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Traffic Engineering Assessment

Proposed Mixed Use Development

251-261 Springvale Road, Glen Waverley

Prepared for
Hongxing Springvale Road Pty Ltd

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G28397R-01C

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Table of Contents

1.	Introduction.....	1
2.	Existing Conditions.....	2
2.1.	<i>Subject Site & Use.....</i>	2
2.2.	<i>Planning Scheme Zones & Surrounding Uses.....</i>	3
2.3.	<i>Road Network.....</i>	5
3.	Proposal.....	8
3.1.	<i>The Development.....</i>	8
3.2.	<i>Car Parking Provisions & Vehicle Access.....</i>	8
3.3.	<i>Bicycle & Motorcycle Parking.....</i>	8
3.4.	<i>Loading & Waste Collection.....</i>	9
4.	Car Parking Considerations.....	10
4.1.	<i>Statutory Requirements – Clause 52.06.....</i>	10
4.2.	<i>Car Parking Demand Assessment.....</i>	12
4.2.1.	<i>Sustainable Modes of Transport.....</i>	13
4.3.	<i>Allowing Fewer Car Spaces.....</i>	16
4.3.1.	<i>Car Parking Availability.....</i>	16
4.3.2.	<i>Relevant Policy.....</i>	17
4.3.3.	<i>Activity Centre Guidelines.....</i>	18
4.3.4.	<i>Appropriateness of Sought Reduction.....</i>	18
4.4.	<i>Car Parking Layout & Access Arrangements.....</i>	19
5.	Traffic Considerations.....	20
5.1.	<i>Traffic Generation.....</i>	20
5.1.1.	<i>Proposed Residential Component.....</i>	20
5.1.2.	<i>Proposed Retail Component.....</i>	20
5.1.3.	<i>Total Traffic Generation.....</i>	20
5.2.	<i>Traffic Distribution & Impact.....</i>	21
6.	Bicycle Considerations.....	23
7.	Loading Considerations.....	24
8.	Conclusions.....	25

List of Figures

Figure 1: Locality Map	2
Figure 2: Nearmap Aerial Photograph – Subject Site	3
Figure 3: Planning Zone Map - Monash	4
Figure 4: Springvale Road - View North	6
Figure 5: Springvale Road - View South	6
Figure 6: Glenway Arcade - View North	6
Figure 7: Glenway Arcade - View South	6
Figure 8: O’Sullivan Road - View East	6
Figure 9: O’Sullivan Road - View West	6
Figure 10: Right of Way - View East	7
Figure 11: Right of Way - View West	7
Figure 12: Monash PPTN Area Map	11
Figure 13: PTV Public Transport Map - Monash	14
Figure 14: Inbound/Outbound Traffic Routes	22

List of Tables

Table 1: Proposed Development Schedule	8
Table 2: Statutory Car Parking Requirements (Clause 52.06)	11
Table 3: Public Transport Services in the Vicinity of the Subject Site	13
Table 4: ABS car ownership statistics (2016)	15
Table 5: Projected Future Traffic Generation	21
Table 6: Statutory Bicycle Parking Requirements	23

List of Appendices

Appendix A Swept Paths

1. Introduction

Traffix Group has been engaged by Hongxing Springvale Road Pty Ltd to undertake a Traffic Engineering Assessment for the proposed mixed use development at 251-261 Springvale Road, Glen Waverley.

This report provides a detailed traffic engineering assessment of the parking and traffic issues associated with the proposed development.

In the course of undertaking this assessment, we inspected the subject site, reviewed development plans and background material, and assessed the car parking and traffic impacts of the proposal.

Our assessment is as follows.

2. Existing Conditions

2.1. Subject Site & Use

The subject land, addressed as 251-261 Springvale Road, Glen Waverley, is located on the western side of Springvale Road, approximately 25 metres south of O'Sullivan Road.

The subject site is rectangular in shape and has a frontage of approximately 32 metres to both Springvale Road and Glenway Arcade at the east and west respectively.

The site is currently occupied by a single storey building, providing for 6 commercial tenancies including a real estate agency, an accounting firm, a pharmacy, a Salvos Store and two other shops. The existing building has a total retail floor area of approximately 1,307m².

Vehicle access to the site is currently provided along the entire western boundary via Glenway Arcade which provides access for a total of 10 on-site 90-degree car spaces.

The site is located within the Glen Waverley Major Activity Centre.

A locality plan and aerial photograph of the site are provided at Figure 1 and Figure 2 respectively.

