



*Traffic Engineers and Transport Planners*

# Traffic Engineering Assessment

**Proposed Residential Development  
at  
52 Golf Road, Oakleigh South**

**Prepared for  
Golf Road Project Development Pty Ltd**

**May, 2019  
G25977R-02A**

## Traffic Engineering Assessment

52 Golf Road, Oakleigh South: Proposed Residential Development

# Traffic Engineering Assessment

## Proposed Residential Development

at

52 Golf Road, Oakleigh South

### Document Control

Issue No.	Type	Date	Prepared By	Approved By
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### Our Reference: G25977R-02A

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## Traffic Engineering Assessment

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# 1 Introduction

Traffix Group has been engaged by Golf Road Project Development Pty Ltd to prepare a traffic engineering assessment for a proposed residential development at 52 golf road, Oakleigh south.

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

# 2 Proposal

The proposal is for a medium density residential development comprising 91 townhouses. A development summary is provided as follows:

**Table 1: Development Summary**

Use	Size/No.	Car Parking Allocation	Resultant Car Parking Rate
Two-bedroom Townhouse	16	16	1 car space per dwelling
Three-bedroom Townhouse	18	36	2 car spaces per dwelling
Four-bedroom Townhouse	55	110	2 car spaces per dwelling
<i>Subtotal</i>	<i>89</i>	<i>162</i>	<i>1.82 spaces per dwelling</i>
Visitor Car Parking	89 dwellings	12	0.13 spaces per dwellings
<b>Total</b>	-	174	-

Vehicle access to the internal road network will be provided via a 5.8m crossover to Golf Road located at the approximate mid-point along the site's frontage to Golf Road. Five dwellings located along the south boundary of the site will have direct vehicle access to Beryl Avenue, and a further four dwellings will have direct vehicle access to Bakers Road, along the east boundary.

Post development, a total of 27 on-street car spaces will be maintained along the site's combined frontages (i.e. net loss of 2 spaces).

A copy of the development plans prepared by Plus Architecture (dated 10<sup>th</sup> May, 2019) is attached at Appendix A to this report.

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# 3 Existing Conditions

## 3.1 Subject Site

The subject site is located on the northeast corner of Golf Road and Beryl Avenue in Oakleigh South. A locality plan, aerial photograph and photograph of the site's frontages are provided at Figure 1 to Figure 5, respectively.

The site is irregular in shape, is currently vacant with a total area of approximately 18,300m<sup>2</sup>. The site has frontages to Golf Road, Beryl Avenue and Bakers Road of 63.8m, 169.8m and 42.7m respectively.

Vehicle access to the subject site is currently provided via a 3.0m crossover to Beryl Avenue and 4.6m wide crossover to Bakers Road.

The site is located within a General Residential Zone – Schedule 1 (GRZ1) under the Planning Scheme as presented at Figure 6. The site is also subject to Development Plan Overlay – Schedule 5 (DPO5). Land surrounding the site is predominantly residential.

