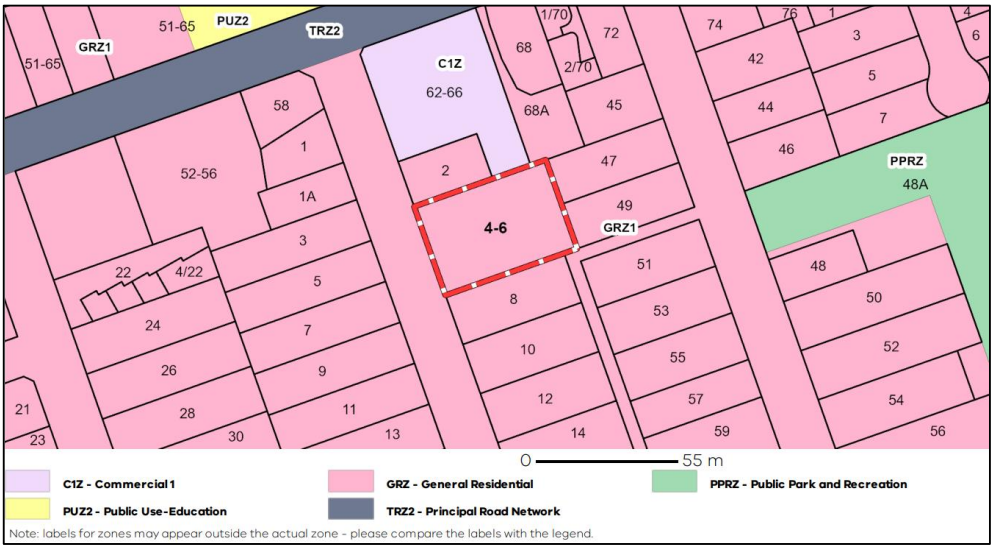
The site, which is zoned General Residential Zone – Schedule 1 (GRZ1), is rectangular in shape with a frontage of 36.4 metres to Woods Street, comprising an area of approximately 1,965 square metres. A single-storey brick house currently occupies the site with a vehicle access from Woods Street.

2.2 SURROUNDING LAND USE

The site is mainly surrounded by residential dwellings, with a retail property (IGA) located on the southeast corner of the Princes Highway/Woods Street intersection.

Colac Primary School is located on the north side of Princes Highway opposite Woods Street, approximately 100m walking distance from the subject site.

A zoning map of the area is provided in **Figure 3**.



SOURCE: VICPLAN

FIGURE 3: ZONING MAP

2.3 ROAD NETWORK

Woods Street is classified as "Urban Minor Road" under the care and management of Colac Otway Shire. It provides a 7.6m wide carriageway allowing for two-way traffic movement with unrestricted kerbside parking spaces on both sides of the road.

Woods Street is subject to the posted urban speed limit of 50km/h, but this is reduced to 40km/h for the northern portion of Woods Street during school days from 8:00 to 9:30 am and 2:30 to 4:00 pm.

Views of Woods Street are as shown in **Figure 4 and Figure 5.**

SOURCE: GOOGLE MAPS STREETVIEW IMAGES

FIGURE 4: WOODS STREET, FACING NORTH

SOURCE: GOOGLEMAPS STREETVIEW IMAGES

FIGURE 5: WOODS STREET, FACING SOUTH

2.4 EXISTING TRAFFIC VOLUMES

O'Brien Traffic commissioned a weeklong automatic tube count survey on Woods Street adjacent to the subject site. Based on this, Woods Street carries an average weekday traffic of 260 vehicles per day past the subject site, of which about 7% are heavy vehicles. The operating speed is approximately 44 km/h.

2.5 SUSTAINABLE TRANSPORT

2.5.1 Public Transport

The subject site has limited access to public transport services. A bus stop for the Alvie–Colac route via Coragulac is located about 120 m walking distance to the north. Colac Station is situated approximately 1.6 km southwest of the site.

2.5.2 Bicycle Network

On-road cycling facilities are provided along both sides of the Princes Highway.

3 THE PROPOSAL

It is proposed to demolish the existing single storey building and construct a 99-place childcare centre on the subject site.

A total of 21 car parking spaces will be provided on the site, including one accessible space. Vehicle access is proposed via a 5.5m wide crossover to Woods Street.

The proposed site plan is included in **Appendix A.**

4 CAR PARKING

4.1 PLANNING SCHEME CAR PARKING REQUIREMENT

Parking policy and requirements applicable to the proposed development are specified in Clause 52.06 of the Planning Scheme.

The purpose of Clause 52.06 is:

- *To ensure that car parking is provided in accordance with the Municipal Planning Strategy and the Planning Policy Framework.*
- *To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.*
- *To support sustainable transport alternatives to the motor car.*
- *To promote the efficient use of car parking spaces through the consolidation of car parking facilities.*
- *To ensure that car parking does not adversely affect the amenity of the locality.*
- *To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.*

The Planning Scheme parking requirement for the proposal is shown in **Table 1**.

USE	SIZE	PLANNING SCHEME PARKING RATE	CAR PARKING REQUIREMENT
Childcare centre	99 children	0.22 spaces to each child	21 spaces
		TOTAL	**21 SPACES**

TABLE 1: PLANNING SCHEME CAR PARKING REQUIREMENT

On this basis, the proposed development has a Planning Scheme car parking requirement of 21 spaces.

As 21 on-site parking spaces are proposed on the site, the proposal satisfies the Planning Scheme car parking requirement.

5 CAR PARK ACCESS AND LAYOUT

The proposed car park access and layout were assessed against the relevant requirements of Clause 52.06 of the Colac Planning Scheme and Australian Standards. The following comments are provided about the car park access and layout:

- Vehicle access is proposed via a 5.5m wide accessway to Woods Street, which exceeds the requirement of Design Standard 1 of Clause 52.06-9 of the Planning Scheme and will conveniently allow two-way movements.

- The car parking spaces are dimensioned 2.6m wide and 4.9m long, accessed by an aisle of at least 6.4m, meeting the requirements of Design Standard 2 of Clause 52.06-9 of the Planning Scheme.
- The design of the accessible space (2.4m x 5.4m) and associated shared area (2.4m x 5.4m) are in accordance with AS 2890.6:2022.
- The swept path analysis in **Appendix B** demonstrates that an Australian Standard B85 vehicle can access critical parking spaces and exit the site in a forward direction, in compliance with Design Standard 1 of Clause 52.06-9 of the Planning Scheme. It is recommended that end parking spaces be allocated to staff to reduce turnover and associated manoeuvring in those spaces, noting that AS/NZS 2890.1:2004 permits three-point turns for employee parking.
- Swept path analysis also confirms that the Australian Standards B85 vehicles can pass one another at the proposed crossover.
- Pedestrian sight triangles can be readily accommodated on the exit side of the accessway at the property boundary in accordance with Design Standard 1 of Clause 52.09-9 of the Planning Scheme, given the provision of a 2m wide landscaping buffer. It is recommended that low-lying vegetation be planted adjacent to the exit side of this accessway to ensure at least 50 per cent of these signal triangles are clear of visual obstructions.

Based on the above assessment, the proposed car park access and layout meet the relevant requirements and are, therefore, satisfactory.

6 BICYCLE FACILITIES

'Childcare centre' is not a listed land use under Clause 52.34 of the Planning Scheme. Therefore, the proposal does not trigger a statutory bicycle parking requirement.

7 LOADING

Clause 65.01 of the Planning Scheme states that before deciding on an application, the responsible authority must consider the adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.

Childcare Centres do not typically generate regular loading or loading activities other than waste collection. Food delivery would occur using vans outside of peak drop-off and pick-up times, and these vans would park in a vacant space within the car park.

A private contractor is anticipated to undertake waste collection using vehicles up to the size of an Australian Standard 6.4m Small Rigid Vehicle (SRV). The waste truck would enter the site in a forward direction, reverse back in the parking aisle and prop adjacent to the bin storage area, empty bins, and then exit the site in a forward direction (refer to swept path in **Appendix B**). Alternatively, the waste collection truck could utilise vacant parking spaces to turn around and exit in a forward direction.

Waste collection would be undertaken outside of the operating times of the centre to

avoid potential interference within the car park.

The proposed loading arrangements are considered adequate to accommodate the loading needs of the proposed development.

8 TRAFFIC GENERATION, DISTRIBUTION AND IMPACT

8.1 TRAFFIC GENERATION

Based on data collected at a range of childcare centres, a traffic generation rate of 3 daily vehicle trip per child and 0.8 vehicle trips per child during peak hours has been adopted. The peak hours of childcare centres are typically morning (7:30 am – 8:30 am) and afternoon (4:30 pm – 5:30 pm).

At full capacity (i.e. 99 children), this equates to up to approx. 300 vehicle trips per day (150 trips to the site and 150 trips away from the site), including approx. 80 vehicle trips in each peak hour (i.e. 40 trips to the site and 40 trips away from the site).

8.2 TRAFFIC DISTRIBUTION

The likely distribution of vehicle movements entering and exiting the proposed development, based on existing developments (including other childcare centres) in the locality and the surrounding road network, would be as follows:

- 20% to/from the south on Woods Street.
- 30% to/from the east on Princes Hwy (via Woods Street).
- 50% to/from the west on Princes Hwy (via Woods Street).

The expected distribution of the site-generated traffic during the AM and PM peak hours is shown in **Figure 6.**

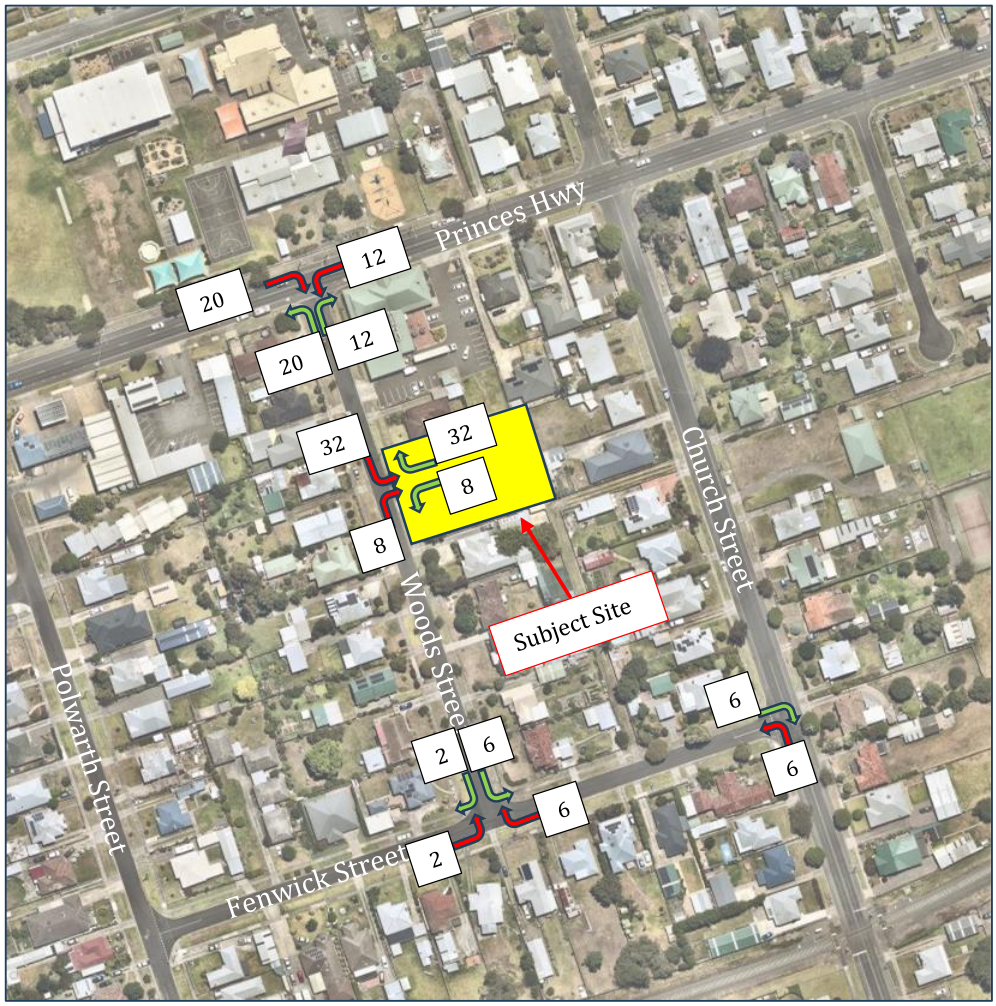


FIGURE 6: EXPECTED DISTRIBUTION OF SITE-GENERATED TRAFFIC – AM AND PM PEAK HOURS

8.3 TRAFFIC IMPACT

Local Road Network

Woods Street currently carries 260 vehicle movements per day past the subject site. The proposed development is expected to generate an additional ~300 vehicle movements per day, resulting in a post-development volume of up to 560 vehicles per day along Woods Street adjacent to the site.

Woods Street is classified as an Access Street – Level 2 under Clause 56.06 of the Colac Planning Scheme, which supports an environmental capacity of up to 3,000 vehicles per day. The projected volume of 560 vehicles per day remains well below this threshold, at less than 30% of the allowable capacity.

This assessment confirms that Woods Street has ample capacity to accommodate the increased traffic associated with the proposed development, without compromising road safety, efficiency, or amenity.

Other surrounding residential streets, including Fernwick Street and Church Street, may experience a minor increase in traffic volumes, as reflected in **Figure 6**. However,

such increases are considered low in traffic engineering terms and are not expected to result in any measurable impact on the performance, safety, or residential character of these streets.

Princes Highway

Princes Highway/Woods Street intersection is projected to accommodate up to 64 additional vehicle movements per peak hour (32 inbound and 32 outbound) generated by the development.

This equates to approximately 1 additional vehicle per minute (on average), considered modest and well within acceptable limits for an arterial intersection.

Notably, a pedestrian-operated signal (POS) is located just east of the intersection. When activated, this signal interrupts highway traffic flow and creates natural gaps in vehicle streams. These interruptions significantly assist vehicles turning right into and out of Woods Street by providing more frequent and safer opportunities to enter or exit the highway, particularly during peak times.

Based on this assessment, the intersection of Princes Highway and Woods Street is expected to continue operating safely and efficiently following the development. No traffic management upgrades are considered necessary.

9 RESPONSE TO COUNCIL RFI

Following lodgement of the original TIAR, Council issued two Requests for Further Information (RFI) (PP118/2025-1) and received submissions from the community raising concerns regarding traffic and parking impacts.

O'Brien Traffic subsequently prepared two technical memoranda addressing the matters raised. These memoranda are included in **Appendix C** and **Appendix D** of this report.

SIDRA intersection modelling for existing and post-development conditions, as requested by Council under its RFI, was undertaken (refer to **Appendix D**) and is provided in **Appendix D**. The SIDRA modelling confirms that the intersection of Murray Street and Woods Street will continue to operate safely and efficiently following development of the childcare centre. All approaches are expected to maintain low Degrees of Saturation, minimal delays, and short queue lengths during the peak periods.

10 CONCLUSION

Based on the considerations outlined in this report, together with the supplementary assessments prepared in response to the Council's RFI, it is concluded that:

- The proposed childcare centre development has a Planning Scheme car parking requirement of 21 spaces;

- As 21 car parking spaces are provided, the proposal meets the Planning Scheme car parking requirement;
- The car park access and layout arrangements meet relevant Planning Scheme and Australian Standard requirements;
- The proposal does not trigger a Planning Scheme bicycle parking requirement;
- The proposed loading and waste collection arrangements are satisfactory; and
- The additional traffic generated by the proposed development (300 daily trips, including 80 two-way trips during AM and PM peak hours) is anticipated to have no significant adverse impact on Woods Street or the surrounding road network.
- The SIDRA intersection modelling undertaken for existing and post-development conditions confirms that the surrounding road network and key intersections will continue to operate safely and efficiently.

We, therefore, find no parking or traffic-related grounds to prevent the proposed childcare development from proceeding.

APPENDIX A

PROPOSED SITE PLAN

SITE ANALYSIS

SITE AREA	1965.00 SQM
GROUND FLOOR AREA	572.60 SQM
COVERED VERANDAH	206.40 SQM
SITE COVERAGE	39.64 %
TOTAL AREA	779.00 SQM
OUTDOOR PLAY AREA	710.00 SQM
CARPARK AREA	566.00 SQM
CARPARKING	21 SPACES

HOURS OF OPERATION

MON-FRI	6:30AM TO 6:30PM
SATURDAY	CLOSED
SUNDAY	CLOSED

WASTE MANAGEMENT

NAPPY DISPOSAL BY DAILY CONTRACTOR
BIN DISPOSAL BY DAILY CONTRACTOR

CHILDREN ROOM 01

AREA	39.20 SQM
UNDER 3 YEAR OLD	12

CHILDREN ROOM 02

AREA	39.20 SQM
UNDER 3 YEAR OLD	12

CHILDREN ROOM 03

AREA	53.70 SQM
UNDER 3 YEAR OLD	16

CHILDREN ROOM 04

AREA	52.00 SQM
UNDER 3 YEAR OLD	15

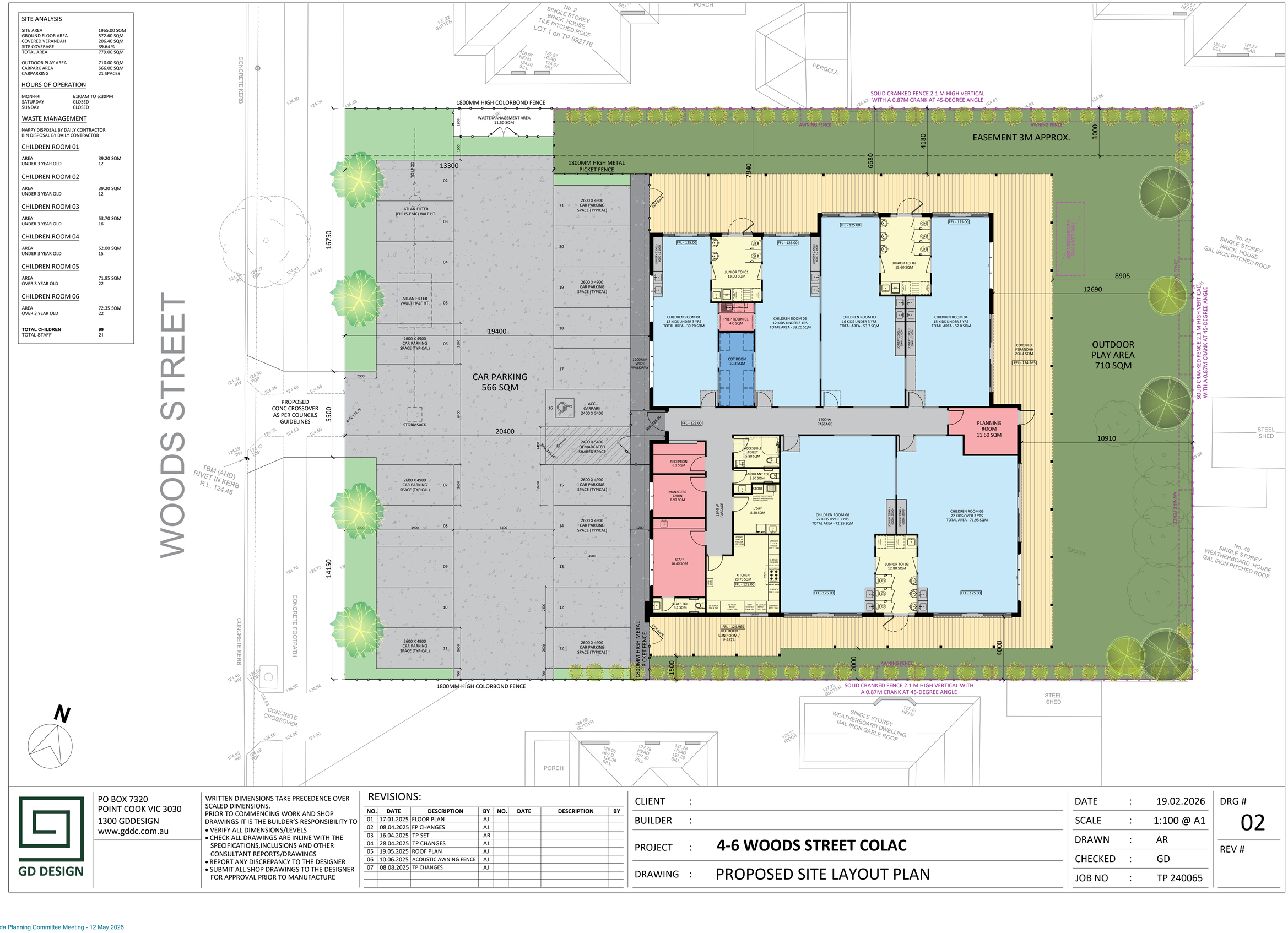
CHILDREN ROOM 05

AREA	71.95 SQM
OVER 3 YEAR OLD	22

CHILDREN ROOM 06

AREA	72.35 SQM
OVER 3 YEAR OLD	22

TOTAL CHILDREN	**99**
TOTAL STAFF	21



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- SUBMIT ALL SHOP DRAWINGS TO THE DESIGNER FOR APPROVAL PRIOR TO MANUFACTURE

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03	16.04.2025	TP SET	AR				
04	28.04.2025	TP CHANGES	AJ				
05	19.05.2025	ROOF PLAN	AJ				
06	10.06.2025	ACOUSTIC AWNING FENCE	AJ				
07	08.08.2025	TP CHANGES	AJ				

CLIENT	:	
BUILDER	:	
PROJECT	:	**4-6 WOODS STREET COLAC**
DRAWING	:	PROPOSED SITE LAYOUT PLAN

DATE	:	19.02.2026
SCALE	:	1:100 @ A1
DRAWN	:	AR
CHECKED	:	GD
JOB NO	:	TP 240065

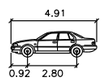
DRG # 02
REV #

APPENDIX B

SWEPT PATH ANALYSIS

NOT FOR CONSTRUCTION

N



B85

	meters
Width	: 1.87
Track	: 1.77
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

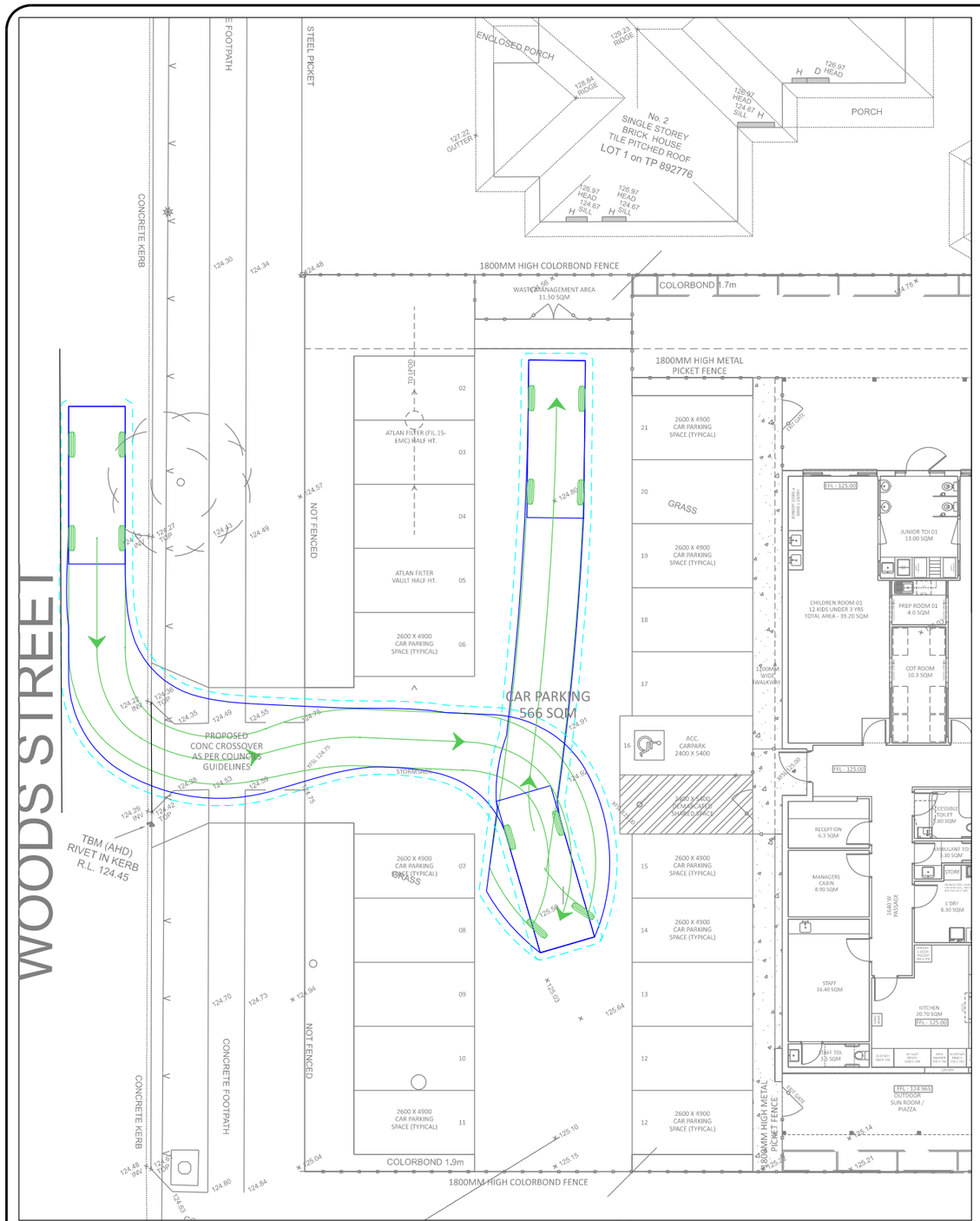
B85
ENTRY/EXIT

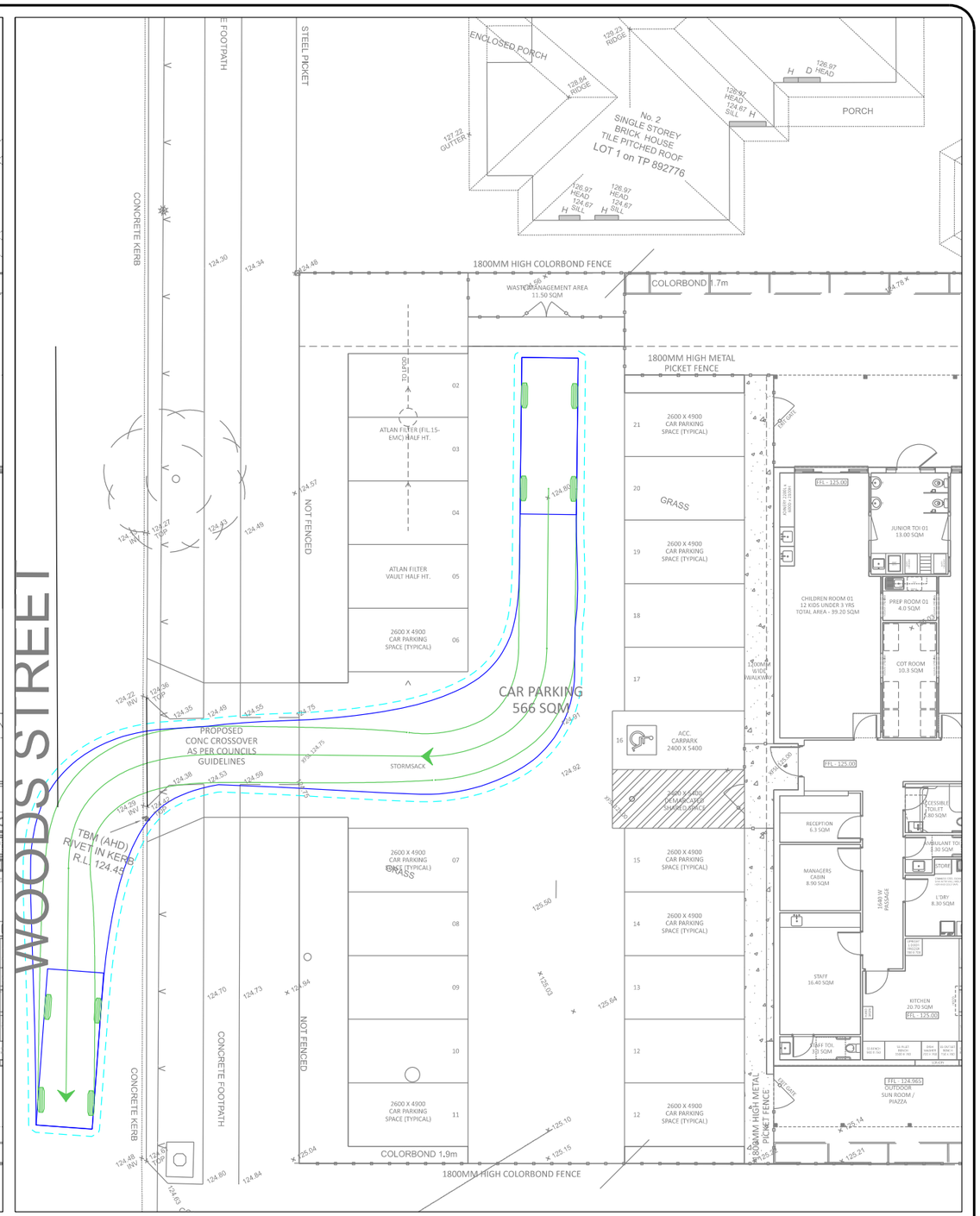
4-6 Woods Street Colac
1:500 @ A3 23/02/26
DWG NO: 27593002