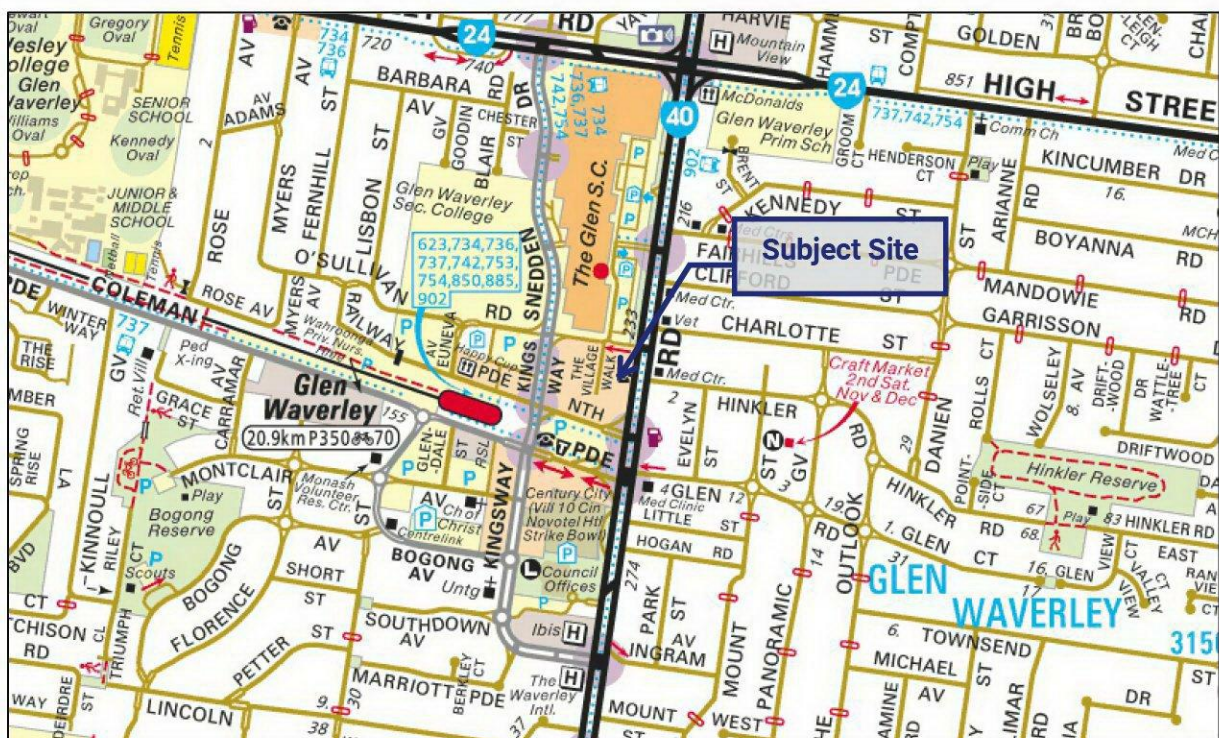


Figure 1: Locality Map

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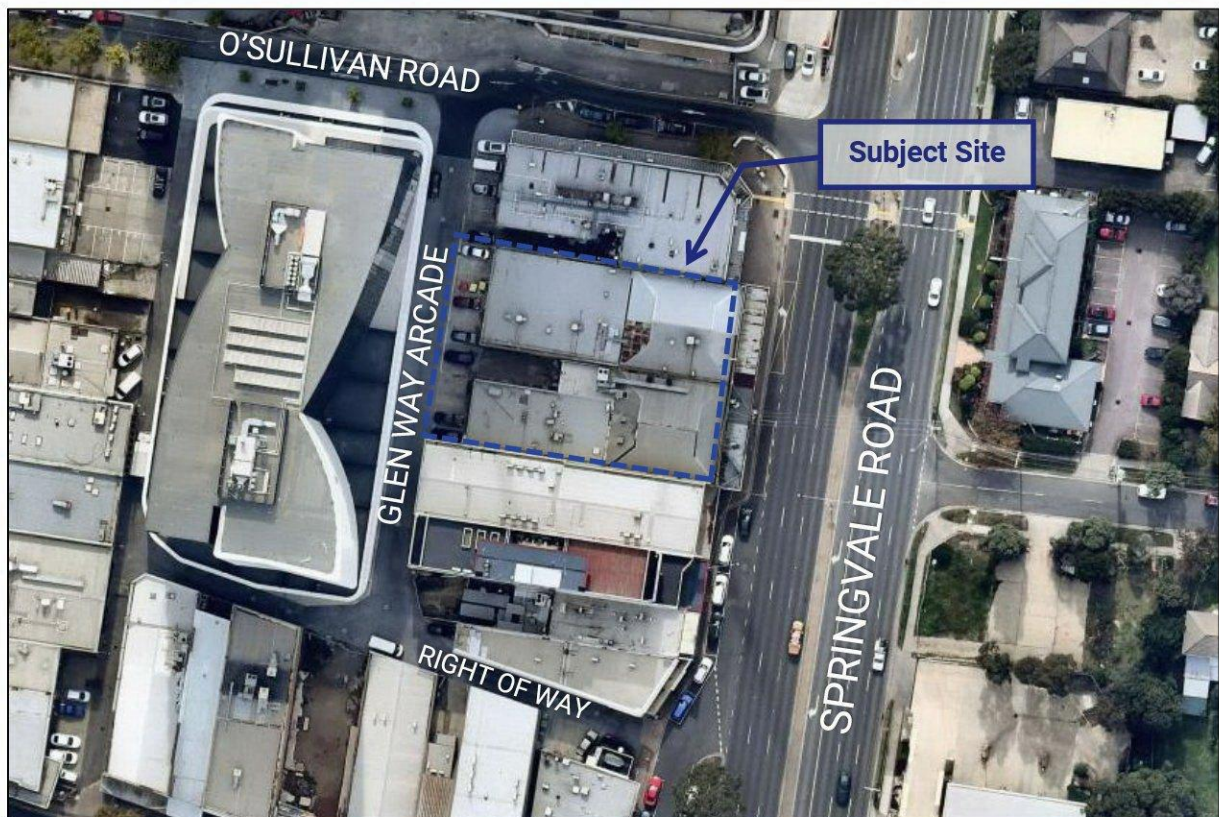


Figure 2: Nearmap Aerial Photograph – Subject Site

Aerial Source: Nearmap

2.2. Planning Scheme Zones & Surrounding Uses

The subject site is zoned as Commercial 1 Zone (C1Z) under the Monash Planning Scheme. A planning zone map is provided at Figure 3.

Land uses in the immediate vicinity of the site are generally commercial. Residentially zoned land is located to the east side of Springvale Road.

Notable nearby uses include:

- The Glen Shopping Centre, located a short distance to the north of the site on the northern side of O'Sullivan Road.
- Glen Waverley Railway Station, located approximately 350 metres south-west of the site.
- Glen Waverley Library and Monash City Council Offices, located approximately 400 metres south of the site.

Traffic Engineering Assessment

251-261 Springvale Road, Glen Waverley

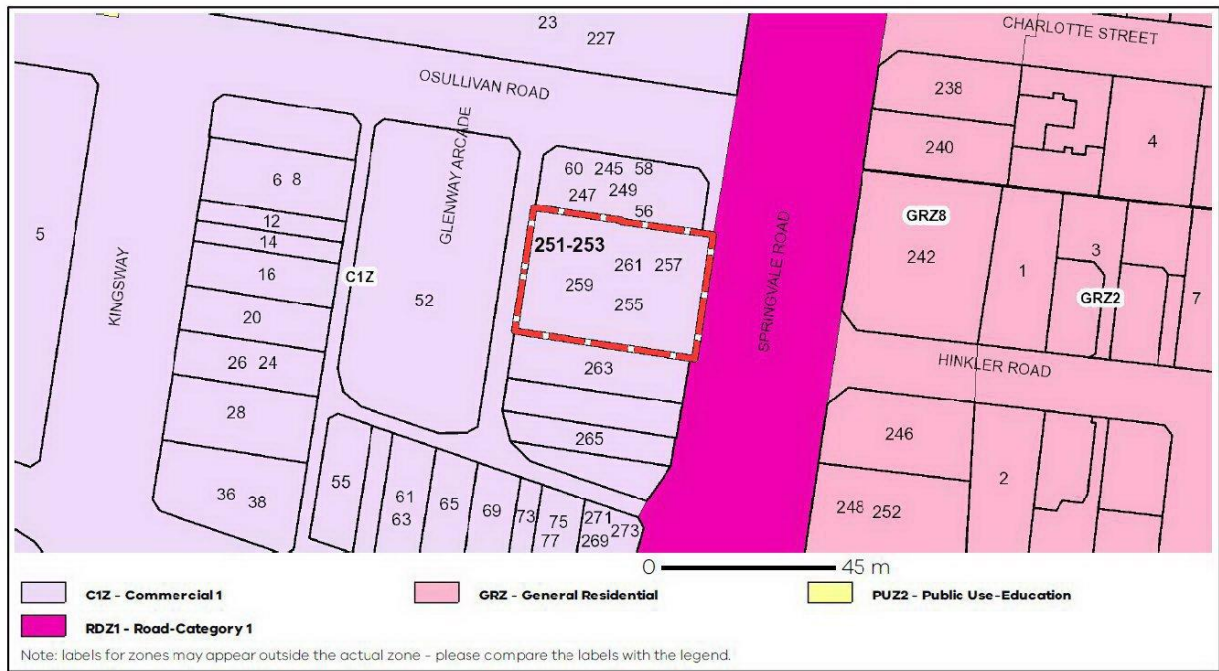


Figure 3: Planning Zone Map - Monash

2.3. Road Network

Springvale Road is an arterial road aligned in a north-south direction and is zoned 'Road Zone Category 1' under the Planning Scheme. Springvale Road, in the vicinity of the site has a divided carriageway that typically provides 3 lanes of through traffic in both directions.

Between the south boundary of the site to O'Sullivan Road, there is a left turning lane adjacent which also accommodates a bus zone and a loading zone. South of the site, an indented parking lane is provided with spaces typically subject to short-term parking restrictions.

Currently, a signed work zone speed limit of 60 km/h applies to Springvale Road in the vicinity of the site. We understand a signed speed limit of 70km/h would normally apply to Springvale Road in this location.

Glenway Arcade is a local road aligned in a north-south direction between O'Sullivan Road to the north and a Right-of-Way to the south. Glenway Arcade has a carriageway of approximately 6.9 metres, accommodating simultaneous two-way traffic.

No on-street parking is permitted along Glenway Arcade. Private 90-degree angle parking is typically provided adjacent to the east side of Glenway Arcade, whilst 'No Stopping' restrictions apply to the west side.

