City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

StudioWAY
TRAFFIC, TRANSPORT & WASTE

TRAFFIC IMPACT ASSESSMENT

PROPOSED MIXED USE DEVELOPMENT

147-149 Bellarine Highway, Newcomb

Project No. 25036-T-REP01-F02

Date 24 April 2026

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City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

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TABLE OF CONTENTS

1. INTRODUCTION 5
2. BACKGROUND 5
3. EXISTING CONDITIONS 6
3.1 Locality & Land Use 6
3.2 Zoning 7
3.3 Road Network 8
3.3.1 Bellarine Highway 8
3.3.2 Coppards Road 8
3.4 Sustainable Transport 8
3.4.1 Walking 8
3.4.2 Cycling 9
3.4.3 Public Transport 9
3.5 Traffic Volumes 10
4. PROPOSAL 11
5. CAR PARKING ASSESSMENT 12
5.1 Statutory Requirements 12
5.2 Application Requirements & Decision Guidelines 13
5.3 Car Parking Demand Assessment 14
5.3.1 Service Station 14
5.3.2 Car Wash 14
5.3.3 Food & Drink Premises 15
5.3.4 Car Parking Demand Summary 15
5.4 Accessible Car Parking 15
6. BICYCLE PARKING ASSESSMENT 16
7. TRAFFIC DESIGN MATTERS 16
7.1 Car Park Access & Layout 16
7.2 Queuing Considerations 20
7.3 Clause 52.29 – Land Adjacent to the Principal Road Network 20
7.4 Coppards Road Access 21
7.5 Pedestrian Access 21
7.6 Bus Stop Relocations 21
8. LOADING & WASTE COLLECTION 22
8.1 Loading 22
8.2 Waste Collection 22
9. TRAFFIC ASSESSMENT 22
9.1 Trip Generation 22
9.1.1 Service Station Trip Generation 22
9.1.2 Car Wash Trip Generation 23

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

9.1.3 Food & Drink Trip Generation 24
9.1.4 Total Traffic Generation 25
9.2 Traffic Distribution 26
9.3 Traffic Impact 29
9.3.1 SIDRA Analysis 29
9.3.2 Assumptions 30
9.3.3 SIDRA Results – Existing Conditions 30
9.3.4 SIDRA Results – Post Development Conditions 31
9.3.5 Summary of Results 32
10. RFI RESPONSE 32
11. CONCLUSIONS 33

Figures

Figure 1 – Locality plan 6
Figure 2 – Aerial view of subject site 7
Figure 3 – Land use zoning and parking map 7
Figure 4 – Bellarine Highway facing east and west 8
Figure 5 – Coppards Road facing north and south 8
Figure 6 – Walking catchment 9
Figure 7 – Cycling catchment 9
Figure 8 – Public transport services 9
Figure 9 – Existing Volumes 10
Figure 10 – Development staging 11
Figure 11 – Traffic Distribution 27
Figure 12 – Total Traffic Generated 28
Figure 13 – Unique and diverted trips 29
Figure 14 – Level of Service Ratings 30

Tables

Table 1 – Traffic volume data (source: SCATS) 10
Table 2 – Statutory Car Parking Requirements 12
Table 3 – Car Parking Demand Assessment 15
Table 4 – Statutory Bicycle Parking Requirements 16
Table 5 – Design Standard 1 (Accessways) 17
Table 6 – Design Standard 2 (Car Parking Spaces) 18
Table 7 – Design Standard 3 (Ramp Gradients) 19

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

Table 8 – TfNSW Service Station Trip Generation Equations 23
Table 9 – Estimated Traffic Generation 23
Table 10 – Estimated Unique Trips 23
Table 11 – Car Wash Trip Generation rates 24
Table 12 – Estimated Traffic Generation 24
Table 13 – Estimated Unique Trips 24
Table 14 – TfNSW Service Station Trip Generation Equations 24
Table 15 – Estimated Traffic Generation 25
Table 16 – Estimated Unique Trips 25
Table 17 – Estimated Unique Trips 25
Table 18 – SIDRA Analysis Results (PM Peak Hour) 31
Table 19 – SIDRA Analysis Results (PM Peak Hour) 31
Table 20 – RFI Response 32

Appendices

Appendix A (Swept Path Diagrams) 34
Appendix B (Coppards Road Concept Layout) 40
Appendix C (SIDRA Results) 42

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

1. Introduction

StudioWAY has been engaged by Pearl Energy to prepare a Traffic Impact Assessment (TIA) for a proposed mixed use development located at 147-149 Bellarine Highway, Newcomb. In the course of undertaking this assessment:

- Background material for a previous development application has been reviewed.
- The subject site has been inspected.
- Plans of the proposal have been reviewed and design advice provided in respect of traffic engineering matters.
- Traffic data has been extracted from SCATS and SIDRA modelling undertaken.
- The parking and traffic implications of the proposal have been assessed.

This version of the report addresses the RFI from the City of Greater Geelong dated 17 March 2026, with a response provided in Section 9.

The following sets out our findings.

2. Background

The subject site includes land at 149 Bellarine Highway, Newcomb, that was previously subject to a planning permit application for a similar development (PP-1512-2020) comprising a service station and convenience restaurant (drive-through), with alteration of access to a road in Transport Zone 2.

The development included vehicle access to Bellarine Highway (entry only) and two access points to Coppards Road, including provision of a short right-turn deceleration lane.

The application was determined at VCAT, with a Planning Permit granted subject to conditions.

The Department of Transport and Planning (DTP) was supportive of the proposal subject to conditions ensuring the bus stop on Coppards Road is reconstructed to the applicable standard drawings, that the new access to Bellarine Highway be designed to accommodate entry movements only, and that the right turn lane on Coppards Road *"...must be compatible with and not adversely impact the existing right turn lane on Coppards Road on the north approach to the Bellarine Highway intersection to the satisfaction of the Head, Transport for Victoria "*.

It is noted that the new proposal provides generally similar vehicle access arrangements to the previously approved development, but with an exit provided to Bellarine Highway as a result of the larger overall land size. This is discussed within this report.

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

3. Existing Conditions

3.1 Locality & Land Use

The subject site is located within the City of Greater Geelong on the northwestern corner of the intersection of Bellarine Highway and Coppards Road, Newcomb.

The site consists of two lots each occupied by a single dwelling. It is generally rectangular in shape and covers an area of approximately 7,493m^2. The terrain is virtually flat.

Surrounding land use consists of a mix of residential and commercial uses, notably including a 7-11 service station and drive-through convenience restaurants located directly opposite the site, on the south-west corner of the Bellarine Highway and Coppards Road intersection.

The locality of the site is shown in Figure 1, with an aerial view provided in Figure 2.

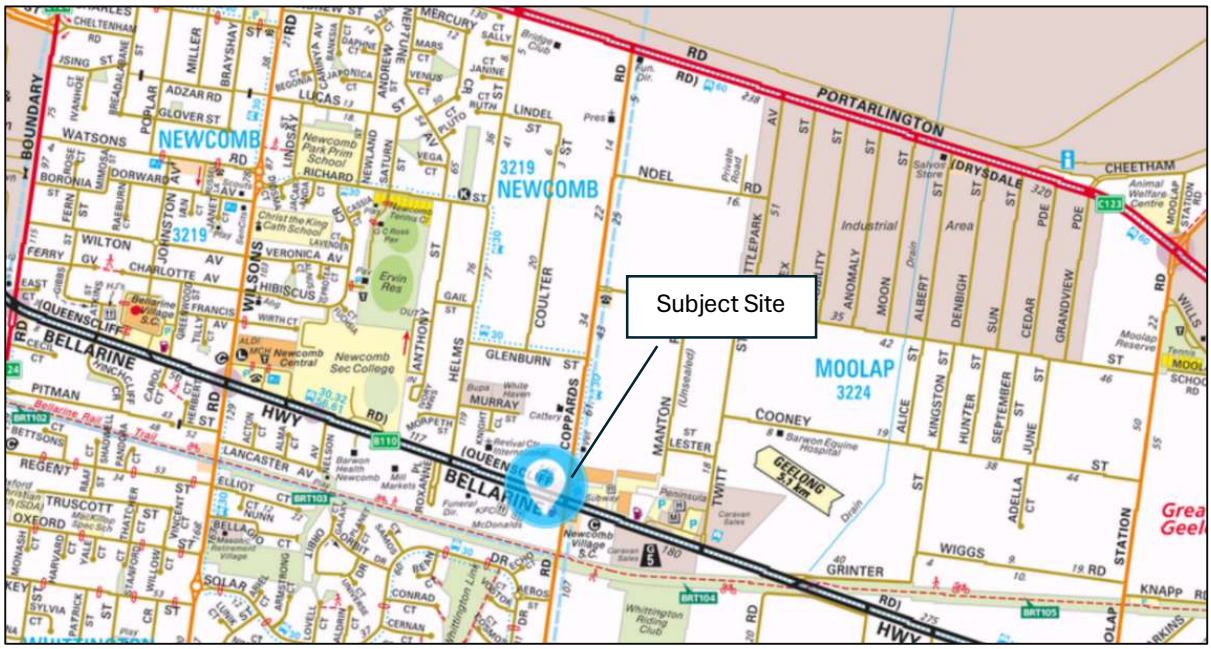


Figure 1 – Locality plan

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026



Figure 2 – Aerial view of subject site

3.2 Zoning

The subject site is zoned Low Density Residential Zone (LDRZ) under the Greater Geelong Planning Scheme and is subject to the Special Building Overlay (SBO).

The site is within the Category 2 car parking requirement area.

The land use zoning and parking map are shown in Figure 3.

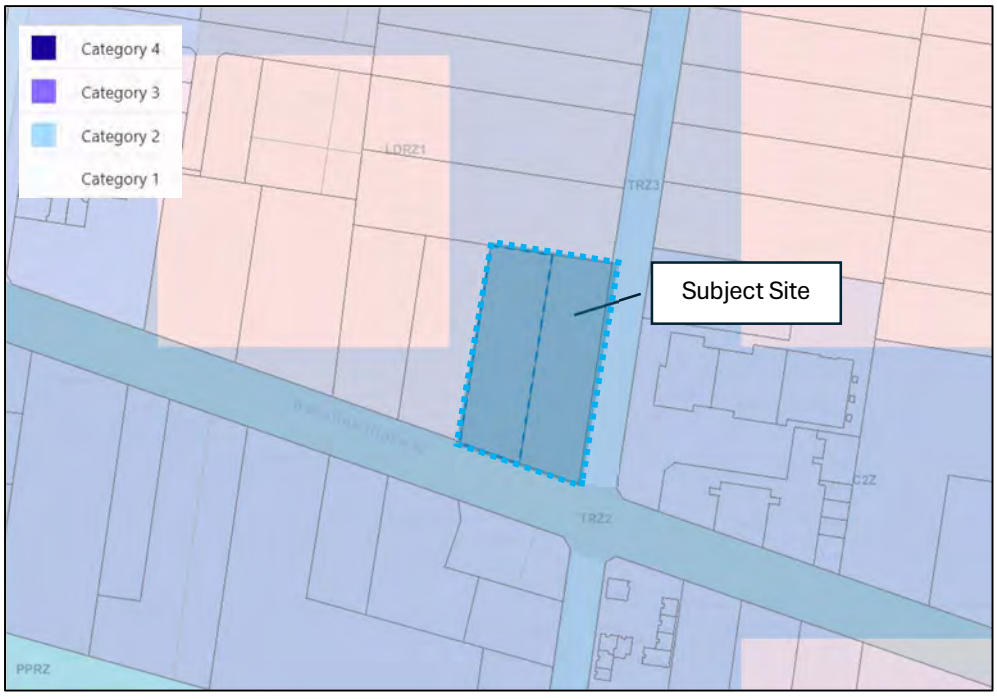


Figure 3 – Land use zoning and parking map

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

3.3 Road Network

3.3.1 Bellarine Highway

Bellarine Highway is a DTP Managed Arterial Road and a Transport Zone 2 (TRZ2). It is orientated east-west and forms the southern border of the site. Bellarine Highway provides two through traffic lanes in each direction, with one left turn lane and one right turn lane provided on the western approach to the signalised intersection with Coppards Road. Separate marked parallel parking bays are provided.

A bus stop with shelter is located directly adjacent the site. The posted speed limit is 70km/h.

Views are provided below.



Figure 4 – Bellarine Highway facing east and west

3.3.2 Coppards Road

Coppards Road is a 'Main Distributor' road as defined in the City of Greater Geelong Road Register. It is orientated north-south and forms the eastern border of the site. Coppards Road provides one traffic lane in each direction and separated marked parallel parking bays.

A bus stop with shelter is located directly adjacent the site. The posted speed limit is 60km/h.

Views are provided below.



Figure 5 – Coppards Road facing north and south

3.4 Sustainable Transport

3.4.1 Walking

The subject site is accessible from nearby residential areas, with a footpath provided on Bellarine Highway and the eastern side of Coppards Road to the north of Bellarine Highway and the western side of Coppards road to the south of Bellarine Highway. There is no footpath directly adjacent the site in Coppards Road.

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

3.4.2 Cycling

There are informal bicycle facilities within the residential areas to the north of the site. This enables potential employees living in these areas to cycle to/from the site.

Walking and cycling heat maps are provided below, showing indicative catchments for walking distances of 10, 20 and 30 minutes respectively.



Figure 6 – Walking catchment



Figure 7 – Cycling catchment

3.4.3 Public Transport

The nearest bus stops are located directly adjacent to the site on Bellarine Highway (travelling eastbound) and Coppards Road (travelling northbound). The nearest westbound bus stop is at The Peninsula Hotel stop approximately 300m (~2 minutes) walk from the site.

The eastbound stop provides access to Routes 30, 32, 56, 61 with the Route 30 bus travelling along Coppards Road in both directions, whilst the westbound stop services Routes 32, 56, 61.

These routes operate from Monday to Sunday at regular intervals throughout the day, making it suitable for use by staff who may choose to travel to the subject site. Refer public transport map in Figure 8.



Figure 8 – Public transport services

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

3.5 Traffic Volumes

Traffic volume data has been extracted from the SCATS database for the intersection of Bellarine Highway and Coppards Road. A typical week was examined from the Monday 8th of September to the Friday 12th of September with Friday having the highest PM peak hour volumes and thus extracted and shown below.

It is noted the AM peak hour data has not been sourced since the development will generate significantly higher volumes in the PM peak hour, making it the critical period for assessment.