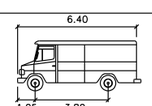
KEY

- CENTRE LINE OF FRONT WHEELS
- WHEEL PATH
- VEHICLE BODY
- VEHICLE CLEARANCE LINE (300mm FROM VEHICLE BODY)

OBT O'BRIEN TRAFFIC
• Traffic Planning • Transport Planning
• Traffic Engineering • Road Safety
SUITE 2.03, 789 TOORAK ROAD
HAWTHORN EAST, VIC, 3123
P: +613 9804 3610
W: obrientraffic.com







SRV

	meters
Width	: 2.30
Track	: 2.30
Lock to Lock Time	: 6.0
Steering Angle	: 38.1

NOT FOR CONSTRUCTION

6.4m SRV ENTRY/EXIT

4-6 Woods Street Colac
1:200 @ A3 23/02/26
DWG NO: 27593002

KEY

- CENTRE LINE OF FRONT WHEELS
- WHEEL PATH
- VEHICLE BODY
- VEHICLE CLEARANCE LINE (300mm FROM VEHICLE BODY)

OBT O'BRIEN TRAFFIC
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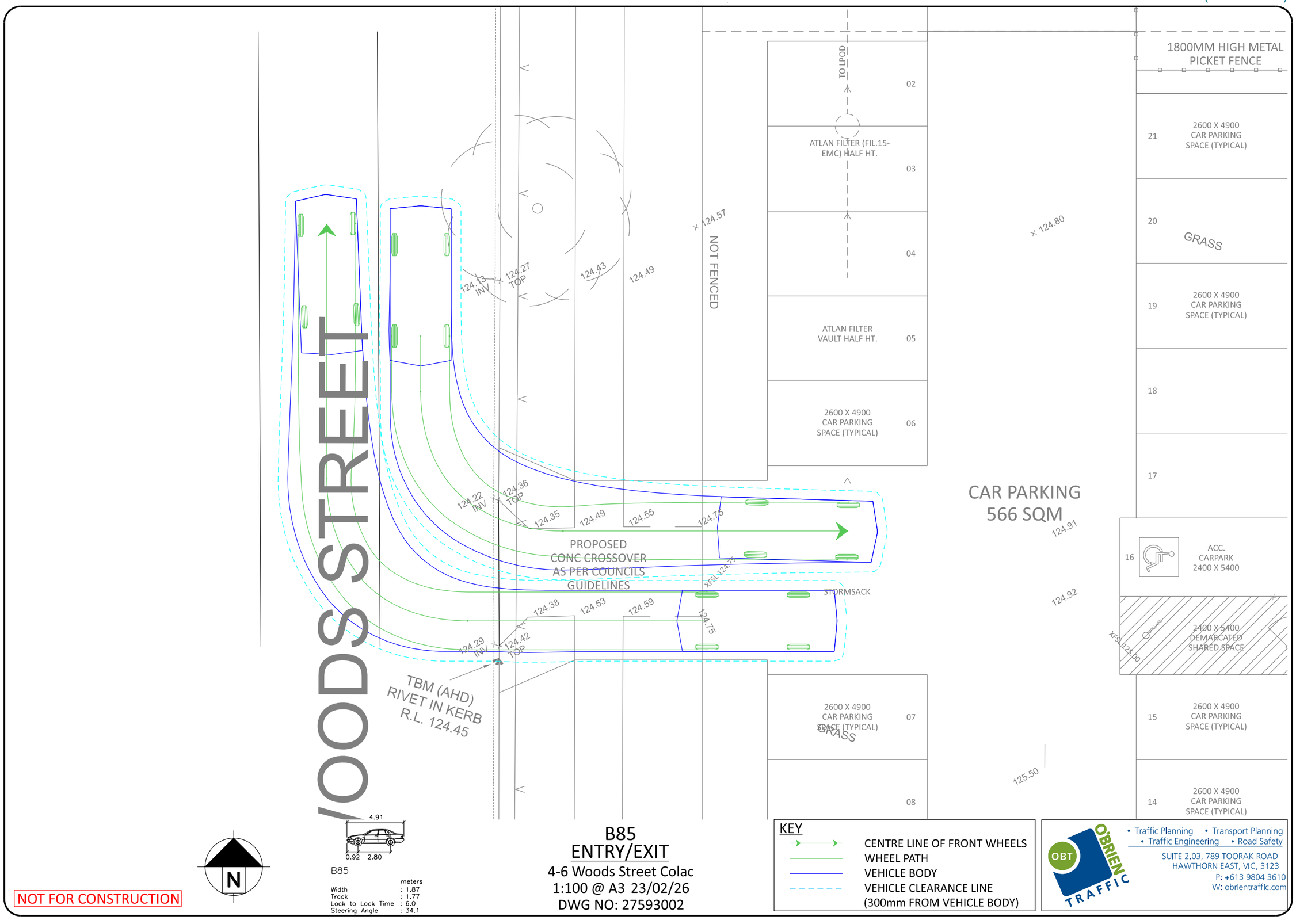
WOODS STREET
1800MM HIGH METAL PICKET FENCE
TO LPOD
02
ATLAN FILTER (FIL.15-EMC) HALF HT.
03
04
ATLAN FILTER VAULT HALF HT.
05
2600 X 4900 CAR PARKING SPACE (TYPICAL)
06
07
08
NOT FENCED
x 124.57
x 124.80
124.13 INV
x 124.27 TOP
124.43
124.49
124.22 INV
x 124.36 TOP
124.35
124.49
124.55
124.76
PROPOSED CONC CROSSOVER AS PER COUNCILS GUIDELINES
XFSL 124.75
STORMSACK
124.38
124.53
124.59
124.75
124.29 INV
x 124.42 TOP
TBM (AHD) RIVET IN KERB R.L. 124.45
CAR PARKING 566 SQM
124.91
124.92
125.50
GRASS
21
2600 X 4900 CAR PARKING SPACE (TYPICAL)
20
GRASS
19
2600 X 4900 CAR PARKING SPACE (TYPICAL)
18
17
16
ACC. CARPARK 2400 X 5400
2400 X 5400 DEMARCATED SHARED SPACE
XFSL 125.00
15
2600 X 4900 CAR PARKING SPACE (TYPICAL)
14
2600 X 4900 CAR PARKING SPACE (TYPICAL)
4.91
0.92
2.80
B85
meters
Width : 1.87
Track : 1.77
Lock to Lock Time : 6.0
Steering Angle : 34.1
N
NOT FOR CONSTRUCTION
B85
ENTRY/EXIT
4-6 Woods Street Colac
1:100 @ A3 23/02/26
DWG NO: 27593002
KEY
CENTRE LINE OF FRONT WHEELS
WHEEL PATH
VEHICLE BODY
VEHICLE CLEARANCE LINE
(300mm FROM VEHICLE BODY)
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SUITE 2.03, 789 TOORAK ROAD
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P: +613 9804 3610
W: obrientraffic.com

APPENDIX C

TRAFFIC MEMO#1 IN RESPONSE TO COUNCIL RFI

Suite 2.03, 789 Toorak Road
Hawthorn East Victoria 3123
T: +61 3 9804 3610
W: obrientraffic.com

3 September 2025

Praveen Gulati
Gulati Homes
C/o Aglow Town Planning Services Pty Ltd
GPO Box 241
Sunbury Victoria 3429

Dear Praveen,

PLANNING APPLICATION: PP118/2025-1
ADDRESS: 4-6 WOODS STREET, COLAC
PROPOSAL: CHILDCARE CENTRE DEVELOPMENT

I refer to your request that O'Brien Traffic prepare a response to Council's Request for Further Information (RFI) dated 22 July 2025 and the public objections received by Council following the advertisement of the above application.

The site plans have been amended in response to the Council's RFI. The amended site plans are included in **Attachment 1**.

It is now proposed to demolish the existing building and construct a 99-place childcare centre (denoting a reduction of one enrolment from the original proposal) on the subject site. A total of 21 car spaces (indicating a decrease of one car space from the original proposal) is proposed on-site, with access provided via a 5.5m crossover to Woods Street.

The following sections of this memo respond to each of the matters raised by Council and address common concerns expressed by the objectors.

COUNCIL'S RFI

For ease of reference, Council's traffic engineering comments are reproduced in ***italics***, followed by our response.

Safe system assessment for

- ***Woods Street and Princes Highway (This intersection will be key as it is already located in the school zone)***

- *Fenwick Street and Woods Street*
- *Church Street and Fenwick Street*

OBT Response:

Council has requested a Safe System Assessment of the nearby intersections. Such assessments are generally applied to major infrastructure or land development projects. This level of analysis is excessive and unjustified for a site-specific urban development accessed via a low-speed local street.

Our submitted Traffic Impact Assessment Report (TIAR) dated 23 May 2025 already provides a qualitative road safety review, consistent with standard practice for similar proposals across metropolitan and regional Victoria.

O'Brien Traffic commissioned an automatic tube count survey on Woods Street (near 5 Woods Street). Data were collected over 7 days, from Tuesday, 19 August 2025 to Monday, 25 August 2025 (i.e., the survey was conducted during a typical period when schools are in session). A summary of the tube count survey for all vehicles on Woods Street is provided below. Full data is provided in **Attachment 2**.

	DIRECTION		COMBINED	%HV	85TH PERCENTILE SPEED
	SOUTHBOUND	NORTHBOUND			
Weekday Avg. (Monday to Friday)	142 vpd	117 vpd	260 vpd	7.4%	43.6km/h
Weekday AM Peak (12noon-1pm)	11 vph	10 vph	21 vph		
Weekday PM Peak (3pm-4pm)	20 vph	15 vph	35 vph		

AUTOMATIC TUBE COUNT SURVEY SUMMARY

The survey identified an average weekday traffic volume of 260 vehicles per day, with peak hour flows of only 21 vehicles per hour (AM) and 35 vehicles per hour (PM). The survey data confirms that Woods Street carries very low traffic. Based on this, it is plausible to assume that the surrounding access-level local streets, such as Fenwick Street, would also be experiencing a similar level of traffic volumes.

The TIAR indicated that the development is expected to add very low traffic volumes (up to 16 vehicles in peak hours, equating to one vehicle every 3 minutes and 45 seconds on average) to the Fenwick Street / Woods Street or Church Street / Fenwick Street intersections. This level of traffic will not materially impact the safety of these intersections.

As for the Woods Street/Princes Highway intersection, the proposal will add up to 64 vehicles in peak hours, almost equating to one vehicle every minute on average. The proximity to the pedestrian signals will naturally create frequent traffic gaps at this

intersection, which facilitates safe right-turn movements. On this basis, the road safety implications of the proposal at this intersection would be minimal.

SIDRA analysis for above intersection considering present and post development after 15-year at 2% growth rate.

OBT Response:

Council has requested a SIDRA analysis incorporating a 15-year design horizon with a 2% growth rate. Such assessments are typically applied in the context of strategic precinct planning or rezonings, rather than individual site applications.

Our analysis of existing and post-development traffic conditions demonstrates that the traffic generated by the proposed childcare centre can be accommodated without adverse operational impacts on the surrounding intersections. The scale of the development is such that its contribution to long-term network capacity will be negligible. Furthermore, there is no nexus for this application to mitigate the cumulative traffic impact resulting from the growth of background traffic.

Analysis must highlight any road treatment that may be required for pedestrian safety.

OBT Response:

The surrounding road environment already includes suitable pedestrian infrastructure, including continuous footpaths and a pedestrian-operated signal on Princes Highway at Woods Street, which facilitates safe crossing opportunities.

Additional traffic generated by the proposal will be accommodated in the surrounding streets without any perceivable safety risks for pedestrians. Accordingly, the submitted TIAR is considered sufficient in responding to pedestrian safety without warranting any treatments.

Parking within easement is not acceptable to Council.

OBT Response:

The amended plans indicate that no parking spaces are proposed within the easement, and as such, the design complies with Council's requirement. This matter is therefore considered resolved.

PUBLIC OBJECTIONS

Council has received a number of submissions from the community raising concerns about the potential traffic and parking impacts of the proposed childcare centre. The key themes of issues raised by the community are summarised below:

- Traffic generation
- Street width, access and visibility on Woods Street
- Parking supply and on-street parking impacts

A response to each of these issues is provided in the following:

Traffic Generation

Submissions noted concerns with the trip generation assumptions adopted in the TIAR, particularly in relation to staff travel, deliveries, contractors and potential parent detours. It was suggested that the total number of vehicle movements generated by the development may be underestimated.

The traffic generation rates adopted in the TIAR are based on empirical data from previous case studies and industry standards.

- O'Brien Traffic conducted a survey-based study for Glen Eira City Council in 2009, which analysed three child care centres:
  - Tree House (241 Kooyong Road, Elsternwick)
  - Roseberry House (2A-4 Roseberry Grove, Glen Huntly)
  - East Bentleigh Child Care (70 East Boundary Road, Bentleigh East)

These surveys found an average peak hour traffic generation rate of 0.8 trips per child. Peak hours were typically between 7:30–8:30 AM and 4:30–5:30 PM.

- The NSW Guide to Traffic Generating Developments (TfNSW) supports similar rates:
  - Daily: 2.97 trips per child
  - AM peak: 0.81 trips/child
  - PM peak: 0.80 trips/child

The rates used in the TIAR are therefore consistent with the above empirical data. These traffic generation rates already account for staff travel, deliveries, contractors, and parent trips.

It is anticipated that not all 21 staff members will be on-site at the same time, as actual staff presence will vary depending on operational shifts and enrolment numbers determined by the future operator. The proposed car park satisfies the statutory parking requirement of Clause 52.06-5, and therefore, a car parking demand assessment is not required.

Therefore, concerns regarding the underestimation of the development traffic are not supported by empirical studies.

Street Width, Access and Visibility

Residents noted that Woods Street is relatively narrow, which makes it difficult for two vehicles to pass each other safely, particularly when cars are parked on both sides of the street. Concerns were also raised about restricted sight lines for property owners when entering or exiting their driveways.

Woods Street features approximately 7.5m wide carriageway, which is consistent with the design standards of an Access Street – Level 2 under Clause 56.06-8 of the Planning Scheme. This street type is designed to provide local access and allows for two-way vehicle movement, while also accommodating kerbside parking on both sides of the street.

Furthermore, existing weekday traffic volumes on Woods Street are low, well below a maximum tolerable threshold of 3,000 vehicles per day identified in Clause 56.06-8 of the Planning Scheme.

The presence of kerbside parking, which seldom occurs on Woods Street based on a review of recent Nearmap photos, and the need for drivers to give way to opposite traffic under some situations, is an anticipated and inherent feature of this street type, which is not an indication of inadequate width.

Based on 99 children, the proposed development is expected to generate an additional up to 300 vehicle movements per day, resulting in a post-development volume of up to 560 vehicles per day along Woods Street. The post-development volume will still be well within the maximum tolerable traffic of 3,000 vehicles per day. Therefore, such traffic increase will not result in any measurable impact on the performance, safety, or residential character of these streets.

In terms of sight distance, Woods Street operates with an 85th percentile speed of 43.6km/h. At these operating speeds and with the straight/flat alignment of the road, stopping sight distances would be well within safe limits. Accordingly, the available sight distance is consistent with expectations for an Access Street – Level 2 and does not present a material safety risk.

Based on the above considerations, concerns regarding the street features being unsuitable for the development traffic are not supported by our assessment.

Parking Supply and On-Street Parking Impact

Some residents questioned the adequacy of the on-site parking spaces proposed to accommodate staff and parent demand. There is concern that overflow parking may occur on-street, reducing availability for residents and further contributing to access issues.

The proposal provides the number of car parking spaces required under the Planning Scheme, thereby satisfying the statutory requirement for a childcare centre of this scale.

These requirements are specifically intended to ensure that developments provide for their own parking demand on-site. On this basis, all staff and parent parking demand is expected to be accommodated within the on-site car park, and no car parking overflow on Woods Street is anticipated.

CONCLUSION

The amended proposal for a 99-place childcare centre has been assessed against Council's RFI requirements and the concerns raised by the community. The amended development plans address Council's specific requests, including the removal of parking within the easement, and demonstrate compliance with statutory parking and design standards. Traffic survey confirms that Woods Street currently carries very low traffic volumes, and the additional trips generated by the childcare centre can be accommodated without adverse impacts on the safety and operation of Woods Street.

Should you have any queries, please do not hesitate to contact me on 0424 202 407.

Yours sincerely

O'BRIEN TRAFFIC

Chirag Safi
Director

ATTACHMENT A

AMENDED SITE PLANS

SITE ANALYSIS

SITE AREA	1965.00 SQM
GROUND FLOOR AREA	572.60 SQM
COVERED VERANDAH	206.40 SQM
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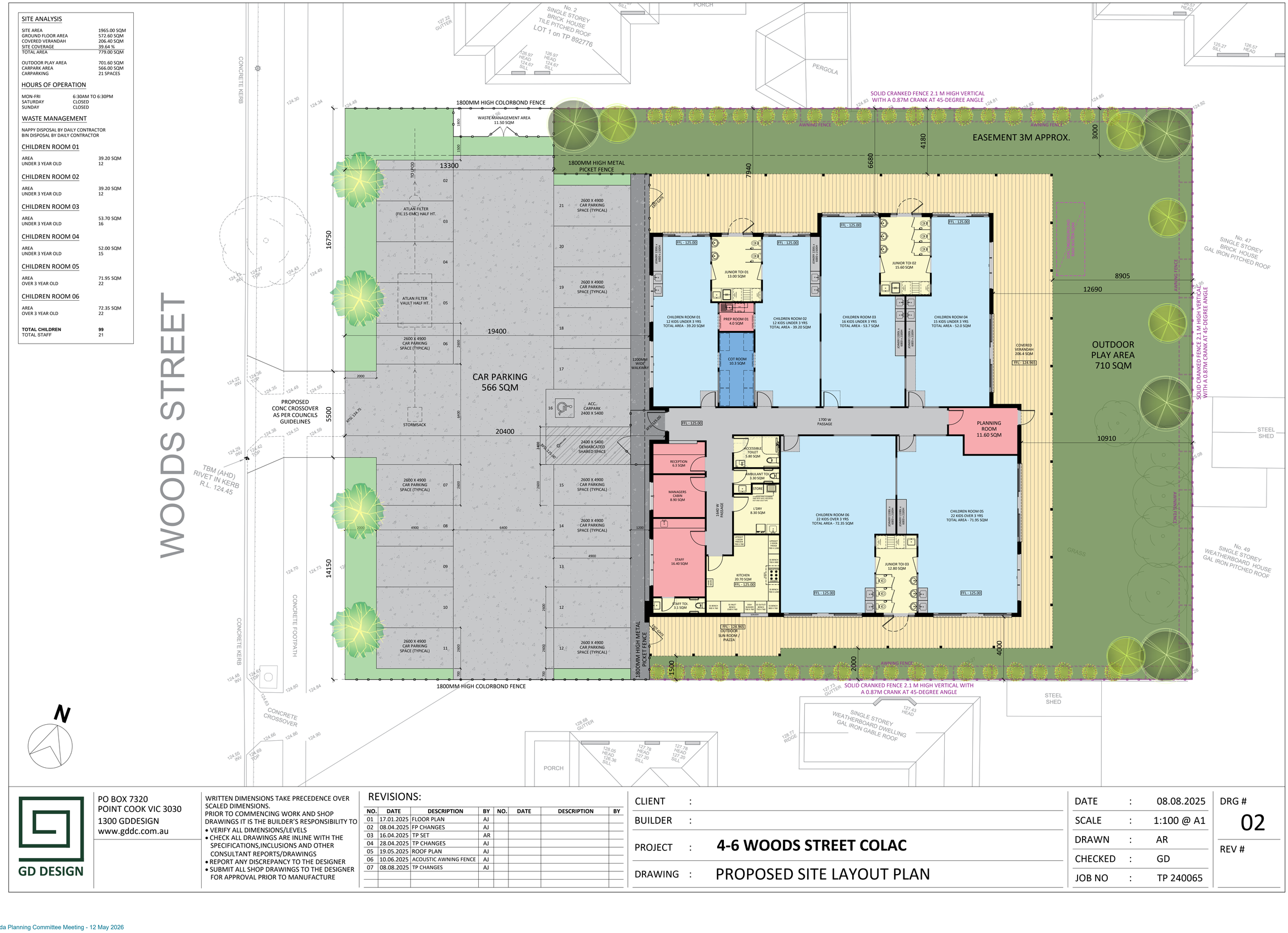

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CLIENT	:	
BUILDER	:	
PROJECT	:	**4-6 WOODS STREET COLAC**
DRAWING	:	PROPOSED SITE LAYOUT PLAN

DATE	:	08.08.2025
SCALE	:	1:100 @ A1
DRAWN	:	AR
CHECKED	:	GD
JOB NO	:	TP 240065

DRG # 02
REV #

ATTACHMENT B

TRAFFIC SURVEY DATA

AUTOMATIC COUNT SUMMARY

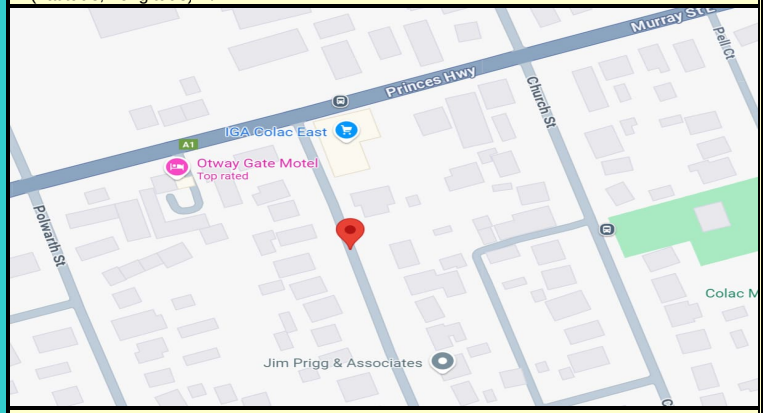
Street Name :	Woods St	**Location :**	At No. 5
Suburb :	Colac	**Start Date :**	00:00 Tue 19/August/2025
Metrocount ID	VV10	**Finish Date :**	00:00 Mon 25/August/2025
Site ID Number :	7079_01	**Speed Zone :**	50 km/h
Prepared By:	Nationwide Traffic Surveys P/L	**Email:**	admin@ntsurveys.com.au

			Direction of Travel		
GPS information	Lat	#VALUE!	**Combined N-S**	**Southbound**	**Northbound**
	Long	#VALUE!			
Traffic Volume :		Weekdays Average	260	142	117
(Vehicles/Day)		7 Day Average	249	139	111
Weekday	**AM**	12:00	20	11	10
Peak hour starts	**PM**	15:00	36	20	15
Speeds :		85th Percentile	43.5	43	44
(Km/Hr)		Average	36.1	37	36
Classification % :		Light Vehicles up to 5.5m	93.2%	92.6%	94.0%

Location

GPS Information Load Google Map (Internet Required)

(Latitude, Longitude)'N/A



Speed Data | Speed Graph | Speed Bins | Volume Data

Volume Graph | Daily Graph | Classified Data | Classified Summary

Daily Speed Bins | Site Summary

Survey No.	7079	Volume	249.4
Road Name	Woods St	Avg Speed	36.1
Site No.	7079_01	85th %ile	43.6
Direction	Combined N-S	Modal Speed	36
Location	At No. 5	Minimum	4.6
		Maximum	62.9
Day	7 Day Average	Std Deviatio	8.1
Period	Mon 18 Aug - Sun 24 Aug 25		

Hour Start	Total Vehicles	Avgerage Speed	85th percentile	Modal Speed	Minimum Speed	Maximum Speed	Standard Deviation
00:00	0	33.7	36.3	30	30.0	37.4	5.2
01:00	0	46.0	49.3	41	41.2	50.7	6.7
02:00	0	30.6	34.5	25	25.1	36.1	7.8
03:00	1	24.9	30.5	28	14.1	34.5	7.4
04:00	0	28.6	31.5	24	24.5	32.7	5.8
05:00	2	35.6	41.9	39	22.3	43.8	6.9
06:00	4	35.1	40.6	34	15.8	44.0	6.4
07:00	8	36.5	43.6	36	15.8	48.6	7.4
08:00	15	38.3	45.1	36	18.3	51.8	6.7
09:00	20	35.0	43.0	40	11.5	56.6	8.4
10:00	20	35.4	44.1	40	5.1	52.6	8.6
11:00	14	33.9	42.1	37	7.7	50.0	8.2
12:00	19	36.2	44.3	38	12.3	53.3	7.9
13:00	23	35.4	42.9	40	5.2	53.9	8.7
14:00	23	36.2	43.4	37	9.0	53.0	7.4
15:00	31	37.5	44.0	39	9.4	53.7	7.7
16:00	24	35.5	43.0	34	4.6	59.2	8.8
17:00	18	36.4	43.1	34	16.3	62.4	7.8
18:00	12	36.1	43.4	36	13.7	55.3	8.5
19:00	7	36.4	44.7	36	5.9	62.9	9.6
20:00	5	38.1	43.9	40	21.3	57.4	6.9
21:00	2	40.1	48.2	33	30.3	57.0	7.8
22:00	1	35.9	38.3	34	33.7	40.3	2.8
23:00	0	38.1	41.7	39	32.6	42.8	5.2
Total	249	36.1	43.6	36	4.6	62.9	8.1

Survey No.	7079	7 Day Total	1746
Road	Woods St	% Heavies	6.59%
Site No.	7079_01	Weekday Total	1298
Direction	Combined N-S	% Heavies	6.55%
Location	At No. 5	Weekend Total	448
		% Heavies	6.70%
Period	Mon 18 Aug - Sun 24 Aug 25		

Day Date	Mon 18/08/2025	Tue 19/08/2025	Wed 20/08/2025	Thu 21/08/2025	Fri 22/08/2025	Sat 23/08/2025	Sun 24/08/2025	7 Day Average	Weekday Average	Weekend Average
AM Peak	08:00-29	09:00-20	08:00-29	10:00-22	09:00-30	11:00-31	09:00-24	09:00-20	10:00-19.4	09:00-22
PM Peak	15:00-35	16:00-34	15:00-40	15:00-45	15:00-36	16:00-26	13:00-32	15:00-31.1	15:00-35.8	13:00-23
00:00	0	0	1	0	0	0	1	0	0	1
01:00	0	0	0	0	1	1	0	0	0	1
02:00	0	2	0	0	0	0	0	0	0	0
03:00	0	0	2	0	0	0	3	1	0	2
04:00	0	0	0	1	0	0	1	0	0	1
05:00	3	0	2	1	6	1	0	2	2	1
06:00	6	3	3	2	12	0	1	4	5	1
07:00	6	9	8	7	12	10	2	8	8	6
08:00	29	13	29	7	16	9	4	15	19	7
09:00	16	20	18	12	30	20	24	20	19	22
10:00	20	8	20	22	27	19	24	20	19	22
11:00	18	9	7	9	12	31	13	14	11	22
12:00	19	11	31	29	11	21	13	19	20	17
13:00	22	21	28	17	28	14	32	23	23	23
14:00	21	21	22	34	25	18	20	23	25	19
15:00	35	23	40	45	36	13	26	31	36	20
16:00	19	34	22	23	25	26	17	24	25	22
17:00	23	21	18	9	20	18	14	18	18	16
18:00	16	10	12	10	12	9	12	12	12	11
19:00	9	6	2	9	8	8	5	7	7	7
20:00	7	3	6	5	7	2	6	5	6	4
21:00	1	0	2	3	2	2	6	2	2	4
22:00	0	2	0	0	1	2	0	1	1	1
23:00	1	1	1	0	0	0	0	0	1	0
Total	271	217	274	245	291	224	224	249	260	224
% Heavy	7.0%	8.3%	5.1%	4.9%	7.6%	6.3%	7.1%	6.6%	6.5%	6.7%

APPENDIX D

TRAFFIC MEMO#2 IN RESPONSE TO COUNCIL RFI

Suite 2.03, 789 Toorak Road
Hawthorn East Victoria 3123
T: +61 3 9804 3610
W: obrientraffic.com

14 November 2025

Archna Rani
Statutory Planner
Colac Otway Shire

E: inq@colacotway.vic.gov.au

Dear Archna,

PLANNING APPLICATION: PP118/2025-1
ADDRESS: 4-6 WOODS STREET, COLAC
PROPOSAL: CHILDCARE CENTRE DEVELOPMENT

I refer to your request in the email dated 14 October 2025 for a SIDRA analysis of the intersection of Princes Highway (Murray Street) and Woods Street in relation to the proposed 99-place childcare centre at 4-6 Woods Street, Colac.