The default urban speed limit of 50km/h applies to Glenway Arcade in the vicinity of the site.

O'Sullivan Road is a local road aligned in an east-west direction between Springvale Road to the east and Myers Avenue to the west. Near the site, O'Sullivan Road operates one-way in a westbound direction, accommodating a single lane of traffic and an indented kerbside parking lane on the south side (between Springvale Road and Glenway Arcade).

Parking along O'Sullivan Road near the site is subject to short-term restrictions.

The default urban speed limit of 50km/h applies to O'Sullivan Road in the vicinity of the site.

A **Right-of-Way (RoW)** is located at the southern end of Glenway Arcade, which extends west from Springvale Road and forms a T-intersection with Glenway Arcade.

The RoW has a carriageway width of approximately 4 metres, accommodating a single lane of two-way traffic.

Figure 4 to Figure 11 provide views of the surrounding road network.

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251-261 Springvale Road, Glen Waverley



Figure 4: Springvale Road - View North



Figure 5: Springvale Road - View South



Figure 6: Glenway Arcade - View North

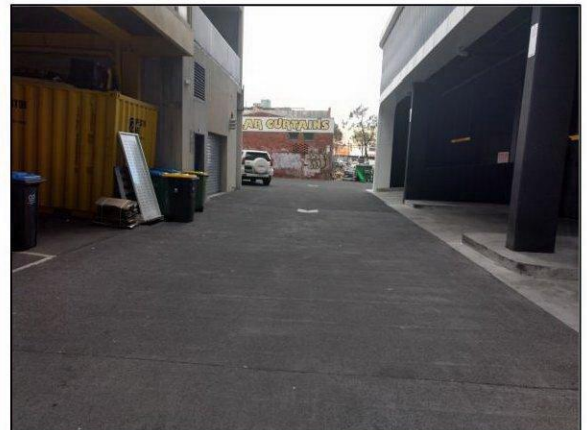


Figure 7: Glenway Arcade - View South

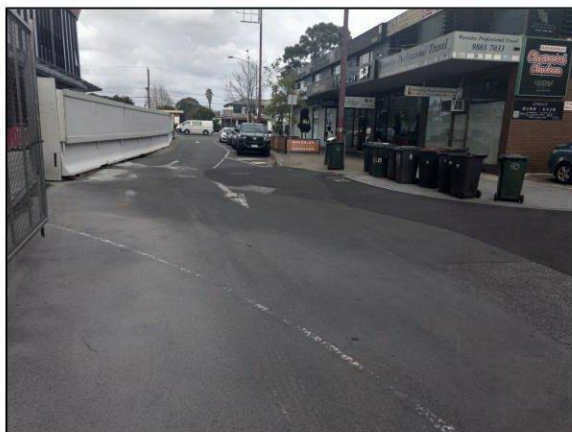


Figure 8: O'Sullivan Road - View East

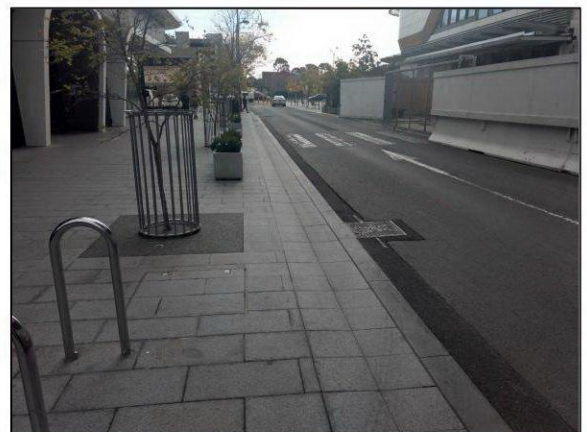


Figure 9: O'Sullivan Road - View West

Traffic Engineering Assessment

251-261 Springvale Road, Glen Waverley



Figure 10: Right of Way - View East



Figure 11: Right of Way - View West

3. Proposal

3.1. The Development

The proposal is for a multi-storey mixed use development, comprising 147 residential apartments and 3 levels of retail floor space.

The proposed development schedule is provided in Table 1.

Table 1: Proposed Development Schedule

Use		Current Scheme
Residential Dwellings	2 bed dwelling	125
	3+ bed dwelling	22
	Total	147
Commercial	Retail	1,835m ² (increase of 528 m ²)

3.2. Car Parking Provisions & Vehicle Access

The application proposes a total provision of 167 car spaces, within a 4-level basement car park, allocated as follows:

- 152 resident spaces, including:
 - 119 spaces for two-bedroom dwellings (0.95 spaces per two-bedroom dwelling)
 - 33 spaces for three-bedroom dwellings (1.5 spaces per three-bedroom dwelling)
- 15 retail staff spaces.

Access to the on-site car park will be provided via a ramp connection to Glenway Arcade at the site's southwest corner. The access ramp is to be configured as a dual-width 6.1 metre wide ramp, and the site access will accommodate simultaneous two-way passing.

3.3. Bicycle & Motorcycle Parking

The application plans illustrate the provision of a total of 86 bicycle spaces comprising:

- 40 spaces at ground level for shared use by residential visitors, staff, and customers, and
- 46 bicycle spaces at level one for residents.

End of Trip facilities are proposed on-site for staff within level one, inclusive of 3 showers and changerooms.

A total of 7 spaces are provided for motorcycles throughout the car park.

3.4. Loading & Waste Collection

A dedicated on-site loading bay is proposed at ground level with access via Glenway Arcade, located immediately north of the car park access. The loading bay has been designed to accommodate up to an 8.8 metre long medium rigid vehicle (MRV).

The loading bay will also be used to facilitate private waste collection on-site.

4. Car Parking Considerations

4.1. Statutory Requirements – Clause 52.06

The car parking requirements for the proposed development are outlined under Clause 52.06 of the Monash 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.*

Clause 52.06-5 states that:

Column B rates apply to a site if any part of the land is identified as being within the Principal Public Transport Network Area as shown on the Principal Public Transport Network Area Maps.

An excerpt of the Principal Public Transport Network (PPTN) Area Map is provided at Figure 12. The site falls within the PPTN area map and therefore the Column B rates apply to the proposal. Accordingly, there is no requirement to provide visitor car parking for the residential apartments.

Of relevance, Clause 52.06-5 also states:

Where the existing use is increased by the measure specified in Column C of Table 1 for that use, the car parking requirement only applies to the increase, provided the existing number of car spaces currently being provided in connection with the existing use is not reduced.

In this circumstance, regarding the commercial component of the development, the application proposes an increase of retail floor area by approximately 528m² above the existing retail floor area of approximately 1,307m². Therefore, the statutory requirement is applicable only to the proposed additional retail floor above the existing floor area, provided that the existing provision of 10 car spaces is retained.

It is noted that there is no specified car parking rate for 'retail premises' under the table at Clause 52.06-5. For the purposes of our assessment we consider it appropriate to adopt the statutory 'shop' rate.

Traffic Engineering Assessment

251-261 Springvale Road, Glen Waverley



Figure 12: Monash PPTN Area Map

A statutory assessment of the proposal under Clause 52.06 is provided at Table 2.

Table 2: Statutory Car Parking Requirements (Clause 52.06)

Use	No / Size	Statutory Requirement	No of Spaces Required
Residential Dwelling	125	1 car space to each 2-bed dwelling for residents	125 spaces
	22	2 car spaces to each 3-bed dwelling for residents	44 spaces
Retail (Shop)	528m ² (increase)	3.5 spaces to each 100 square metres of leasable floor area	18 spaces
Total			187 spaces

Based on the table above, the development has a statutory requirement to provide 187 car spaces including 169 resident spaces and an additional 18 spaces for the retail component.