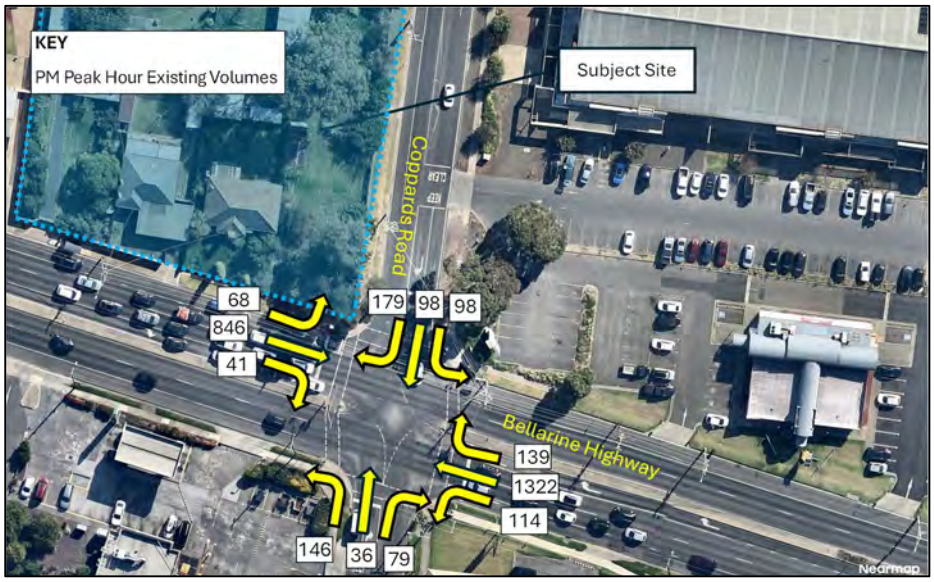


Figure 9 – Existing Volumes

The data is summarised in Table 1. Volumes are taken from the west of the intersection on Bellarine Highway and north of the intersection on Coppards Road.

Table 1 – Traffic volume data (source: SCATS)

Direction	Daily Volume	PM Peak Hour Volume
Bellarine Highway Eastbound	13,375	955
Bellarine Highway Westbound	17,495	1,647
TOTAL	**30,870**	**2,602**
Coppards Road Northbound	3,441	375
Coppards Road Southbound	3,070	243
TOTAL	**6,511**	**618**

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

4. Proposal

It is proposed to construct a mixed-use development in two stages (refer Figure 10) comprising of:

Stage 1

- Service station
  - Convenience shop (200m^2 LFA).
  - 8 x double-sided fuel bowsers (16 pumps total, 4 of which are Ultra Hi-Flow Bowsers).
- Car wash with 2 automatic bays, 3 manual bays and 4 vacuum bays.
- 29 parking spaces (inc. 3 DDA spaces).

Stage 2

- Food and Drink 1 (200m^2 NFA).
- Food and Drink 2 (202m^2 NFA).
- 7 parking spaces (inc. 1 DDA space).
- 12 bicycle parking spaces

Once both stages are delivered, the total supply of parking (36 vehicle spaces and 12 bicycle spaces) will be available to all uses.

Vehicle access is proposed via:

- Entry and exit crossovers to Bellarine Highway.
- Entry and exit crossover to Coppards Road (southern access) – with right turn lane.
- Exit crossover to Coppards Road (northern access).

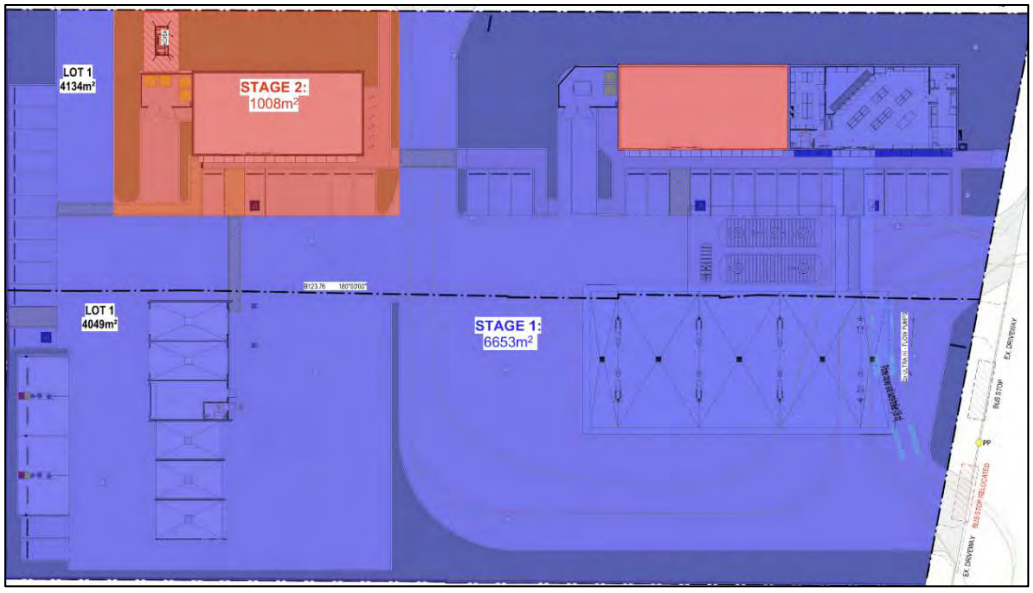


Figure 10 – Development staging

For the remainder of this assessment, the convenience shop component of the service station has been assessed as ancillary, with the *"selling of food, drinks and other convenience goods"* being incorporated into the land use definition under Clause 73.03 of the Planning Scheme.

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

5. Car Parking Assessment

5.1 Statutory Requirements

Statutory car parking requirements applicable to the proposed development are outlined in Clause 52.06 of the Greater Geelong Planning Scheme.

As the site is within Category 2 of the Car Parking Requirement Map, the Category 2 rates in Table 1 to Clause 52.06-5 are applicable. It is noted:

- A 'Service Station' is not a specified land use, and hence parking for this is to be provided to the satisfaction of the responsible authority (Council).
- A 'Car Wash' is nested under the broader 'Industry' land use group and is accordingly subject to the parking rate for 'Industry – other than specified in this table'. This rate is based on the leasable floor area (LFA) which is equal to zero in this case, since the only enclosed building area is used for services and mechanical equipment, which does not count towards the LFA (pursuant to the definition under Clause 73.01).
- 'Food & Drink Premises' encompasses various types of uses; however, we understand the likely end use is as 'Take Away Food Premises' which falls under the 'Food & Drink Premises' category and so for the purposes of assessment this is adopted.

The statutory car parking requirements are presented in Table 1.

Table 2 – Statutory Car Parking Requirements

Land Use	Size	Car Parking Rate	Stage	Requirement[1]
Service Station	200m^2	No listed rate	1	To the satisfaction of council
Car Wash	0m^2	0.4 to each 100m^2 of leasable floor area	1	0
Food and Drink 1	200m^2	2 spaces to each 100m^2 of net floor area	2	4
Food and Drink 2	202m^2	2 spaces to each 100m^2 of net floor area	2	4
			STAGE 1 REQUIREMENT	**To the satisfaction of council**
			STAGE 2 REQUIREMENT	**8 spaces**
			TOTAL REQUIREMENT	**To the satisfaction of council**
			TOTAL PARKING PROPOSED STAGE 1	**29 spaces**
			TOTAL PARKING PROPOSED TOTAL	**36 spaces**
			PARKING SURPLUS (+) / SHORTFALL (-)	**To the satisfaction of council**

[1] Parking requirements are rounded down under CL52.06

Accordingly, to determine whether the proposed supply of car parking is satisfactory, an assessment must be made to the satisfaction of Council.

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

5.2 Application Requirements & Decision Guidelines

An application to reduce (including reduce to zero) the number of car parking spaces required under Clause 52.06-7 must be accompanied by a Car Parking Demand Assessment. Whilst this is not strictly applicable in this case, it is nonetheless appropriate to undertake.

The Car Parking Demand Assessment must assess the car parking demand likely to be generated by the proposal and must also address the following matters, to the satisfaction of the responsible authority.

- *The likelihood of multi-purpose trips within the locality which are likely to be combined with a trip to the land in connection with the proposed use.*
- *The variation of car parking demand likely to be generated by the proposed use over time.*
- *The short-stay and long-stay car parking demand likely to be generated by the proposed use.*
- *The availability of public transport in the locality of the land.*
- *The convenience of pedestrian and cyclist access to the land.*
- *The provision of bicycle parking and end of trip facilities for cyclists in the locality of the land.*
- *The anticipated car ownership rates of likely or proposed visitors to or occupants (residents or employees) of the land.*
- *Any empirical assessment or case study.*

Before granting a permit to reduce the number of spaces, the responsible authority must consider the following, as appropriate:

- *The Car Parking Demand Assessment.*
- *Any relevant local planning policy or incorporated plan.*
- *The availability of alternative car parking in the locality of the land, including:*
  - *Efficiencies gained from the consolidation of shared car parking spaces.*
  - *Public car parks intended to serve the land.*
  - *On street parking in non-residential zones.*
  - *Streets in residential zones specifically managed for non-residential parking.*
- *On street parking in residential zones in the locality of the land that is intended to be for residential use.*
- *The practicality of providing car parking on the site, particularly for lots of less than 300 square metres.*
- *Any adverse economic impact a shortfall of parking may have on the economic viability of any nearby activity centre.*
- *The future growth and development of any nearby activity centre.*
- *Any car parking deficiency associated with the existing use of the land.*
- *Any credit that should be allowed for car parking spaces provided on common land or by a Special Charge Scheme or cash-in-lieu payment.*
- *Local traffic management in the locality of the land.*
- *The impact of fewer car parking spaces on local amenity, including pedestrian amenity and the amenity of nearby residential areas.*
- *The need to create safe, functional and attractive parking areas.*
- *Access to or provision of alternative transport modes to and from the land.*

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

- *The equity of reducing the car parking requirement having regard to any historic contributions by existing businesses.*
- *The character of the surrounding area and whether reducing the car parking provision would result in a quality/positive urban design outcome.*
- *Any other matter specified in a schedule to the Parking Overlay.*
- *Any other relevant consideration.*

Considering the above matters and decision criteria, we have undertaken a Car Parking Demand Assessment as follows.

5.3 Car Parking Demand Assessment

5.3.1 Service Station

First Principles Assessment

The primary role of the proposed service station is to operate as a fuel outlet, rather than a retail store, and it is unlikely to draw many customers who are not already stopping to purchase fuel. The retail component is relatively minor, occupying only 200m^2, and will offer a small selection of convenience items akin to most typical service stations.

Given this context, the majority of customers are expected to be motorists refuelling their vehicles. These customers typically remain with their vehicles during payment, using the kiosk without needing to relocate, which means dedicated parking spaces are generally not required. In practice, sixteen (16) spaces located at the fuel pumps will accommodate this type of demand.

Occasionally, there may be a small number of customers who stop solely to purchase convenience goods. For the purposes of this assessment, such demand is estimated to require up to three (3) parking spaces.

In addition to customer needs, parking will also be required for staff operating the kiosk. This is anticipated to require up to two (2) further spaces.

Therefore, when considering the overall parking needs of the service station surplus to that provided at the fuel pumps, the total estimated demand is up to five (5) spaces.

Alternative Assessment

Whilst not strictly applicable in this case, given the Convenience Store is ancillary to the Service Station use of the land, the applicable statutory parking requirements for a Convenience Store have been nonetheless been considered. Clause 52.06 of the Planning Scheme specifies that a 'Convenience Shop' should provide parking at a rate of 10 spaces to each premises.

As a point of comparison, the Transport for NSW Guide to Transport Impact Assessment stipulates a rate, for a 'Convenience Store', of 5 spaces per 100m^2 GFA. Application of this to the proposed floor area of 200m^2 equates to a demand for 10 spaces i.e. identical to the Victorian Planning Scheme rate.

Both these rates do not account for customer parking occurring at the fuel pumps.

5.3.2 Car Wash

First Principles Assessment

The customers for the land use will wash their respective vehicles from the provided bays generating minimal demand for parking. It is anticipated that customers using the car wash will likely use the vacuum bays in addition to their wash with minimal use of only the vacuum nays.

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

As such the only supplementary demand will be from staff members including attendants and technicians. The parking required for staff operating the car wash is anticipated to require up to two (2) spaces, comprising one (1) attendant and one (1) technician, only from time-to-time.

Therefore, when considering the overall parking needs of the car wash surplus to that provided at the bays, the total estimated demand is up to two (2) spaces.

5.3.3 Food & Drink Premises

The Planning Scheme car parking rates are adopted. Whilst it is acknowledged that actual parking demands may exceed this, there is no requirement to provide greater than the minimum.

5.3.4 Car Parking Demand Summary

The overall estimated peak car parking demands are shown in Table 3.

Table 3 – Car Parking Demand Assessment

Land Use	Size	Peak Parking Demand
Service Station	200m^2	5 spaces
Car Wash	0m^2	2 spaces
Food and Drink 1	200m^2	4 spaces[1]
Food and Drink 2	202m^2	4 spaces[1]
TOTAL PEAK DEMAND		**15 spaces**
PARKING SUPPLY		**36 spaces**
PARKING SURPLUS		**+ 21 spaces**

[1] Planning Scheme requirement rather than demand

It is therefore estimated that upon completion of Stages 1 and 2, there will be a total peak demand of up to 15 spaces, which is exceeded by the supply of 36 spaces.

For Stage 1 only there will be a demand of up to 7 spaces, which is exceeded by the supply of 29 spaces.

5.4 Accessible Car Parking

The National Construction Code (NCC) outlines the minimum standards for accessible car parking spaces. For a development such as the proposed service station, takeaway food and drink, and car wash – classified as a Class 6 buildings – the requirement is one accessible parking space for every 50 spaces (or part thereof) for the first 1,000 spaces, and one for every 100 spaces (or part thereof) beyond 1,000.

Given that the development includes a total of 36 on-site parking spaces, the NCC mandates the provision of at least one (1) accessible space.

Accordingly, the inclusion of four (4) accessible parking spaces complies with the applicable NCC requirements and ensures that each individual area can meet the requirements.

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

6. Bicycle Parking Assessment

Bicycle parking requirements are outlined in Clause 52.34 of the Geelong Planning Scheme.

The applicable rates and requirements are presented in Table 4.