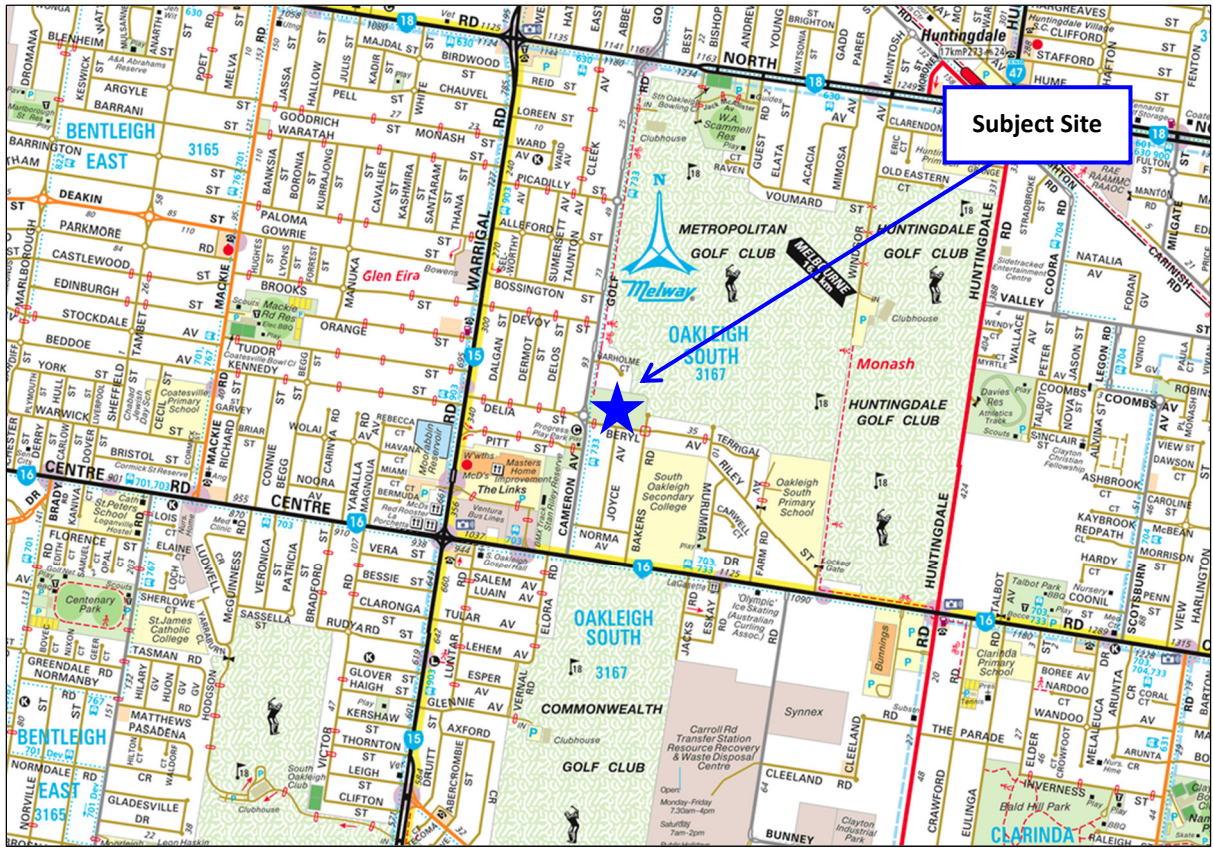
The subject site is located within the Principal Public Transport Network Area under the *Principal Public Transport Network Area Maps*.

Significant nearby land uses and activity centres are detailed below:

- Bright Beginnings Child Care Centre – located approximately 50m walking distance southwest of the site,
- South Oakleigh College, located approximately 150m walking distance southeast of the site,
- Oakleigh South Primary School, located approximately 650m walking distance southeast of the site, and
- Olympic Ice Skating Centre, located approximately 800m walking distance southeast of the site.



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**Figure 1: Locality Map**



Source: www.nearmap.com

**Figure 2: Aerial Photograph**



**Traffic Engineering Assessment**

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**Figure 3: Site Frontage to Golf Road**