When considering that 10 spaces are to be retained in association with the existing retail floor area, this equates to a total car parking requirement for 197 car spaces.

The application proposes a total provision of 167 car spaces, which is a shortfall for 30 car spaces.

The proposed car parking allocation is as follows:

- 152 resident spaces, including:
 - 119 spaces for two-bedroom dwellings (0.95 spaces per two-bedroom dwelling).
 - 33 spaces for the three-bedroom dwellings (1.5 spaces per three-bedroom dwelling).
- 15 retail staff spaces.

The above allocation results in a shortfall of 17 resident spaces and 13 retail spaces.

Clause 52.06-7 of the Planning Scheme allows a permit to be granted to vary the statutory car parking.

Planning Practice Note (June, 2015) specifies that the provisions draw a distinction between the assessment of likely demand for parking spaces (Car Parking Demand Assessment), and whether it is appropriate to allow the supply of fewer spaces below the likely demand. These are two separate considerations, one technical while the other is more strategic. Different factors are taken into account in each consideration.

An assessment of the appropriateness of reducing the car parking provision below the statutory requirement is set out as follows.

4.2. Car Parking Demand Assessment

The Scheme requires the assessment of car parking demand likely to be generated by the proposed use to have regard for listed factors, as appropriate, including:

- *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 or occupants (residents or employees) of the land.*
- *Any empirical assessment or case study.*

An assessment of the projected car parking demand for the proposed development, accounting for these factors follows.

4.2.1. Sustainable Modes of Transport

The site has excellent access to sustainable transport modes and is well located with regard to retail and essential services as detailed below.

The site is extremely well located to promote walking to everyday services.

This site is located within the Glen Waverley Major Activity Centre which provides access to a wide range of everyday services such as supermarkets, banks, restaurants, specialty shops and medical centres. The activity centre also includes The Glen shopping centre.

The site is also very well serviced by public transport with a number of services provided within convenient walking distance of the site. The Glen Waverley Railway Station and bus interchange are located approximately 350 metres to the south-west of the site.

Given the high level of public transport access in this locality, the proposed development is expected to generate parking at a lower rate than a similar site within an inner suburban location with less accessibility to public transport.

Table 3 summarises the available services, whilst Figure 13 illustrates the nearby routes.

Table 3: Public Transport Services in the Vicinity of the Subject Site

Service	Route	Distance to Node
Metropolitan Train Services		
Glen Waverley Railway Station	City – Glen Waverley	~350m south-west
Metropolitan Bus Services		
Route 902	Chelsea – Airport West (SMARTBUS Service)	~150m north
Route 623	Glen Waverley – St Kilda via Mount Waverley, Chadstone, Carnegie	~350m south-west
Route 734	Glen Iris – Glen Waverley	~350m south-west
Route 736	Mitcham – Blackburn via Vermont South, Glen Waverley, Forest Hill	~350m south-west
Route 737	Croydon – Monash University via Boronia, Knox City SC, Glen Waverley	~350m south-west
Route 742	Eastland – Chadstone via Vermont South, Glen Waverley, Forest Hill	~350m south-west
Route 753	Glen Waverley – Bayswater via Wheelers Hill, Knoxfield, Boronia	~350m south-west

Traffic Engineering Assessment

251-261 Springvale Road, Glen Waverley

Route 754	Rowville – Glen Waverley via Caulfield Grammar, Wheelers Hill	~350m south-west
Route 850	Dandenong- Glen Waverley via Mulgrave, Brandon Park	~350m south-west
Route 885	Glen Waverley – Springvale via Wanda Street	~350m south-west

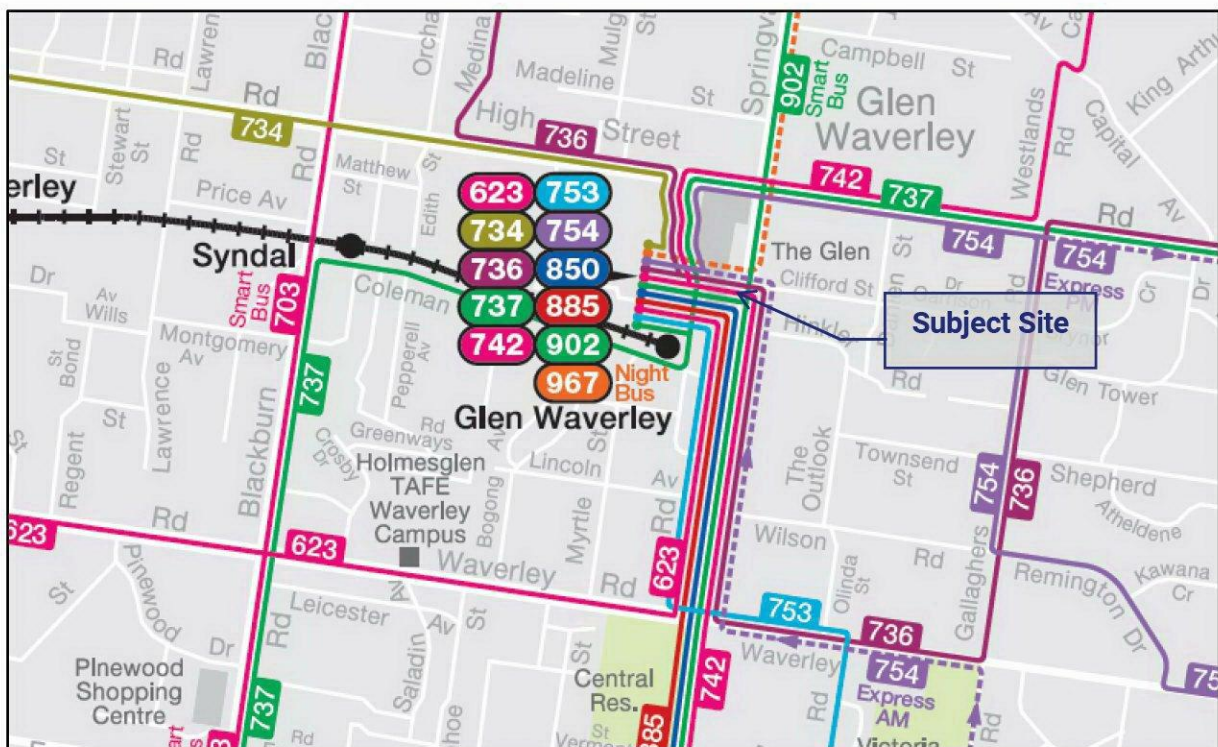


Figure 13: PTV Public Transport Map - Monash

Source: Public Transport Victoria

Anticipated Parking Demand

Residential

The development seeks a reduction in the car parking requirements for both two-bedroom and three-bedroom apartments.

To understand parking ownership for these dwelling types, we have sourced the 2016 Australian Bureau of Statistics (ABS) Census data for 'flats, units or apartments' within the suburb of Glen Waverley and the Monash LGA as summarised at Table 4

These statistics highlight that 14% and 18% of two-bedroom apartments in Glen Waverley suburb and Monash LGA respectively, are occupied with owners/tenants that do not own a vehicle. Similarly, 41% and 44% of three-bedroom apartments are occupied with owners/tenants that only own a single vehicle. The average car ownership rates for similar three-bedroom dwellings is 1.6 spaces per dwelling in Glen Waverley, and 1.5 spaces per dwelling in the overall Monash LGA.