Table 4 – Statutory Bicycle Parking Requirements

Land Use	Size	Bicycle Parking Rate		Bicycle Parking Requirement	
		Employees	Visitors	Employees	Visitors
Service Station	200m^2	n/a	n/a	0	0
Car Wash	0m^2	1 to each 800m^2 NFA	None	0	0
Food and Drink (total)	402m^2	1 to each 100m^2 NFA	1 to each 50m^2 NFA	4	8
TOTAL REQUIREMENT				**4 spaces**	**8 spaces**
TOTAL BICYCLE PARKING PROPOSED				**12 spaces**	
PARKING SURPLUS (+) / SHORTFALL (-)				**0 spaces**	

It can be seen the bicycle parking requirement is met by the proposed development.

The proposed bicycle rails are spaced 1 metre apart and angled to ensure that the 1.3m wide pathway provides appropriate access in accordance with AS2890.3.

7. Traffic Design Matters

7.1 Car Park Access & Layout

The proposed car park design and vehicle access arrangements have been assessed against the requirements of Clause 52.06-9 of the Planning Scheme. Swept path analysis is shown in Appendix A for critical vehicle movements. Our findings are as follows:

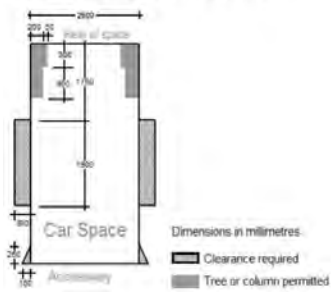
City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

Table 5 – Design Standard 1 (Accessways)

Requirement	Response	Compliance
Be at least 3 metres wide.	The accessway widths are a minimum of 6.7m wide.	**Yes**
Have an internal radius of at least 4 metres at changes of direction or intersection or be at least 4.2 metres wide.	Accessway widths exceed 4.2m.	**Yes**
Allow vehicles parked in the last space of a dead-end accessway in public car parks to exit in a forward direction with one manoeuvre	Not applicable as it is a private, not public car park.	**N/A**
Provide at least 2.1 metres headroom beneath overhead obstructions, calculated for a vehicle with a wheelbase of 2.8 metres.	Minimum headroom of 5.2m is provided above car parking areas.	**Yes**
If the accessway serves four or more car spaces or connects to a road in a Road Zone, the accessway must be designed so that cars can exit the site in a forward direction.	The accessways are designed so cars can exit the site in a forward direction.	**Yes**
Provide a passing area at the entrance at least 6.1 metres wide and 7 metres long if the accessway serves ten or more car parking spaces and is either more than 50 metres long or connects to a road in a Transport Zone 2 or Transport Zone 3.	Passing areas all exceed these dimensions.	**Yes**
Have a corner splay or area at least 50 per cent clear of visual obstructions extending at least 2 metres along the frontage road from the edge of an exit lane and 2.5 metres along the exit lane from the frontage, to provide a clear view of pedestrians on the footpath of the frontage road.	Visibility splays measuring 2.5m x 2.0m are provided at each crossover in the relevant direction.	**Yes**
If an accessway to four or more car parking spaces is from land in a Road Zone, the access to the car spaces must be at least 6 metres from the road carriageway.	Distance exceeds 6 metres.	**Yes**
If entry to the car space is from a road, the width of the accessway may include the road.	Not applicable	**N/A**

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

Table 6 – Design Standard 2 (Car Parking Spaces)

Requirement	Response	Compliance
Car parking spaces and accessways must have the following minimum dimensions: Angle of car parking spaces to access way / Accessway width / Car space width / Car space length Parallel / 3.6 m / 2.3 m / 6.7 m 45° / 3.5 m / 2.6 m / 4.9 m 60° / 4.9 m / 2.6 m / 4.9 m 90° / 6.4 m / 2.6 m / 4.9 m 5.8 m / 2.8 m / 4.9 m 5.2 m / 3.0 m / 4.9 m 4.8 m / 3.2 m / 4.9 m	Parking spaces are 5.5m long x 2.6m wide, with access from a minimum 6.7m wide aisle. This meets/exceeds the minimum requirements.	**Yes**
A wall, fence, column, tree, tree guard or any other structure that abuts a car space must not encroach into the area marked 'clearance required' on Diagram 1, other than: *A column, tree or tree guard, which may project into a space if it is within the area marked 'tree or column permitted' on Diagram 1.* *A structure, which may project into the space if it is at least 2.1 metres above the space.* **Diagram 1 Clearance to car parking spaces**  	There are no obstructions within the 'clearance required' areas.	**Yes**
Car spaces in garages or carports must be at least 6 metres long and 3.5 metres wide for a single space and 5.5 metres wide for a double space measured inside the garage or carport.	No garages or carports are proposed.	**N/A**
Where parking spaces are provided in tandem (one space behind the other) an additional 500 mm in length must be provided between each space.	No tandem parking is proposed	**N/A**
Where two or more car parking spaces are provided for a dwelling, at least one space must be under cover.	No dwellings are proposed.	**N/A**

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

Disabled car parking spaces must be designed in accordance with Australian Standard AS2890.6- 2009 (disabled) and the Building Code of Australia. Disabled car parking spaces may encroach into an accessway width specified in Table 2 by 500mm.	The disabled car spaces and shared areas are all 5.5m long x 2.4m wide, which meets/exceeds AS2890.6 requirements.	**Yes**

Table 7 – Design Standard 3 (Ramp Gradients)

Requirement	Response	Compliance
Accessway grades must not be steeper than 1:10 (10 per cent) within 5 metres of the frontage to ensure safety for pedestrians and vehicles. *The design must have regard to the wheelbase of the vehicle being designed for; pedestrian and vehicular traffic volumes; the nature of the car park; and the slope and configuration of the vehicle crossover at the site frontage.* *This does not apply to accessways serving three dwellings or less.*	This site is virtually flat and hence there will be no significant gradients.	**Yes**
Ramps (except within 5 metres of the frontage) must have the maximum grades as outlined in Table 3 and be designed for vehicles travelling in a forward direction. Type of car park / Length of ramp / Maximum grade Public car parks: 20 metres or less: 1:5 (20%); longer than 20 metres: 1:6 (16.7%) Private or residential car parks: 20 metres or less: 1:4 (25%); longer than 20 metres: 1:5 (20%)	As above, the site is virtually flat and there are no ramps proposed.	**Yes**
Where the difference in grade between two sections of ramp or floor is greater that 1:8 (12.5 per cent) for a summit grade change, or greater than 1:6.7 (15 per cent) for a sag grade change, the ramp must include a transition section of at least 2 metres to prevent vehicles scraping or bottoming.	No grade changes proposed.	**N/A**
Plans must include an assessment of grade changes of greater than 1:5.6 (18 per cent) or less than 3 metres apart for clearances, to the satisfaction of the responsible authority.	No grade changes proposed.	**N/A**

Accordingly, the proposal satisfies the purpose of Clause 52.06, specifically:

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.

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

7.2 Queuing Considerations

The service station provides generous queueing space. Two large cars can comfortably store behind vehicles parked at the fuel pumps. All pumps are independently accessible which minimises delays.

Bypass lanes allow for drivers to travel around the fuel pumps on either side if wishing to access the parking in front of the convenience store or avoid waiting for fuel (i.e. in the event they have entered the site and noticed significant queuing). This avoids the situation, though very unlikely, of cars queuing back to Bellarine Highway. Further, it is StudioWAY's experience that typically no more than 1 – 2 cars will wait for fuel, and drivers will typically drive on and look for another service station if queues exceed this.

The car wash provides queueing for two (2) cars at each bay, which in our experience is more than adequate. Further, the car wash bays are located far from the site entrances, meaning that any overspill will not occur to the surrounding road network.

Vehicle swept path assessment for key passenger vehicle movements is provided in Appendix A. This has been prepared for the Australian Standard B99 car (i.e. a large SUV or 4WD). Accordingly, more than sufficient queuing space is provided on the site.

7.3 Clause 52.29 – Land Adjacent to the Principal Road Network

The proposed development is subject to Clause 52.29 of the Greater Geelong Planning Scheme, which applies to land adjoining the Principal Road Network – specifically Bellarine Highway. This clause seeks to ensure appropriate access arrangements to key transport routes.

Under Clause 52.29, a planning permit is required to create or alter access to a road in a Transport Zone 2 (TRZ2). The application must also be referred to the relevant road authority, which in this case is the Department of Transport and Planning (DTP).

When assessing an application to alter access to the Principal Road Network, the responsible authority must consider:

- *The Municipal Planning Strategy and the Planning Policy Framework.*
- *The views of the relevant road authority.*
- *The effect of the proposal on the operation of the road and on public safety.*
- *Any policy made by the relevant road authority pursuant to Schedule 2, Clause 3 of the Road Management Act 2004 regarding access between a controlled access road and adjacent land.*

The development proposes access via separate left-in and left-out crossovers to Bellarine Highway. These will adequately accommodate the intended vehicle types, from cars and rigid trucks (using the high flow pumps) through to fuel tankers (20m long articulated vehicles).

The exit crossover is located in a position that will allow exiting drivers to enter gaps in the eastbound traffic stream, as well as to join slow moving queues of traffic at a red light as a result of 'courtesy gaps' by other drivers. Provision of both entry and exit crossovers to the main road (Bellarine Highway) is relatively common for corner sites at signalised intersections, where service stations and other 'customer orientated' uses (such as convenience restaurants) are typically located, and ensures commercial viability where such land uses are typically encouraged by planning zones.

There is little risk of drivers attempting to exit the site and U-turn back to the westbound direction, given this is a difficult movement, and opportunity is afforded for drivers to turn right onto Coppards Road and turn right into Bellarine Highway in a convenient and more comfortable way.

Swept path diagrams for a range of vehicle types are provided in Appendix A.

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

Clear signage and line marking will be required to reinforce permitted vehicle movements, both externally and within the site, and this can be provided by way of permit condition as part of a Signage and Line Marking Plan.

Accordingly, the proposal is not expected to significantly impact road operations or compromise public safety and complies with the requirements of Clause 52.29.

7.4 Coppards Road Access

StudioWAY has prepared a concept layout plan for a short channelised right turn treatment, i.e. a CHR(S), at the Coppards Road access point – refer Appendix B. This is similar to what was previously approved for the 149 Bellarine Highway planning application.

The design is in general accordance with Austroads Part 4A: Signalised & Unsignalised Intersections, maintaining the existing through lane widths (3.3m) and providing a 3.0m wide turn lane, which is considered acceptable to minimise parking losses, and noting that mostly cars will turn right into the site from the north (rather than trucks) given the surrounding road network.

7.5 Pedestrian Access

Separate pedestrian footpath connections are proposed to both Bellarine Highway and Coppards Road frontages. A footpath is not currently provided on Coppards Road but can be provided by permit condition as was required for the previous development application for 149 Bellarine Highway.

Internally, footpaths are provided on front of the retail tenancies, with marked walkways at key locations servicing the northern parking area, car wash and fuel pump areas.

7.6 Bus Stop Relocations

The proposed vehicle access arrangements will require relocation of both the Coppards Road and Bellarine Highway bus stops and shelters.

The Coppards Road bus stop can be relocated closer to the signalised intersection, in a similar manner to what was previously approved for the application at 149 Bellarine Highway.

The Bellarine Highway bus stop can be relocated to a position between the entry and exit crossovers that does not result in the bus overhanging either crossover, with more than sufficient room available.

It is envisaged that suitable permit conditions will be required by DTP as part of any permit issued.

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

8. Loading & Waste Collection

8.1 Loading

Clause 65 (Decision Guidelines) of the Greater Geelong Planning Scheme states that, prior to deciding on an application or approving a plan, the responsible authority must consider, where relevant, the adequacy of loading and unloading facilities, along with any associated impacts on amenity, traffic flow, and road safety.

There are two loading bays with which can accommodate Medium Rigid Vehicles (MRVs).

It is proposed that the fuel tanker will access the site via a left in movement from Bellarine Highway and exit the site via a left out onto Bellarine Highway. Access is also possible via Coppards Road.

Swept path assessment (refer Appendix A) has been undertaken using AutoTURN. This adopts standard 300mm clearance lines as specified in Section 5.4 of AS2890.2 that states:

Low speed manoeuvres (e.g. when entering or leaving a service bay or parking bay) — 300 mm on both sides of the vehicle.

The analysis indicates that trucks can readily access the site.

Accordingly, the loading arrangements are found satisfactory.

8.2 Waste Collection

Bins will be stored within the dedicated waste areas for each building. A standard 8.8m long rear-lift waste collection vehicle or a front lift waste collection vehicle (for steel bins associated with FD1) can satisfactorily access each loading area.

Refer swept path diagrams in Appendix A.

For additional information regarding waste collection, refer to the Waste Management Plan (WMP) prepared by StudioWAY.

9. Traffic Assessment

9.1 Trip Generation

The site includes a mix of uses that together will generate peak traffic in the weekday PM peak hour. This is because take away food premises, and car washes, are traditionally very low generators in the weekday AM peak hour.

Our traffic assessment therefore considers the critical weekday PM peak hour only.

9.1.1 Service Station Trip Generation

Traffic volumes generated by a service station can vary depending on factors such as site location, time of day, surrounding traffic conditions, and the inclusion of additional uses like a convenience store.

Traffic surveys conducted by other engineering firms at comparable service station sites – particularly along major urban arterial roads – indicate peak hour traffic generation typically ranges from 100 to 180 vehicle movements (two-way combined).

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

Guidance can also be sought from the TfNSW Guide to Transport Impact Assessment (2024). The guide includes equations to estimate daily and peak hour vehicle trips (refer Table 8), based on surveys of service stations undertaken in 2013. This includes nine (9) metropolitan Sydney sites and one site outside the Sydney metropolitan area.

Table 8 – TfNSW Service Station Trip Generation Equations

Time Period	Vehicle trip generation equation (vehicle trips/hour)
PM peak hour (PM)	(PM) = 0.0205(S) + 88.52 (R2 = 0.84)

(S) refers to the total site area in square metres

Based on a total effective site area of approximately 2,400m^2 (for the service station only), the PM peak hour volume is calculated at 138 trips (total, in and out) – refer Table 9.

Table 9 – Estimated Traffic Generation

Time Period	Inbound Movements (vehicles)	Outbound Movements (vehicles)	Total Movements (vehicles)
PM Peak Hour	69	69	138

It is important to recognise that the majority of vehicles accessing service stations are passing trade – that is, vehicles already travelling on the adjacent road network that temporarily divert to the site as part of a broader journey. Consequently, these trips do not constitute new or additional vehicle movements on the road network.