**Figure 4: Site Frontage to Beryl Avenue**



**Figure 5: Site Frontage to Bakers Road**



# Traffic Engineering Assessment

## 52 Golf Road, Oakleigh South: Proposed Residential Development

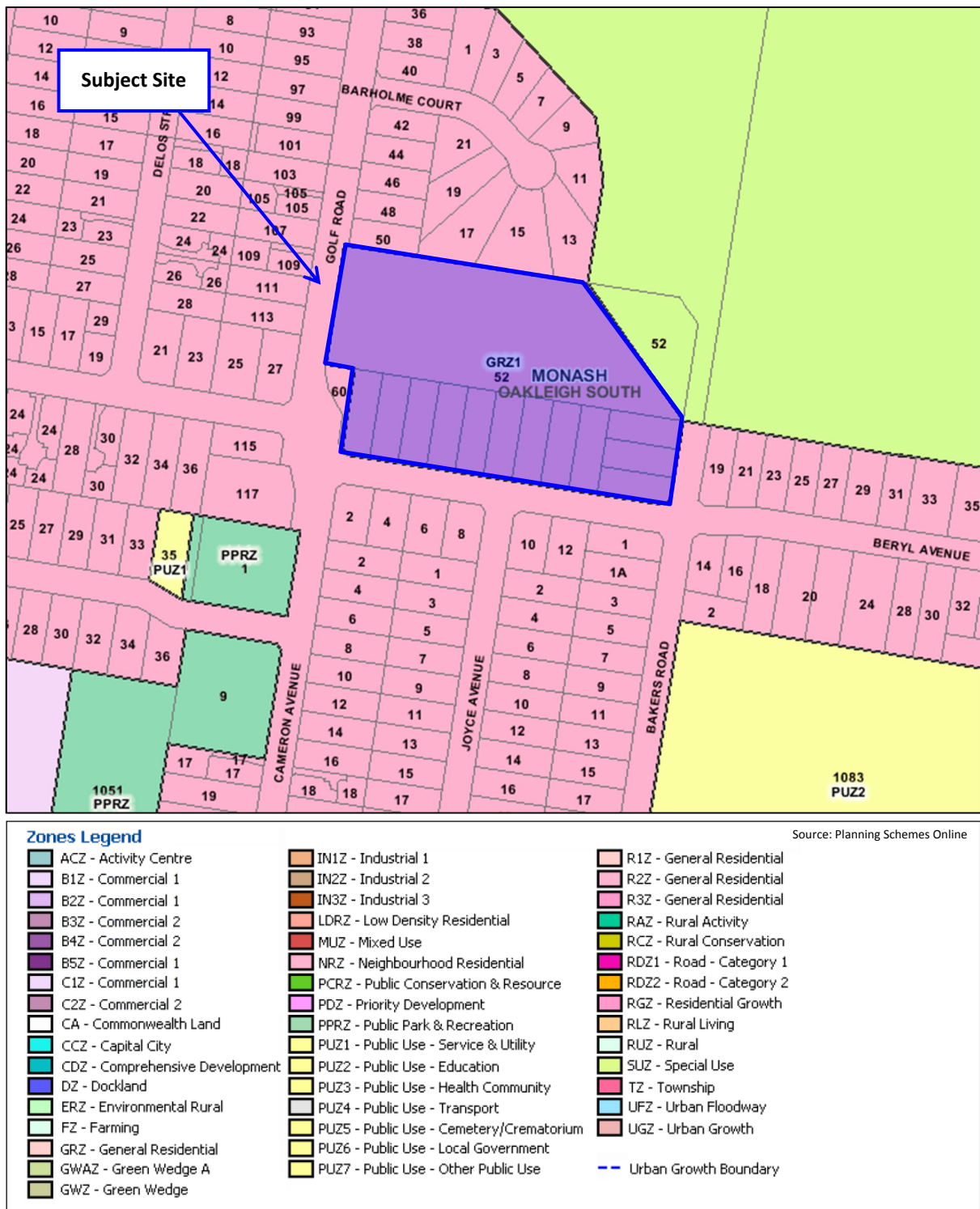


Figure 6: Land Use Zoning Map

## Traffic Engineering Assessment

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### 3.2 Road Network

**Golf Road** is a Council collector road, and is aligned in a north-south direction between Beryl Avenue in the south (where it continues as Cameron Avenue) and North Road to the north.

In vicinity of the site, Golf Road has a 7.8m wide carriageway accommodating a single traffic lane in both directions. Indented kerbside parking is provided to the north of the site along the west side.

The default urban speed limit of 50km/h applies to Golf Road.

**Beryl Avenue** is a local road aligned in an east-west direction between Cameron Avenue to west and Riley Street to the east.

Beryl Avenue has a carriageway width of approximately 6.8m in the vicinity of the site, which facilitates kerbside parking on both sides and a shared lane for through traffic.

It is noted that 6.8m (less than 7m) is generally considered insufficient for vehicles to park opposite one another and maintain a 3m clear width for through traffic. Accordingly, when assessing the supply of car parking, the capacity of one side has been included only.

The default urban speed limit of 50km/h applies to Beryl Avenue

The intersection between Beryl Avenue and Cameron Avenue is configured as an unsignalised T-intersection with priority given to Cameron Avenue via a Give-Way sign.

**Bakers Road** is a local road aligned in a north-south direction between South Road to the south and a court bowl to the north.

Bakers Road has a carriageway width of approximately 6.8m in the vicinity of the site, which facilitates kerbside parking on both sides and a shared lane for through traffic.

It is noted that 6.8m (less than 7m) is generally considered insufficient for vehicles to park opposite one another and maintain a 3m clear width for through traffic. Accordingly, when assessing the supply of car parking, the capacity of one side has been included only.

The default urban speed limit of 50km/h applies to Bakers Road.

The intersection between Bakers Road and Beryl Avenue is configured as an unsignalised four-way intersection with priority given to Beryl Avenue via a Give-Way sign.

Photographs depicting the surrounding road network are presented in Figure 4 and Figure 7.