Traffic Engineering Assessment

251-261 Springvale Road, Glen Waverley

Table 4: ABS car ownership statistics (2016)

Type of Dwelling	Number of Cars	Glen Waverley Suburb	Monash LGA
Two-bedroom	Average no. of cars per dwelling	1.1	1.1
	0 cars	14%	18%
	1 car	62%	57%
Three-bedroom	Average no. of cars per dwelling	1.6	1.5
	1 car	41%	44%
	2 or more cars	55%	50%

The data suggests there is market demand for these types of dwellings with less parking than the statutory requirement. Moreover, the site has excellent accessibility to sustainable modes of transport and everyday services, and parking in the area is largely restricted meaning that if you do not have an allocated car space it is not practical for residents to maintain a vehicle on-street.

In view of the foregoing assessment, we are of the opinion the supply of parking will dictate the resident demand, and the application in effect is proposing travel demand management by suppressing car parking demands. That is, by providing reduced on-site car parking the applicant is encouraging the use of alternative transport modes.

To this end, we don't expect the development to be reliant on any off-site car parking for residents.

Retail

Given the site's access to a number of alternate modes of transport, the proximity to existing and proposed residences (including future apartments as part of this development), the proximity to other commercial services in the area and likelihood of multipurpose trips, we are of the opinion that the statutory 'shop' rate is conservative for the anticipated peak parking demands.

It is important to note that even lower rates, particularly for staff, can be expected in locations within Activity Centres that are well served by public transport and have constrained parking environments (such as limited car parking either on or off-site, subject to significant fees or car parking is in high demand).

The proposed retail tenancies are expected to operate as more service retail, and therefore would draw trade from existing uses in the area, rather than be destinations in their own right.

Furthermore, there is some likelihood that staff of the nearby area (or residents including within the development itself) may walk to the site and therefore will not generate a specific demand for car parking.

Nevertheless, for the purposes of a conservative assessment, we will adopt the statutory 'shop' rate (i.e. the Column B rate in Clause 52.06 of 3.5 spaces per 100 square metres) to

conservatively estimate the parking demands associated with the proposed additional retail floor area.

This calculates to a peak parking demand for 28 spaces when allowing for the existing on-site provision for 10 spaces that is to be retained in association with the existing floor area. The proposed on-site car parking allocation for retail staff is 15 spaces including replacement of 10 existing spaces plus 5 additional spaces associated with the increase of 528m² of floor area.

The additional staff parking provision equates to approximately one space per 100 square metres of floor area which is consistent with our expectation of typical staff demands for retail tenancies of the size and nature proposed. We note that a rate of one space per 100 square metres of floor area is regularly accepted by VCAT and Councils throughout Melbourne for staff demands associated with retail premises in locations with similar attributes to the site.

The proposed car parking shortfall spaces associated with increase of retail floor area for 13 will comprise of short-term customer demands only that will rely on public car parking in the nearby area.

4.3. Allowing Fewer Car Spaces

When considering if it is appropriate to provide fewer car parking spaces on-site, the responsible authority must consider a number of matters as appropriate, including the following that are most relevant to the application:

- *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.*
- *The future growth and development of any nearby activity centre.*
- *Any car parking deficiency associated with the existing use of the land.*
- *Access to or provision of alternative transport modes to and from the land.*
- *Any other relevant consideration.*

A discussion of the relevant items follows.

4.3.1. Car Parking Availability

In the vicinity of the site, there are numerous off-street car parks available for the use of the public including the following:

- The Glen Shopping Centre car park (in the order of 3,500 spaces), paid parking (first 3 hours free).
- Coleman Parade Council car park (257 spaces), 2 hour parking between 8am-7pm Mon-Wed, Sat-Sun & 8am-9pm Thu-Fri.
- O'Sullivan Road Council car park (106 spaces), 2 hour parking between 8am-6pm Mon-Sat.
- Euneva East Council car park (315 spaces), 5 hour parking between 8am-6pm Mon-Sat.

Given the significant supply of public car parking in the nearby area, the modest increase in customer parking demands for up to 13 spaces is expected to be adequately accommodated without any noticeable impacts to existing car parking conditions.

Furthermore, it has been a long held practice within Activity Centres to rely on a centre based approach to parking. That is, individual sites do not provide car parking on their land but rather rely on a pool of car parking throughout the activity centre. The Glen Waverley Activity Centre has an abundance of off-street car parks, and we understand Council has collected or has agreements in place to fund the construction of at least an additional 400 car spaces within the area west of Kings Way and south of Coleman Parade.

In this instance, the projected off-site demand is relatively small, and the Activity Centre is well served by public transport and already has a high supply of car parking. Additionally, it is expected that a significant proportion of customers will already be in the activity centre rather than a generate a specific trip to this site.

Furthermore, a significant proportion of customers will likely be residents from the new or future residential developments that are encouraged within the Activity Centre. For example, The Glen has approval for in the order of 500 apartments. With the significant increase of population within the Activity Centre, it is expected there will be proportionally less reliance on car parking and a greater proportion of visitors using sustainable transport.

4.3.2. Relevant Policy

The City of Monash supports sustainable transport and design in new and existing developments through a number of policies and initiatives. These include:

Clause 22.13 - Environmentally Sustainable Development Policy

Clause 22.13 of the Monash Planning Scheme identifies the following objectives in relation to transport:

- *To ensure that the built environment is designed to promote the use of walking, cycling and public transport, in that order.*
- *To minimise car dependency.*
- *To promote the use of low emissions vehicle technologies and supporting infrastructure.*

Monash Integrated Transport Strategy 2017

The Monash Integrated Transport Strategy (ITS) was published in 2017 and provides a 20 year framework for the planning and development of the transport system.

The Monash ITP outlines the following goals with regard to promoting sustainable transport:

- *Encourage the use of more sustainable transport modes within the road infrastructure and decrease reliance on private vehicles*
- *Increase the attractiveness of walking, through implementing Pedestrian Oriented Design (POD)*

- *Apply Road User Hierarchy principles to complement the SmartRoads designations, which prioritises active and public transport modes*
- *Increase public transport mode share by making it a more attractive and reliable option for all residents of Monash*
- *Increase bicycle mode share across Monash, for all trip purposes*
- *Eliminate ‘missing links’ and ‘missing connections’ in cycle and walking network, creating a cohesive integrated active transport network across Monash*
- *Encourage the use of walking and cycling as the ‘default mode’ to access public transport and optimise intermodal transfers*
- *Recognise and plan for the role technology will play in lowering car ownership requirements and increasing the diversity of transport options in the future*
- *Reduce car dependence and usage through the provision of compelling alternatives*
- *Encourage a move from petrol and diesel to low-emission fuels through promoting the establishment of infrastructure such as charging stations within new developments, or as part of existing fuel station businesses*

The Monash ITP also outlines a number of goals in relation to parking management. Specifically, with regard to car parking provisions in new developments, the ITP notes the following goals:

- *Encourage residents to reduce reliance on private vehicle use*
- *Review car parking requirements for new developments in locations with good access to public transport, recognising the impact generous car parking provision has on reducing the competitiveness of sustainable mobility*

The proposal supports these strategies and objectives of Monash City Council by providing reduced car parking given the site’s proximity to sustainable modes of transport and nearby amenities.

4.3.3. Activity Centre Guidelines

The proposed development is located within the Glen Waverley Major Activity Centre. The proposed car parking provision for the development is considered to be in line with the objectives of the Victorian Government’s *Activity Centre Designs Guidelines*. In particular, the development proposes to encourage walking, cycling and public transport usage as a result of reducing the level of on-site car parking for residents and staff.