For the purpose of this assessment, and in line with commonly accepted industry assumptions, it is assumed that 80% of service station traffic consists of diverted trips from existing traffic on Bellarine Highway, with the remaining 20% representing new or unique trips.

Based on this assumption, Table 10 presents the estimated volume of unique traffic generated by the proposed service station.

Table 10 – Estimated Unique Trips

Time Period	Inbound Movements (vehicles)	Outbound Movements (vehicles)	Total Movements (vehicles)
PM Peak Hour	14	14	28

9.1.2 Car Wash Trip Generation

The anticipated trip generation for the car wash is estimated from first principles. To determine a maximum capacity for each bay a typical 5-minute duration is adopted per vehicle for automatic bays and 10-minute duration for manual bays. The vacuum bay will not have an additional generation rate as most trips will occur from customers who have already used the car wash.

Based on this the following rates are adopted, noting these are two-way rates.

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

Table 11 – Car Wash Trip Generation rates

Type of Bay	Vehicle trip generation equation (vehicle trips/hour)
Automatic (A)	(A) = 24(N)
Manual (M)	(M) = 12(N)

(N) = number of bays

Based on the proposed two (2) automatic wash bays and three (3) manual bays, it is estimated that 84 movements per hour will be generated (total in and out). This is conservatively high, assuming that constant arrivals are available for each bay.

For analysis purposes an even split between inbound and outbound traffic is adopted – refer Table 9.

Table 12 – Estimated Traffic Generation

Time Period	Inbound Movements (vehicles)	Outbound Movements (vehicles)	Total Movements (vehicles)
PM Peak Hour	42	42	84

Like the service station, the majority of vehicles will be passing trade. For the purpose of this assessment, and in line with commonly accepted industry assumptions, it is assumed that 80% of car wash traffic consists of diverted trips from existing traffic on Bellarine Highway, with the remaining 20% representing new or unique trips.

Based on this assumption, Table 10 presents the estimated volume of unique traffic generated by the proposed car wash.

Table 13 – Estimated Unique Trips

Time Period	Inbound Movements (vehicles)	Outbound Movements (vehicles)	Total Movements (vehicles)
PM Peak Hour	8	8	16

9.1.3 Food & Drink Trip Generation

Traffic volumes generated by a fast food can vary depending on factors such as site location, time of day, surrounding traffic conditions, and the inclusion of additional uses like a convenience store.

Guidance can also be sought from the TfNSW Guide to Transport Impact Assessment (2024). The guide includes an in-depth analysis report on "Fast food outlets (2016)" (refer Table 14), based on surveys of fast-food restaurants undertaken in 2016. This includes nine (9) metropolitan Sydney sites and seven (7) sites outside the Sydney metropolitan area noting that McDonalds has been excluded as they traditionally attracted a much higher patronage than other typical fast-food outlets and would be an outlier in this case. The rate combines PM network peak trip generation based on 'park & walk-in only' and 'park > 10 mins only', and excludes traffic associated with drive-through lanes.

Table 14 – TfNSW Service Station Trip Generation Equations

Time Period	Vehicle trip generation equation (vehicle trips/hour)
PM peak hour (PM)	(PM) = 8.9(GFA)

(GFA) = gross floor area per 100m^2

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

Based on the proposed combined building area of 402m^2, it is estimated that 36 movements per hour will be generated (total in and out). For analysis purposes an even split between inbound and outbound traffic is adopted – refer Table 15.

Table 15 – Estimated Traffic Generation

Time Period	Inbound Movements (vehicles)	Outbound Movements (vehicles)	Total Movements (vehicles)
PM Peak Hour	18	18	36

Like the service station, the majority of vehicles will be passing trade. For the purpose of this assessment, and in line with commonly accepted industry assumptions, it is assumed that 60% of service station traffic consists of diverted trips from existing traffic on Bellarine Highway, with the remaining 40% representing new or unique trips.

Based on this assumption, Table 13 presents the estimated volume of unique traffic generated by the proposed service station.

Table 16 – Estimated Unique Trips

Time Period	Inbound Movements (vehicles)	Outbound Movements (vehicles)	Total Movements (vehicles)
PM Peak Hour	7	7	14

9.1.4 Total Traffic Generation

Based on the above calculations, Table 17 presents the estimated volume of unique traffic generated by the proposed development overall.

Table 17 – Estimated Unique Trips

Trip	Inbound Movements (vehicles)	Outbound Movements (vehicles)	Total Movements (vehicles)
Diverted	86	86	171
Unique	43	43	86
Total	**129**	**129**	**257**

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

9.2 Traffic Distribution

The traffic distribution of the development can be estimated having regard to the site's location, likely catchment areas and the existing distribution of traffic flow on Bellarine Highway. The following estimates are made:

- 80% to/from Bellarine Highway
  - All vehicles that exit onto Bellarine Highway continue east at the intersection
- 20% to/from Coppards Road
  - 15% to the south
    - 7% to Bellarine Highway eastbound
    - 4% to Bellarine Highway westbound
    - 4% to Coppards Road southbound
  - 15% from the south
    - 12% from Bellarine Highway westbound
    - 3% from Coppards Road northbound
  - 5% to/from the north

The anticipated peak hour traffic distribution is shown in Figure 11.

The anticipated peak hour traffic volumes generated by the development are shown in Figure 12.

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026



Figure 11 – Traffic Distribution

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

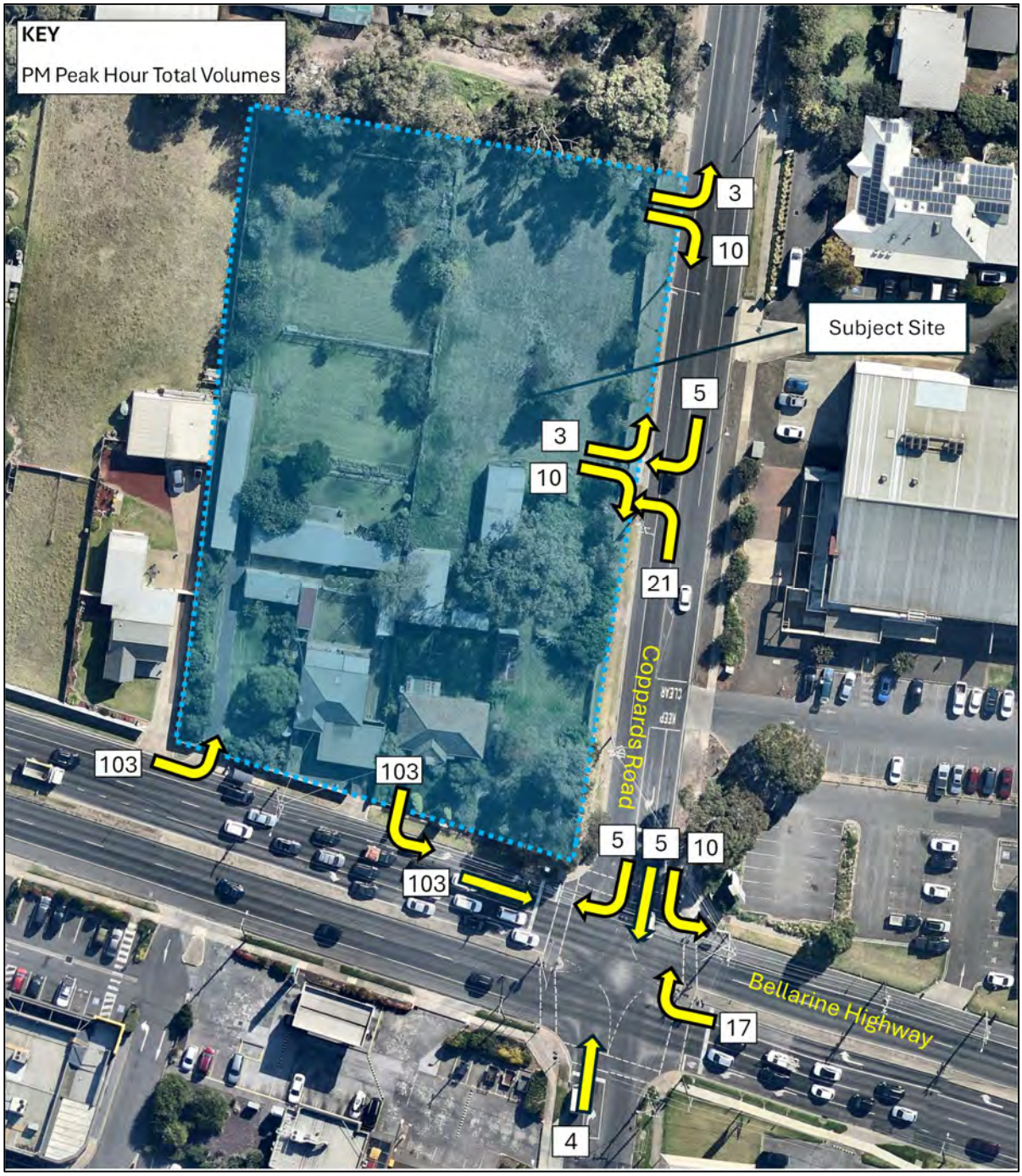


Figure 12 – Total Traffic Generated

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

The anticipated unique and diverted peak hour traffic volumes at the Bellarine Highway and Coppards Road intersection are shown in Figure 11.

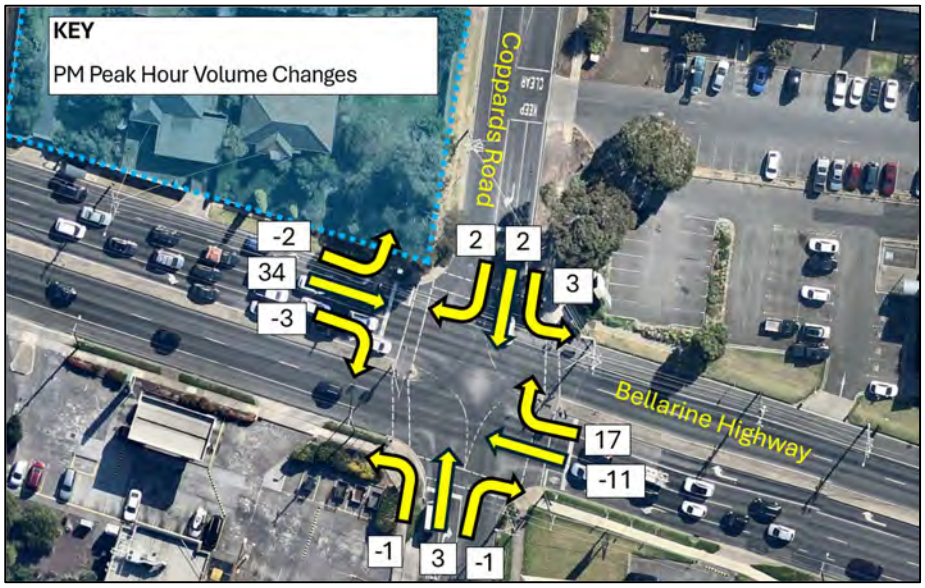


Figure 13 – Unique and diverted trips

These volumes are adopted for the intersection for the purposes of the SIDRA assessment.

9.3 Traffic Impact

9.3.1 SIDRA Analysis

To assess the performance of the intersection of Bellarine Highway and Coppards Road, traffic modelling has been undertaken using SIDRA Intersection, a widely accepted software package used by traffic engineers and road authorities in Australia and internationally. SIDRA (Signalised and Unsignalised Intersection Design and Research Aid) performs micro-analytical modelling of individual intersections and networks, accounting for traffic volumes, control types, geometric layouts, and user behaviour.

The analysis provides a range of outputs that assist in evaluating intersection performance. The key performance measures considered in this assessment include:

- **Average Delay (seconds/vehicle):** This represents the average time a vehicle is delayed at an intersection due to control measures (e.g. signals, give way). Delay is a critical indicator of intersection efficiency and user experience.
- **Level of Service (LOS):** LOS is a qualitative rating derived from average delay and categorised from A (excellent operation with minimal delay) to F (over-saturated conditions with high delay). LOS provides a simple, recognisable summary of performance.
- **95th Percentile Queue Length (metres):** This indicates the maximum queue length expected in 95% of traffic signal cycles or time intervals, providing insight into storage requirements and potential for queuing spill-back.
- **Degree of Saturation (DoS):** The ratio of traffic demand to the available capacity for a movement or approach, expressed as a decimal. A DoS of 1.00 indicates that demand equals capacity (i.e. the movement is operating at full capacity), while values above 1.00 suggest oversaturation and potential queuing or delays. DoS is a critical indicator of how close an intersection or movement is to exceeding its operational capacity.

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

Level of Service	Control delay per vehicle in seconds (d) (*including geometric delay*)		
	Signals	"SIDRA Roundabout LOS" method (1)	Sign Control
A	d ≤ 10	d ≤ 10	d ≤ 10
B	10 < d ≤ 20	10 < d ≤ 20	10 < d ≤ 15
C	20 < d ≤ 35	20 < d ≤ 35	15 < d ≤ 25
D	35 < d ≤ **55**	35 < d ≤ **50**	25 < d ≤ **35**
E	**55** < d ≤ 80	**50** < d ≤ 70	**35** < d ≤ 50
F	80 < d	70 < d	50 < d

LOS Target

Source: SIDRA User Guide

Figure 14 – Level of Service Ratings

These measures collectively inform whether an intersection is operating within acceptable performance thresholds, that may consider both existing and future traffic conditions, with and without the proposed development.

9.3.2 Assumptions

Default SIDRA settings and parameters have been adopted.

Existing phasing has been adopted based on that specified in the Operation Sheet for the intersection.

A standard 120 second cycle time has been used for analysis purposes.

9.3.3 SIDRA Results – Existing Conditions

The results of the SIDRA analysis for existing conditions are presented in Table 15, and for post-development conditions in Table 16.

The SIDRA movement summaries are attached in Appendix C.