A SIDRA analysis has been conducted to evaluate the operational performance of the intersection under both existing and post-development conditions, as requested, and the results are summarised in this letter.

To assess this intersection, O'Brien Traffic commissioned Turning Movement Count (TMC) surveys at the intersection of Murray Street and Woods Street. The surveys were undertaken on Tuesday, 11 November 2025 from 7 am - 9 am and 3pm - 6 pm. The peak hours at this intersection were found to occur between 8 am - 9 am and 4 pm - 5 pm. The peak hour counts are shown in **Figure 1** with the details provided in **Attachment A**. This data was then used to conduct SIDRA assessments of the Murray Street/Woods Street intersection.

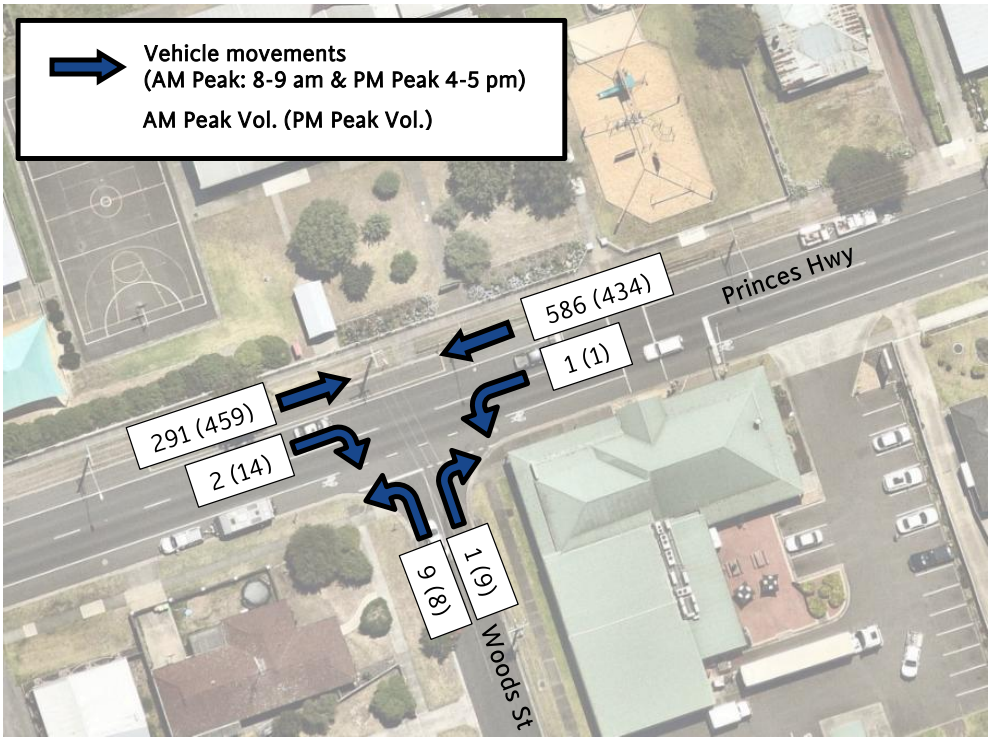


FIGURE 1 EXISTING TRAFFIC VOLUMES AT THE INTERSECTION OF MURRAY ST/WOODS ST

SIDRA ANALYSIS

The following traffic generation and distribution assumptions have been adopted, consistent with the submitted TIA report (*27593 TIAR*) dated 23 May 2025.

- The proposed childcare centre would generate 80 vehicle trips in each peak hour (i.e., 40 trips to the site and 40 trips away from the site).
- The traffic distribution of the development traffic is assumed as follows:
  - 20% to/from the south on Woods Street,
  - 30% to/from the east on Murray Street (via Woods Street) and
  - 50% to/from the west on Murray Street (via Woods Street).

Based on the above assumptions, the expected sum of the development generated traffic and the existing turning movements at the intersection of Murray Street and Woods Street during the AM and PM peak hours is presented in **Figure 2**.

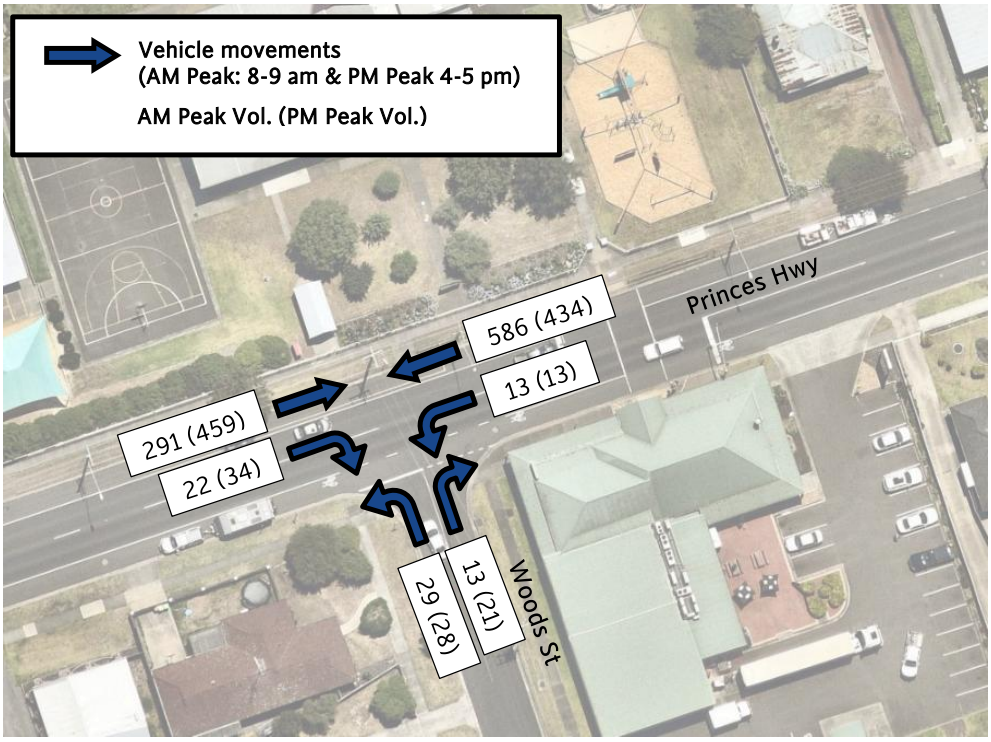


FIGURE 2 TOTAL OF EXISTING TRAFFIC VOL PLUS DEVELOPMENT GENERATED TRAFFIC AT THE INTERSECTION OF PRINCES HWY/ WOODS ST

Degree of Saturation (DoS), Average Delay and 95% Back of Queue Distance results of the analysis for the 'total approach' of the intersection (Existing Conditions & Post-Development Conditions) are provided in **Table 1**. Full results of this assessment are provided in **Attachment B**.

APPROACH	AM PEAK HOUR			PM PEAK HOUR		
	DOS	AVERAGE DELAY (SEC)	95% QUEUE (M)	DOS	AVERAGE DELAY (SEC)	95% QUEUE (M)
Existing Conditions						
South: Woods Street	0.018	11.7	0.4	0.037	13.2	0.8
East: Murray Street	0.344	0.1	0.0	0.247	0.0	0.0
West: Murray Street	0.170	0.1	0.2	0.276	0.3	1.2
Post-Development Conditions						
South: Woods Street	0.09	13.0	2.1	0.102	12.6	2.4
East: Murray Street	0.351	0.2	0.0	0.254	0.1	0.0
West: Murray Street	0.194	1.1	2.3	0.295	0.8	2.9

TABLE 1: INTERSECTION PERFORMANCE (EXISTING + POST-DEV CONDITIONS) – MURRAY ST/WOODS ST

The SIDRA analysis indicates that:

- Under both existing and post-development conditions, all approaches operate well within acceptable performance limits, with DoS below 0.36 in the AM peak and below 0.3 in the PM peak under the post-development scenario. These DoS values indicate that the intersection continues to operate with substantial spare capacity, and no approach is nearing the practical capacity (i.e., DoS greater than 0.90).
- Average delays for right turns into and out of Woods Street remain very low on all approaches. The Murray Street approaches continue to operate with near-zero delay, while Woods Street experiences only a minor increase of up to 1.2 seconds per vehicle.
- Queue distances remain short on all approaches. Woods Street increase slightly but remain around 2-3 metres, and Murray Street queues remain negligible and largely unchanged.

CONCLUSION

The SIDRA assessment indicates that the intersection of Murray Street and Woods Street will continue to operate efficiently with the addition of traffic generated by the proposed childcare centre. All approaches are expected to maintain low Degrees of Saturation, minimal delays, and short queue lengths during the peak periods. On this basis, the proposed development is not expected to have any material impact on intersection performance.

Should you have any queries, please do not hesitate to contact me on 0424 202 407.

Yours sincerely

O'BRIEN TRAFFIC

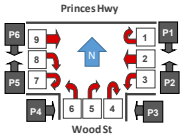
Chirag Safi
Director

ATTACHMENT A

TURNING MOVEMENT COUNTS

nationwide TRAFFIC SURVEYS

Client: OB
Name: Colac
Job No.: 7119
Location: Princes Hwy and Woods St
Date: Tue 11/11/2025 **Time:** 7-9am and 3-6pm
Weather: Sunny



Absolute Value		VEHICLE MOVEMENTS																																PEDESTRIAN MOVEMENTS											
		1				2				3				4				5				6				7				8				9				P1		P2		P3		P4		P5		P6	
TIME		Car	Truck	Bus	Cyclist	Car	Truck	Bus	Cyclist	Car	Truck	Bus	Cyclist	Car	Truck	Bus	Cyclist	Car	Truck	Bus	Cyclist	Car	Truck	Bus	Cyclist	Car	Truck	Bus	Cyclist	Car	Truck	Bus	Cyclist	Car	Truck	Bus	Cyclist	Ped	Cyclist	Ped	Cyclist	Ped	Cyclist	Ped	Cyclist	Ped	Cyclist	Ped	Cyclist
7:00	7:15	0	0	0	0	40	10	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	41	9	3	0	0	0	0	0	1	0	0	0	0	0	0	0
7:15	7:30	0	0	0	0	44	20	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	60	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	7:45	0	0	0	0	47	14	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	49	13	2	0	2	0	2	0	0	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	96	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	55	6	0	0	0	0	0	0	1	0	1	1	1	0	0	0
8:00	8:15	0	0	0	0	106	23	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	49	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	149	14	4	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	41	4	0	0	0	0	3	1	1	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	122	18	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	78	11	0	0	0	0	4	0	0	0	4	0	0	0	0	0
8:45	9:00	0	0	0	0	131	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	0	1	0	0	0	94	4	3	0	1	0	6	0	0	0	4	0	0	0	0	0
15:00	15:15	0	0	0	0	102	8	1	1	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	6	0	0	0	102	16	0	0	0	0	0	0	1	0	0	1	0	0	0	0
15:15	15:30	0	0	0	0	101	6	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	0	0	0	0	0	0	6	0	0	0	120	5	3	0	19	1	0	0	5	0	2	0	0	0	0	0
15:30	15:45	0	0	0	0	98	11	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	91	12	6	0	0	0	1	0	2	0	1	0	0	0	0	0
15:45	16:00	0	0	0	0	86	9	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	97	7	0	0	0	0	0	0	1	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	115	7	0	1	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	3	0	0	0	111	10	0	0	0	0	0	0	2	0	1	0	0	0	0	0
16:15	16:30	0	0	0	0	106	6	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	3	0	0	0	91	12	3	0	0	0	0	0	0	0	1	0	0	0	0	0
16:30	16:45	0	0	0	0	106	10	3	0	1	0	0	0	0	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	3	0	0	0	93	10	2	0	1	0	0	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	73	6	1	1	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	5	0	0	0	122	4	1	0	0	0	2	0	1	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	75	7	1	0	1	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	1	0	0	0	4	0	0	0	131	12	3	1	0	0	0	4	1	0	2	0	0	0	0	0
17:15	17:30	0	0	0	0	59	8	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	4	0	0	0	117	7	4	0	1	2	0	0	2	0	3	0	0	0	0	0
17:30	17:45	0	0	0	0	70	6	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	85	8	0	0	1	0	1	0	1	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	64	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	71	14	4	0	1	0	1	0	1	0	2	0	0	0	0	0

FIGURE A1: TURNING MOVEMENT COUNT SURVEY (TUESDAY 11 NOV 2025)

ATTACHMENT B

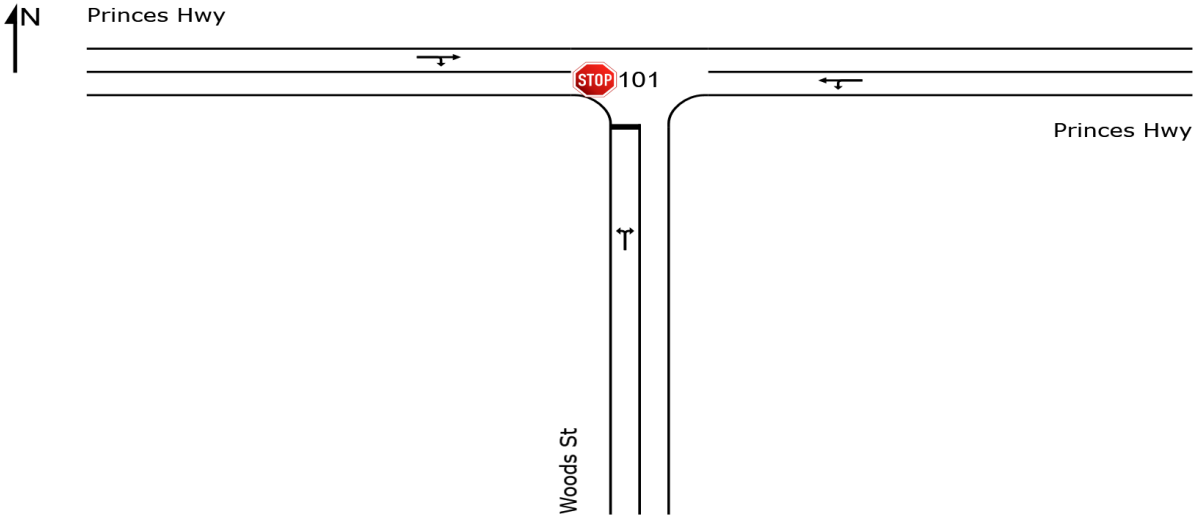
SIDRA RESULTS

SITE LAYOUT

Site: 101 [AM.Ex Princes Hwy/ Woods St (Site Folder: General)]

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

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



Organisation: O'BRIEN TRAFFIC | Licence: PLUS / FLOATING | Created: Friday, 14 November 2025 2:31:41 PM
Project: C:\Users\MatthewLam\OneDrive - O'Brien Traffic\General - Company Data\Document\Current Documents\27593\Documents\27593SIDRA.sip9

MOVEMENT SUMMARY

Site: 101 [AM.Ex Princes Hwy/ Woods St (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Woods St															
1	L2	All MCs	9	0.0	9	0.0	0.018	11.2	LOS B	0.1	0.4	0.57	0.90	0.57	39.0
3	R2	All MCs	1	0.0	1	0.0	0.018	15.5	LOS C	0.1	0.4	0.57	0.90	0.57	38.9
Approach			11	0.0	11	0.0	0.018	11.7	LOS B	0.1	0.4	0.57	0.90	0.57	39.0
East: Princes Hwy															
4	L2	All MCs	1	0.0	1	0.0	0.344	5.6	LOS A	0.0	0.0	0.00	0.00	0.00	57.3
5	T1	All MCs	617	13.3	617	13.3	0.344	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach			618	13.3	618	13.3	0.344	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.8
West: Princes Hwy															
11	T1	All MCs	306	10.0	306	10.0	0.170	0.0	LOS A	0.0	0.2	0.01	0.01	0.01	59.9
12	R2	All MCs	2	0.0	2	0.0	0.170	7.1	LOS A	0.0	0.2	0.01	0.01	0.01	57.1
Approach			308	9.9	308	9.9	0.170	0.1	NA	0.0	0.2	0.01	0.01	0.01	59.9
All Vehicles			937	12.0	937	12.0	0.344	0.2	NA	0.1	0.4	0.01	0.01	0.01	59.4

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

Organisation: O'BRIEN TRAFFIC | Licence: PLUS / FLOATING | Processed: Friday, 14 November 2025 12:51:04 PM
Project: C:\Users\MatthewLam\OneDrive - O'Brien Traffic\General - Company Data\Document\Current Documents\27593\Documents\27593SIDRA.sip9

MOVEMENT SUMMARY

Site: 101 [PM.Ex Princes Hwy/ Woods St (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Woods St															
1	L2	All MCs	8	0.0	8	0.0	0.037	9.7	LOS A	0.1	0.8	0.59	0.93	0.59	45.0
3	R2	All MCs	9	0.0	9	0.0	0.037	15.3	LOS C	0.1	0.8	0.59	0.93	0.59	37.4
Approach			18	0.0	18	0.0	0.037	12.7	LOS B	0.1	0.8	0.59	0.93	0.59	41.9
East: Princes Hwy															
4	L2	All MCs	1	0.0	1	0.0	0.247	2.5	LOS A	0.0	0.0	0.00	0.00	0.00	55.2
5	T1	All MCs	457	7.8	457	7.8	0.247	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach			458	7.8	458	7.8	0.247	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.8
West: Princes Hwy															
11	T1	All MCs	483	9.2	483	9.2	0.276	0.1	LOS A	0.2	1.2	0.04	0.05	0.04	59.3
12	R2	All MCs	15	0.0	15	0.0	0.276	7.7	LOS A	0.2	1.2	0.04	0.05	0.04	56.8
Approach			498	8.9	498	8.9	0.276	0.3	NA	0.2	1.2	0.04	0.05	0.04	59.2
All Vehicles			974	8.2	974	8.2	0.276	0.4	NA	0.2	1.2	0.03	0.04	0.03	58.8

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

Organisation: O'BRIEN TRAFFIC | Licence: PLUS / FLOATING | Processed: Friday, 14 November 2025 12:51:04 PM
Project: C:\Users\MatthewLam\OneDrive - O'Brien Traffic\General - Company Data\Document\Current Documents\27593\Documents\27593SIDRA.sip9

MOVEMENT SUMMARY

Site: 101 [AM.Proposed Princes Hwy/ Woods St (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Woods St															
1	L2	All MCs	31	0.0	31	0.0	0.090	11.5	LOS B	0.3	2.1	0.64	1.00	0.64	38.5
3	R2	All MCs	14	0.0	14	0.0	0.090	16.5	LOS C	0.3	2.1	0.64	1.00	0.64	38.4
Approach			44	0.0	44	0.0	0.090	13.0	LOS B	0.3	2.1	0.64	1.00	0.64	38.5
East: Princes Hwy															
4	L2	All MCs	14	0.0	14	0.0	0.351	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.2
5	T1	All MCs	617	13.3	617	13.3	0.351	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.6
Approach			631	13.0	631	13.0	0.351	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.6
West: Princes Hwy															
11	T1	All MCs	306	10.0	306	10.0	0.194	0.5	LOS A	0.3	2.3	0.12	0.15	0.12	58.9
12	R2	All MCs	23	0.0	23	0.0	0.194	8.9	LOS A	0.3	2.3	0.12	0.15	0.12	56.2
Approach			329	9.3	329	9.3	0.194	1.1	NA	0.3	2.3	0.12	0.15	0.12	58.7
All Vehicles			1004	11.2	1004	11.2	0.351	1.1	NA	0.3	2.3	0.07	0.10	0.07	57.9

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

Organisation: O'BRIEN TRAFFIC | Licence: PLUS / FLOATING | Processed: Friday, 14 November 2025 12:58:01 PM
Project: C:\Users\MatthewLam\OneDrive - O'Brien Traffic\General - Company Data\Document\Current Documents\27593\Documents\27593SIDRA.sip9

MOVEMENT SUMMARY

Site: 101 [PM.Proposed Princes Hwy/ Woods St (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Woods St															
1	L2	All MCs	29	0.0	29	0.0	0.102	9.8	LOS A	0.3	2.4	0.60	0.97	0.60	45.0
3	R2	All MCs	22	0.0	22	0.0	0.102	16.3	LOS C	0.3	2.4	0.60	0.97	0.60	37.5
Approach			52	0.0	52	0.0	0.102	12.6	LOS B	0.3	2.4	0.60	0.97	0.60	42.6
East: Princes Hwy															
4	L2	All MCs	14	0.0	14	0.0	0.254	2.5	LOS A	0.0	0.0	0.00	0.02	0.00	55.1
5	T1	All MCs	457	7.8	457	7.8	0.254	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
Approach			471	7.6	471	7.6	0.254	0.1	NA	0.0	0.0	0.00	0.02	0.00	59.6
West: Princes Hwy															
11	T1	All MCs	483	9.2	483	9.2	0.295	0.3	LOS A	0.4	2.9	0.10	0.12	0.10	58.4
12	R2	All MCs	36	0.0	36	0.0	0.295	7.8	LOS A	0.4	2.9	0.10	0.12	0.10	56.4
Approach			519	8.5	519	8.5	0.295	0.8	NA	0.4	2.9	0.10	0.12	0.10	58.2
All Vehicles			1041	7.7	1041	7.7	0.295	1.1	NA	0.4	2.9	0.08	0.12	0.08	57.2

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

Organisation: O'BRIEN TRAFFIC | Licence: PLUS / FLOATING | Processed: Friday, 14 November 2025 12:58:01 PM
Project: C:\Users\MatthewLam\OneDrive - O'Brien Traffic\General - Company Data\Document\Current Documents\27593\Documents\27593SIDRA.sip9

Suite 2.03, 789 Toorak Road
Hawthorn East Victoria 3123
T: +61 3 9804 3610
W: obrientraffic.com

3 September 2025

Praveen Gulati
Gulati Homes
C/o Aglow Town Planning Services Pty Ltd
GPO Box 241
Sunbury Victoria 3429

Dear Praveen,

PLANNING APPLICATION: PP118/2025-1
ADDRESS: 4-6 WOODS STREET, COLAC
PROPOSAL: CHILDCARE CENTRE DEVELOPMENT

I refer to your request that O'Brien Traffic prepare a response to Council's Request for Further Information (RFI) dated 22 July 2025 and the public objections received by Council following the advertisement of the above application.

The site plans have been amended in response to the Council's RFI. The amended site plans are included in **Attachment 1**.

It is now proposed to demolish the existing building and construct a 99-place childcare centre (denoting a reduction of one enrolment from the original proposal) on the subject site. A total of 21 car spaces (indicating a decrease of one car space from the original proposal) is proposed on-site, with access provided via a 5.5m crossover to Woods Street.

The following sections of this memo respond to each of the matters raised by Council and address common concerns expressed by the objectors.

COUNCIL'S RFI

For ease of reference, Council's traffic engineering comments are reproduced in ***italics***, followed by our response.

Safe system assessment for

- ***Woods Street and Princes Highway (This intersection will be key as it is already located in the school zone)***

- *Fenwick Street and Woods Street*
- *Church Street and Fenwick Street*

OBT Response:

Council has requested a Safe System Assessment of the nearby intersections. Such assessments are generally applied to major infrastructure or land development projects. This level of analysis is excessive and unjustified for a site-specific urban development accessed via a low-speed local street.

Our submitted Traffic Impact Assessment Report (TIAR) dated 23 May 2025 already provides a qualitative road safety review, consistent with standard practice for similar proposals across metropolitan and regional Victoria.

O'Brien Traffic commissioned an automatic tube count survey on Woods Street (near 5 Woods Street). Data were collected over 7 days, from Tuesday, 19 August 2025 to Monday, 25 August 2025 (i.e., the survey was conducted during a typical period when schools are in session). A summary of the tube count survey for all vehicles on Woods Street is provided below. Full data is provided in **Attachment 2**.

	DIRECTION		COMBINED	%HV	85TH PERCENTILE SPEED
	SOUTHBOUND	NORTHBOUND			
Weekday Avg. (Monday to Friday)	142 vpd	117 vpd	260 vpd	7.4%	43.6km/h
Weekday AM Peak (12noon-1pm)	11 vph	10 vph	21 vph		
Weekday PM Peak (3pm-4pm)	20 vph	15 vph	35 vph		

AUTOMATIC TUBE COUNT SURVEY SUMMARY

The survey identified an average weekday traffic volume of 260 vehicles per day, with peak hour flows of only 21 vehicles per hour (AM) and 35 vehicles per hour (PM). The survey data confirms that Woods Street carries very low traffic. Based on this, it is plausible to assume that the surrounding access-level local streets, such as Fenwick Street, would also be experiencing a similar level of traffic volumes.