4.3.4. Appropriateness of Sought Reduction

Based on the preceding, we are of the view that the proposed on-site car parking provision is sufficient and it is appropriate for a Permit to be issued for a reduction in the statutory car parking requirement under Clause 52.06-7 of the Planning Scheme.

4.4. Car Parking Layout & Access Arrangements

The car park layout and access arrangements have been developed with design advice provided to the project architect (Plus Architecture) and is considered to principally meet the relevant requirements of the Monash Planning Scheme and where applicable, the Australian Standard for Off-Street Parking (AS/NZS 2890.1:2004).

A review of the car park layout reveals:

General Car Parking Layout

- Car spaces are to be provided with minimum dimensions of 2.6 metres width and 4.9 metres length, accessible from 6.4 metre wide aisles, as per the requirements of Clause 52.06-9 (Design Standard 2).
- Tandem spaces are to be provided with an additional length of 500mm between each space satisfying the requirements of Clause 52.06-9 (Design Standard 2). Each pair of tandem spaces is to be allocated to the same dwelling.
- Car spaces adjacent to walls and structures have been provided with appropriate clearances of at least 300mm to allow for satisfactory car door opening and in accordance with the clearance envelope at Diagram 1 of Clause 52.06-9 (Design Standard 2).
- Columns adjacent to car spaces are located within 0.25-1.25 metres from the aisle end of car spaces in accordance with the car parking envelope of Clause 52.06-9 (Design Standard 2).
- Sufficient headroom clearance is to be provided to, from and throughout the basement car park including along the ramp. In particular, a minimum headroom clearance of at least 2.2 metres will be provided in excess of the statutory requirement under Clause 52.06-9 of the Planning Scheme (Design Standard 2) and in accordance with the relevant Australian Standard (AS/NZS 2890.1:2004).

Access & Ramps

- The proposal is to take access via Glenway Arcade via a double width (two-way) access ramp, located at the south-western corner of the site.
- The proposed main and internal ramps are provided with a width of at least 6.1 metres (between walls) which provides for a dual-lane two-way accessway, in accordance with the requirements of Clause 52.06-9 (Design Standard 1) and AS/NZS 2890.1-2004.
- Vehicles can enter and exit the site in a forward direction in accordance with Clause 52.06-9 (Design Standard 1).
- Appropriate opportunities for passing have been provided within the basement and at the site access.
- A grade no steeper than 1 in 10 for the first 5 metres is provided from the property boundary, satisfying the requirements of the Planning Scheme (Design Standard 3).
- The main access ramp and internal ramps between basement levels are illustrated with a maximum grade of 1 in 5 with transitions not exceeding 1 in 8 for not less than 2.0

metres. These grades satisfy the requirements of Clause 52.06-9 (Design Standard 3) for a private car park.

Based on the foregoing, the car park layout and access arrangements are considered satisfactory and accord with the requirements of Clause 52.06-9 of the Planning Scheme and AS2890.1-2004 (where relevant).

5. Traffic Considerations

5.1. Traffic Generation

5.1.1. Proposed Residential Component

In consideration of the location of the site and size of the dwellings and traffic generation rates adopted for other developments in the area, it is expected that the residential component will generate traffic at a rate of 4 vehicle movements per dwelling per day, inclusive of 0.4 movements per dwelling in each of the AM and PM peak hours.

Application of these rates to the proposed 141 dwellings with allocated car parking equates to a projected daily traffic generation of 564 movements, inclusive of 56 movements in each of the peak hours.

Assuming a typical AM peak traffic split of 20% arrivals and 80% departures and PM peak traffic split of 60% arrivals and 40% departures for the residential spaces, it is projected the development will generate:

AM PEAK:	11 arrivals and 45 departures
PM PEAK:	34 arrivals and 22 departures

5.1.2. Proposed Retail Component

Regarding the retail component, 5 additional spaces are proposed to be provided on-site for retail staff.

With respect to staff parking, it is typical to assume that 50% of the staff spaces provided will generate an arrival movement during the morning peak hour and 50% will generate a departure movement during the evening peak hour.

Based on the foregoing, it is projected that the proposed additional retail staff spaces will generate up to an additional 3 arrivals and 3 departures in the morning and afternoon peak periods, respectively.

5.1.3. Total Traffic Generation

Based on the preceding, it is projected that the proposal will generate up to 59 additional vehicle movements during both the AM and PM peak hours. This equates to approximately one vehicle per minute on average during the peak hours.

A summary of the future traffic generation is provided in Table 5.

Table 5: Projected Future Traffic Generation

Use	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Residential	11	45	56	34	22	56
Retail	3	0	3	0	3	3
Total	14	45	59	34	25	59

5.2. Traffic Distribution & Impact

Due to the configuration of the immediate road network, generally all inbound movements will be generated via the Springvale Road/O'Sullivan Road signals and the intersection of O'Sullivan Road/Glenway Arcade. It is noted that inbound vehicles can also access the site from the southern end of Glenway Arcade, via the RoW and the Springvale Road service road, however we anticipate a very small number of vehicles to access the site via this route.

Similarly, regarding outbound movements, we anticipate the majority of movements to be generated to the O'Sullivan Road/Glenway Arcade intersection towards Kingsway/Snedden Drive. However, vehicles intending to travel north will likely use the ROW to the south of the site to access Springvale Road.

We note that O'Sullivan Road operates one-way westbound between Springvale Road and Kingsway/Snedden Drive and therefore all movements generated to/from this intersection are to be left-in/left-out only. In addition, any vehicle movements generated to/from the intersection of the RoW and Springvale Road service road will also be left-in/left-out only.

Figure 14 illustrates the inbound and outbound routes to/from the site.

As noted above, it is projected that the proposal will generate up to 59 additional vehicle movements during both the AM and PM peak hour, to and from Glenway Arcade. This level of traffic generation is relatively low in traffic engineering terms, equivalent to an average of one additional vehicle movement being generated every minute during the peak periods.

This is a low level of traffic and will be split between arrivals and departures, and it is important to note that vehicle movements at the key nearby intersections of Glenway Arcade/O'Sullivan Road and Springvale Road service road/RoW are to be left-in/left-out only and therefore will have minimal impact on the operation of these intersections.

Based on the preceding, we are satisfied that the additional traffic generated by the proposal will be able to be accommodated by the surrounding road network.



Figure 14: Inbound/Outbound Traffic Routes

Aerial Source: Nearmap

6. Bicycle Considerations

Clause 52.34 of the Monash Planning Scheme specifies the bicycle parking requirement for new developments.

The relevant requirements are summarised in Table 6.

Table 6: Statutory Bicycle Parking Requirements

Use	Units	Statutory Requirement	No. Of Spaces Required
Dwellings	147 dwellings	1 space per 5 dwellings for residents 1 space per 10 dwellings for visitors	29 resident spaces 15 visitor spaces
Retail	1,835m ²	1 space per 300 square metres for staff 1 space per 500 square metres for customers	6 staff spaces 4 customer spaces
Total		Resident Staff Visitor/Customers	29 resident spaces 6 staff spaces 19 visitor/customer spaces

Based on the above assessment, the development is required to provide a total of 54 bicycle spaces, comprising 29 resident spaces, 6 staff spaces and 19 visitor/customer spaces.

The requirement for 6 staff spaces also triggers a requirement for one shower and associated changeroom for staff.

The application plans illustrate the provision of a total of 86 bicycle spaces comprising:

- 40 spaces at ground level for shared use by residential visitors, staff, and customers, and
- 46 bicycle spaces at level one for residents.

End of Trip facilities with three showers and associated changerooms are identified on the plans within level one.