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

Table 18 – SIDRA Analysis Results (PM Peak Hour)

Location	Approach	Movement	Performance Parameters (PM Peak Hour)			
			Level of Service	DOS	95%ile Queue (m)	Avg Delay (s)
Bellarine Highway / Coppards Road	Coppards Rd (South)	Left	D	0.471	69.1	50.1
		Through	D	0.471	69.1	44.5
		Right	D	0.310	24.9	39.3
	Bellarine Hwy (East)	Left	D	0.147	29.0	45.0
		Through	E	0.881	298.0	55.3
		Right	F	0.881	67.8	85.4
	Coppards Rd (North)	Left	D	0.500	75.0	50.4
		Through	D	0.500	75.0	44.8
		Right	D	0.680	59.2	47.6
	Bellarine Hwy (West)	Left	C	0.088	16.8	31.6
		Through	C	0.528	133.9	28.4
		Right	E	0.260	17.1	63.3

9.3.4 SIDRA Results – Post Development Conditions

Table 19 – SIDRA Analysis Results (PM Peak Hour)

Location	Approach	Movement	Performance Parameters (PM Peak Hour)			
			Level of Service	DOS	95%ile Queue (m)	Avg Delay (s)
Bellarine Highway / Coppards Road	Coppards Rd (South)	Left	D	0.476	70.0	50.1
		Through	D	0.476	70.0	44.6
		Right	D	0.310	24.6	39.4
	Bellarine Hwy (East)	Left	D	0.150	29.5	46.3
		Through	E	0.896	306.7	59.3
		Right	F	0.896	77.1	86.7
	Coppards Rd (North)	Left	D	0.513	77.1	50.5
		Through	D	0.513	77.1	45.0
		Right	D	0.691	60.1	48.1
	Bellarine Hwy (West)	Left	C	0.087	16.5	34.1
		Through	C	0.569	146.3	30.6
		Right	E	0.218	15.6	61.3

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

9.3.5 Summary of Results

The SIDRA analysis indicates that the proposed development will have negligible adverse impact on the operation of the Bellarine Highway and Coppards Road intersection during the critical weekday PM on-road peak hour.

Whilst the intersection is currently experiencing notable delays for some movements, this is not unusual for signalised intersections on major highways, and the Degree of Saturation remains well below the typically accepted limit of 0.95 (for signals) beyond which delays increase disproportionately.

There will be no change in Level of Service for any movements, and negligible increases in queues and delays overall.

The previous permit condition by DTP required that the proposed right-turn deceleration lane in Coppards Road not adversely impact the existing right turn lane on Coppards Road on the north approach to the Bellarine Highway intersection. The SIDRA results indicate that the existing right-turn 95th percentile right turn queue length is 59.2m, which will increase marginally to 60.1m post-development. At present this queue will spill into the southbound through/left lane, and this does not change with the addition of a right-turn lane into the development.

10. RFI Response

A response to Councils RFI of 17 March 2026 is provided in Table 20.

Table 20 – RFI Response

Council Comment / Request	Response
3. The Traffic Impact Assessment outlines that there is a shortfall of 12 bicycle spaces compared to the required bicycle facilities under Clause 52.34 - Bicycle Facilities. The application will be required to be amended to include reduction of Bicycle Facilities as a permit trigger. Otherwise, the plans should be updated to show the required bicycle facilities. If the application is amended to include reduction of Bicycle Facilities additional fees of $748.05 will be required.	The plans have now been amended to include 12 bicycle spaces, meeting the Planning Scheme requirement.
23. The Council's Traffic Engineer has suggested that the air hose for the proposed service station may be better located within its own designated bay away from the Convenience shop so as to avoid it being used as car parking.	The Air & Water Bay is retained in the same location next to the service station convenience shop, on the southern end of the row of car parking. This location has the advantage of being readily seen and ensuring that pedestrians can inflate tyres safely away from moving vehicles.
24. It is advised that a pedestrian footpath within Coppards Road adjacent the eastern boundary of the site will be sought. This can be shown on plans, or required by conditions, if a permit were issued.	A permit condition can be adopted to this effect.

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

25. The Council's Civil Infrastructure unit has advised that it will request a 3m x 3m visibility splay at the south-eastern corner of the subject site at the intersection of Coppards Road and Bellarine Highway.	This could be adopted as a permit condition. It will have no material impact on any structures, pathways or parking areas.

11. Conclusions

Having regard to the assessments and considerations made in respect of the proposed warehouse development, it is concluded that:

- The Planning Scheme car parking requirement is indeterminate and therefore must be demonstrated to the satisfaction of Council.
- A Car Parking Demand Assessment finds an estimated peak demand of up to 15 car spaces. With 36 car spaces proposed, this is surplus to the demand and therefore satisfactory.
- The Planning Scheme bicycle parking requirement is 12 spaces. This is met by the proposal.
- The design of the car parking and vehicle access arrangements complies with relevant Planning Scheme and Australian Standard requirements, as applicable. Signage and line marking requirements, details regarding bus stop relocations, and the need for a footpath on Coppards Road, are envisaged to be dealt with by way of permit conditions.
- Loading, fuel tanker access and waste collection can all satisfactorily occur on-site.
- The additional traffic generated by the development will have negligible adverse impact on the safety and operation of the intersection of Bellarine Highway and Coppards Road, and the surrounding road network.

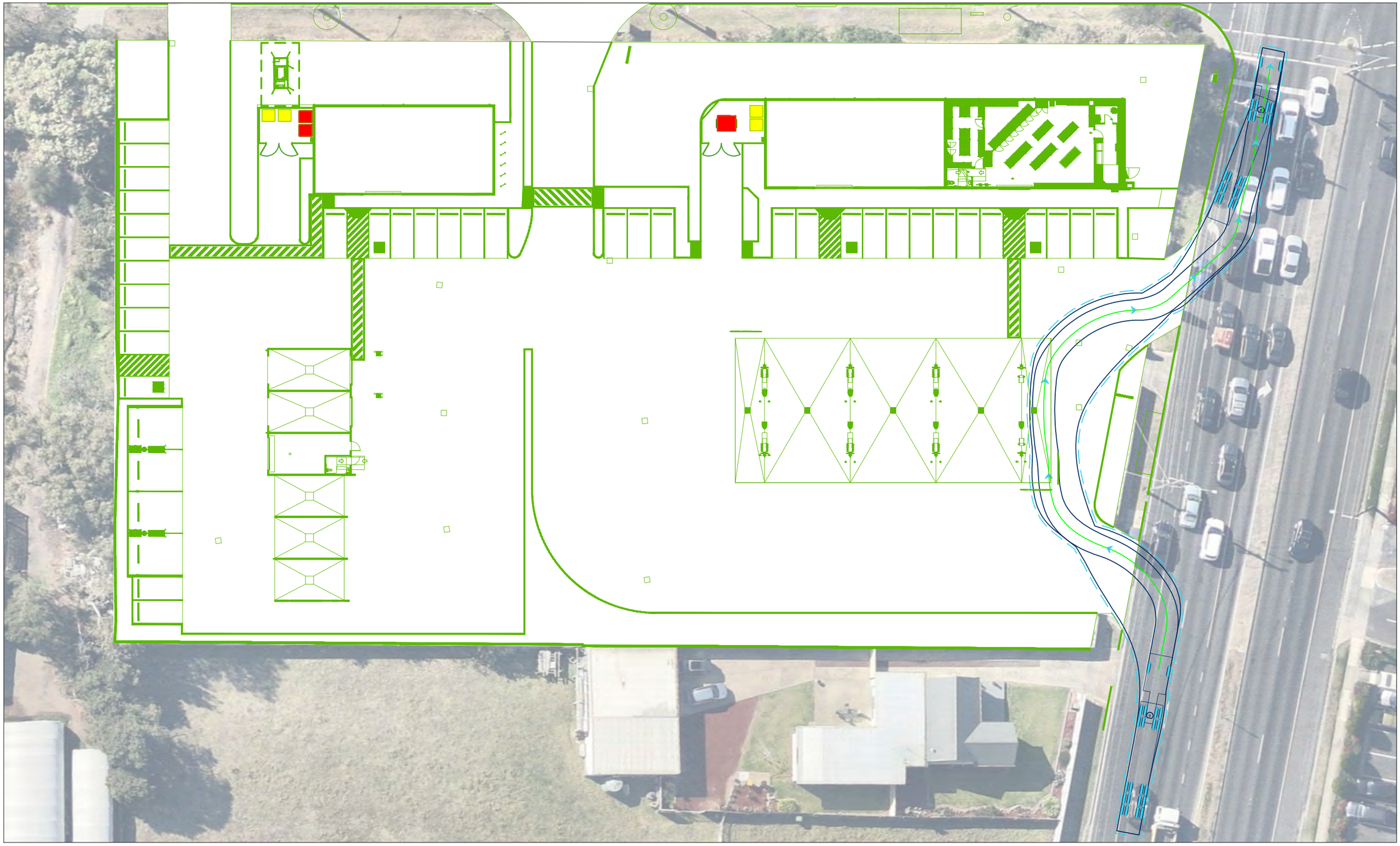
Accordingly, the parking and traffic aspects of the proposed development are satisfactory, and we find no reason for refusal of the sought Planning Permit.

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

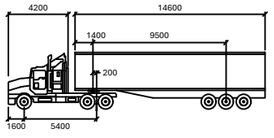
Appendix A

SWEPT PATH DIAGRAMS

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026



Refuelling



AV

	mm		
Tractor Width	: 2500	Lock to Lock Time	: 6.0
Trailer Width	: 2500	Steering Angle	: 28.3
Tractor Track	: 2500	Articulating Angle	: 72.0
Trailer Track	: 2500		