The TIAR indicated that the development is expected to add very low traffic volumes (up to 16 vehicles in peak hours, equating to one vehicle every 3 minutes and 45 seconds on average) to the Fenwick Street / Woods Street or Church Street / Fenwick Street intersections. This level of traffic will not materially impact the safety of these intersections.

As for the Woods Street/Princes Highway intersection, the proposal will add up to 64 vehicles in peak hours, almost equating to one vehicle every minute on average. The proximity to the pedestrian signals will naturally create frequent traffic gaps at this

intersection, which facilitates safe right-turn movements. On this basis, the road safety implications of the proposal at this intersection would be minimal.

SIDRA analysis for above intersection considering present and post development after 15-year at 2% growth rate.

OBT Response:

Council has requested a SIDRA analysis incorporating a 15-year design horizon with a 2% growth rate. Such assessments are typically applied in the context of strategic precinct planning or rezonings, rather than individual site applications.

Our analysis of existing and post-development traffic conditions demonstrates that the traffic generated by the proposed childcare centre can be accommodated without adverse operational impacts on the surrounding intersections. The scale of the development is such that its contribution to long-term network capacity will be negligible. Furthermore, there is no nexus for this application to mitigate the cumulative traffic impact resulting from the growth of background traffic.

Analysis must highlight any road treatment that may be required for pedestrian safety.

OBT Response:

The surrounding road environment already includes suitable pedestrian infrastructure, including continuous footpaths and a pedestrian-operated signal on Princes Highway at Woods Street, which facilitates safe crossing opportunities.

Additional traffic generated by the proposal will be accommodated in the surrounding streets without any perceivable safety risks for pedestrians. Accordingly, the submitted TIAR is considered sufficient in responding to pedestrian safety without warranting any treatments.

Parking within easement is not acceptable to Council.

OBT Response:

The amended plans indicate that no parking spaces are proposed within the easement, and as such, the design complies with Council's requirement. This matter is therefore considered resolved.

PUBLIC OBJECTIONS

Council has received a number of submissions from the community raising concerns about the potential traffic and parking impacts of the proposed childcare centre. The key themes of issues raised by the community are summarised below:

- Traffic generation
- Street width, access and visibility on Woods Street
- Parking supply and on-street parking impacts

A response to each of these issues is provided in the following:

Traffic Generation

Submissions noted concerns with the trip generation assumptions adopted in the TIAR, particularly in relation to staff travel, deliveries, contractors and potential parent detours. It was suggested that the total number of vehicle movements generated by the development may be underestimated.

The traffic generation rates adopted in the TIAR are based on empirical data from previous case studies and industry standards.

- O'Brien Traffic conducted a survey-based study for Glen Eira City Council in 2009, which analysed three child care centres:
  - Tree House (241 Kooyong Road, Elsternwick)
  - Roseberry House (2A-4 Roseberry Grove, Glen Huntly)
  - East Bentleigh Child Care (70 East Boundary Road, Bentleigh East)

These surveys found an average peak hour traffic generation rate of 0.8 trips per child. Peak hours were typically between 7:30–8:30 AM and 4:30–5:30 PM.

- The NSW Guide to Traffic Generating Developments (TfNSW) supports similar rates:
  - Daily: 2.97 trips per child
  - AM peak: 0.81 trips/child
  - PM peak: 0.80 trips/child

The rates used in the TIAR are therefore consistent with the above empirical data. These traffic generation rates already account for staff travel, deliveries, contractors, and parent trips.

It is anticipated that not all 21 staff members will be on-site at the same time, as actual staff presence will vary depending on operational shifts and enrolment numbers determined by the future operator. The proposed car park satisfies the statutory parking requirement of Clause 52.06-5, and therefore, a car parking demand assessment is not required.

Therefore, concerns regarding the underestimation of the development traffic are not supported by empirical studies.

Street Width, Access and Visibility

Residents noted that Woods Street is relatively narrow, which makes it difficult for two vehicles to pass each other safely, particularly when cars are parked on both sides of the street. Concerns were also raised about restricted sight lines for property owners when entering or exiting their driveways.

Woods Street features approximately 7.5m wide carriageway, which is consistent with the design standards of an Access Street – Level 2 under Clause 56.06-8 of the Planning Scheme. This street type is designed to provide local access and allows for two-way vehicle movement, while also accommodating kerbside parking on both sides of the street.

Furthermore, existing weekday traffic volumes on Woods Street are low, well below a maximum tolerable threshold of 3,000 vehicles per day identified in Clause 56.06-8 of the Planning Scheme.

The presence of kerbside parking, which seldom occurs on Woods Street based on a review of recent Nearmap photos, and the need for drivers to give way to opposite traffic under some situations, is an anticipated and inherent feature of this street type, which is not an indication of inadequate width.

Based on 99 children, the proposed development is expected to generate an additional up to 300 vehicle movements per day, resulting in a post-development volume of up to 560 vehicles per day along Woods Street. The post-development volume will still be well within the maximum tolerable traffic of 3,000 vehicles per day. Therefore, such traffic increase will not result in any measurable impact on the performance, safety, or residential character of these streets.

In terms of sight distance, Woods Street operates with an 85th percentile speed of 43.6km/h. At these operating speeds and with the straight/flat alignment of the road, stopping sight distances would be well within safe limits. Accordingly, the available sight distance is consistent with expectations for an Access Street – Level 2 and does not present a material safety risk.

Based on the above considerations, concerns regarding the street features being unsuitable for the development traffic are not supported by our assessment.

Parking Supply and On-Street Parking Impact

Some residents questioned the adequacy of the on-site parking spaces proposed to accommodate staff and parent demand. There is concern that overflow parking may occur on-street, reducing availability for residents and further contributing to access issues.

The proposal provides the number of car parking spaces required under the Planning Scheme, thereby satisfying the statutory requirement for a childcare centre of this scale.

These requirements are specifically intended to ensure that developments provide for their own parking demand on-site. On this basis, all staff and parent parking demand is expected to be accommodated within the on-site car park, and no car parking overflow on Woods Street is anticipated.

CONCLUSION

The amended proposal for a 99-place childcare centre has been assessed against Council's RFI requirements and the concerns raised by the community. The amended development plans address Council's specific requests, including the removal of parking within the easement, and demonstrate compliance with statutory parking and design standards. Traffic survey confirms that Woods Street currently carries very low traffic volumes, and the additional trips generated by the childcare centre can be accommodated without adverse impacts on the safety and operation of Woods Street.

Should you have any queries, please do not hesitate to contact me on 0424 202 407.

Yours sincerely

O'BRIEN TRAFFIC

Chirag Safi
Director

ATTACHMENT A

AMENDED SITE PLANS

SITE ANALYSIS

SITE AREA	1965.00 SQM
GROUND FLOOR AREA	572.60 SQM
COVERED VERANDAH	206.40 SQM
SITE COVERAGE	39.64 %
TOTAL AREA	779.00 SQM
OUTDOOR PLAY AREA	701.60 SQM
CARPARK AREA	566.00 SQM
CARPARKING	21 SPACES

HOURS OF OPERATION

MON-FRI	6:30AM TO 6:30PM
SATURDAY	CLOSED
SUNDAY	CLOSED

WASTE MANAGEMENT

NAPPY DISPOSAL BY DAILY CONTRACTOR
BIN DISPOSAL BY DAILY CONTRACTOR

CHILDREN ROOM 01

AREA	39.20 SQM
UNDER 3 YEAR OLD	12

CHILDREN ROOM 02

AREA	39.20 SQM
UNDER 3 YEAR OLD	12

CHILDREN ROOM 03

AREA	53.70 SQM
UNDER 3 YEAR OLD	16

CHILDREN ROOM 04

AREA	52.00 SQM
UNDER 3 YEAR OLD	15

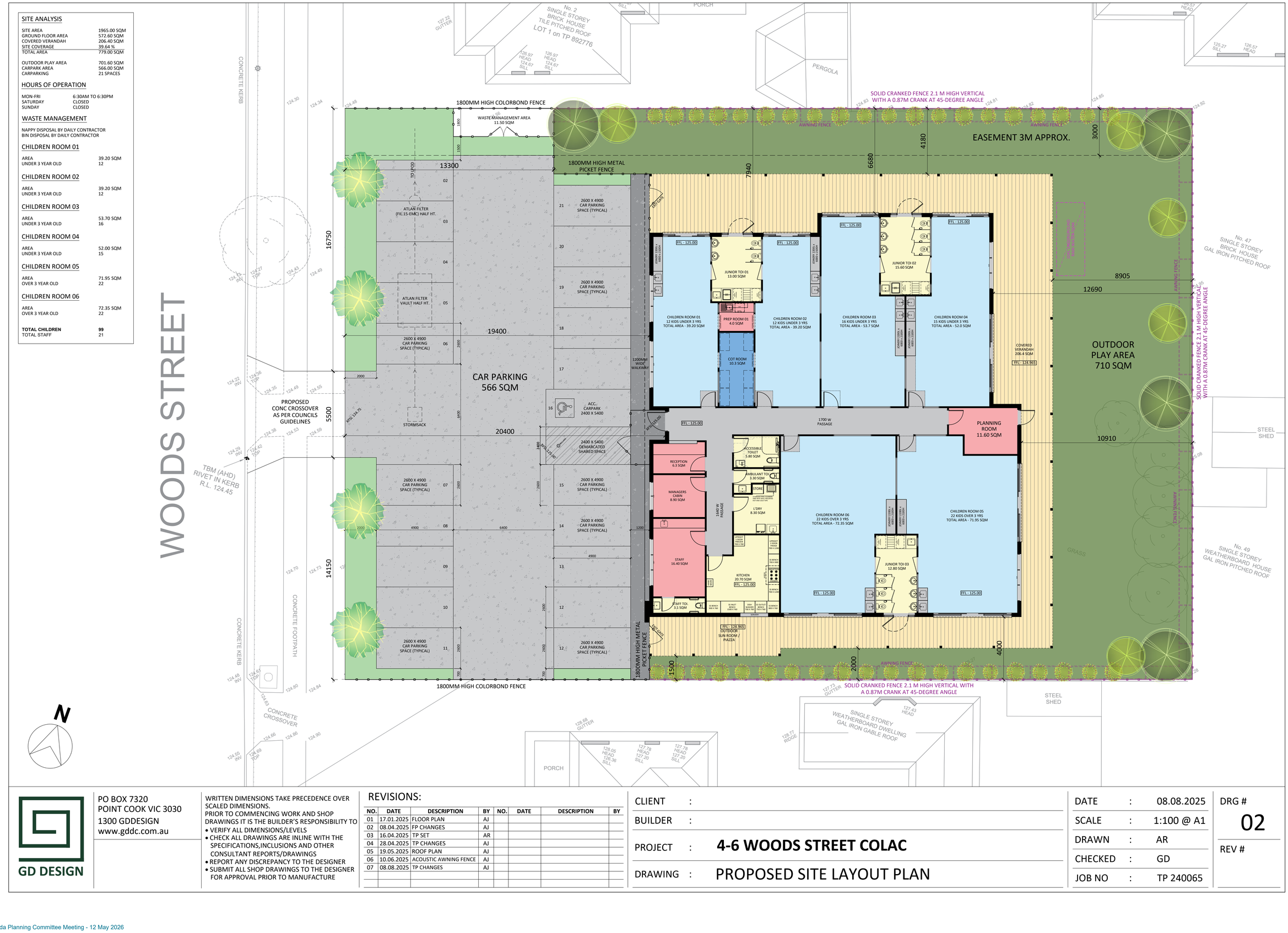
CHILDREN ROOM 05

AREA	71.95 SQM
OVER 3 YEAR OLD	22

CHILDREN ROOM 06

AREA	72.35 SQM
OVER 3 YEAR OLD	22

TOTAL CHILDREN	**99**
TOTAL STAFF	21



GD DESIGN
PO BOX 7320
POINT COOK VIC 3030
1300 GDDESIGN
www.gddc.com.au

WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS.
PRIOR TO COMMENCING WORK AND SHOP DRAWINGS IT IS THE BUILDER'S RESPONSIBILITY TO
- VERIFY ALL DIMENSIONS/LEVELS
- CHECK ALL DRAWINGS ARE INLINE WITH THE SPECIFICATIONS,INCLUSIONS AND OTHER CONSULTANT REPORTS/DRAWINGS
- REPORT ANY DISCREPANCY TO THE DESIGNER
- SUBMIT ALL SHOP DRAWINGS TO THE DESIGNER FOR APPROVAL PRIOR TO MANUFACTURE

REVISIONS:

NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY
01	17.01.2025	FLOOR PLAN	AJ				
02	08.04.2025	FP CHANGES	AJ				
03	16.04.2025	TP SET	AR				
04	28.04.2025	TP CHANGES	AJ				
05	19.05.2025	ROOF PLAN	AJ				
06	10.06.2025	ACOUSTIC AWNING FENCE	AJ				
07	08.08.2025	TP CHANGES	AJ				

CLIENT	:	
BUILDER	:	
PROJECT	:	**4-6 WOODS STREET COLAC**
DRAWING	:	PROPOSED SITE LAYOUT PLAN

DATE	:	08.08.2025
SCALE	:	1:100 @ A1
DRAWN	:	AR
CHECKED	:	GD
JOB NO	:	TP 240065

DRG # 02
REV #

ATTACHMENT B

TRAFFIC SURVEY DATA

AUTOMATIC COUNT SUMMARY

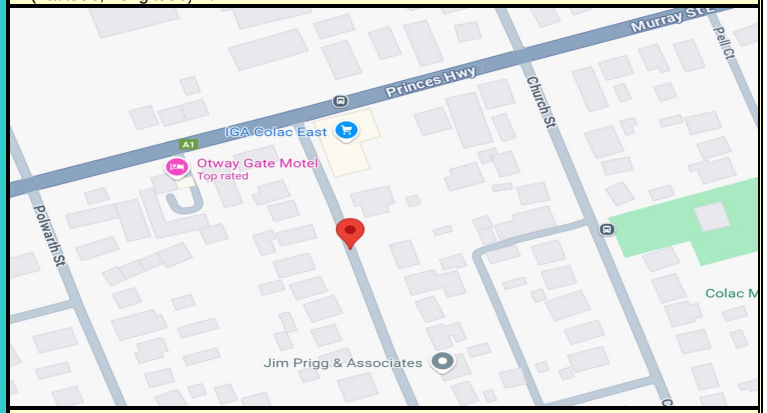
Street Name :	Woods St	**Location :**	At No. 5
Suburb :	Colac	**Start Date :**	00:00 Tue 19/August/2025
Metrocount ID	VV10	**Finish Date :**	00:00 Mon 25/August/2025
Site ID Number :	7079_01	**Speed Zone :**	50 km/h
Prepared By:	Nationwide Traffic Surveys P/L	**Email:**	admin@ntsurveys.com.au

GPS information	Lat	#VALUE!	**Direction of Travel**		
	Long	#VALUE!	**Combined N-S**	**Southbound**	**Northbound**
Traffic Volume :		Weekdays Average	260	142	117
(Vehicles/Day)		7 Day Average	249	139	111
Weekday	**AM**	12:00	20	11	10
Peak hour starts	**PM**	15:00	36	20	15
Speeds :		85th Percentile	43.5	43	44
(Km/Hr)		Average	36.1	37	36
Classification % :		Light Vehicles up to 5.5m	93.2%	92.6%	94.0%

Location

GPS Information Load Google Map (Internet Required)

(Latitude, Longitude)'N/A



Speed Data | Speed Graph | Speed Bins | Volume Data

Volume Graph | Daily Graph | Classified Data | Classified Summary

Daily Speed Bins | Site Summary

Survey No.	7079	Volume	249.4
Road Name	Woods St	Avg Speed	36.1
Site No.	7079_01	85th %ile	43.6
Direction	Combined N-S	Modal Speed	36
Location	At No. 5	Minimum	4.6
		Maximum	62.9
Day	7 Day Average	Std Deviatio	8.1
Period	Mon 18 Aug - Sun 24 Aug 25		

Hour Start	Total Vehicles	Avgerage Speed	85th percentile	Modal Speed	Minimum Speed	Maximum Speed	Standard Deviation
00:00	0	33.7	36.3	30	30.0	37.4	5.2
01:00	0	46.0	49.3	41	41.2	50.7	6.7
02:00	0	30.6	34.5	25	25.1	36.1	7.8
03:00	1	24.9	30.5	28	14.1	34.5	7.4
04:00	0	28.6	31.5	24	24.5	32.7	5.8
05:00	2	35.6	41.9	39	22.3	43.8	6.9
06:00	4	35.1	40.6	34	15.8	44.0	6.4
07:00	8	36.5	43.6	36	15.8	48.6	7.4
08:00	15	38.3	45.1	36	18.3	51.8	6.7
09:00	20	35.0	43.0	40	11.5	56.6	8.4
10:00	20	35.4	44.1	40	5.1	52.6	8.6
11:00	14	33.9	42.1	37	7.7	50.0	8.2
12:00	19	36.2	44.3	38	12.3	53.3	7.9
13:00	23	35.4	42.9	40	5.2	53.9	8.7
14:00	23	36.2	43.4	37	9.0	53.0	7.4
15:00	31	37.5	44.0	39	9.4	53.7	7.7
16:00	24	35.5	43.0	34	4.6	59.2	8.8
17:00	18	36.4	43.1	34	16.3	62.4	7.8
18:00	12	36.1	43.4	36	13.7	55.3	8.5
19:00	7	36.4	44.7	36	5.9	62.9	9.6
20:00	5	38.1	43.9	40	21.3	57.4	6.9
21:00	2	40.1	48.2	33	30.3	57.0	7.8
22:00	1	35.9	38.3	34	33.7	40.3	2.8
23:00	0	38.1	41.7	39	32.6	42.8	5.2
Total	249	36.1	43.6	36	4.6	62.9	8.1

Survey No.	7079	7 Day Total	1746
Road	Woods St	% Heavies	6.59%
Site No.	7079_01	Weekday Total	1298
Direction	Combined N-S	% Heavies	6.55%
Location	At No. 5	Weekend Total	448
		% Heavies	6.70%
Period	Mon 18 Aug - Sun 24 Aug 25		

Day Date	Mon 18/08/2025	Tue 19/08/2025	Wed 20/08/2025	Thu 21/08/2025	Fri 22/08/2025	Sat 23/08/2025	Sun 24/08/2025	7 Day Average	Weekday Average	Weekend Average
AM Peak	08:00-29	09:00-20	08:00-29	10:00-22	09:00-30	11:00-31	09:00-24	09:00-20	10:00-19.4	09:00-22
PM Peak	15:00-35	16:00-34	15:00-40	15:00-45	15:00-36	16:00-26	13:00-32	15:00-31.1	15:00-35.8	13:00-23
00:00	0	0	1	0	0	0	1	0	0	1
01:00	0	0	0	0	1	1	0	0	0	1
02:00	0	2	0	0	0	0	0	0	0	0
03:00	0	0	2	0	0	0	3	1	0	2
04:00	0	0	0	1	0	0	1	0	0	1
05:00	3	0	2	1	6	1	0	2	2	1
06:00	6	3	3	2	12	0	1	4	5	1
07:00	6	9	8	7	12	10	2	8	8	6
08:00	29	13	29	7	16	9	4	15	19	7
09:00	16	20	18	12	30	20	24	20	19	22
10:00	20	8	20	22	27	19	24	20	19	22
11:00	18	9	7	9	12	31	13	14	11	22
12:00	19	11	31	29	11	21	13	19	20	17
13:00	22	21	28	17	28	14	32	23	23	23
14:00	21	21	22	34	25	18	20	23	25	19
15:00	35	23	40	45	36	13	26	31	36	20
16:00	19	34	22	23	25	26	17	24	25	22
17:00	23	21	18	9	20	18	14	18	18	16
18:00	16	10	12	10	12	9	12	12	12	11
19:00	9	6	2	9	8	8	5	7	7	7
20:00	7	3	6	5	7	2	6	5	6	4
21:00	1	0	2	3	2	2	6	2	2	4
22:00	0	2	0	0	1	2	0	1	1	1
23:00	1	1	1	0	0	0	0	0	1	0
Total	271	217	274	245	291	224	224	249	260	224
% Heavy	7.0%	8.3%	5.1%	4.9%	7.6%	6.3%	7.1%	6.6%	6.5%	6.7%

Suite 2.03, 789 Toorak Road
Hawthorn East Victoria 3123
T: +61 3 9804 3610
W: obrientraffic.com

14 November 2025

Archna Rani
Statutory Planner
Colac Otway Shire

E: inq@colacotway.vic.gov.au

Dear Archna,

PLANNING APPLICATION: PP118/2025-1
ADDRESS: 4-6 WOODS STREET, COLAC
PROPOSAL: CHILDCARE CENTRE DEVELOPMENT

I refer to your request in the email dated 14 October 2025 for a SIDRA analysis of the intersection of Princes Highway (Murray Street) and Woods Street in relation to the proposed 99-place childcare centre at 4-6 Woods Street, Colac.

A SIDRA analysis has been conducted to evaluate the operational performance of the intersection under both existing and post-development conditions, as requested, and the results are summarised in this letter.

To assess this intersection, O'Brien Traffic commissioned Turning Movement Count (TMC) surveys at the intersection of Murray Street and Woods Street. The surveys were undertaken on Tuesday, 11 November 2025 from 7 am - 9 am and 3pm - 6 pm. The peak hours at this intersection were found to occur between 8 am - 9 am and 4 pm - 5 pm. The peak hour counts are shown in **Figure 1** with the details provided in **Attachment A**. This data was then used to conduct SIDRA assessments of the Murray Street/Woods Street intersection.

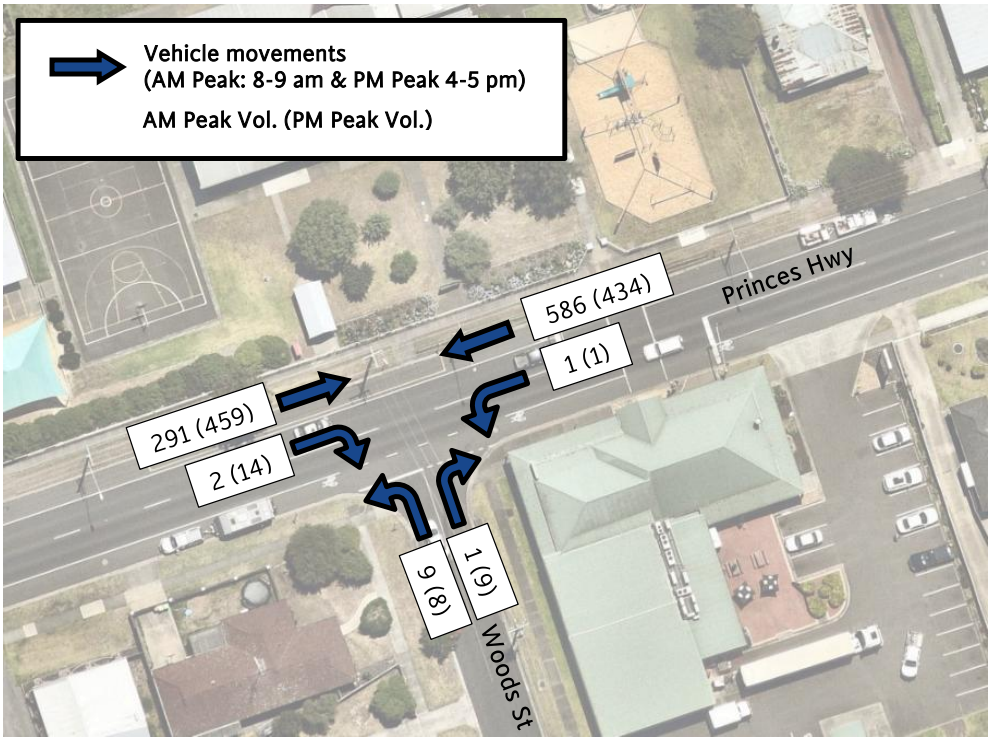


FIGURE 1 EXISTING TRAFFIC VOLUMES AT THE INTERSECTION OF MURRAY ST/WOODS ST

SIDRA ANALYSIS

The following traffic generation and distribution assumptions have been adopted, consistent with the submitted TIA report (*27593 TIAR*) dated 23 May 2025.

- The proposed childcare centre would generate 80 vehicle trips in each peak hour (i.e., 40 trips to the site and 40 trips away from the site).
- The traffic distribution of the development traffic is assumed as follows:
  - 20% to/from the south on Woods Street,
  - 30% to/from the east on Murray Street (via Woods Street) and
  - 50% to/from the west on Murray Street (via Woods Street).

Based on the above assumptions, the expected sum of the development generated traffic and the existing turning movements at the intersection of Murray Street and Woods Street during the AM and PM peak hours is presented in **Figure 2**.

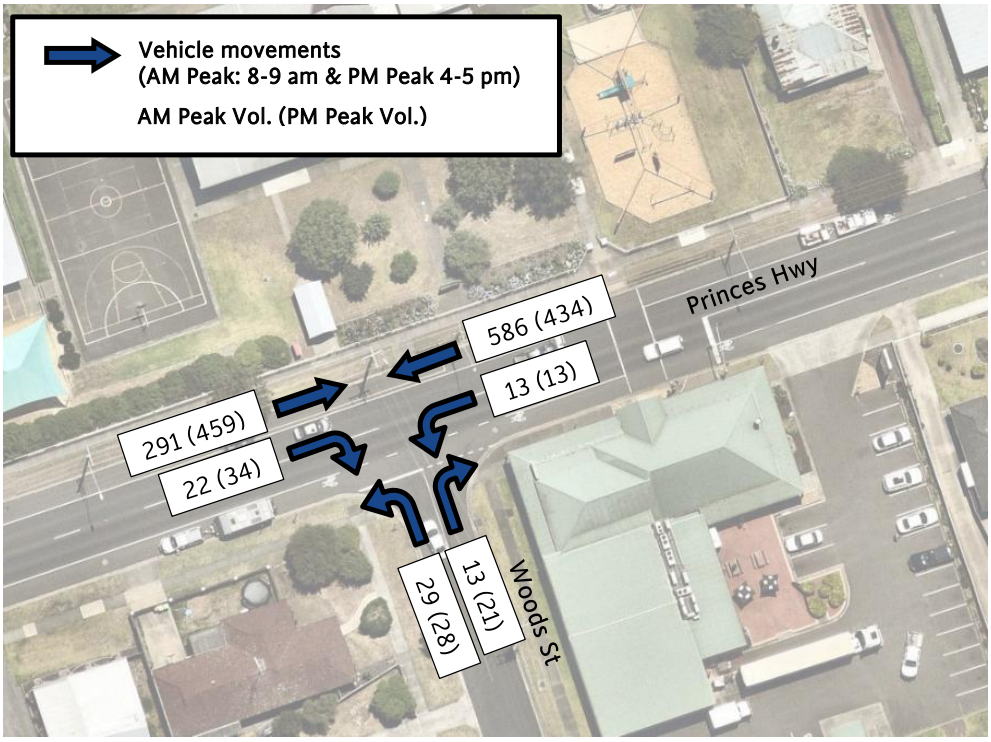


FIGURE 2 TOTAL OF EXISTING TRAFFIC VOL PLUS DEVELOPMENT GENERATED TRAFFIC AT THE INTERSECTION OF PRINCES HWY/ WOODS ST

Degree of Saturation (DoS), Average Delay and 95% Back of Queue Distance results of the analysis for the 'total approach' of the intersection (Existing Conditions & Post-Development Conditions) are provided in **Table 1**. Full results of this assessment are provided in **Attachment B**.