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**Figure 7: Golf Road – view north**



**Figure 8: Golf Road – view south**



**Figure 9: Beryl Avenue – view east**



**Figure 10: Beryl Avenue – view west**



**Figure 11: Bakers Road – view north**



**Figure 12: Bakers Road – view south**



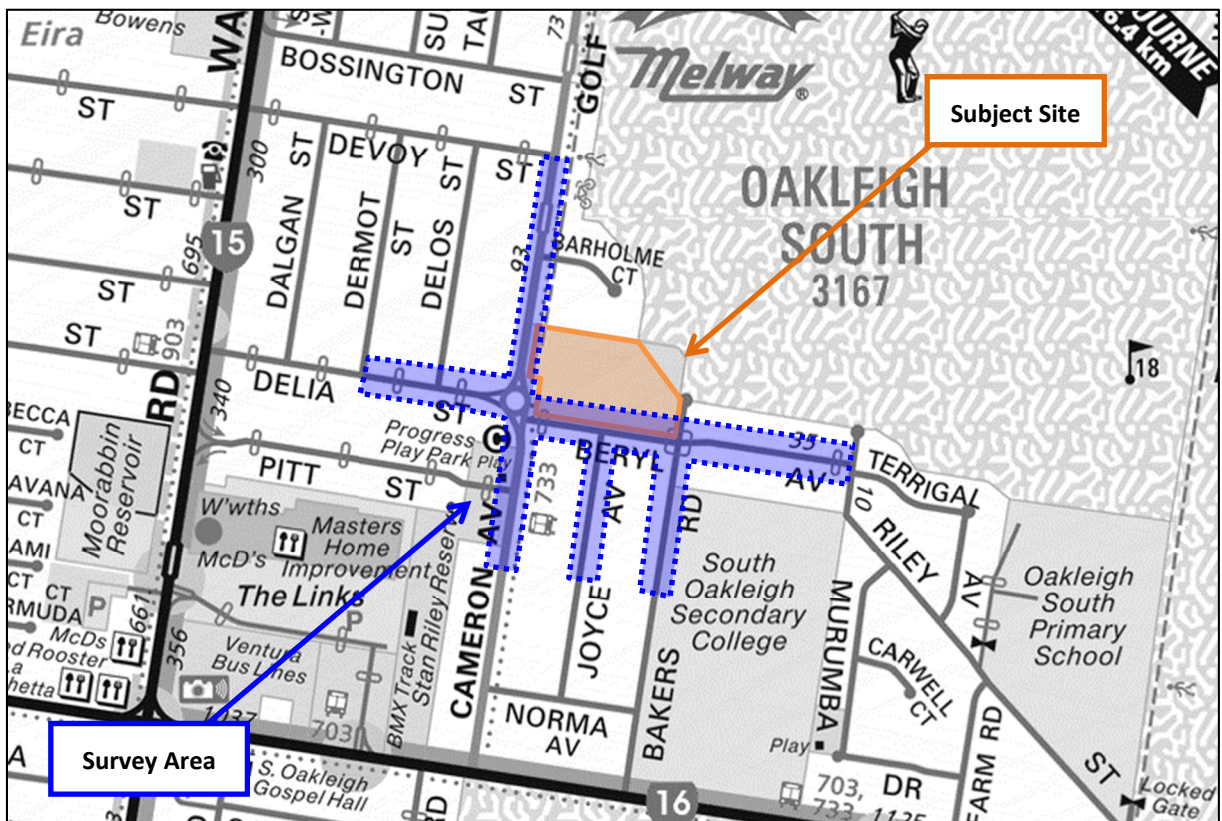
## Traffic Engineering Assessment

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### 3.3 Car Parking Conditions

As the requisite number of car spaces under Clause 52.06-5 are provided on the site, it is not necessary to consider the ability of on-street parking areas to accommodate overflow demands. However, for completeness we have undertaken a parking inventory survey to determine the existing car parking conditions for the area surrounding the site. The survey was conducted on Thursday 6<sup>th</sup> December, 2018 at 10am.

The area surveyed is shown in Figure 13 and the detailed results of the surveys are provided at Appendix B.



Source: Melway Publishing

**Figure 13: Parking Survey Area**

A total of 158 publicly available on-street car parking spaces are located within the inventory area.

On-street parking is generally unrestricted, with small areas controlled by 'Permit Zone' restrictions.

There is a total of 26 unrestricted car spaces located along the site's frontage to Beryl Avenue and 3 spaces along Bakers Road.

Kerbside parking is not available along the site's frontage to Golf Road.

The inventory indicated that on-street parking is in low demand with a total of 133 vacant spaces (25 cars parked, 16% occupancy).