These provisions exceed the minimum requirements under Clause 52.34 of the scheme.

Bicycle parking has been provided in accordance with AS2890.3-2015 with a mix of vertical and horizontal rails as follows:

- Wall mounted vertical rails are dimensioned at 1.2 metres deep spaces, 0.5 metres spacings, and are accessible from an aisle 1.5 metres wide; and
- Horizontal rails are provided with dimensions of 1.8 metre length and spaced at 1.0 metre centres, accessible from a 1.5 metre aisle.

7. Loading Considerations

Clause 65.01 of the Planning Scheme states that the responsible authority must consider a number of matters as appropriate including:

- *The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.*

An on-site loading bay is proposed at ground level accessed via Glenway Arcade along the site's western boundary. The loading bay is to be utilised for loading activities associated with both the proposed retail and residential uses, as well as waste collection.

The loading bay has been designed to accommodate a 8.8 metre long medium rigid vehicle (MRV) and accessibility has been demonstrated via swept paths attached at Appendix A. In particular, delivery trucks will reverse into the site from Glenway Arcade and then exit the site in a forward direction onto Glenway Arcade.

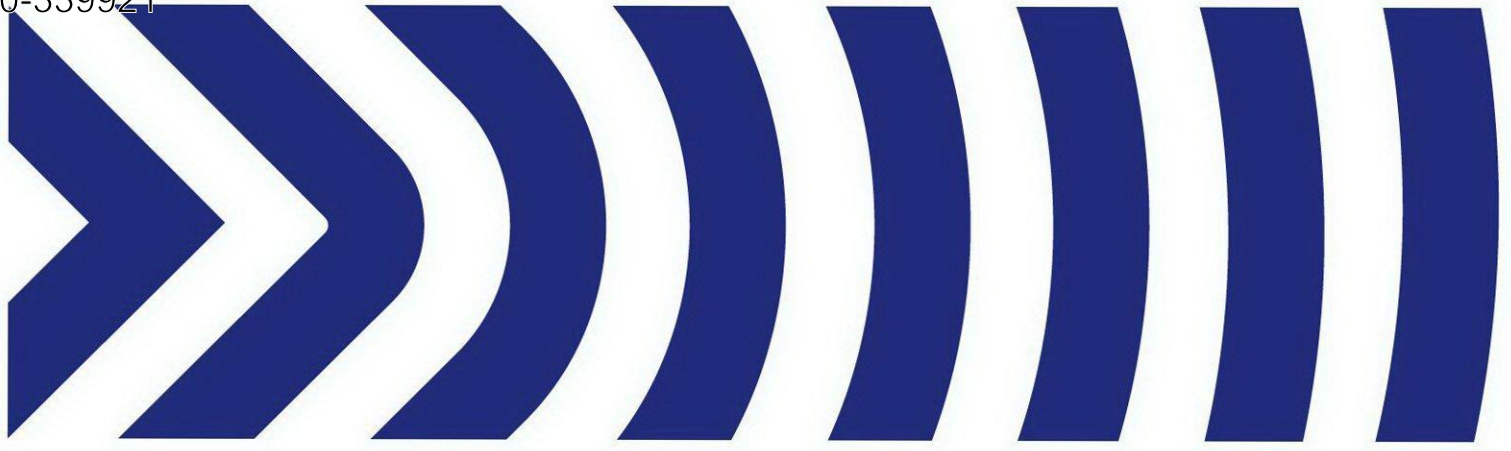
Regarding waste collection, the plans identify a bin room immediately east of the loading bay. As noted above, the proposed loading bay will also be utilised for the purposes of waste collection. We understand that private waste collection services are proposed.

Based on the above, we are satisfied that appropriate loading and waste collection arrangements are to be provided.

8. Conclusions

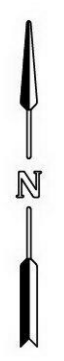
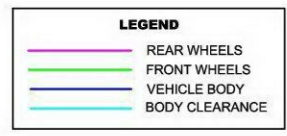
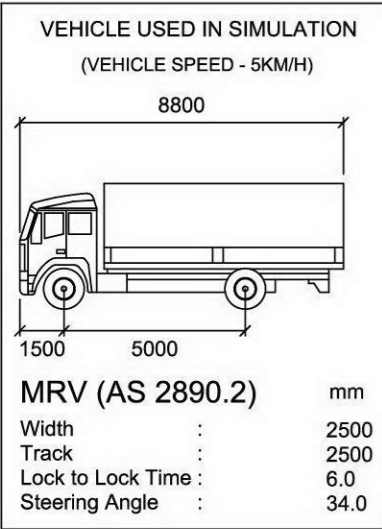
Having undertaken a detailed traffic engineering assessment of the proposed mixed use development at 251-261 Springvale Road, Glen Waverley, we are of the opinion that:

- a. the proposed development has a statutory requirement to provide 187 car spaces including 169 resident spaces and an additional 18 spaces for the retail component. When considering that 10 spaces are to be retained in association with the existing retail floor area, this equates to a total car parking requirement for 197 car spaces.
- b. a total provision of 167 car spaces is to be provided which results in a shortfall for 30 car spaces.
- c. the required reduction in parking under Clause 52.06-6 is supported on the following grounds:
 - i) ABS car ownership data for existing similar dwelling in the area which demonstrate that there is a demand for some dwellings with reduced car parking,
 - ii) the site is located within the Glen Waverley Major Activity Centre and therefore there is a high likelihood of multi-purpose trips by customers,
 - iii) the site is well served by public transport and alternative transport modes,
 - iv) the provision of bicycle parking and end of trip facilities in excess of statutory requirement,
 - v) Council local policies support reduced car parking provisions in areas such as this, and
 - vi) the supply of public parking to support retail customers in an Activity Centre.
- d. the proposed parking layout and access arrangements accord with the requirements of the Planning Scheme, AS2890.1:2004 (where relevant) and current practice,
- e. the level of traffic generated as a result of this proposal will not have a detrimental impact on the surrounding road network,
- f. bicycle parking is provided in excess of the minimum requirements set out at Clause 52.34 of the Planning Scheme,
- g. loading arrangements have been considered and have been appropriately designed to accommodate delivery and waste vehicles, and
- h. there are no traffic engineering reasons why a planning permit for the proposed mixed use development at 251-261 Springvale Road, Glen Waverley, should be refused, subject to appropriate conditions.