APPROACH	AM PEAK HOUR			PM PEAK HOUR		
	DOS	AVERAGE DELAY (SEC)	95% QUEUE (M)	DOS	AVERAGE DELAY (SEC)	95% QUEUE (M)
Existing Conditions						
South: Woods Street	0.018	11.7	0.4	0.037	13.2	0.8
East: Murray Street	0.344	0.1	0.0	0.247	0.0	0.0
West: Murray Street	0.170	0.1	0.2	0.276	0.3	1.2
Post-Development Conditions						
South: Woods Street	0.09	13.0	2.1	0.102	12.6	2.4
East: Murray Street	0.351	0.2	0.0	0.254	0.1	0.0
West: Murray Street	0.194	1.1	2.3	0.295	0.8	2.9

TABLE 1: INTERSECTION PERFORMANCE (EXISTING + POST-DEV CONDITIONS) – MURRAY ST/WOODS ST

The SIDRA analysis indicates that:

- Under both existing and post-development conditions, all approaches operate well within acceptable performance limits, with DoS below 0.36 in the AM peak and below 0.3 in the PM peak under the post-development scenario. These DoS values indicate that the intersection continues to operate with substantial spare capacity, and no approach is nearing the practical capacity (i.e., DoS greater than 0.90).
- Average delays for right turns into and out of Woods Street remain very low on all approaches. The Murray Street approaches continue to operate with near-zero delay, while Woods Street experiences only a minor increase of up to 1.2 seconds per vehicle.
- Queue distances remain short on all approaches. Woods Street increase slightly but remain around 2-3 metres, and Murray Street queues remain negligible and largely unchanged.

CONCLUSION

The SIDRA assessment indicates that the intersection of Murray Street and Woods Street will continue to operate efficiently with the addition of traffic generated by the proposed childcare centre. All approaches are expected to maintain low Degrees of Saturation, minimal delays, and short queue lengths during the peak periods. On this basis, the proposed development is not expected to have any material impact on intersection performance.

Should you have any queries, please do not hesitate to contact me on 0424 202 407.

Yours sincerely

O'BRIEN TRAFFIC

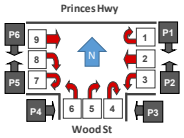
Chirag Safi
Director

ATTACHMENT A

TURNING MOVEMENT COUNTS

nationwide TRAFFIC SURVEYS

Client: OB
Name: Colac
Job No.: 7119
Location: Princes Hwy and Woods St
Date: Tue 11/11/2025 **Time:** 7-9am and 3-6pm
Weather: Sunny



Absolute Value		VEHICLE MOVEMENTS																																PEDESTRIAN MOVEMENTS											
		1				2				3				4				5				6				7				8				9				P1		P2		P3		P4		P5		P6	
TIME		Car	Truck	Bus	Cyclist	Car	Truck	Bus	Cyclist	Car	Truck	Bus	Cyclist	Car	Truck	Bus	Cyclist	Car	Truck	Bus	Cyclist	Car	Truck	Bus	Cyclist	Car	Truck	Bus	Cyclist	Car	Truck	Bus	Cyclist	Car	Truck	Bus	Cyclist	Ped	Cyclist	Ped	Cyclist	Ped	Cyclist	Ped	Cyclist	Ped	Cyclist	Ped	Cyclist
7:00	7:15	0	0	0	0	40	10	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	41	9	3	0	0	0	0	0	1	0	0	0	0	0	0	0
7:15	7:30	0	0	0	0	44	20	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	60	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	7:45	0	0	0	0	47	14	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	49	13	2	0	2	0	2	0	0	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	96	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	55	6	0	0	0	0	0	0	1	0	1	1	1	0	0	0
8:00	8:15	0	0	0	0	106	23	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	49	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	149	14	4	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	41	4	0	0	0	0	3	1	1	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	122	18	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	78	11	0	0	0	0	4	0	0	0	4	0	0	0	0	0
8:45	9:00	0	0	0	0	131	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	0	1	0	0	0	94	4	3	0	1	0	6	0	0	0	4	0	0	0	0	0
15:00	15:15	0	0	0	0	102	8	1	1	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	6	0	0	0	102	16	0	0	0	0	0	0	1	0	0	1	0	0	0	0
15:15	15:30	0	0	0	0	101	6	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	0	0	0	0	0	0	6	0	0	0	120	5	3	0	19	1	0	0	5	0	2	0	0	0	0	0
15:30	15:45	0	0	0	0	98	11	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	91	12	6	0	0	0	1	0	2	0	1	0	0	0	0	0
15:45	16:00	0	0	0	0	86	9	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	97	7	0	0	0	0	0	0	1	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	115	7	0	1	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	3	0	0	0	111	10	0	0	0	0	0	0	2	0	1	0	0	0	0	0
16:15	16:30	0	0	0	0	106	6	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	3	0	0	0	91	12	3	0	0	0	0	0	0	0	1	0	0	0	0	0
16:30	16:45	0	0	0	0	106	10	3	0	1	0	0	0	0	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	3	0	0	0	93	10	2	0	1	0	0	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	73	6	1	1	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	5	0	0	0	122	4	1	0	0	0	2	0	1	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	75	7	1	0	1	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	1	0	0	0	4	0	0	0	131	12	3	1	0	0	0	4	1	0	2	0	0	0	0	0
17:15	17:30	0	0	0	0	59	8	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	4	0	0	0	117	7	4	0	1	2	0	0	2	0	3	0	0	0	0	0
17:30	17:45	0	0	0	0	70	6	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	85	8	0	0	1	0	1	0	1	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	64	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	71	14	4	0	1	0	1	0	1	0	2	0	0	0	0	0

FIGURE A1: TURNING MOVEMENT COUNT SURVEY (TUESDAY 11 NOV 2025)

ATTACHMENT B

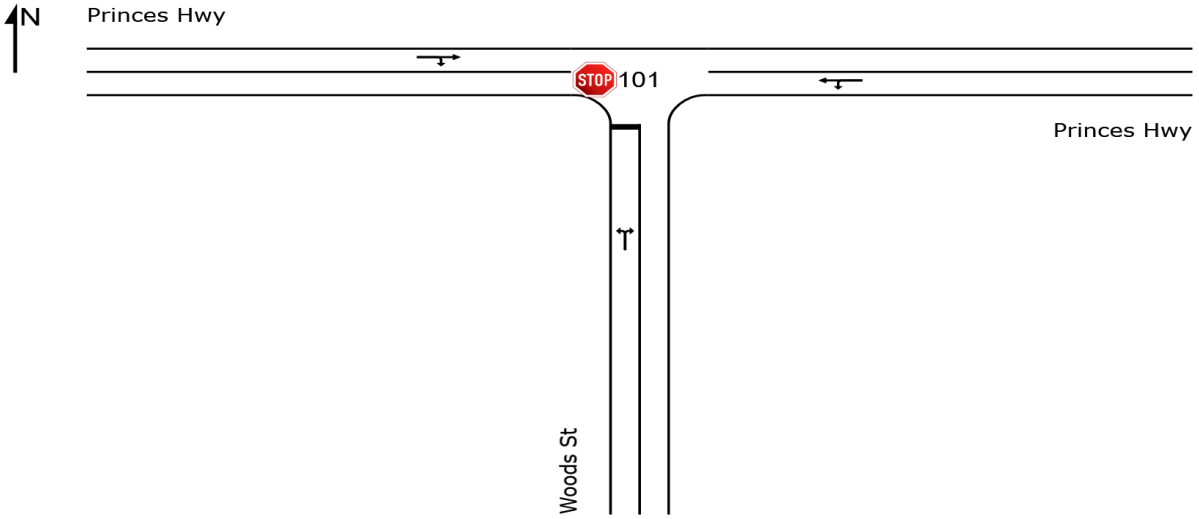
SIDRA RESULTS

SITE LAYOUT

Site: 101 [AM.Ex Princes Hwy/ Woods St (Site Folder: General)]

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

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



Organisation: O'BRIEN TRAFFIC | Licence: PLUS / FLOATING | Created: Friday, 14 November 2025 2:31:41 PM
Project: C:\Users\MatthewLam\OneDrive - O'Brien Traffic\General - Company Data\Document\Current Documents\27593\Documents\27593SIDRA.sip9

MOVEMENT SUMMARY

Site: 101 [AM.Ex Princes Hwy/ Woods St (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Woods St															
1	L2	All MCs	9	0.0	9	0.0	0.018	11.2	LOS B	0.1	0.4	0.57	0.90	0.57	39.0
3	R2	All MCs	1	0.0	1	0.0	0.018	15.5	LOS C	0.1	0.4	0.57	0.90	0.57	38.9
Approach			11	0.0	11	0.0	0.018	11.7	LOS B	0.1	0.4	0.57	0.90	0.57	39.0
East: Princes Hwy															
4	L2	All MCs	1	0.0	1	0.0	0.344	5.6	LOS A	0.0	0.0	0.00	0.00	0.00	57.3
5	T1	All MCs	617	13.3	617	13.3	0.344	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach			618	13.3	618	13.3	0.344	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.8
West: Princes Hwy															
11	T1	All MCs	306	10.0	306	10.0	0.170	0.0	LOS A	0.0	0.2	0.01	0.01	0.01	59.9
12	R2	All MCs	2	0.0	2	0.0	0.170	7.1	LOS A	0.0	0.2	0.01	0.01	0.01	57.1
Approach			308	9.9	308	9.9	0.170	0.1	NA	0.0	0.2	0.01	0.01	0.01	59.9
All Vehicles			937	12.0	937	12.0	0.344	0.2	NA	0.1	0.4	0.01	0.01	0.01	59.4

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

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MOVEMENT SUMMARY

Site: 101 [PM.Ex Princes Hwy/ Woods St (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Woods St															
1	L2	All MCs	8	0.0	8	0.0	0.037	9.7	LOS A	0.1	0.8	0.59	0.93	0.59	45.0
3	R2	All MCs	9	0.0	9	0.0	0.037	15.3	LOS C	0.1	0.8	0.59	0.93	0.59	37.4
Approach			18	0.0	18	0.0	0.037	12.7	LOS B	0.1	0.8	0.59	0.93	0.59	41.9
East: Princes Hwy															
4	L2	All MCs	1	0.0	1	0.0	0.247	2.5	LOS A	0.0	0.0	0.00	0.00	0.00	55.2
5	T1	All MCs	457	7.8	457	7.8	0.247	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach			458	7.8	458	7.8	0.247	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.8
West: Princes Hwy															
11	T1	All MCs	483	9.2	483	9.2	0.276	0.1	LOS A	0.2	1.2	0.04	0.05	0.04	59.3
12	R2	All MCs	15	0.0	15	0.0	0.276	7.7	LOS A	0.2	1.2	0.04	0.05	0.04	56.8
Approach			498	8.9	498	8.9	0.276	0.3	NA	0.2	1.2	0.04	0.05	0.04	59.2
All Vehicles			974	8.2	974	8.2	0.276	0.4	NA	0.2	1.2	0.03	0.04	0.03	58.8

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

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MOVEMENT SUMMARY

Site: 101 [AM.Proposed Princes Hwy/ Woods St (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Woods St															
1	L2	All MCs	31	0.0	31	0.0	0.090	11.5	LOS B	0.3	2.1	0.64	1.00	0.64	38.5
3	R2	All MCs	14	0.0	14	0.0	0.090	16.5	LOS C	0.3	2.1	0.64	1.00	0.64	38.4
Approach			44	0.0	44	0.0	0.090	13.0	LOS B	0.3	2.1	0.64	1.00	0.64	38.5
East: Princes Hwy															
4	L2	All MCs	14	0.0	14	0.0	0.351	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.2
5	T1	All MCs	617	13.3	617	13.3	0.351	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.6
Approach			631	13.0	631	13.0	0.351	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.6
West: Princes Hwy															
11	T1	All MCs	306	10.0	306	10.0	0.194	0.5	LOS A	0.3	2.3	0.12	0.15	0.12	58.9
12	R2	All MCs	23	0.0	23	0.0	0.194	8.9	LOS A	0.3	2.3	0.12	0.15	0.12	56.2
Approach			329	9.3	329	9.3	0.194	1.1	NA	0.3	2.3	0.12	0.15	0.12	58.7
All Vehicles			1004	11.2	1004	11.2	0.351	1.1	NA	0.3	2.3	0.07	0.10	0.07	57.9

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

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MOVEMENT SUMMARY

Site: 101 [PM.Proposed Princes Hwy/ Woods St (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Woods St															
1	L2	All MCs	29	0.0	29	0.0	0.102	9.8	LOS A	0.3	2.4	0.60	0.97	0.60	45.0
3	R2	All MCs	22	0.0	22	0.0	0.102	16.3	LOS C	0.3	2.4	0.60	0.97	0.60	37.5
Approach			52	0.0	52	0.0	0.102	12.6	LOS B	0.3	2.4	0.60	0.97	0.60	42.6
East: Princes Hwy															
4	L2	All MCs	14	0.0	14	0.0	0.254	2.5	LOS A	0.0	0.0	0.00	0.02	0.00	55.1
5	T1	All MCs	457	7.8	457	7.8	0.254	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
Approach			471	7.6	471	7.6	0.254	0.1	NA	0.0	0.0	0.00	0.02	0.00	59.6
West: Princes Hwy															
11	T1	All MCs	483	9.2	483	9.2	0.295	0.3	LOS A	0.4	2.9	0.10	0.12	0.10	58.4
12	R2	All MCs	36	0.0	36	0.0	0.295	7.8	LOS A	0.4	2.9	0.10	0.12	0.10	56.4
Approach			519	8.5	519	8.5	0.295	0.8	NA	0.4	2.9	0.10	0.12	0.10	58.2
All Vehicles			1041	7.7	1041	7.7	0.295	1.1	NA	0.4	2.9	0.08	0.12	0.08	57.2

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

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ENGINEERING SCIENCES

46 WOODS ST, COLAC VIC 3250

NOISE IMPACT ASSESSMENT – CHILD CARE CENTRE

JULY 24, 2025

Engineering Sciences
P (02) 9157 4090
E SALES@ENGINEERINGSCIENCES.COM.AU
WWW.NATIONALNOISE.COM.AU
ABN 23 682 260 402

Project Information

Details	
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Reference	Issue Date	Details	Revision	Prepared	Reviewed	Authorised
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1 INTRODUCTION

Engineering Sciences has been engaged by Gulati Homes to conduct a noise impact assessment for the development of a Childcare Centre located at 46 Woods St, Colac VIC 3250.

The nearest noise sensitive receivers that may be impacted by noise emissions from the operation of the business have been identified. This report also sets out recommendations (where deemed feasible and reasonable) to reduce any impact on the amenity of the adjacent noise sensitive receivers.

The potential noise emissions from the reception centre have been assessed against the requirements of:

- **Association of Australian Acoustical Consultants (AAAC)** - Guideline for Childcare Acoustic Assessment V3.0
- **Environment Protection Act 2017** – Environment Protection Regulations (2021)
- **Publication 1826, Environment Protection Authority, May 2021** – Noise Limit and Assessment Protocol for the Control of Noise from Commercial, Industrial and Trade Premises an Entertainment Venues

This report has been prepared with reference to the architectural drawings provided by GD Design, outlined in Table 1.

Table 1 - Architectural Drawings

Drawing. No	Drawing Title	Date
01	Proposed Site Layout Plan	08/08/2025

2 SITE DESCRIPTION

2.1 Project Description

The childcare centre proposed operating hours are outlined in Table 2. The proposed site plan is included in Figure 1. The childcare centre has a proposed maximum capacity of 99 places.

Table 2 - Operating Hours

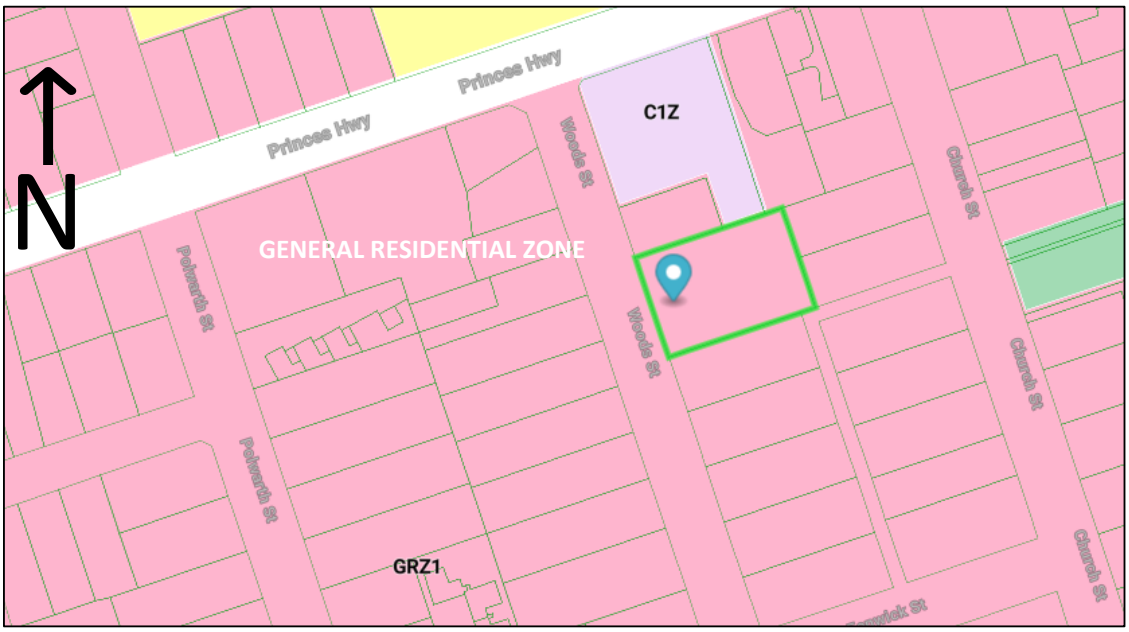
Activity	Day of Week	Operating Hours
Childcare Centre	Monday to Friday	7:00am-6:00pm

Figure 1 –Site Plan

2.2 Project Locality

The subject site, outlined in a red dashed line, is located within and surrounded by a GENERAL RESIDENTIAL ZONE (GRZ1).

Figure 2 -Subject Site and Land Zoning of Surrounding Areas (Mecone Mosaic)



2.3 Nearest Noise Sensitive Receivers

The nearest noise sensitive receivers are summarised in Table 3 and are presented in Figure 3. The background noise monitoring location is also included in Figure 3.

Figure 3 - Aerial imagery of Project Site (Google Earth)

Table 3 - Noise Sensitive Receivers Locations

ID	Type	Receiver Description
R1	Residential	8 WOODS STREET COLAC 3250
R2		2 WOODS STREET COLAC 3250
R3		51 CHURCH STREET COLAC 3250
R4		49 CHURCH STREET COLAC 3250
R5		47 CHURCH STREET COLAC 3250
R6		68 MURRAY STREET E COLAC 3250
R7		3 WOODS STREET COLAC 3250
R8		5 WOODS STREET COLAC 3250
R9		7 WOODS STREET COLAC 3250

3 EXISTING AMBIENT NOISE LEVELS

3.1 Sound level Descriptors

Noise level descriptors used in the assessment are explained below. For analysing noise, the following descriptors are used:

- L_{90} is known as background noise. L_{90} is a statistical sound level which describes the percentage of times a sound level is exceeded. This parameter is used to set up the allowable noise levels for intrusive noise sources since the level of disturbance of the intrusive noise source will be dependent on how audible it is above the existing noise environment.
- L_{eq} is the equivalent sound level which represents the average noise level during a measurement period. L_{eq} describes a receiver's cumulative noise exposure from all events over a specified period for compliance assessment purposes.
- L_{01} is the noise level exceeded for 1% of the measurement period. During the measurement period, the noise level is below the L_{01} level for 99% of the time

- L_{10} is the noise level exceeded for 10% of the measurement period. During the measurement period, the noise level is below the L_{10} level for 90% of the time. The L_{A10} is a common noise descriptor for environmental noise and road traffic noise
- L_{Amax} is the maximum instantaneous noise level during a measurement period
- A-weighted Sound Level (instantaneous) is the most common weighting used in noise measurements, and it represents the frequency range detectable by the human ear. A-weighted is used for noise measurements and prediction purposes.

3.2 Unattended Background Noise Measurements

3.3 Background Noise Measurements

Long-term environmental noise monitoring was undertaken to quantify the existing ambient background noise levels in the area. The noise logger was installed at the location shown in Figure 2. Monitoring was conducted using an NTi XL2 Noise Logger set to A-weighted, fast response mode, recording data in 1-hour intervals. The microphone was positioned approximately 1 metre from an acoustically reflective surface, with a correction of -2.5 dB applied to account for reflective influence.

For each measurement instrument calibration was checked before and after measurements, with variation in calibrated levels not exceeding ±0.5dB. The acoustic instrumentation employed was designed to comply with the requirements of AS IEC 61672.1—2004 – Electroacoustics—Sound level meters, Part 1: Specifications and carries current manufacturer calibration certificates.

Unattended Noise Monitoring Results are showing the minimum 15-minute noise level for relevant periods below in Table 4. Full unattended noise monitoring data is included in Appendix C.

Table 4 – Unattended Background Noise Monitoring Results

Unattended Measurement Location	Date	Measured Background Noise Level, L_{90} dB(A)
		Day (7am – 6pm)
46 WOODS ST, COLAC VIC 3250	Friday, 25 April 2025	42
	Monday, 28 April 2025	41
	Tuesday, 29 April 2025	-
	Wednesday, 30 April 2025	48
	Thursday, 1 May 2025	48
	Average Background Noise Level	**45**
	Lowest Background Noise Level	**41**
Note:	- Long-term background measurements were taken as unaffected by adverse meteorological conditions including abnormal wind conditions above 5ms^{-1} or any precipitation.	

4 NOISE EMISSION CRITERIA

4.1 Publication 1826 Part I, Environment Protection Authority

EPA Publication 1826 – Noise Limit and Assessment Protocol for the Control of Noise from Commercial, Industrial and Trade Premises and Entertainment Venues (Part 1, EPA Pub. 1826-P1) – outlines noise limits applicable to commercial, industrial, and trade activities. It also provides the methodology for determining effective noise levels and assessing whether noise emissions are unreasonable under the Environment Protection Regulations 2021 and the Environment Protection Act 2017.

The noise limits defined in EPA Publication 1826-P1 are based on local planning overlays and existing background noise levels, measured in the absence of intrusive commercial noise sources. These limits are summarised in the Table below.

The night-time noise limits specified in EPA 1826-P1 are more stringent than those applied during the day or evening. Therefore, if a noise source complies with the night-time limits—and its noise levels remain consistent—it is assumed to comply with the day and evening limits as well. For the purposes of assessment, measurements are taken outside nearby residential dwellings.

Table 5 – EPA Pub. 1826-Part I Noise Criteria

Period	Background Noise Level L_{eq} dB(A)	Classification	EPA Pub. 1826-Part I Limit, L_{eq} dB(A) BG
Day	45	Neutral	49

4.2 AAAC Guideline for Childcare Acoustic Assessment Criteria

4.2.1 Noise Emissions form Outdoor Play Area – Residential Receptor Criteria

The AAAC Guideline establishes criteria for noise generated by children using outdoor play areas. The guideline establishes two criteria applicable to assessing noise generated by outdoor play areas. These are described as follows:

Background Greater Than 40 dB(A) – The contributed Leq,15min noise level emitted from an outdoor play and internal activity areas shall not exceed the background noise level by more than 5 or 10 dB at the assessment location, depending on the usage of the outdoor play area. AAAC members regard that a total time limit of approximately 2 hours outdoor play per morning and afternoon period should allow an emergence above the background of 10 dB (ie background +10 dB if outdoor play is limited to 2 hours in the morning and 2 hours in the afternoon).

Up to 4 Hours (total) per day

> *If outdoor play is limited to no more than 2 hours in the morning and 2 hours in the afternoon, the contributed Leq,15-minute noise level emitted from the outdoor play shall not exceed the background noise level by more than 10 dB at the assessment location.*

More than 4 hours (total) per day.

> *If outdoor play is not limited to no more than 2 hours in the morning and 2 hours in the afternoon, the contributed Leq,15-minute noise level emitted from the outdoor play area shall not exceed the background noise level by more than 5 dB at the assessment location.*

4.2.2 Other Noise Emissions

The cumulative Leq,15-minute noise emission level resulting from the use and operation of the childcare center, with the exception of noise emission from outdoor play discussed above, shall not exceed the background noise level by more than 5 dB at the assessment location as defined above. This includes the noise emission resulting from:

- Mechanical Plant
- Vehicle Drop Off and Pick Up
- Indoor play
- Other activities/operations (not including outdoor play).

Mechanical Plant

Childcare centers may include air-conditioning plant and equipment, kitchen and wet area exhaust fans, car park and garbage room ventilation fans. Depending on the requirements of the state or territory where the center is located, any such mechanical equipment should be assessed in accordance with this section and should not be audible outside the premises between 6pm and 7am.

Indoor Play

Noise emission from indoor play and activities should be considered, including scenarios with windows and doors both open and closed. Some childcare centers may need to close their windows and doors during active indoor play or music.

4.3 Resultant Criteria

Following a review of the relevant noise regulations and standards in this Section, the resultant criteria applicable to this project have been established and presented in the Table below. These criteria are tailored to ensure that all operational noise levels meet the stipulated guidelines for environmental noise control.

Table 6 – Project Noise Target

Receiver	Period	$L_{eq,15min}$ dB(A)
Residential	Day (Up to 8 Hours Play)	46
	Day (Up to 4 Hours Play)	51

5 NOISE EMISSION ASSESSMENT

5.1 Operational Scenario

In order to assess a worst-case operational scenario of the childcare centre, the following assumptions have been considered in the noise emission assessment:

General

- Childcare centre operates between 7:00am to 6:00pm (Including children pick up and drop off).
- Sound Power Levels as per Table 7.
- 58 Children in total, split into the rooms in the following order:
  - Indoor Play 1 & 2: 44 Children Over 3 Years Old
  - Indoor Play 3, 4, 5, 6: 56 Children Over 3 Years Old
- Building Specifications:
  - Façade elements (External Walls/Roof) assumed to have a minimum Rw of 50.
  - Glazing has a minimum Rw of 31 (Equivalent to 6mm Float).

- Boundary Fence:
  - The subject site is bounded to the North, East and South by a solid cranked fence 2.1 metres high vertical with a 0.87m crank at 45-degree angle such as a '**Wallmark Smart Wall Solutions Educational Fence**'.

Children outdoor play (Outdoor play area)

- Hours of Outdoor Play: The outdoor play time has been calculated for up to 8 hours for each day with up to 25 children at a time or up to 4 hours per day with 44 children at a time.
- Children in the outdoor play area are continuously emitting noise for 70% of the 15 min assessment period.

Other Noise Emissions (Indoor play, vehicles and mechanical plant)

- Children in each class are continuously emitting noise for 40% of the 15 min assessment period.
- Vehicle movements
  - Each car space is used once in the 15 min assessment period.
  - 8 cars are driving in and out of the car park in the 15 min assessment period.
- Mechanical Equipment (Mech units are continuously emitting noise in the 15 min assessment period).
  - 1 Kitchen exhaust, 4 Air conditioning Units, 3 Toilet/Laundry exhaust Fans.
  - All assumed mechanical units have been placed on the facades of the building for the purpose of this assessment.

5.2 Noise Sources

The sound power levels of the AC units, kitchen fans, toilet exhaust fans, and cars has been taken from our technical database. Sound power levels of human voices have been taken from AAAC – Guideline for Childcare Centre Acoustic Assessment v3. Mechanical plant is yet to be selected, with the noise model assuming 3x standard AC units. Octave band sound power levels used within the assessment are provided within Table 7. Octave band sound power levels are reported in A-weighting (Noise level perception of human ear).