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## 3.4 Public Transport

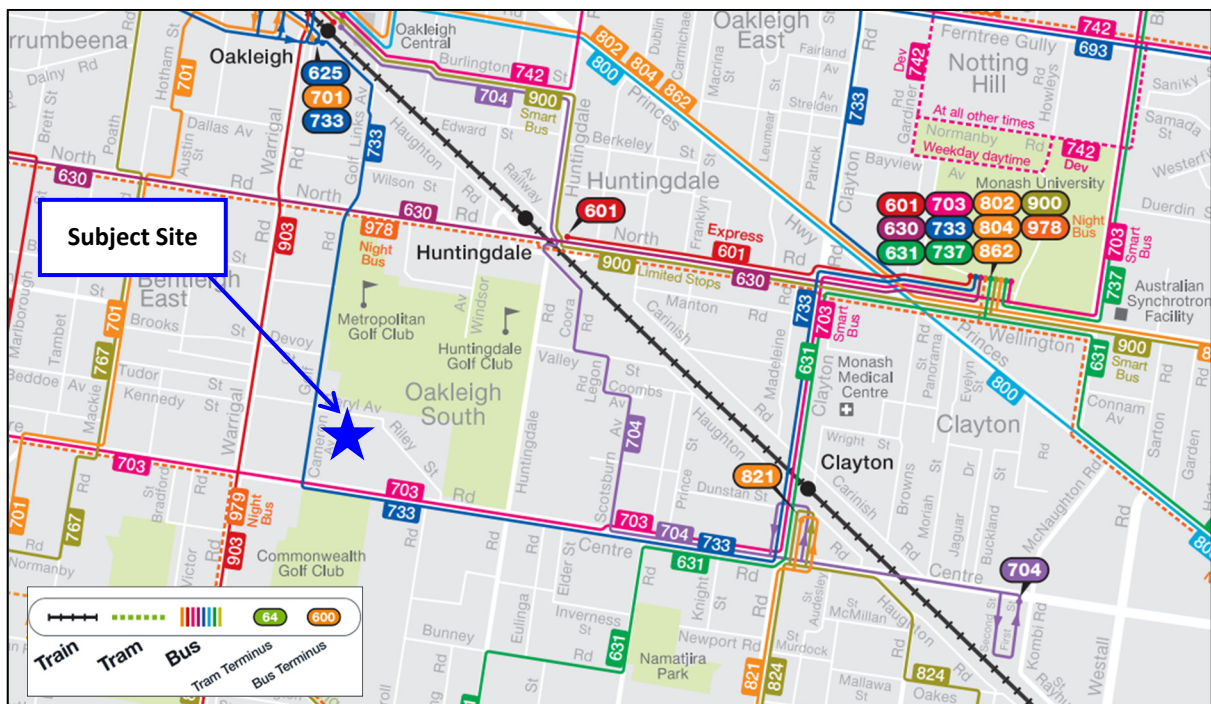
The site is served by a number of public transport services, including several bus services located within walking distance of the site.

The public transport network surrounding the site is shown in Figure 14. The key facilities located within the nearby area are detailed in the following table.

The closest railway station (walking distance) is Huntingdale Station, located 2.3km from the site. Oakleigh and Clayton Railway Stations are both accessible via bus routes mentioned below.

**Table 2: Summary of Public Transport Services**

Service	Between	Via
<b>Golf Road – approximately 100m walking distance north of the site</b>		
Bus Route 733	Oakleigh Station & Box Hill Station	Clayton, Monash University & Mt Waverley
<b>Warrigal Road – approximately 550m walking distance west of the site</b>		
Bus Route 903 (SmartBus)	Altona & Mordialloc	Sunshine, Essendon, Coburg, Preston, Heidelberg, Doncaster, Box Hill & Oakleigh
<b>Centre Road – approximately 550m walking distance south of the site</b>		
Bus Route 703	Middle Brighton & Blackburn	Bentleigh, Clayton & Monash University



Source: ptv.vic.gov.au

**Figure 14: Public Transport Map**

## 4 Traffic Engineering Assessment

### 4.1 Statutory Car Parking Assessment

The proposed development falls under the land-use category of 'dwelling' under Clause 74 of the Planning Scheme. The Planning Scheme sets out the parking requirements for new developments under Clause 52.06.

The purpose of Clause 52.06 is:

- *To ensure that car parking is provided in accordance with the State Planning Policy Framework and Local 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 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 (State Government of Victoria, 2018).*

As the site is located within the Principal Public Transport Network Area, the Column B rates apply to the site.