Vehicle Envelope / Front Wheel Path

Vehicle Centreline

300mm Clearance

Min. Design Speed 5km/h

147-149 Bellarine Highway, Newcomb

Proposed Mixed-Use Development

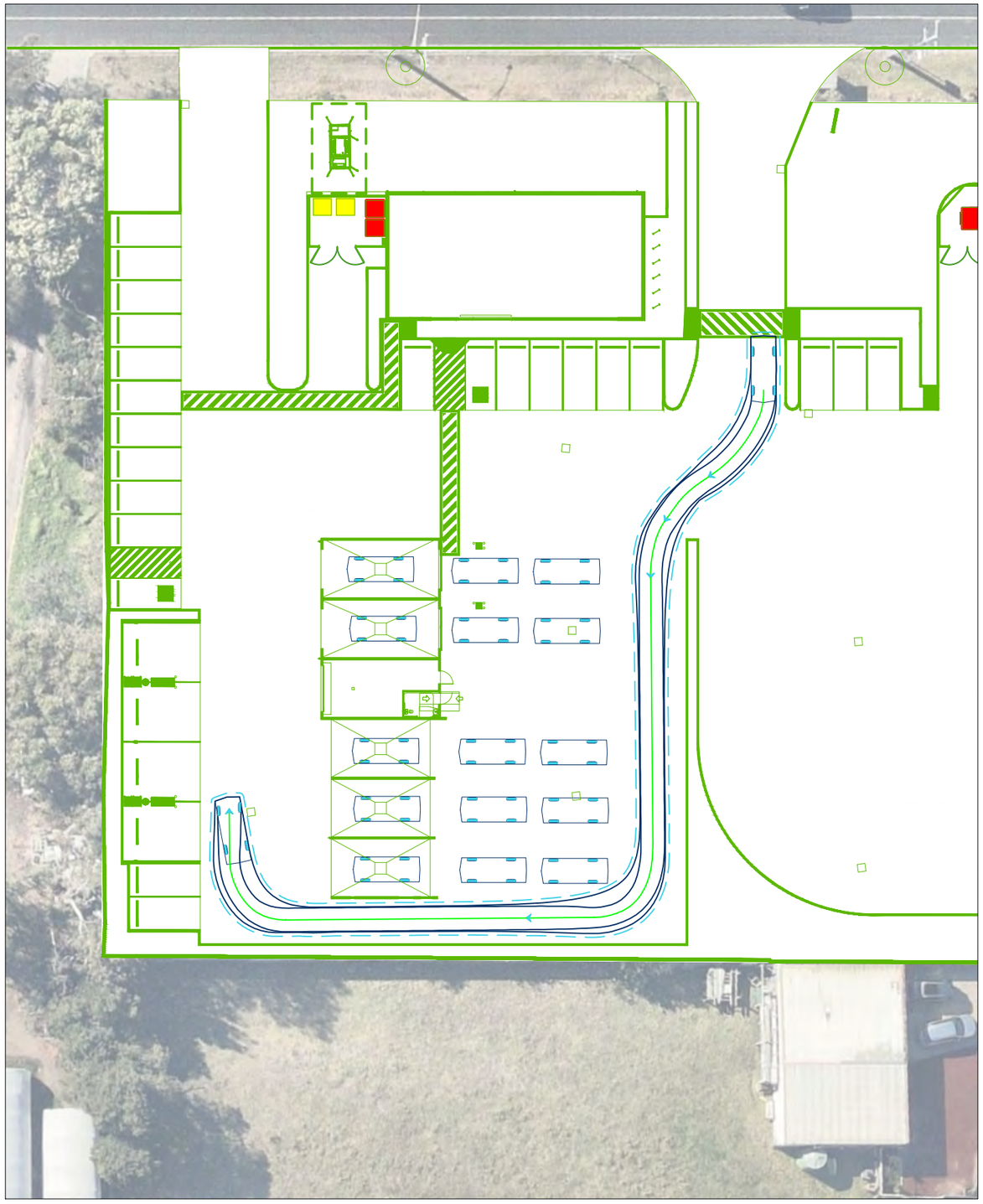
Swept Path Anaylsis

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DATE: 23.04.2026
DWG No: 25036_SPA01
SHEET No: 1 of 5
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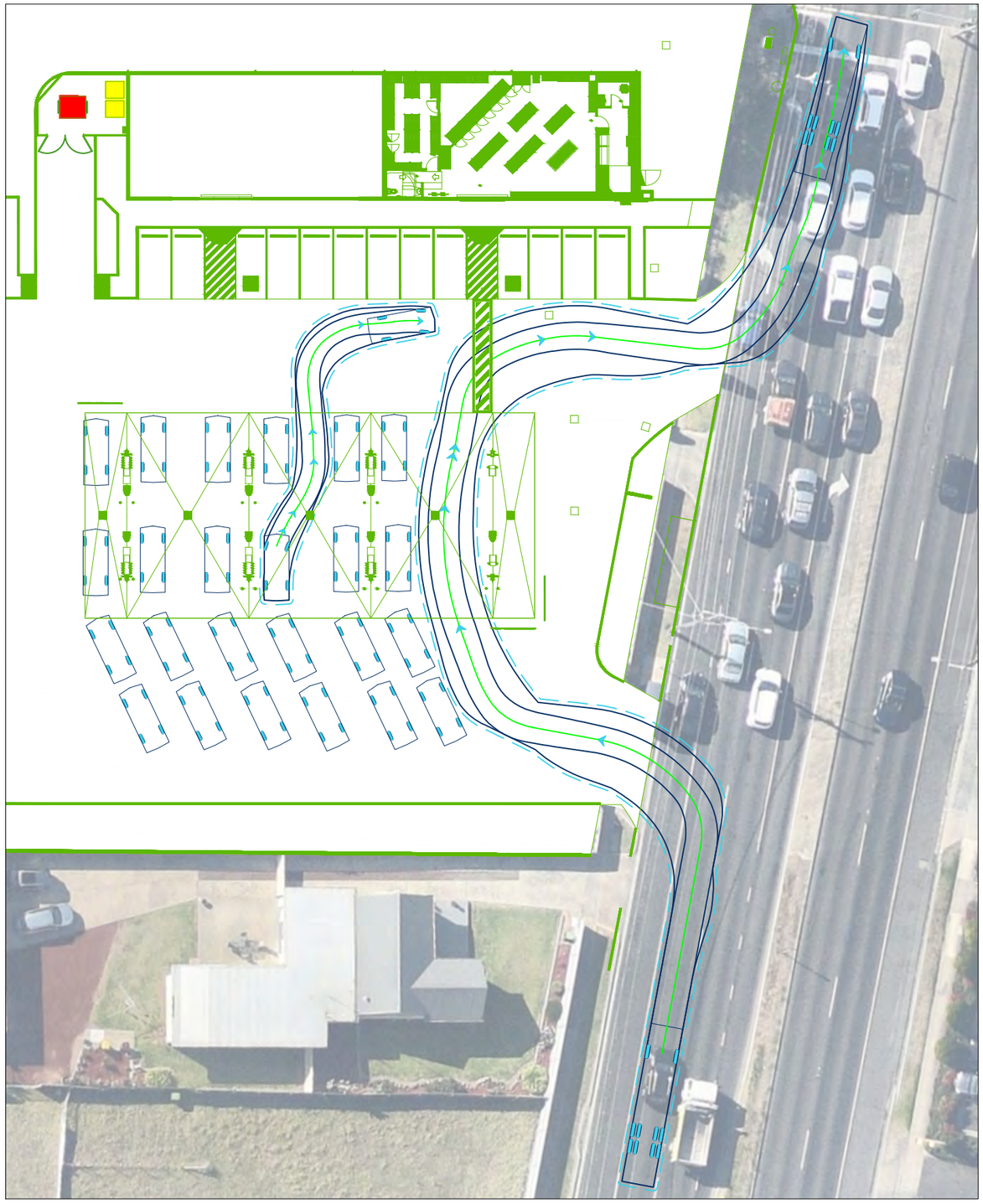
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StudioWAY
TRAFFIC, TRANSPORT & WASTE

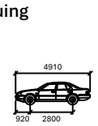
City of Greater Geelong, Statutory Planning - Date Received 28/7/2026



Car Wash Queuing

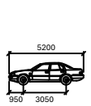


Petrol Pump Queuing



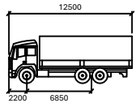
B85

	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	: 6.0
Steering Angle	: 34.1



B99

	mm
Width	: 1940
Track	: 1840
Lock to Lock Time	: 6.0
Steering Angle	: 33.9



HRV

	mm
Width	: 2500
Track	: 2500
Lock to Lock Time	: 6.0
Steering Angle	: 36.7

Vehicle Envelope / Front Wheel Path

Vehicle Centreline

300mm Clearance

Min. Design Speed 5km/h

147-149 Bellarine Highway, Newcombe

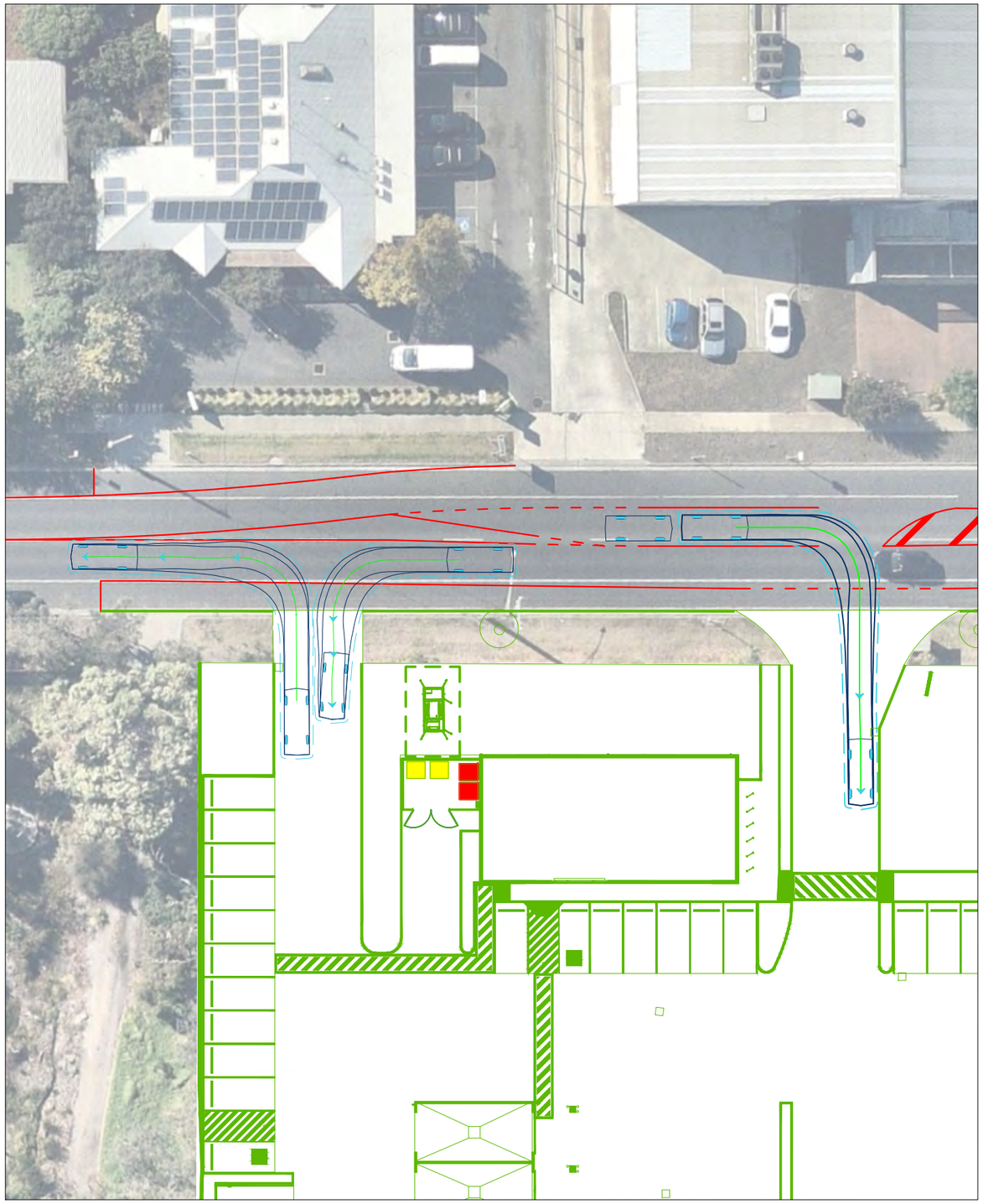
Proposed Mixed-Use Development
Swept Path Anaylsis

DRAWN / CHECKED: NA/JW
DATE: 23.04.2026
DWG No: 25036_SPA01
SHEET No: 2 of 5
REVISION: B

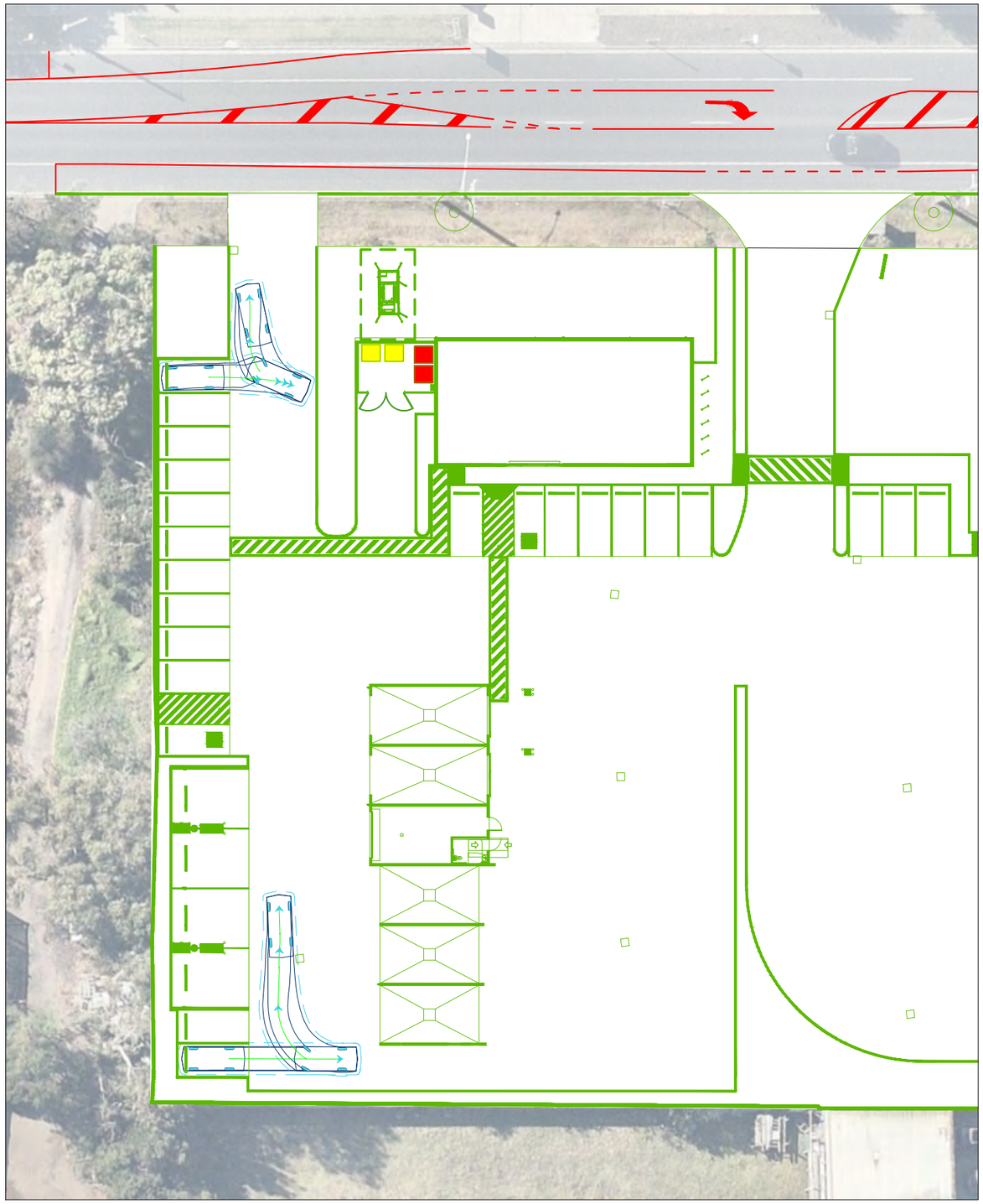
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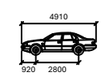
City of Greater Geelong, Statutory Planning - Date Received 28/7/2026



Turn Lane Ingress/Far Exit Access



End Space Egress



B85

	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	: 6.0
Steering Angle	: 34.1



B99

	mm
Width	: 1940
Track	: 1840
Lock to Lock Time	: 6.0
Steering Angle	: 33.9

Vehicle Envelope / Front Wheel Path

Vehicle Centreline

300mm Clearance

Min. Design Speed 5km/h

147-149 Bellarine Highway, Newcombe

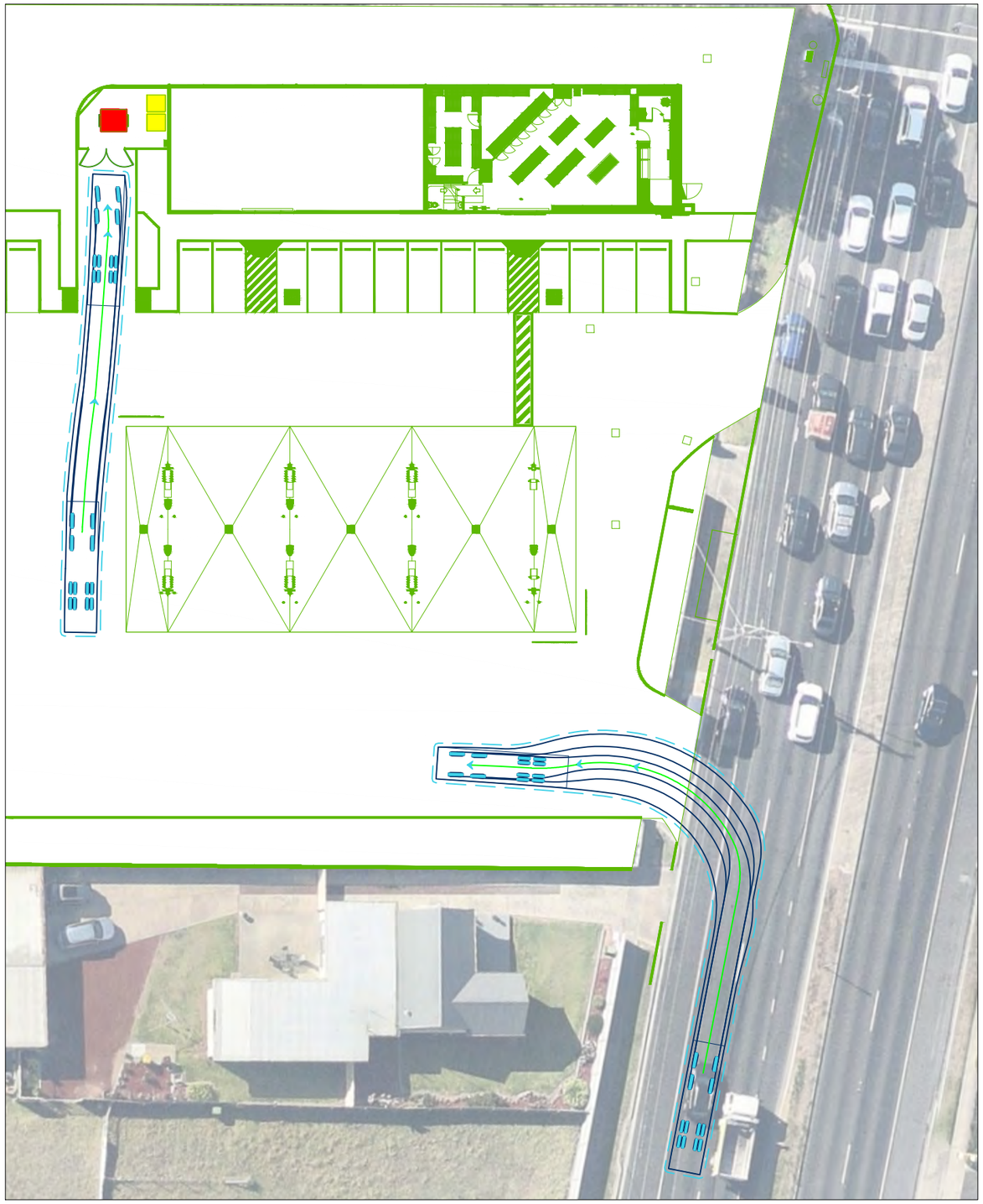
Proposed Mixed-Use Development
Swept Path Anaylsis