Table 7 – Sources Sound Power Levels and Reverberant Sound Pressure Level

Noise Source	Total Sound Power Level, L_{Aw} dB(A)	Octave Band Frequency (Hz) Sound Power Levels dB(A)								
		31.5	63	125	250	500	1k	2k	4k	8k
AC Outdoor Unit X3 Combined (assumed)	64	49	59	59	60	50	48	43	39	32
10 Children (0 to 2 years)	78	48	54	60	66	72	74	71	67	64
10 Children (2 to 3 years)	85	53	61	67	73	79	81	78	74	70
10 Children (3 to 5 years)	87	55	64	70	75	81	83	80	76	72
Car < 10km/h	81	45	61	65	66	70	76	74	74	69
Car Idling	73	33	48	53	59	62	65	70	65	57
Car Door Slam	86	70	81	78	80	79	73	70	67	61
Kitchen Exhaust Fans	71	60	62	67	64	59	59	56	53	53
Toilet Exhaust Fan	67	55	58	63	60	56	55	53	50	50

5.2.1 Noise Modelling

Noise emissions levels at the nearest noise sensitive receivers have been calculated using computer-based 3D acoustic noise modelling software iNoise version 2023.1.1. iNoise utilizes ISO 9613 calculation algorithms to determine noise emission levels at the nearest affected noise sensitive receivers. The following assumptions have been included within the noise model:

- Distance attenuation.
- Atmospheric attenuation.
- Directivity.
- Ground absorption (G = 0.5)
- Barrier effects/screening.
- Ground Elevation Contours.

Noise contours have been generated to clearly identify the resulting noise level impacts at adjacent noise sensitive receivers at a height where the receiver is most impacted. Noise contours generated with iNoise can be found in Appendix A – iNoise Noise Contours.

5.3 Noise Modelling Scenarios and Predicted Noise Levels

The calculated noise emission levels at the nearest residential receiver locations resulting from the various noise sources associated with the childcare centre are presented against the relevant noise emission assessment objectives detailed within Section 4. Noise modelling has been conducted for the operational scenarios outlined in Table 8.

Table 8 - Noise Modelling Scenarios

Scenario	Assessment	Time Period	Windows/ Doors Open or Closed	Assessment Table
1a	Cumulative play from all age groups (44 Children outdoors)	2 hours in the morning and 2 hours in the afternoon	N/A	Table 8
1b	Cumulative play from all age groups (25 Children outdoors)	Up to 8 hours a day		Table 9
2a	Other Noise Emissions	Day: 7:00am-6:00pm	Open	Table 10
2b		Day: 7:00am-6:00pm	Closed	Table 11

Table 9 - Outdoor Playground Noise Emissions Assessment 1a

Metric	Result								
Receivers	*R1*	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*R9*
Criteria dB(A) over 4 hours Play?	46								
Criteria dB(A) up to 4 hours Play	51								
EPA Pub. 1826-Part I Limit	49								
Calculated L_{Aeq} Noise Level, dB	**49**	**49**	**46**	**48**	**47**	**46**	**46**	**40**	**46**
Compliant up to 4 hours Play?	✓	✓	✓	✓	✓	✓	✓	✓	✓
Compliant up to 8 hours Play?	×	×	✓	×	×	✓	✓	✓	✓
Compliant with EPA Pub. 1826-Part I Limit	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 10 - Outdoor Playground Noise Emissions Assessment 1b

Metric	Result								
Receivers	*R1*	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*R9*
Criteria dB(A) over 4 hours Play?	46								
Criteria dB(A) up to 4 hours Play	51								
EPA Pub. 1826-Part I Limit	49								
Calculated L_{Aeq} Noise Level, dB	**45**	**45**	**42**	**44**	**43**	**42**	**42**	**36**	**42**
Compliant up to 4 hours Play?	✓	✓	✓	✓	✓	✓	✓	✓	✓
Compliant up to 8 hours Play?	✓	✓	✓	✓	✓	✓	✓	✓	✓
Compliant with EPA Pub. 1826-Part I Limit	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 11 - Other Noise Emissions Assessment Windows Closed 2a

Metric	Result								
Receivers	*R1*	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*R9*
Criteria dB(A)	46								
EPA Pub. 1826-Part I Limit	49								
Calculated L_{Aeq} Noise Level, dB	**35**	**35**	**<35**	**<35**	**<35**	**<35**	**<35**	**<35**	**<35**
Complies	✓	✓	✓	✓	✓	✓	✓	✓	✓
Compliant with EPA Pub. 1826-Part I Limit	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 12 - Other Noise Emissions Assessment Windows Open 2b

Metric	Result								
Receivers	*R1*	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*R9*
Criteria dB(A)	46								
EPA Pub. 1826-Part I Limit	49								
Calculated L_{Aeq} Noise Level, dB	**36**	**36**	**<36**	**<36**	**<36**	**<36**	**<36**	**<36**	**<36**
Complies	✓	✓	✓	✓	✓	✓	✓	✓	✓
Compliant with EPA Pub. 1826-Part I Limit	✓	✓	✓	✓	✓	✓	✓	✓	✓

5.4 Recommendations

To ensure that noise emissions associated with the proposed childcare centre at 46 Woods Street, Colac comply with the criteria outlined in the AAAC Guideline for Childcare Acoustic Assessment V3.0 and to minimise potential impacts on nearby noise-sensitive receivers, the following recommendations are made:

1. **Outdoor Play Scheduling**
   If 44 children at a time are to be using the outdoor play area, the play schedule should be limited to no more than 2 hours in the morning and 2 hours in the afternoon. This scheduling supports compliance with the less stringent noise criterion of background +10 dB(A) as per the AAAC Guideline. Up to 8 hours play time outdoors is suitable if no more than 25 children at a time are using the outdoor play area.

2. **Acoustic Barrier Installation**
   Acoustic barriers must be installed along site boundaries directly adjacent to residential properties (e.g. **a solid cranked fence 2.1 metres high vertical with a 0.87m crank at 45-degree angle such as a 'Wallmark Smart Wall Solutions Educational Fence'**.
3. **Mechanical Plant Control**

4. **Mechanical Plant** (e.g., air-conditioning units, exhaust fans) should be selected and installed to ensure cumulative noise emissions do not exceed the background noise level +5 dB(A) at any sensitive receiver. Enclosures or acoustic shielding may be necessary depending on final plant selection.

5. **Operational Controls**
   - Windows and doors should remain closed during high-activity indoor sessions involving music or active play to reduce potential breakout noise.
   - Staff should be briefed on minimising outdoor noise, especially during early morning hours and during pickup/drop-off periods.

6. **Community Engagement**
   A communication protocol should be developed to address any future noise complaints efficiently. Maintaining good relations with neighbouring properties can assist in mitigating concerns before they escalate.

5.5 Management Plan

As recommended by the AAAC (Australian Acoustical Society), implementing a Noise Management Plan (NMP) is one of the best measures to effectively manage noise. The NMP should include various management measures, some examples of which are outlined below:

- A separate daily program for both the warmer and cooler months should be established to regulate the total time spent outdoors and indoors;
- The NMP should be made publicly available to parents and neighbours;
- A contact phone number for the Centre's director should be made available to neighbours to facilitate communication and to resolve any neighbourhood issues that may arise due to operation of the Centre;
- The type of outdoor activities may be programmed to only allow quiet or "passive" activities such as painting, garden exploration, reading, block play or drawing in certain areas of the centre's outdoor play area;
- Crying children should be taken inside the centre and comforted;
- The behaviour of children should be monitored and modified as required by adequately trained childcare workers;
- Parents and guardians should be informed of the importance of noise minimisation when entering the site, dropping off or picking up children;
- Carers / staff should be educated to control the level of their voice while outside

6 CONCLUSION

The noise impact assessment for the proposed childcare centre at 46 Woods Street, Colac VIC 3250 has been completed with reference to the AAAC Guideline for Childcare Acoustic Assessment (Version 3.0). Based on the assessment, predicted noise levels from typical operational scenarios, including outdoor play, mechanical plant, and vehicular activity, are expected to comply with the relevant noise emission criteria when outdoor play is limited to the recommendations in this report.

The assessment indicates that, with the adoption of the noise management strategies outlined in Section 5.5, the proposed development is not expected to result in adverse noise impacts on surrounding residential receivers. The project is therefore considered to meet the applicable acoustic criteria for residential amenity, subject to the implementation of the recommended management measures.

No further acoustic mitigation is deemed necessary at this stage. However, it is recommended that the operational limits, particularly in relation to outdoor playtime duration and equipment noise, be maintained in accordance with the assumptions of this assessment to ensure continued compliance.

Please contact us if you have any further queries.

Sincerely,

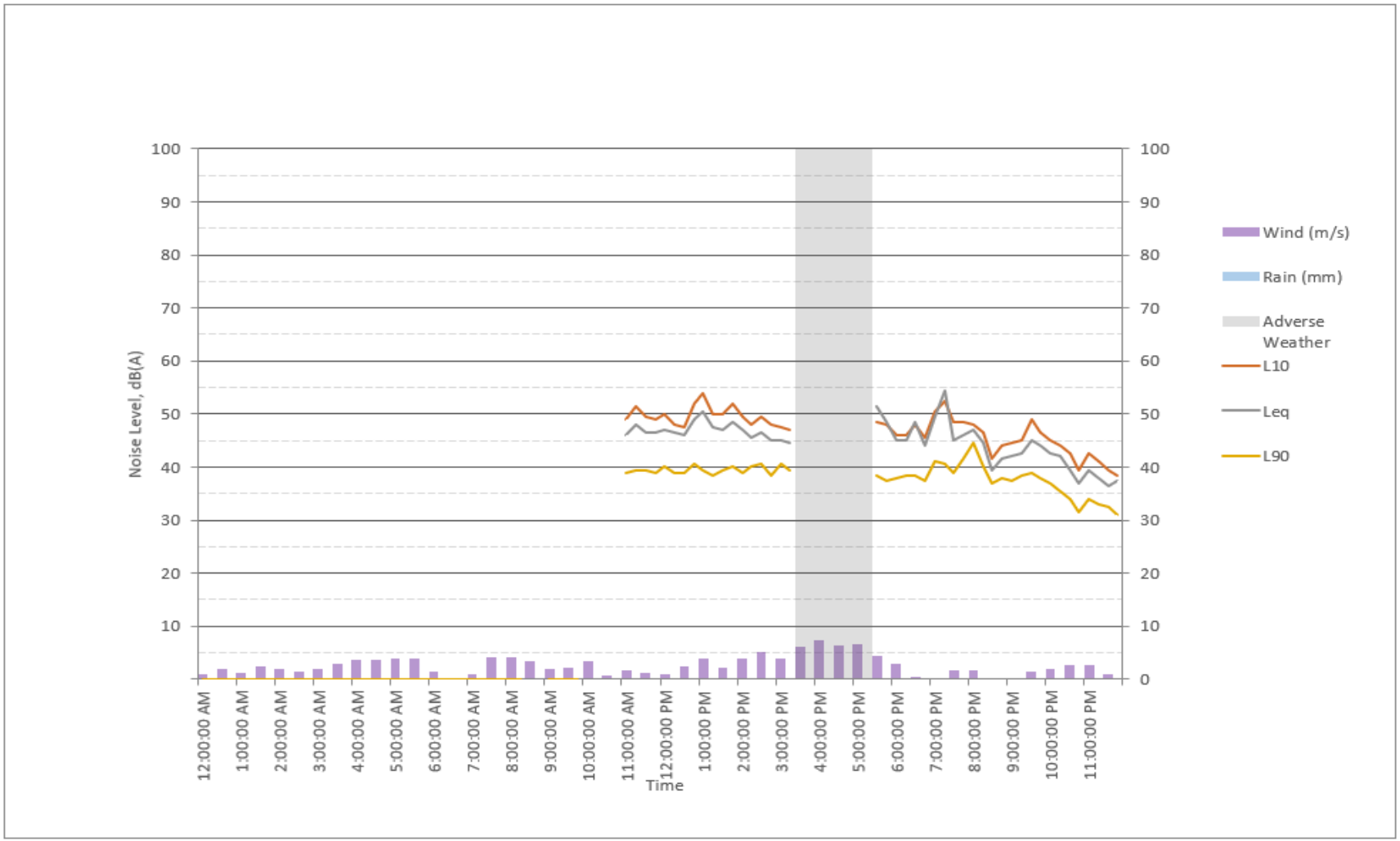
Michael Phillips

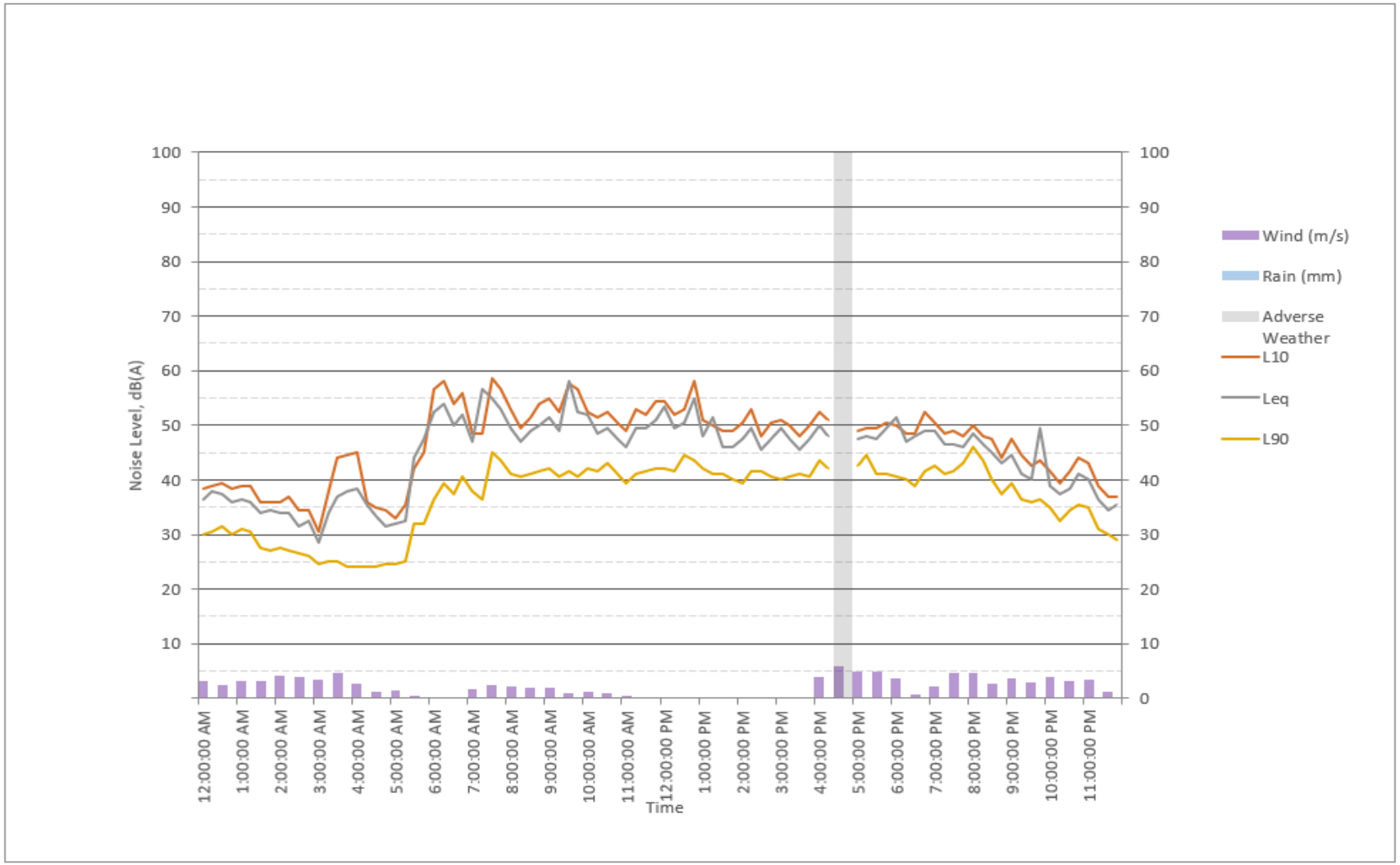
Head of Engineering
M.A.A.S.
MArchSc (Audio & Acoustics), AssocDeg (Audio Eng.)

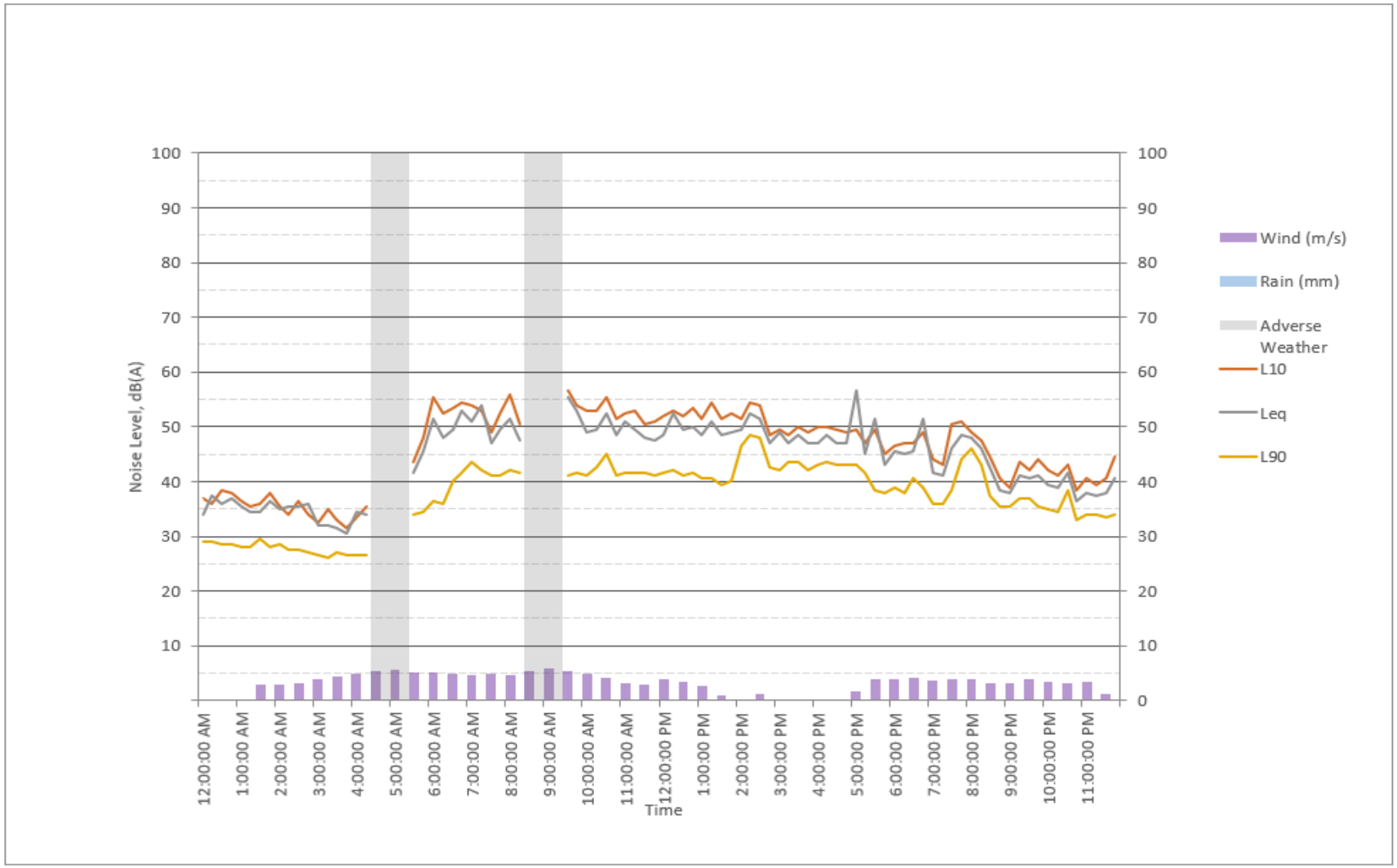
P (02) 9199 9689
E sales@engineeringsciences.com.au
W www.nationalnoise.com.au

Appendix A – iNoise Noise Contours

Appendix B – Background Noise Monitoring Data




Noise Level, dB(A)
100
90
80
70
60
50
40
30
20
10
0
12:00:00 AM
1:00:00 AM
2:00:00 AM
3:00:00 AM
4:00:00 AM
5:00:00 AM
6:00:00 AM
7:00:00 AM
8:00:00 AM
9:00:00 AM
10:00:00 AM
11:00:00 AM
12:00:00 PM
1:00:00 PM
2:00:00 PM
3:00:00 PM
4:00:00 PM
5:00:00 PM
6:00:00 PM
7:00:00 PM
8:00:00 PM
9:00:00 PM
10:00:00 PM
11:00:00 PM
Time
Wind (m/s)
Rain (mm)
Adverse Weather
L10
Leq
L90