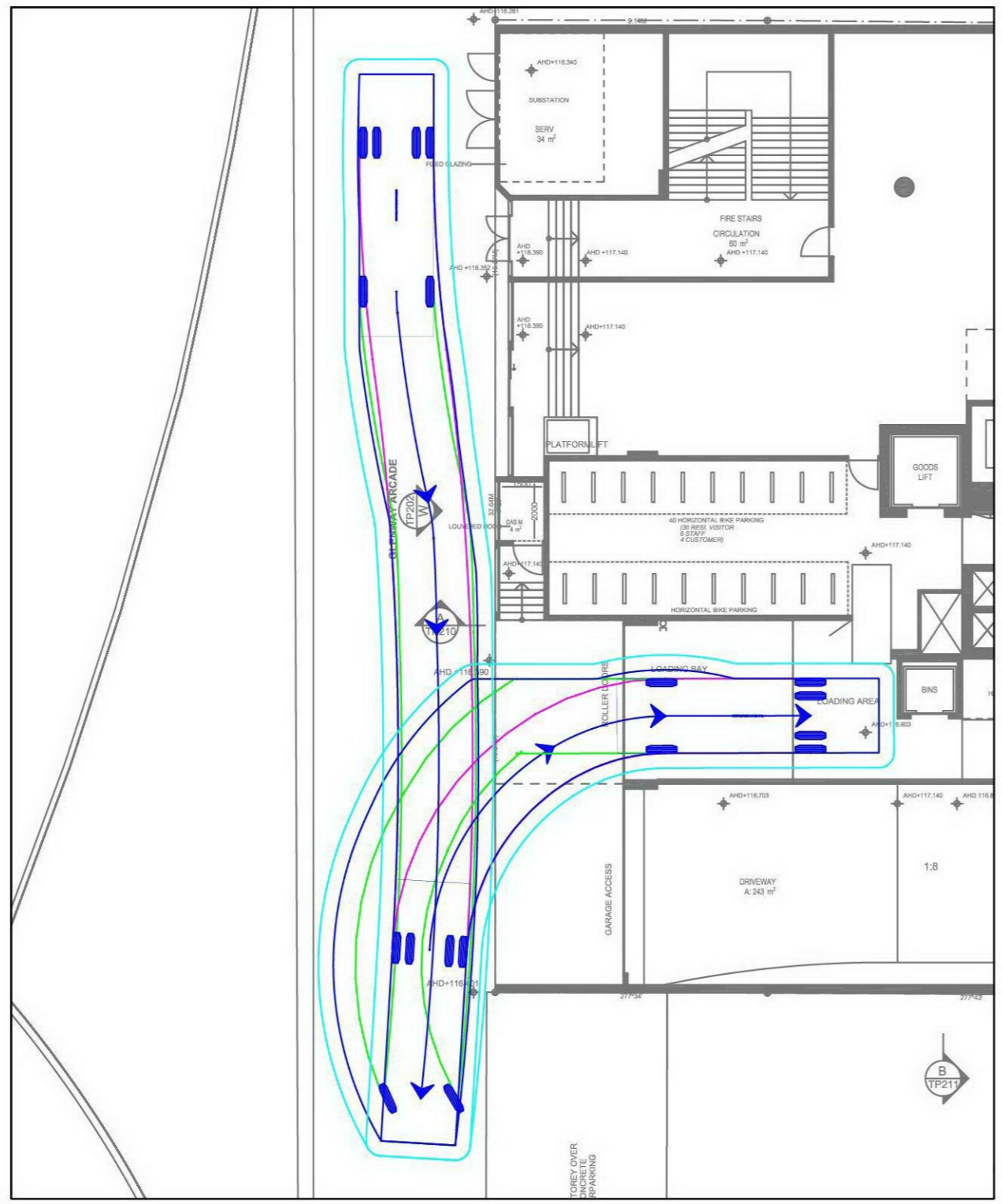


Appendix A

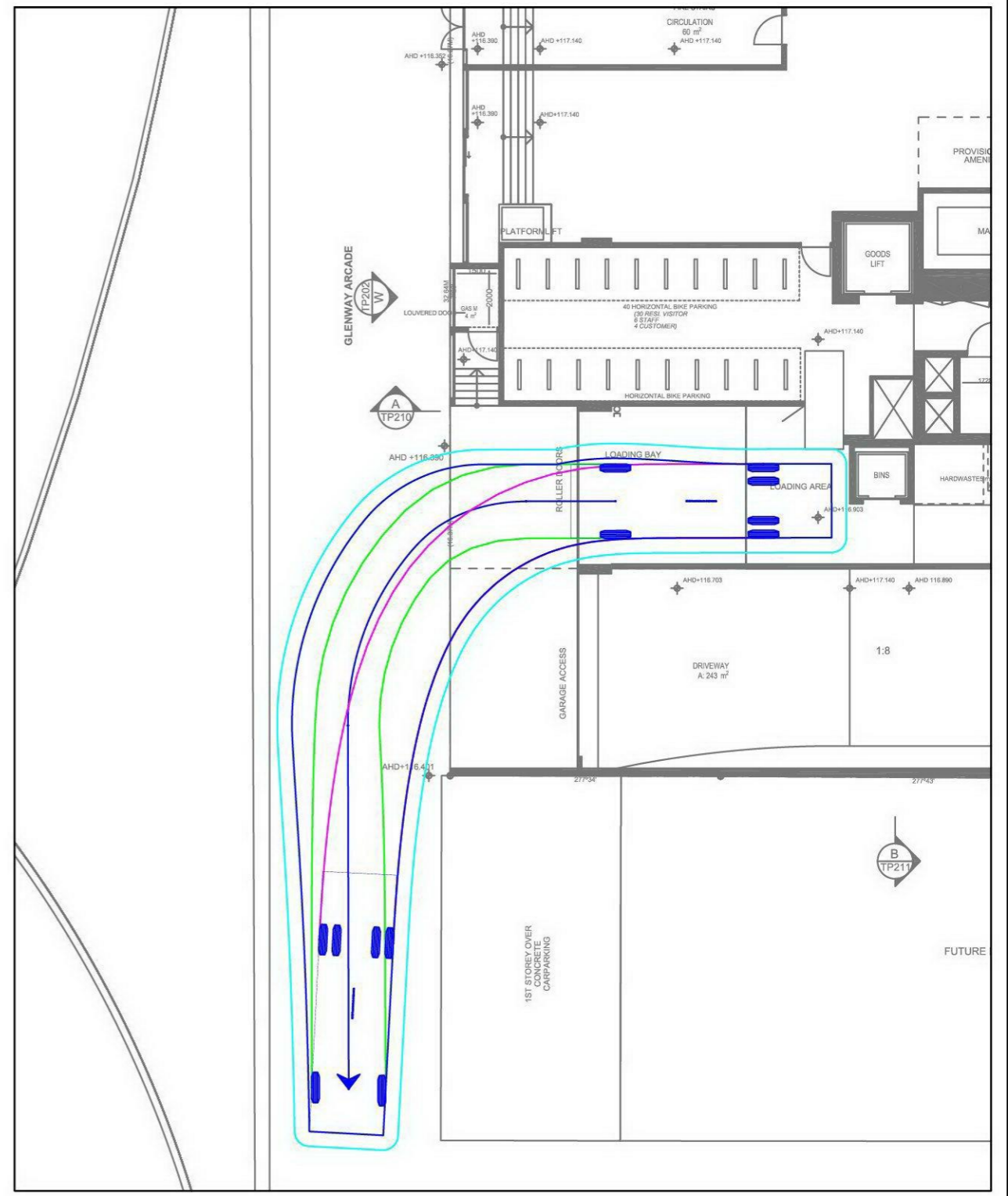
Swept Paths



LOADING TRUCK (MRV) - INGRESS



LOADING TRUCK (MRV) - EGRESS



PRELIMINARY ONLY
NOT FOR CONSTRUCTION

REV.	REVISION NOTES	REVISION DATE	GENERAL NOTES: BASE PLANS PROVIDED BY PLUS ARCHITECTURE, RECEIVED 22 OCTOBER 2020.	DESIGNED BY: T. AMANATIDIS 22/10/2020	<p>Level 28, 459 Collins Street MELBOURNE VICTORIA 3000 TEL : (03) 9822-2888</p>	<p>251-261 SPRINGVALE ROAD, GLEN WAVERLEY LOADING TRUCK SWEEP PATHS PROPOSED MIXED USE DEVELOPMENT</p>
A	TOWN PLANNING APPLICATION	22/10/2020	CHECKED BY: B. CHISHOLM 22/10/2020	ISSUE: A		
B	AMENDED PLANS	16/11/2020	FILE NAME: G28397-01	SCALE: 1:200 (A3)		
						<p>SHEET NO.: 01/01</p> <p>DRAWING NO.: G28397-01</p>