DRAWN / CHECKED: NA/JW
DATE: 23.04.2026
DWG No: 25036_SPA01
SHEET No: 3 of 5
REVISION: B

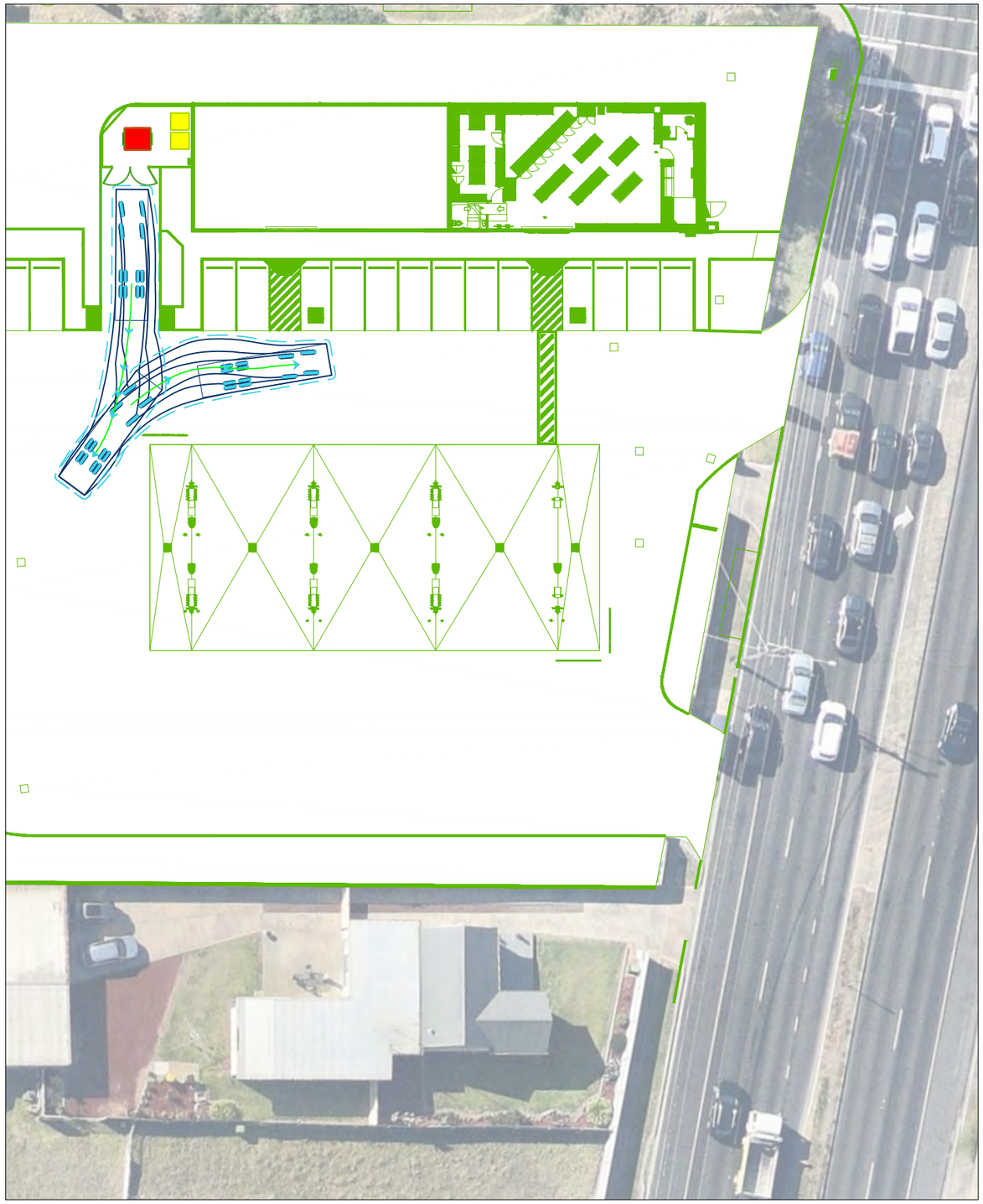
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StudioWAY
TRAFFIC, TRANSPORT & WASTE

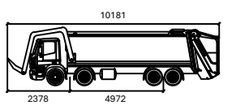
City of Greater Geelong, Statutory Planning - Date Received 28/7/2026



Waste Area 1 In



Waste Area 1 Out



8x4 Overhead Loader

	mm
Width	: 2490
Track	: 1910
Lock to Lock Time	: 6.0
Steering Angle	: 27.1

Vehicle Envelope / Front Wheel Path

Vehicle Centreline

300mm Clearance

Min. Design Speed 5km/h

147-149 Bellarine Highway, Newcombe

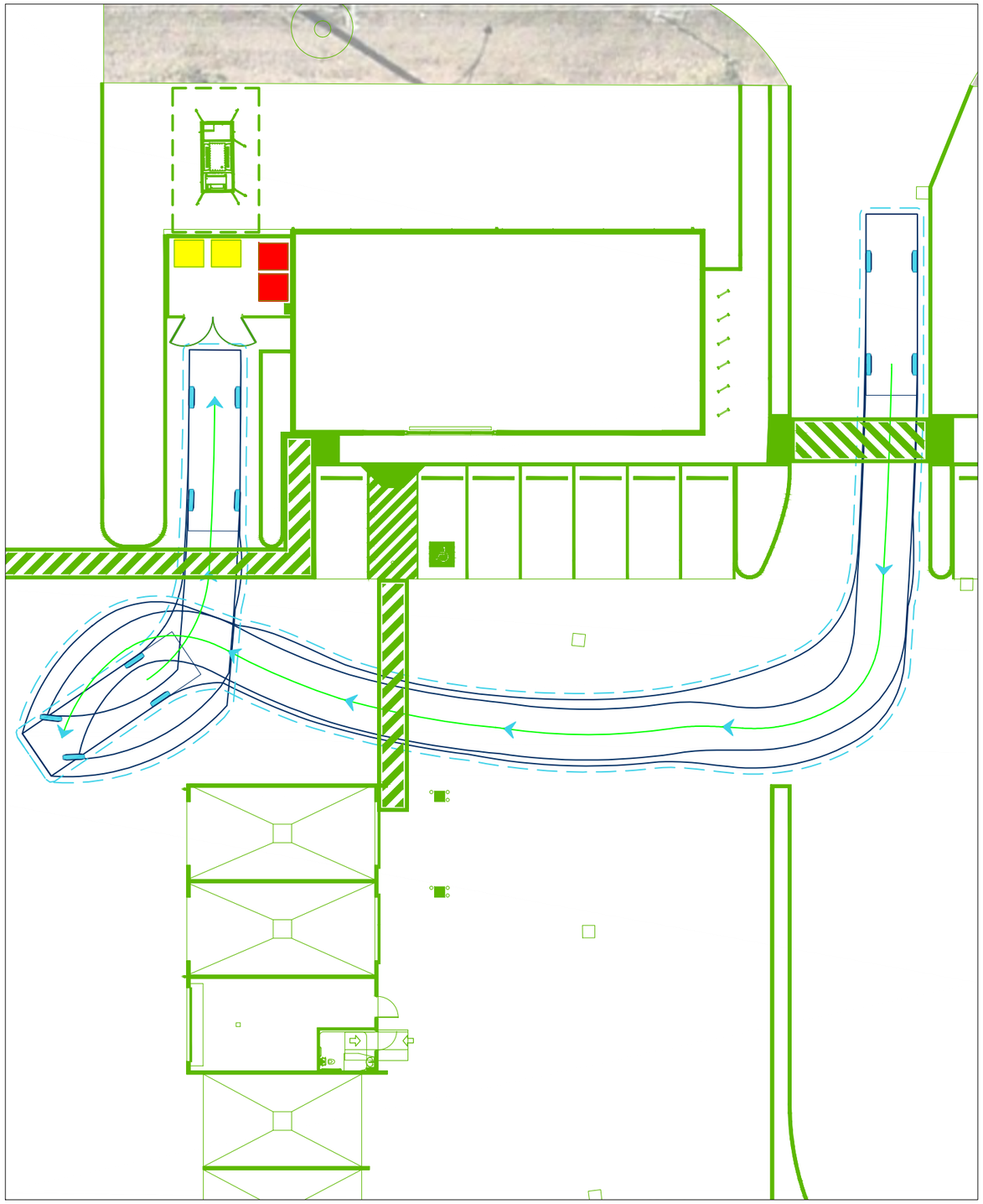
Proposed Mixed-Use Development
Swept Path Anaylsis

DRAWN / CHECKED: NA/JW
DATE: 23.04.2026
DWG No: 25036_SPA01
SHEET No: 4 of 5
REVISION: B

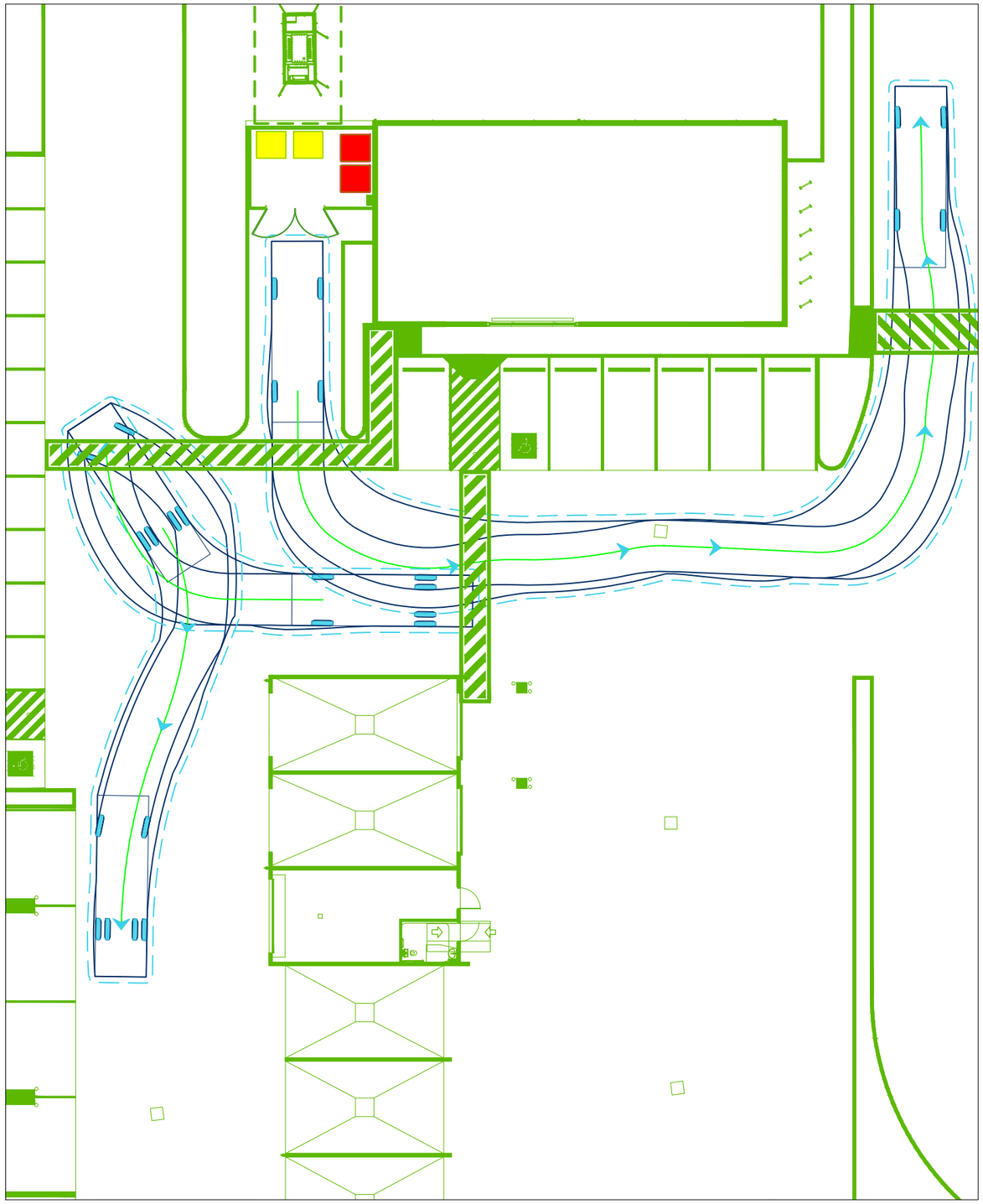
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StudioWAY
TRAFFIC, TRANSPORT & WASTE

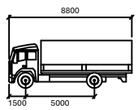
City of Greater Geelong, Statutory Planning - Date Received 28/7/2026