Noise Level, dB(A)
100
90
80
70
60
50
40
30
20
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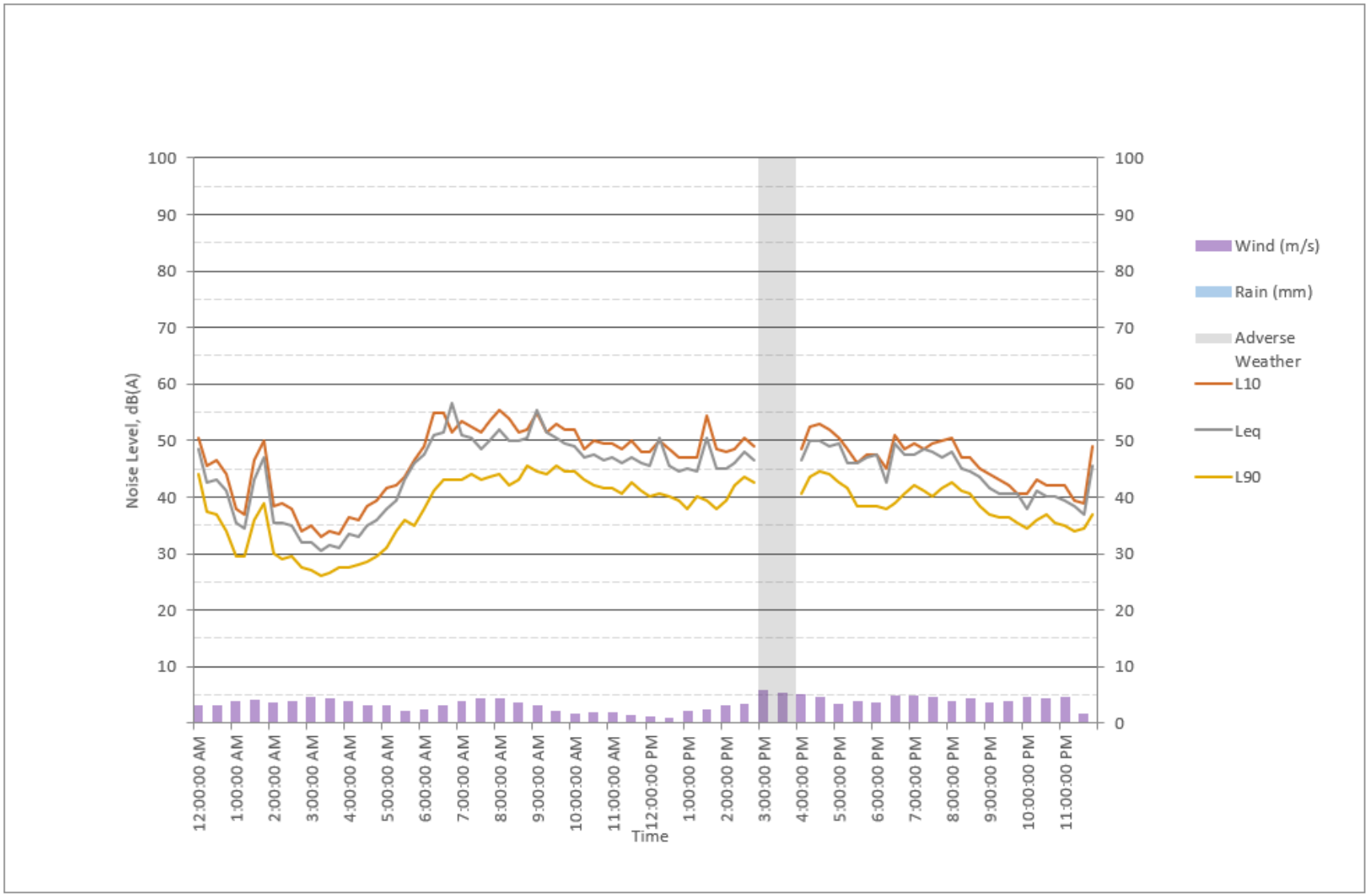
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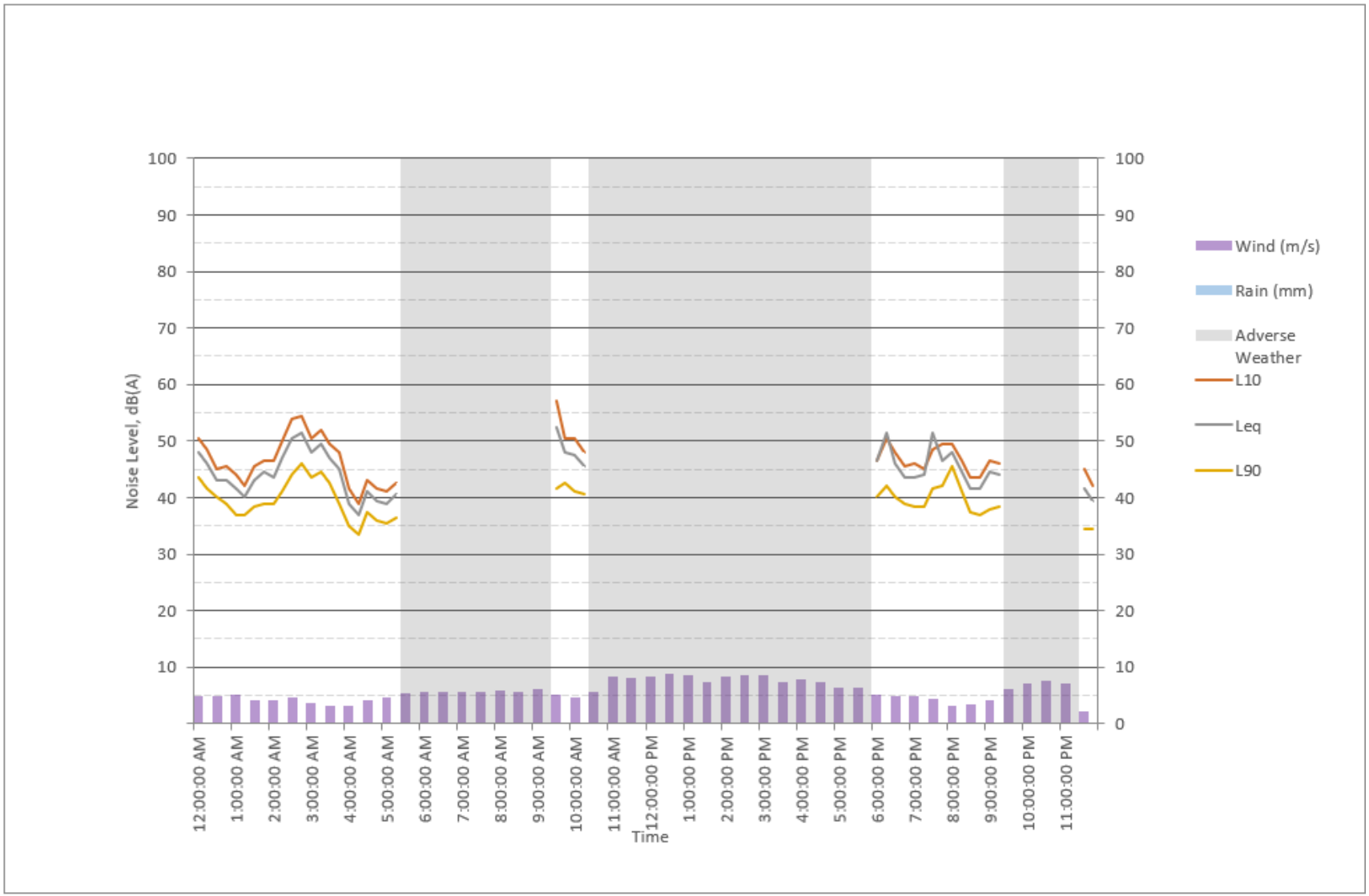
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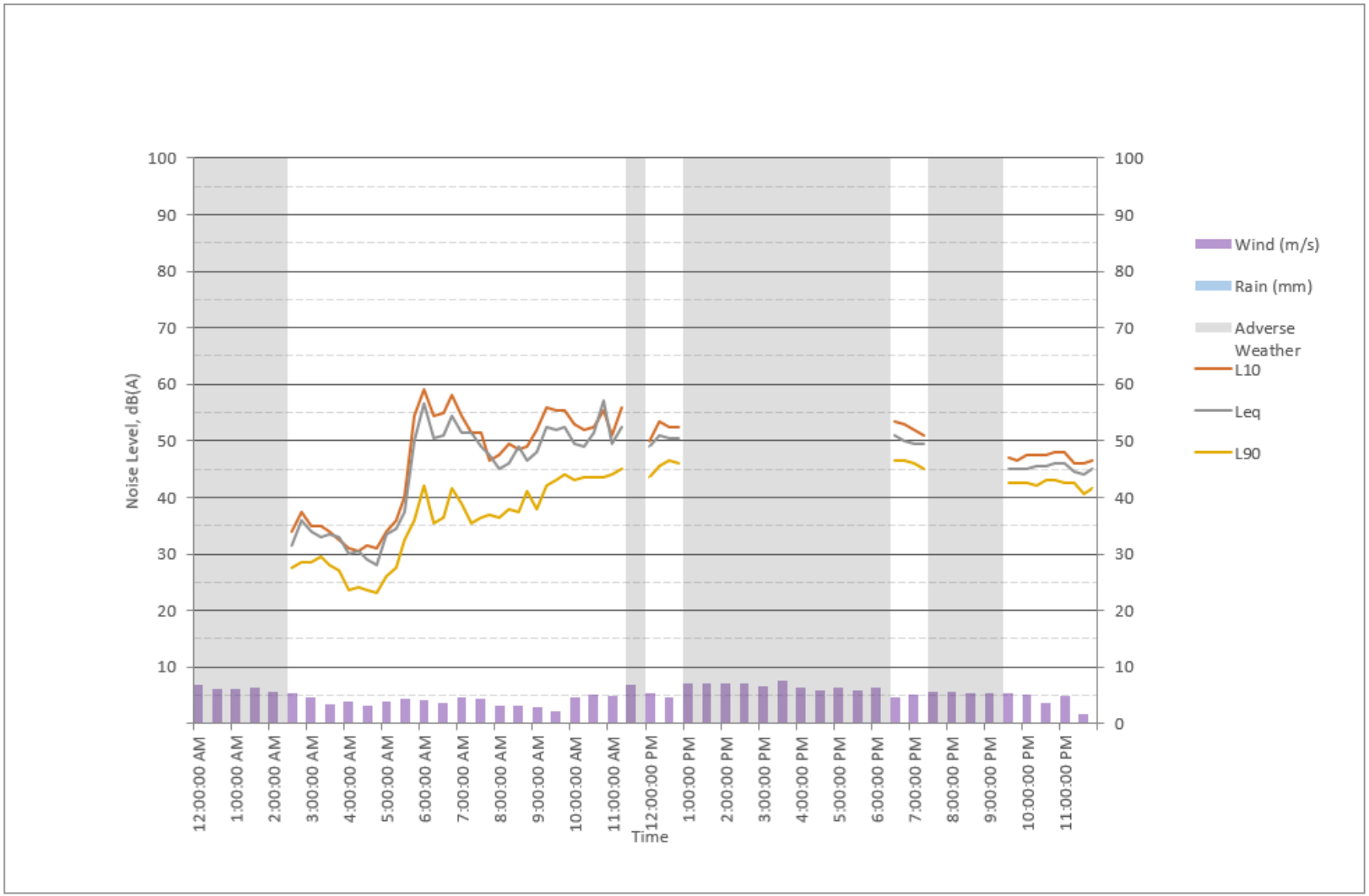
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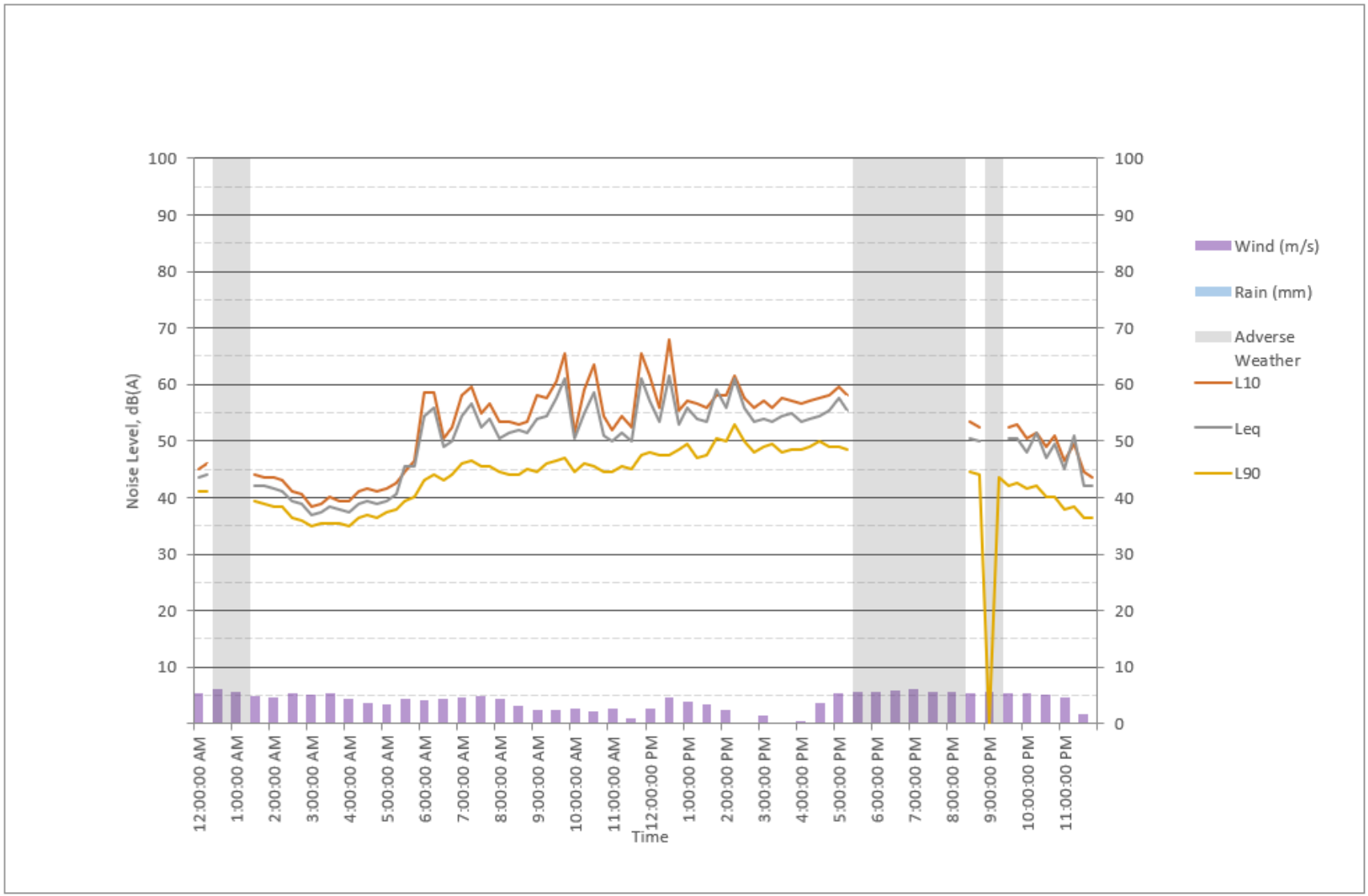
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lid Low Impact Development Consulting

Stormwater Management

Water Sensitive Urban Design assessment for:

4-6 Woods Street Colac

Prepared for: Gulati Homes
Prepared by: ZZ– Low Impact Development Consulting

28/05/2025

e: info@lidconsulting.com.au
p: 03 9016 9486
a: Level 6, 114 Flinders St, Melbourne 3000
w: www.lidconsulting.com.au

Version	Date	Description	Drawings	Prepared	Checked
1.0	28/05/2025	WSUD Issue	Rev. 05 / 19.05.2025	ZZ	PM

Disclaimer

The content of this document represents the entirety of work output or recommendations offered by LID Consulting for this particular project. This content supersedes all other verbal discussions undertaken by LID Consulting representatives in relation to this project.

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3 Proposed Response 5
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LID acknowledges and pays respect to the Australian Aboriginal and Torres Strait Islander people, to their ancestors and elders, past, present and emerging, as the traditional custodians of the lands upon which we work and live. We recognise Aboriginal and Torres Strait Islander people's deep cultural and spiritual relationships to the water, land and sea, and their rich contribution to society.

1 Introduction

Low Impact Development (LID) Consulting was engaged by Gulati Homes to assess the proposed development at 4-6 Woods Street Colac and prepare a Stormwater Management (Water Sensitive Urban Design) response addressing the requirements of planning scheme clauses:

- VPP 19.03-3S Integrated water management
- VPP 53.18 Stormwater management in urban development

This report is based on the drawing set provided by GD Design, dated 19/05/2025.

The following documents informed the WSUD recommendations of this report:

1. Best Practice Environmental Management Guidelines for Urban Stormwater (CSIRO 1999) (BPEMG)
2. WSUD Engineering Procedures: Stormwater (CSIRO 2005 EPS)
3. WSUD Maintenance Guidelines – A guide for asset managers (Melbourne Water)

1.1 Development Summary

Address: **4-6 Woods Street Colac**
Type: **Commercial site**
Site area: **1965 m²**
Occupants: 20*

*Note STORM occupancy rates are derived from the InSite Water tool, which adopts weighted occupancy rates based on NCC Section D1.13 as relevant to the building classification.

1.2 Response Summary

The chosen response is to direct all roof rainfall runoff to a retention tank serving all toilets within the proposed development. In addition, minimum 500m² of driveway area is directed to rain gardens. These responses should be co-ordinated with architect and civil design to ensure feasibility.

STORM catchment areas are summarised as follows:

Table 1 - STORM Area Summary

Catchment	Area (m²)	Treatment Type	Treatment Size (L/m²)
Roof	820	Rainwater tank	10,000
Driveway	500	Raingarden (100mm)	10
Other Impervious	108	-	-
Pervious	537	-	-

2 Site Layout

Refer to Appendix 2 for site layout plan.

3 Proposed Response

3.1 Response

The proposed development achieves the Water-Sensitive Urban Design (WSUD) objectives of the Colac Otway Shire by water harvesting and re-use. A Melbourne Water STORM assessment on the above property has been undertaken in order to demonstrate in-operation compliance with best-practice stormwater treatment objectives as set out in the Urban Stormwater Best Practice Environmental Management Guidelines[1]. The proposed plans achieved a stormwater treatment STORM tool score of 105% (100% or greater shows compliance) with the following parameters:

- Rainwater shed from all roof areas (minimum 820m^2) will be collected in rainwater tank(s) of minimum 10,000L retention capacity.
- Rainwater tanks will be connected to all toilets in the development serving all toilets for flushing purposes. In addition to stormwater benefits, this capture and re-use of rainwater provides mains water saving benefits.
- Leaf diverting rain heads and first flush diverters should be included upstream of the tank to divert the initial sediment flow when rain events occur from flowing into the tank.
- Rain gardens have been sized to equal 2% of the catchment area[2]. Minimum 500m^2 driveway will be treated by a total area of 10m^2 of raingarden(s). Should multiple raingardens be specified, the size of each individual raingarden will be proportionate to the impervious area being treated. See appendices for STORM Areas proof.
- The development is not expected to have any chemical pollutants or toxicants where stormwater runoff would impact the local environment.
- The design includes vegetated landscaping trees in the development. The lawn area will assist with retaining moisture and promote evapotranspiration in the immediate environment. This will contribute towards cooling and improving the local habitat, and providing an attractive and enjoyable space.

[1] *Urban Stormwater: Best Practice Environmental Management Guidelines*, CSIRO, 1999, http://www.publish.csiro.au/pid/2190.htm

[2] Melbourne Water – Healthy Waterways Raingardens – Instruction sheet – Building an inground raingarden p3 – Size.

3.2 Items to be included on plans

Where not already shown the following should be included on plans for town planning submission:

1. All treatment means need to be shown.
    a. The rain water tank location and minimum retention volume (size) of 10,000L needs to be shown, also indicating whether the tank is above ground or below ground. Indicate the tank is connected to all toilets for flushing.
    b. The rain garden location and size needs. Where rain gardens pick up water from paved surfaces levels and falls must be shown to the rain gardens.
2. The permeability status of surface finishes if unclear.
3. Any location where retaining walls or garden bed edging would prevent water run-off from paths entering landscaped permeable areas (this scenario can make WSUD assessments more challenging to comply ie water infiltration on site is beneficial). From the plans we have not assumed any of these scenarios on site.

4 Site Management

The following is intended to inform the site management plan in matters relating to stormwater management during construction. Relevant principles per the EPA Civil Construction, Building and Demolition Guide[3], and measures as per Urban Stormwater Best Practice Environmental Management Guidelines Section 6.3 are shown below.

The site management plan should restrict runoff to adjoining properties and ensure minimal earth disturbance occurs during construction. Additionally, building waste, dangerous chemicals and food waste must be managed to prevent damage to flora and fauna, or build up or blockage in drains and nearby creeks.

Item	Potential issues	Control Measure
Fences	Porous fences allow stormwater runoff to carry sediment across the site and discharge into the stormwater network.	Mesh fabric and silt fences to be installed on fences where site includes slopes greater than 1:20. Hay bales may also be suitable for larger sites.
Pit inlets	Without sediment filters, pit inlets allow sediment to enter the stormwater network causing sediment build-up downstream.	Sediment traps or drain filters should be installed on all pit inlets, particularly those in the street that are the first to receive water from the site.

[3] *EPA Civil Construction, Building and Demolition Guide, Publication 1834 (2020)* https://www.epa.vic.gov.au/about-epa/publications/1834

Item	Potential issues	Control Measure
Downpipes	Localised flooding due to lack of site drainage.	Temporary downpipes to be installed as soon as roofing is installed to minimise overland flow across the site (see plastic tube roll image below). These should be connected to the rainwater tank where possible, or alternatively the stormwater pipes.
Vehicle traffic on site	Areas of vehicle traffic are subject to disturbance of soil.	Use stabilised vehicle entrances and paths, with crushed rock or other suitable material. Include rumble grates, track mats (where access is over sand), and physically remove mud from tyres of vehicles prior to leaving the site.
Mounded earth	Unsecured mounds create significant issues with sedimentation after rainfall.	Use erosion control blankets for mounded earth. Ensure correct installation, and incorporate secondary measures such as silt fences on steep sites.
Bins	Where suitable bins are not provided, litter can be washed from the site.	Ensure appropriate bins are provided for construction workers and staff. Ensure bins for lightweight food packaging and construction waste have lids to stop waste blowing away.
Waste material	Pollution of stormwater can occur where appropriate disposal methods for waste materials are not established on site.	Provide separate bins for paints and solvents to allow safe removal and disposal at accredited locations. Ensure all staff are aware of correct disposal methods.
Stockpiles	Incorrect stockpiling can lead to stormwater contamination, and site pollution.	Locate stockpiles away from drainage paths, and construct stockpiles with gentle slopes (max 1:2).

In addition, the contractor will be required to:

- **Identify and document,** prior to construction commencing, where these measures will be installed, and how erosion and loose waste will be managed.
- **Install tarps on site waste bins** every night.
- **Avoid overfilling vehicles** or cover all soil loads being taken offsite.
- **Sweep up the site** every day when works occur on site to ensure loose waste does not blow around the site and into the surrounding streets.
- **Ensure erosion and sediment control measures are maintained** through daily checks –

maintenance measures may include removing sediment trapped in filters and topping up gravel on the vehicle entry path.

Figure 1 - Temporary Downpipes

Figure 2 - Sediment Trap

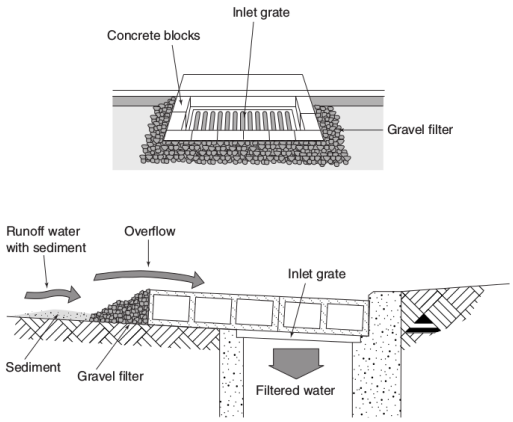


Figure 3 - Block and Gravel Filter (CSIRO)

Figure 4 - Sediment Trap

5 Maintenance Plan

5.1 Rainwater Tanks

The following maintenance schedule is to be used as a guide for rainwater tank maintenance. It is based on average maintenance requirements for rainwater tanks in Victoria, and timings may need to be adjusted to suit specific site assets. Regular inspections should be undertaken every three months. Inspection and maintenance of all rainwater tanks will be the responsibility of the building owner.

Refer to the Melbourne Water WSUD Maintenance Guidelines for further details.

Item	What to check for	Action	Frequency
Tank inlet	Tank inlet is not blocked by accumulated debris	Physically remove debris build up	1-3 months
First flush device and filters	First flush device and filters are not blocked and flow is not limited by litter or sediment accumulation	Physically remove litter and sediment from first flush device, or if it contains a flush-out valve, use water to remove sediment.	1-3 months
Tank outlet	Tank outlet is not restricted by sediment.	Flush tank as required.	1-3 months
Mosquito screens	Mosquito screens are not torn or loose	Replace mosquito screens if necessary. Put screens back carefully, ensuring they are tightly refitted.	1-3 months
Pumps	Water around pump equipment. Water pressure.	Replace seals where leaks are noted. Clean pumps as required to maintain pump pressure. Refer to pump manufacturer's maintenance requirements.	1-3 months
Roof and gutters	Accumulated debris in gutters. Discolouration of tank water, or notable odours.	Physically remove accumulated debris, including leaf and other plant material. More regular maintenance may be required where there are overhanging trees.	3-6 months
Overhanging trees	Vegetation overhanging roof and gutters	Prune overhanging trees where possible to reduce vegetation build up and chance of blockages in tank network.	3-6 months
Tank	Tank defects or damage. Sediment and sludge build up in tank, or sulphide/rotten egg odours.	Replace defect or damaged tank as necessary. Remove accumulated sediment and sludge from tank. Clean tank if required.	2-3 years

5.2 Raingardens

The following maintenance schedule is to be used as a guide for raingarden maintenance. It is based on average maintenance requirements for raingardens in Victoria, and timings may need to be adjusted to suit specific site assets. Regular inspections should be undertaken every three months. Inspection and maintenance of all raingardens will be the responsibility of the building owner.

Refer to the Melbourne Water WSUD Maintenance Guidelines for further details[4].

Item	What to check for	Action	Frequency
Inlet	No evidence of erosion, blockage, damage or standing water.	Clear inlet of accumulated sediment or debris. Eroded areas should be locally re-profiled or reinforced, and re-planted if necessary. Refer to Water By Design (2012) *Rectifying Vegetated Stormwater Treatment Assets* if the erosion is either recurring or severe.	Storm events 3 months
Outlet	No evidence of erosion, blockage, damage or standing water. Outlet freely draining.	Clear outlet of accumulated sediment or debris. Refer to Water by Design (2012) *Rectifying Vegetated Stormwater Treatment Assets* if standing (backwatering into the raingarden) is present.	Storm events 3 months
Other structures	No evidence of erosion and damage to other structures, e.g. pits, pipes, access ramps, walls and rock protection.	Repair minor damage to structures. Eroded areas should be repaired (reinforced). This may involve minor re-profiling or re-planting works. For severe damage, i.e. where flows have scoured down the side of a structure refer to Water by Design (2012) *Rectifying Vegetated Stormwater Treatment Assets.*	3 months

[4] *WSUD maintenance guidelines: Inspection and maintenance activities,* Melbourne Water Corporation, 2013, http://www.melbournewater.com.au/Planning-and-building/Forms-guidelines-and-standard-drawings/Documents/WSUD-Maintenance-Inspection-and-maintenance-activity-guidelines.pdf

Item	What to check for	Action	Frequency
Hydraulic conductivity	Filter media is draining freely. No water ponded on the surface of the raingarden for more than 12 hours after rainfall.	If water is ponded on the surface of the raingarden for more than 12 hours after rainfall, refer to Water by Design (2012) *Rectifying Vegetated Stormwater Treatment Assets.* Note: the disposal of raingarden filter material must comply with EPA Victoria guidelines for the disposal of contaminated soil.	Storm events
Sediment accumulation	No major sediment accumulation on surface of the raingarden.	Accumulated sediment to be removed from the surface of the raingarden and the system replanted as required.	Annually
Filter media surface	No surface scour, depressions	Filter surface to be repaired. This may involve evening out the surface, importing additional filter media and replanting.	3 months
Fine sediment surface crust	No impermeable or clayey surface on the filter media. No major surface crusting (<3mm depth across less than 10% of the filter area is permissible).	Repair surface layer by scarify filter media surface, re-profiling and re-establishing vegetation, if required. If the problem persists refer to Water by Design (2012) *Rectifying Vegetated Stormwater Treatment Assets.*	3 months
Mulch layer	Even depth and distribution of the mulch layer. Surface of the mulch layer is at least 100mm below the top of the outflow pit. Much is not touching the plant stems.	Re-distribute or replace mulch that has been washed out or displaced. This may involve retaining mulch using jute mats or nets. Remove mulch that is touching plant stems.	3 months
Algal or moss growth	No major algal growth (less than 10% of the raingarden area is permissible). No moss growth.	If significant patches of algal growth or moss persist across the surface of the raingarden (i.e. greater than 10% of the surface) then refer to Water by Design (2012) *Rectifying Vegetated Stormwater Treatment Assets.*	3 months

Item	What to check for	Action	Frequency
Inspection opening	Water level is below filter media layer. No sediment accumulation in underdrain system.	Refer to Water by Design (2012) *Rectifying Vegetated Stormwater Treatment Assets* if standing water is present in the filter media layer. Flush the underdrain system using low pressure water to remove accumulated sediment.	Annually
Vegetation cover - filter media	Greater than 90% vegetation cover. Plants healthy, free from disease and vigorously growing.	Remove any dead or diseased vegetation. Replant individual bare patches (greater than 5% of the area) using either new plants or by dividing and translocating existing plants.	3 months
Weeds - filter media	Less than 10% of the filter media surface area and batters covered in weeds.	Physically remove weeds from filter media surface. Do not use herbicides as these may harm the raingarden vegetation and contaminate the filter media. Refer to Water by Design (2012) *Rectifying Vegetated Stormwater Treatment Assets* if weed ingress is a persistent problem (i.e. weed coverage is persistently greater than 30%).	3 months
Litter	Filter media surface free of litter (i.e. less than 1 piece of litter per 4m2).	Remove all litter and excessive debris.	3 months
Pests	No damage by pest animals and insects.	Seek specialist advice if persistent insect damage is observed. Refer to Water by Design (2012) *Rectifying Vegetated Stormwater Treatment Assets* if there is evidence of pest animal damage.	3 months

Appendix 1 - Policy Objectives

For information only, the objectives of relevant stormwater management policies are shown here:

19.03-3S
22/11/2024
VC263

Integrated water management

Objective

To sustainably manage water supply and demand, water resources, wastewater, drainage and stormwater through an integrated water management approach.

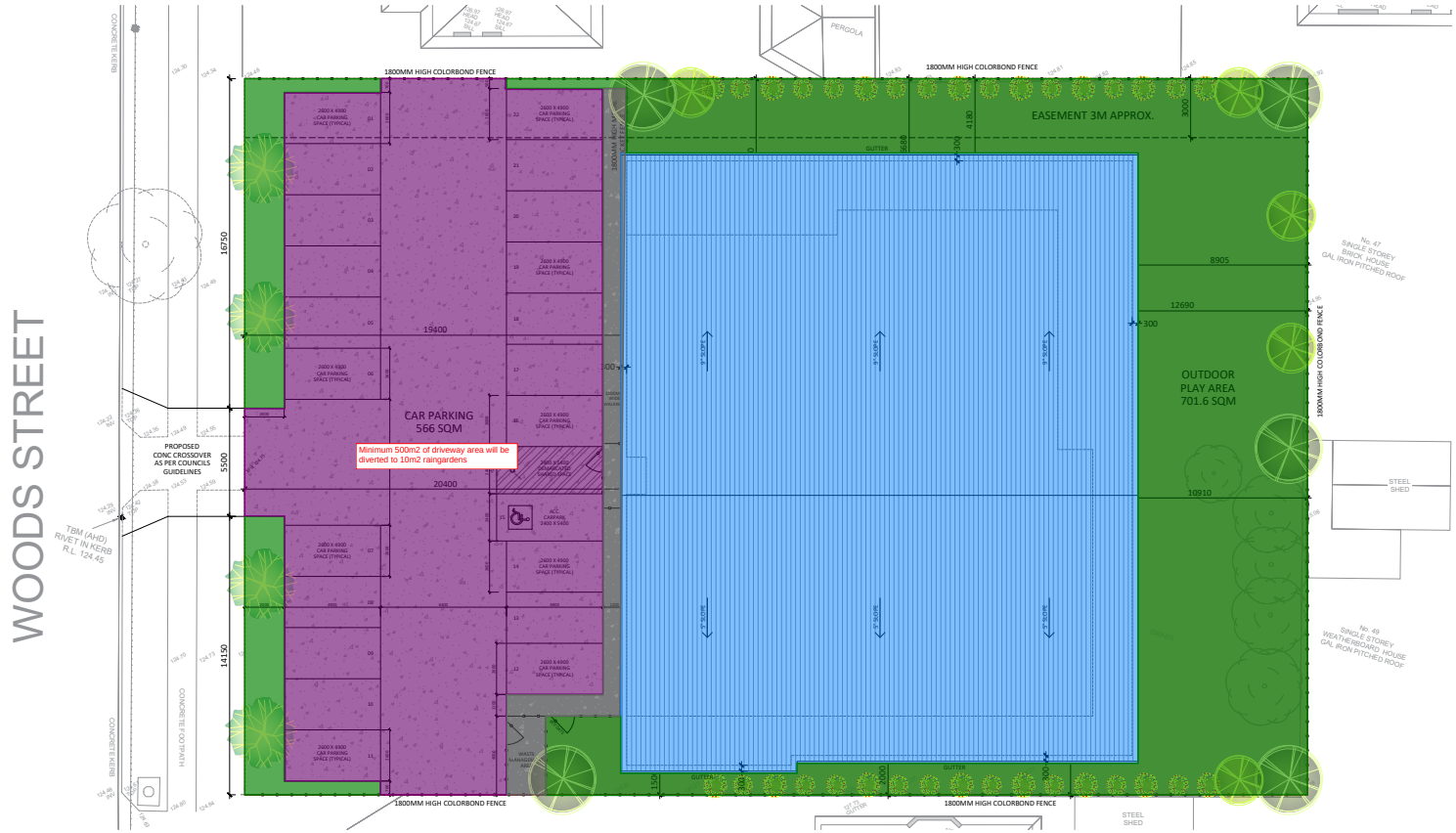
53.18
26/10/2018
VC154

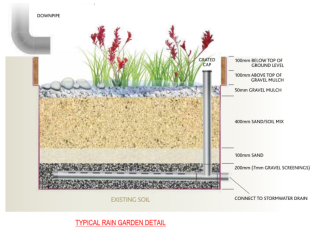
STORMWATER MANAGEMENT IN URBAN DEVELOPMENT

Purpose

To ensure that stormwater in urban development, including retention and reuse, is managed to mitigate the impacts of stormwater on the environment, property and public safety, and to provide cooling, local habitat and amenity benefits.

Appendix 2 - Site Layout Plan





TYPICAL RAIN GARDEN DETAIL

Legend		
Driveway to RG (minimum 500m2 out of 564m2)	564	sq m
Impervious Area	108	sq m
Permeable Area	537	sq m
Roof to RWT	820	sq m
Site Area	1,965	sq m

Minimum 500m2 (out of 564m2) of driveway area will be diverted to raingardnes.
Refer to Landscape plan for raingarden locations.
Raingarden locations will be subject to civil design.

Appendix 3 - STORM Report

Melbourne Water STORM Rating Report

TransactionID: 0
Municipality: COLAC OTWAY
Rainfall Station: COLAC
Address: 4-6 Woods Street
Colac
VIC 3250
Assessor: LID Consulting
Development Type: Commercial/Retail
Allotment Site (m2): 1,965.00
STORM Rating %: 105

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
Roof to RWT	820.00	Rainwater Tank	10,000.00	20	102.60	84.90
Driveway to RG	500.00	Raingarden 100mm	10.00	0	131.00	0.00
Impervious Area	108.00	None	0.00	0	0.00	0.00

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Note: For non-residential developments or components, occupancy rates are taken from the InSite Water tool which is based on Building Code of Australia section D1.13. Occupancy rates (determined from areas).

Appendix 4 - Technical Measures Explained

Rainwater Harvesting

Rain water tanks collect water from the roof via downpipes, providing flow detention capacity and storage for reuse. Rainwater tanks reduce stormwater run-off but also treat water by allowing particle settlement within the tank. Water can be generally used for irrigation, toilet flushing, laundry services and showers.

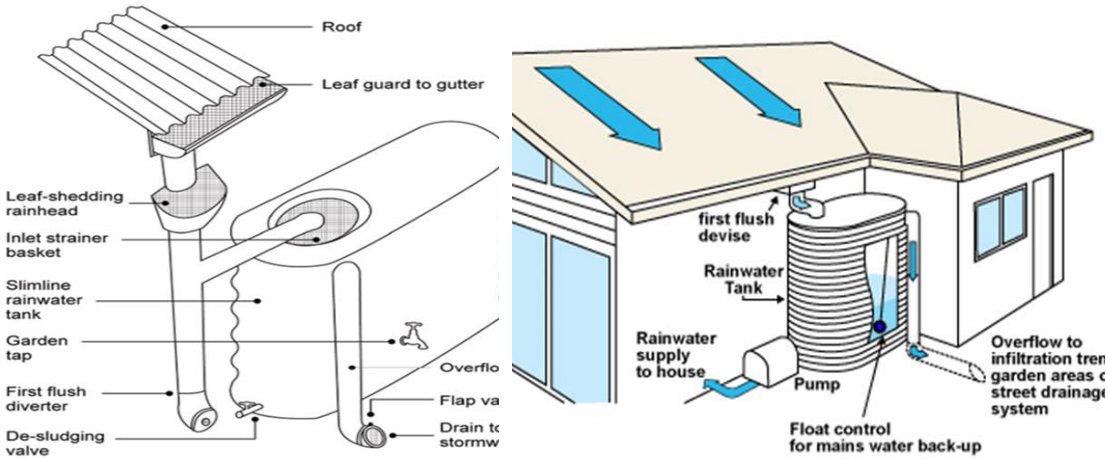

Figure 5 - Components of a Rainwater Harvesting System (Bluescope Steel)

Rainwater Filtration

Rainwater Filtration requirements depend upon intended end-use. See the following table for required quality levels across typical end-uses:

Table 2 - Required Rainwater Quality for Different End Uses [5]

	Required Quality			
End Use	**Clear**	**Odourless**	**Low in dissolved solids**	**No human pathogens, toxins or heavy metals**
Garden/lawn irrigation				
Toilet flushing	✓	✓		
Clothes washing	✓	✓		
Showering/bathing	✓	✓	✓	
Drinking	✓	✓	✓	✓

See the following table for appropriate treatment measures to meet the specified quality above:

[5] https://www.yourhome.gov.au/water/rainwater

Table 3 - Required Rainwater Filtration for Different End Uses [6]

	Filter		
Fixture/use	**Tannin filter (if tannins from overhanging trees expected)**	**Sediment filter (eg. 20 micron)**	**Sub 1 micron absolute filter**
Irrigation and outdoor			
Hot water system	✓		
Toilet cistern/washing machine	✓		
Drinking water outlets (cold)	✓	✓	✓

Further considerations:

- The simplest tank system is where downpipes can flow directly into the top of a water tank as shown above. Where a number of downpipes from around the building are collecting water for the same tank that is not underground, a charged pipe system might be required, where by water sits in the downpipes to the level of the top of the tank. When more water enters the downpipes, the existing water in the pipes will enter the tank as the water level stays balanced.
- Rainwater tank systems may either be wet (charged) or dry. Charged systems are systems where the pipes from the gutter go down the wall and underground, then up into the tank. They are 'wet' because the size of buildings and/or the placement of tanks away from buildings mean that there are long runs of pipe underground which remain full of water. Dry systems are systems where the pipe network is designed to run direct from the gutter into the tank. The pipes drain out after rain and do not hold water when rainfall stops.
- Charged tank systems (where water tanks are above ground) should incorporate 1mm aperture screens on all openings to ensure pipes do not become breeding grounds for mosquitoes. **No charged pipes are to be located beneath ground slabs.**
- A **first flush device** that diverts the initial most polluted 1-2 minutes of runoff from the roof into the garden should be incorporated in the system prior to the tank.
- **Connection to toilets** or other regularly used end-uses should ensure that tanks are run down regularly. This leaves spare capacity to collect new rainfall water and hence reduces the level of rain from the roofs going down the drains.
- **Tank to mains switches** which can divert water supply from tanks to mains need to be incorporated in any design, in the event that tanks empty or become near empty. Automated switch-over is ideal, but having good access to switches in the event of failure of the automated switches is also a good design consideration.

[6] https://www.yourhome.gov.au/water/rainwater

a) b)

c) d)

Figure 6 - Types of Rainwater Tanks a) Slimline; b) Storage walls; c) Underground; d) Modular (www.yourhome.gov.au/water/rainwater & www.freshwater.com.au)

Raingardens

Raingardens are a type of vegetated filtration systems, consisting typically of a vegetated soil-based filter medium (a garden bed) draining into a porous pipe. They combine physical, chemical and biological treatment systems, removing pollutants and filtering out solids before redirecting water into the stormwater mains. Melbourne Water provide useful information about raingardens at their website[7].

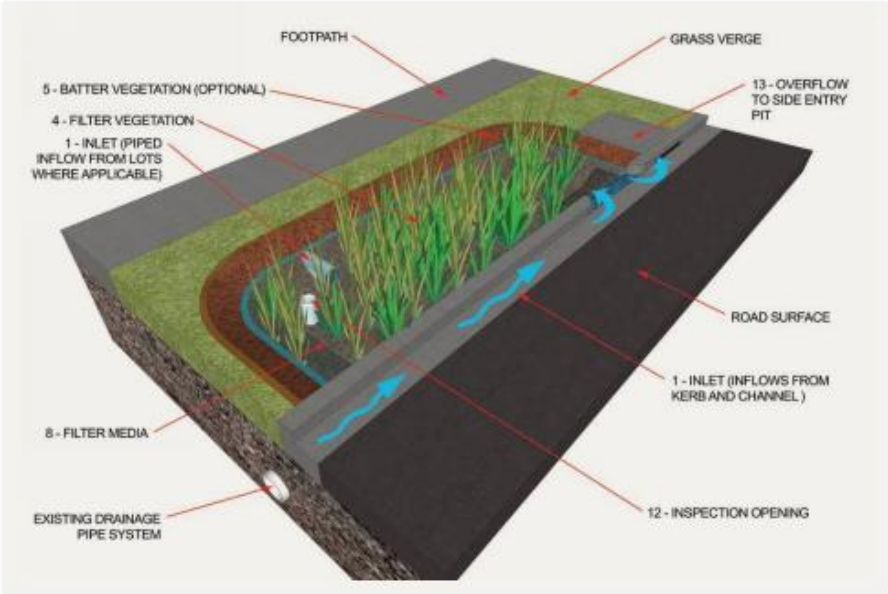

Figure 7 - Raingarden Components (Melbourne Water)

Further considerations:

- Rectangle shapes are often the simplest and cheapest to construct.
- They should not be built too close to permanent structures, as filtration of water into surrounding soils may affect building foundations. Lining may be used if nearby infrastructure is sensitive to infiltration.
- Raingardens require layers of filter media and plants above a slotted pipe connected to the stormwater mains or stormwater outfall. An overflow pipe should also be located nearby should the raingarden clog up and/or be inundated beyond design capacity. A heavy mulch or gauze type matting over the top of the ground is also useful to reduce erosion of surface layers during high rainfall events.
- The plants and filter media should physically, chemically and biologically remove pollutants from the water. The filter media may include scoria, screenings or loamy sand. Water takes longer to infiltrate in clay soils than sandy soils.
- Mulch can be used as an additional layer to the raingarden as a weed control system. However unwashed gravel mulch can clog pipes so it should be avoided.
- A properly constructed raingarden isn't a breeding ground for mosquitoes. Raingardens are designed to drain quickly – usually within several hours after a "normal" rainfall. Even with a heavy rainfall, the nominated soil profile should ensure ponding duration does not exceed four days. Mosquitoes require at least a week of standing water to complete their life cycle.

[7] http://www.melbournewater.com.au/getinvolved/protecttheenvironment/raingardens/Pages/How-do-I-build-a-raingarden.aspx

Planting

A good guide to suitable plants to use in a raingarden is provided in Melbourne Water's instruction sheet "Building a Raingarden"[8] (page 7) which can be found through the Melbourne Water website.

[8] http://www.melbournewater.com.au/getinvolved/protecttheenvironment/raingardens/Pages/How-do-I-build-a-raingarden.aspx

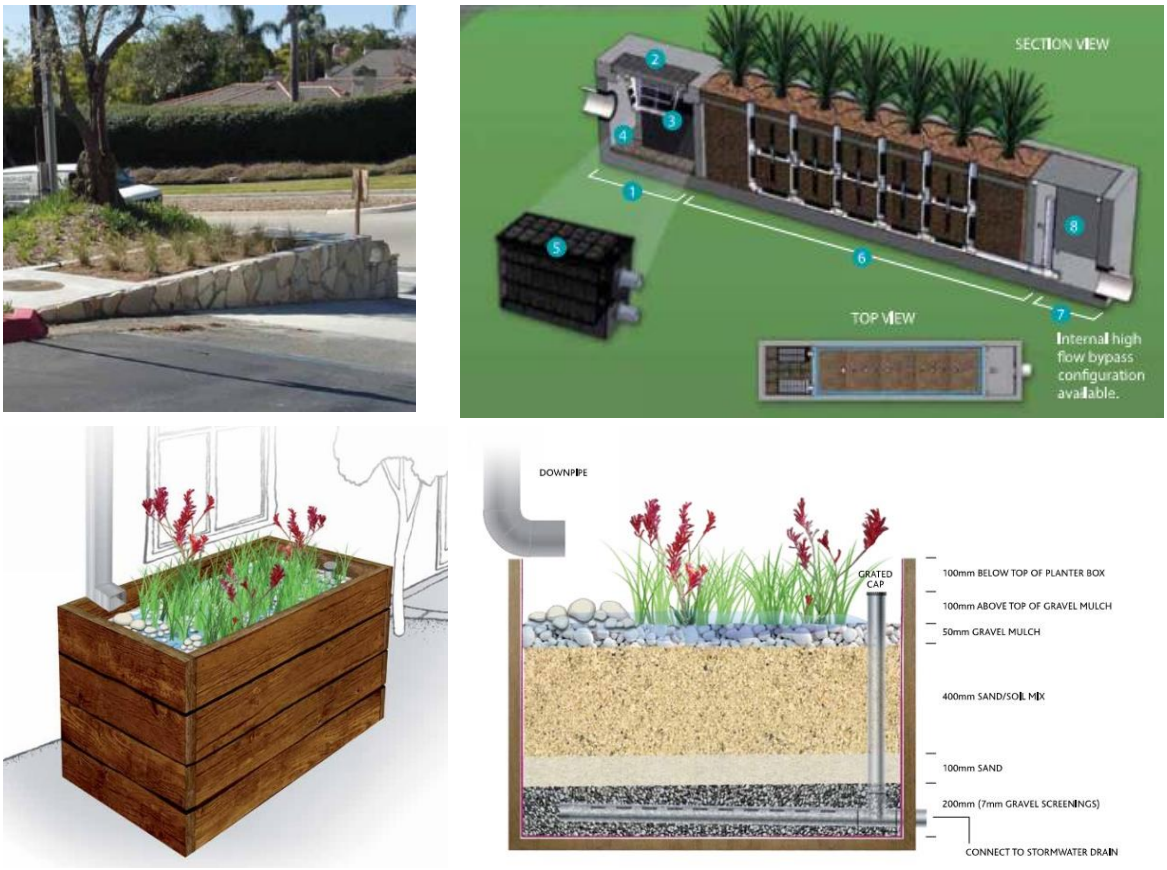

Figure 8 - In Ground and Planter Box Raingarden Systems (SPEL, Melbourne Water, LID Consulting)

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Praveen7800@gmail.com||+61433852158

WASTE MANAGEMENT PLAN – 4/6 Woods St Colac VIC 3250

Amandment:3 - 24/02/2026

Waste management plan for the proposed childcare center development at 4 - 6 Woods St Colac VIC 3250

This waste management plan will address the following:

- The anticipated garbage and recycling generation levels for the development.
- Details of the required bin types and sizes for the development.
- Details of the proposed bin storage location.
- Details on proposed bin collection method (including details on maneuverability conditions of the waste collection vehicle)
- Best practice notes to manage waste within the site.

During preparation of this waste management plan, "Guidelines for Preparing a Waste Management Plan–2015(City of Melbourne)" document has been referenced.

BACKGROUND

The subject site is located on the western side of Woods Street . The proposal seeks to construct a childcare center within the site to accommodate a total of 99 children. The proposed educational center will operate between 6.30am to 6.30pm Monday to Friday.

On site car parking (with access off Woods Street) is provided to accommodate 21 vehicles (Including 1 disability accessible car space).

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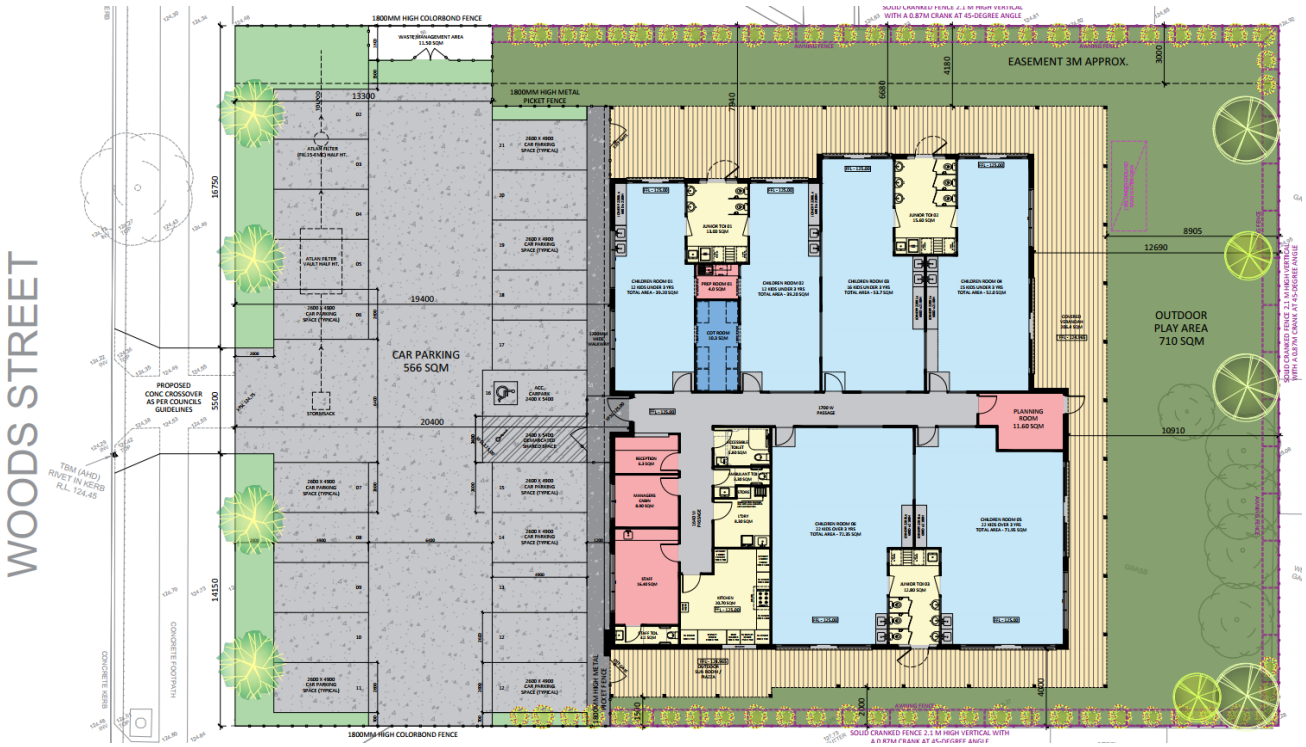

Updated Site Plan
19/02/2026

Figure 1: Proposed Site Plan

ANTICIPATED WASTE GENERATION LEVELS

The Guidelines for Preparing a Waste Management Plan – 2015 document provides the weekly waste generation rates for various types of developments. The following table illustrates the waste generation rates for education developments.

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Outlet type	Garbage	Recycling
Retail		
Retail (non-food)	50L/100 m^2 floor area/day	50L/100 m^2 floor area/day
Restaurant	660L/100 m^2 floor area/day	200L/100 m^2 floor area/day
Supermarket	660L/100 m^2 floor area/day	240L/100 m^2 floor area/day
Café	300L/100 m^2 floor area/day	200L/100 m^2 floor area/day
Take-away / café (pre-packaged food only)	150L/100 m^2 floor area/day	150L/100 m^2 floor area/day
Licenced club	50L/100 m^2 floor area/day	50L/100 m^2 floor area/day
Other		
Office	10L/100 m^2 floor area/day	10L/100 m^2 floor area/day
Education	1.5L/student/day	0.5L/student/day
Religious/social	50L/100 m^2 floor area/day	10L/100 m^2 floor area/day
Serviced apartment	35L/apartment/week	35L/apartment/week

Figure 2: Commercial Waste Generation Rates

Applying the above identified garbage and recycling generation rates to the proposed development with 99 students at one time on site, the following are obtained.

- Garbage: 750 L per week
- Recycling: 250 L per week

BIN STORAGE

The proposed development includes an enclosed waste bin storage area within the site. The Guidelines for Preparing a Waste Management Plan – 2015 document provides the following standard bin dimensions.

Type (L)	Width (m)	Depth (m)	Height (m)
120	0.5	0.6	1.0
240	0.6	0.8	1.1
660	1.4	0.7	1.2
1100	1.4	1.3	1.5

Figure 3: Standard Bin Dimension

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Based on the above bin dimension, the following bin configuration is proposed for the subject development (assuming once a week bin collection):

To accommodate the anticipated generation of **750 L per week** of general and green waste:

- **Green Waste:** 2 × 240 L bins
- **General Waste:** 2 × 240 L bins

Recycling: Use 1 X 240L and 1 X 120 bins to accommodate the anticipated generation of 250L per week.

The following figure outlines the scaled bin area diagram for the subject site.

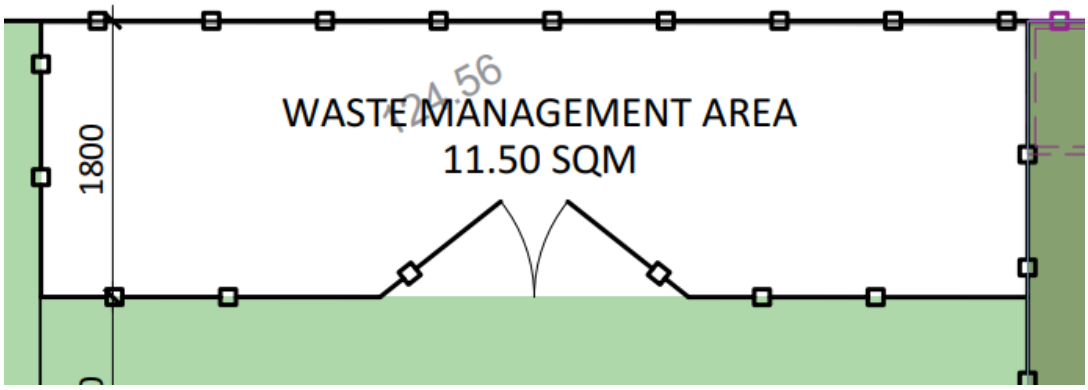

Figure 4: Scaled Bin Area Diagram

As can be seen from the above scaled waste management area diagram, the communal bin storage room (located right side corner of carpark) can sufficiently accommodate 2 x 240L Green Waste bin and 2 x 240L bin for General Waste + 1 X 240L and 1 X 120 bins for recycling).

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BINSTORAGE AREA SCREENING

The developer should ensure sufficient screening is provided by enclosing the proposed bin storage area. In this regard, a COLORBOND® Slat Rubbish Bin Screen Enclosure, as illustrated in the figure below, could be utilized.

Figure5: Typical Colourbond Bin Screen

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COLLECTION

It is noted that, once operational, the development will utilize private waste collection services through a waste contractor. Therefore, the applicant shall engage a private waste contractor for once-a-week collection of waste (Garbage and recycling).

The collection will typically be undertaken outside the operational hours of the childcare center. The proposed waste collection vehicle for this site is a low-profile rear loading small rigid collection vehicle. (6.4m long with 3.5m head clearance requirement) The anticipated manoeuvrability conditions of the small rigid waste collection vehicle have been investigated using a swept path assessment. This swept path assessment. This swept path test was undertaken using Auto TURN software. (The industry standard swept path assessment software).

The following figure illustrates the template of the small rigid vehicle used to simulate the swept path. (It is noted that this rigid vehicle template is developed according to the dimensions specified in AS 2890.2-2004).

Dimensions In Metres

Vehicle Class	Overall Length (m)	Design Width (m)	Wheel Base (m)	Design Turning Radius (m)	Swept Circles (m)	Clearance Height (m)
SRV	6.4	2.3	3.8	7.1	15.3	3.5
MRV	8.8	2.5	5	10	21.6	4.5
HRV	12.5	2.5	6.85	12.5	27.8	4.5
AV	20	2.5	14.7	12.5	26.6	4.5
BD	26	2.5	21.7	12.5	n/a	4.5
A- Double	36.5	2.5	32.3	15	n/a	4.5
A-Triple	53.5	2.5	49	15	n/a	4.5

Figure 6: Vehicle dimensions specification

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Swept path analysis provided demonstrates that a Small Rigid Vehicle (SRV) would be able to enter the car park, turn around and then exit in a forward direction. The proposed loading arrangements are therefore considered adequate to accommodate the loading needs of the proposed development.

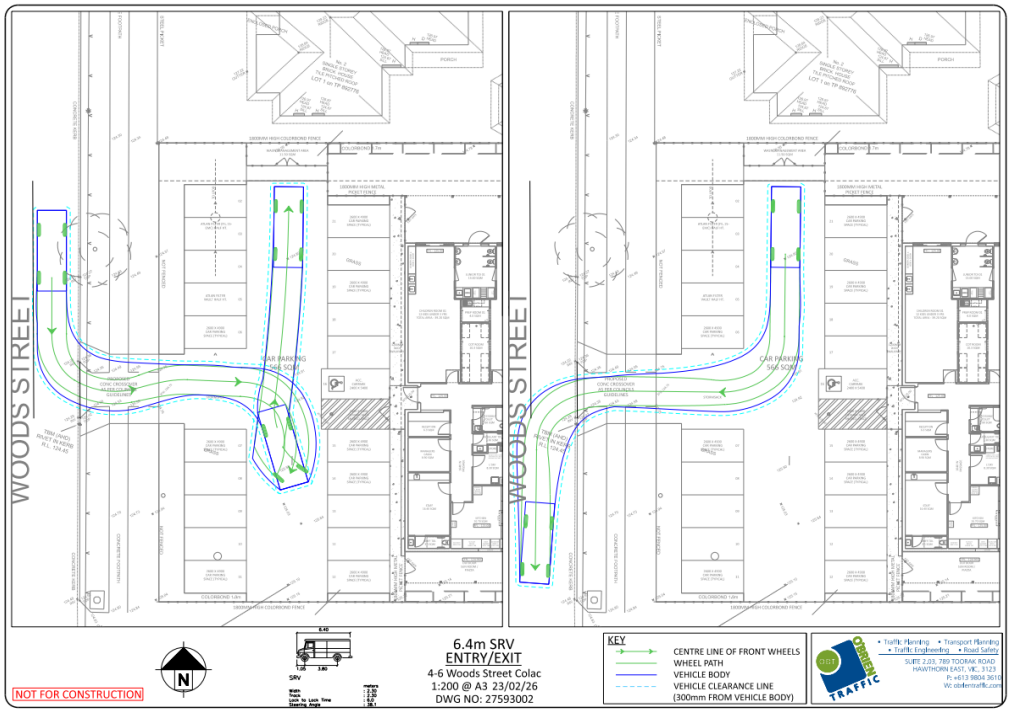

Figure 7: Swept path analysis (Traffic report Appendix B)

Updated 24/02/2026

RESPONSIBILITY AND MANAGEMENT

The owner/occupier of the building is responsible for managing on-site waste. Garbage, FOGO/ green waste, and recycling shall be stored within the building in smaller internal bins located in each classroom and the kitchen area. These internal bins must be regularly emptied into the external bins located within the communal bin-storage area.

The owner/occupier must also actively monitor the adequacy of the waste-collection frequency and increase collections if required, noting that the capacity of the on-site bin-storage area is fixed.

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Praveen7800@gmail.com||+61433852158

CONSIDERATION

Should Council require any further information in relation to this waste management plan, please do not hesitate to contact the undersigned.

Praveen Gulati
Domestic License – DB-U 72724|| Commercial License - CB-L 72725

Director
Gulati Homes Pty Ltd
License No: CDB - U 61932

Four Square Commercial Pty Ltd
License No: CCB-L 100016

24/02/2026

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