Waste Area 2 In



Vac Bay In/Waste Area 2 Out



MRV

	mm
Width	: 2500
Track	: 2500
Lock to Lock Time	: 6.0
Steering Angle	: 34.0

Vehicle Envelope / Front Wheel Path

Vehicle Centreline

300mm Clearance

Min. Design Speed 5km/h

147-149 Bellarine Highway, Newcombe

Proposed Mixed-Use Development
Swept Path Anaylsis

DRAWN / CHECKED: NA/JW
DATE: 23.04.2026
DWG No: 25036_SPA01
SHEET No: 5 of 5
REVISION: B

SCALE: 1:250 @ A3

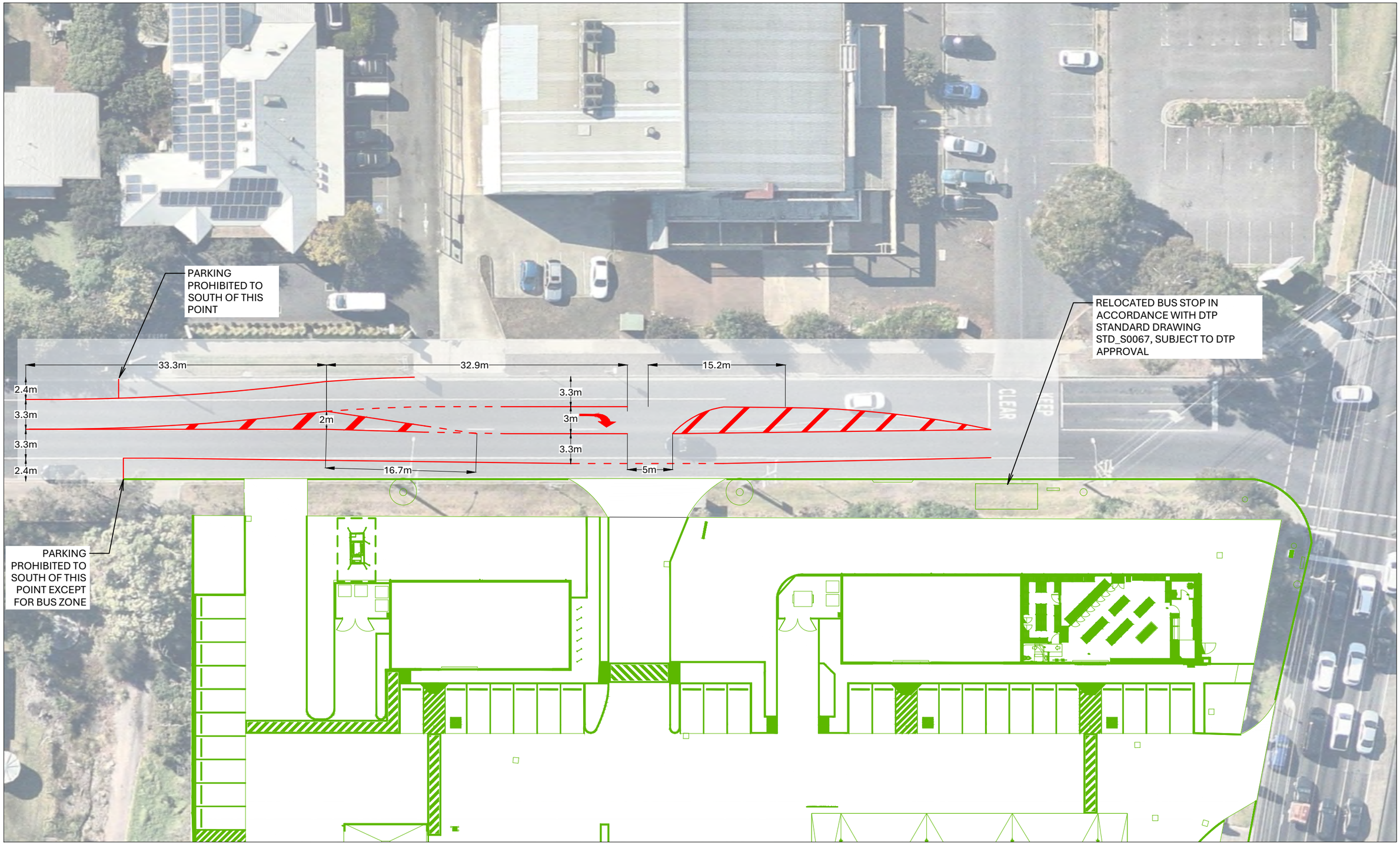
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Appendix B

CONCEPT LAYOUT – COPPARDS ROAD ACCESS

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Turn Lane Concept Layout Plan

147-149 Bellarine Highway, Newcomb

Proposed Mixed-Use Development
Concept Layout Plan - Right Turn Lane

DRAWN / CHECKED: NA/JW
DATE: 23.04.2026
DWG No: 25036_CLP01
SHEET No: 1 of 1
REVISION: B

SCALE: 1:400 @ A3

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City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

Appendix C

SIDRA RESULTS

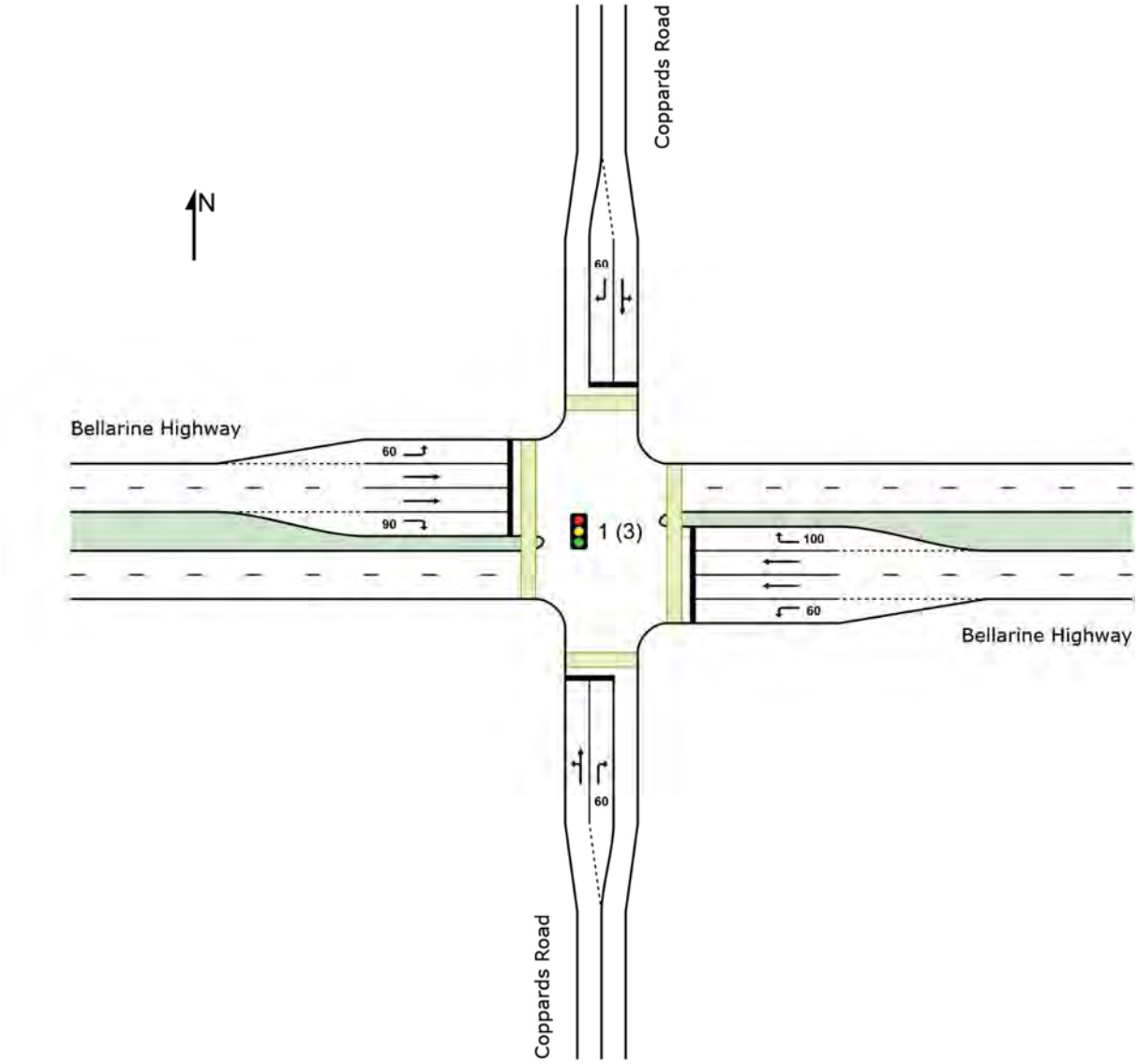
City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

SITE LAYOUT

Site: Site Layout (Intersection of Bellarine Highway and Coppards Road)

Intersection of Bellarine Highway and Coppards Road
Site Category: Intersection
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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



City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

MOVEMENT SUMMARY

Site: Existing Conditions (Intersection of Bellarine Highway and Coppards Road)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Intersection of Bellarine Highway and Coppards Road
Site Category: Intersection
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120.0 seconds (Site Optimum Cycle Time - Minimum Delay)
Site Scenario: Existing Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Coppards Road															
1	L2	All MCs	154	0.0	154	0.0	0.471	50.1	LOS D	9.9	69.1	0.92	0.80	0.92	32.5
2	T1	All MCs	38	0.0	38	0.0	0.471	44.5	LOS D	9.9	69.1	0.92	0.80	0.92	33.3
3	R2	All MCs	83	0.0	83	0.0	0.310	39.3	LOS D	3.6	24.9	0.91	1.05	0.91	28.3
Approach			275	0.0	275	0.0	0.471	46.1	LOS D	9.9	69.1	0.92	0.87	0.92	31.2
East: Bellarine Highway															
4	L2	All MCs	120	0.0	120	0.0	0.147	45.0	LOS D	4.1	29.0	0.63	0.74	0.63	43.9
5	T1	All MCs	1392	0.0	1392	0.0	* 0.881	55.3	LOS E	42.6	298.0	0.99	0.98	1.10	38.8
6	R2	All MCs	146	0.0	146	0.0	* 0.881	85.4	LOS F	9.7	67.8	1.00	0.96	1.35	27.9
Approach			1658	0.0	1658	0.0	0.881	57.2	LOS E	42.6	298.0	0.96	0.96	1.09	33.2
North: Coppards Road															
7	L2	All MCs	103	0.0	103	0.0	0.500	50.4	LOS D	10.7	75.0	0.93	0.79	0.93	33.0
8	T1	All MCs	103	0.0	103	0.0	* 0.500	44.8	LOS D	10.7	75.0	0.93	0.79	0.93	33.8
9	R2	All MCs	188	0.0	188	0.0	* 0.680	47.6	LOS D	8.5	59.2	0.98	1.11	1.02	26.2
Approach			395	0.0	395	0.0	0.680	47.6	LOS D	10.7	75.0	0.95	0.95	0.97	29.5
West: Bellarine Highway															
10	L2	All MCs	72	0.0	72	0.0	0.088	31.6	LOS C	2.4	16.8	0.61	0.72	0.61	44.2
11	T1	All MCs	891	0.0	891	0.0	0.528	28.4	LOS C	19.1	133.9	0.78	0.69	0.78	46.6
12	R2	All MCs	43	0.0	43	0.0	0.260	63.3	LOS E	2.4	17.1	0.97	0.74	0.97	30.8
Approach			1005	0.0	1005	0.0	0.528	30.1	LOS C	19.1	133.9	0.78	0.69	0.78	44.1
All Vehicles			3333	0.0	3333	0.0	0.881	47.0	LOS D	42.6	298.0	0.90	0.87	0.97	35.1

City of Greater Geelong, Statutory Planning - Date Received 28/7/2026

MOVEMENT SUMMARY

Site: Post Development Conditions (Intersection of Bellarine Highway and Coppards Road)
Output produced by SIDRA INTERSECTION Version: 10.0.8.241

Intersection of Bellarine Highway and Coppards Road
Site Category: Intersection
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120.0 seconds (Site Optimum Cycle Time - Minimum Delay)
Site Scenario: Post Development Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Coppards Road															
1	L2	All MCs	153	0.0	153	0.0	0.476	50.1	LOS D	10.0	70.0	0.92	0.80	0.92	32.5
2	T1	All MCs	41	0.0	41	0.0	0.476	44.6	LOS D	10.0	70.0	0.92	0.80	0.92	33.3
3	R2	All MCs	82	0.0	82	0.0	0.310	39.4	LOS D	3.5	24.6	0.91	1.05	0.91	28.3
Approach			276	0.0	276	0.0	0.476	46.1	LOS D	10.0	70.0	0.92	0.87	0.92	31.2
East: Bellarine Highway															
4	L2	All MCs	120	0.0	120	0.0	0.150	46.3	LOS D	4.2	29.5	0.64	0.74	0.64	43.5
5	T1	All MCs	1380	0.0	1380	0.0	* 0.896	59.3	LOS E	43.8	306.7	1.00	1.02	1.14	37.4
6	R2	All MCs	164	0.0	164	0.0	* 0.896	86.7	LOS F	11.0	77.1	1.00	0.98	1.37	27.7
Approach			1664	0.0	1664	0.0	0.896	61.1	LOS E	43.8	306.7	0.97	0.99	1.13	32.1
North: Coppards Road															
7	L2	All MCs	106	0.0	106	0.0	0.513	50.5	LOS D	11.0	77.1	0.93	0.80	0.93	32.9
8	T1	All MCs	105	0.0	105	0.0	* 0.513	45.0	LOS D	11.0	77.1	0.93	0.80	0.93	33.7
9	R2	All MCs	191	0.0	191	0.0	* 0.691	48.1	LOS D	8.6	60.1	0.99	1.12	1.03	26.0
Approach			402	0.0	402	0.0	0.691	47.9	LOS D	11.0	77.1	0.96	0.95	0.98	29.4
West: Bellarine Highway															
10	L2	All MCs	69	0.0	69	0.0	0.087	34.1	LOS C	2.4	16.5	0.62	0.72	0.62	43.9
11	T1	All MCs	937	0.0	937	0.0	0.569	30.6	LOS C	20.9	146.3	0.81	0.72	0.81	45.8
12	R2	All MCs	40	0.0	40	0.0	0.218	61.7	LOS E	2.2	15.6	0.96	0.74	0.96	31.2
Approach			1046	0.0	1046	0.0	0.569	32.1	LOS C	20.9	146.3	0.80	0.72	0.80	43.2
All Vehicles			3388	0.0	3388	0.0	0.896	49.3	LOS D	43.8	306.7	0.92	0.89	0.99	34.3