The car parking requirements for the proposed use are set out under Clause 52.06 and the car parking table at Clause 52.06-5 of the Planning Scheme.

The assessment of the car parking requirements associated with the proposed development is set out in Table 3.

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**Table 3: Statutory Car Parking Assessment – Clause 52.06**

Use	Size/No.	Statutory Parking Rate (Column B)	Car Parking Requirement (Note 1)	Car Parking Provision	Shortfall/ Surplus
Two-bedroom Townhouse	16	1 space per one or two- bedroom dwelling	16	16	0
Three-bedroom Townhouse	18	2 spaces per 3 or more bedroom dwelling	36	36	0
Four-bedroom Townhouse	55		110	110	0
Residential visitors	89 dwellings	No Requirement	0	12	+12
<b>TOTAL</b>			<b>162</b>	<b>174</b>	<b>+12</b>

Note 1: Clause 52.06-5 specifies that where a car parking calculation results in a requirement that is not a whole number, the number of spaces should be rounded down to the nearest whole number.

Table 3 indicates that the statutory car parking requirement for the development is 162 car spaces allocated to residents. No visitor car spaces are required under Column B of Clause 52.06-5.

The proposed car parking provision of 174 car spaces including 162 resident spaces and 12 shared visitor spaces meets the resident requirement and provides 12 additional visitor car spaces.

Accordingly, a car parking reduction is not required under Clause 52.06.

### Other Considerations – Availability of Alternative Car Parking

Whilst there is no requirement under Clause 52.06-5 (Column B) for visitor car parking to be provided on the site, there is likely to be some level of visitor car parking generated by the development.

Some visitor car parking will be accommodated on the site within the 12 spaces. Any overflow demands above the provision of 12 will be accommodated on-street. The reliance on off-site car parking areas for visitors of the development is consistent with the approach to residential developments in PPTN areas.

As detailed in Section 3.3, Traffix Group has undertaken a parking inventory survey of the surrounding area.

The results of these surveys highlight that there is a very low demand for on-street parking in the nearby area on weekdays during the day, with 133 vacant spaces (16% occupancy) in the survey area.

Post-development, a total of 19 car spaces will be available along the site's frontage to Beryl Avenue, which could accommodate overflow demands.

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### 4.2 Bicycle Parking Assessment

Statutory bicycle parking requirements are set out at Clause 52.34 of the Planning Scheme, as follows:

Dwellings:

- For residents: in developments of four or more storeys, one space per 5 dwellings
- For visitors: in developments of four or more storeys, one space per 10 dwellings

As this development is less than four storeys there is no statutory requirement to provide bicycle parking on site.

Given the nature of the development, informal bicycle parking can be accommodated within garages or elsewhere on the properties.

### 4.3 Review of Car Parking Layout and Access Arrangements

Traffix Group has provided design advice to the project architect to achieve a satisfactory carpark layout. The proposed parking layout has been assessed under the following guidelines:

- Clause 52.06-9 of the Planning Scheme (Design standards for car parking),
- Clause 55.03-9/10 of the Planning Scheme, and
- AS2890.1-2004 – Part 1: Off-Street car parking, where relevant.

The key elements of the design include:

#### ***Clause 52.06-9 Design Standard 1 – Accessways & Clause 55.03-9/10***

- Access to the development is provided via a 5.8m wide accessway (with landscaping on both sides) to Golf Road, which facilitates two-lanes accommodating simultaneous two-way movements and accords with Clause 52.06-9 (Design Standard 1) and AS2890.1-2004.
- Internal accessways are at least 5.5m wide with landscaping on both sides allowing for two-way traffic flow and accords with Clause 52.06-9 (Design Standard 1) and AS2890.1-2004.
- Vehicles will be able to enter and exit the site in a forwards direction in accordance with Clause 52.06-9.
- Full pedestrian sight triangles can be achieved on both sides of the accessway in accordance with Clause 52.06-9.
- The width of the accessways do not exceed 33% of the site's frontages to Golf Road, Beryl Avenue and Bakers Road in accordance with Standard B14 (Clause 55.03-9).
- Standard B15 of Clause 55.03-10 requires that shared accessways or carparks of other dwellings and residential buildings should be located at least 1.5m from the windows of habitable rooms. This requirement is satisfied.

#### ***Clause 52.06-9 Design Standard 2 – Car parking spaces***

- Visitor parallel car spaces are shown as 6.7m long and 2.3m wide satisfying the requirements of Clause 52.06-8 (Design Standard 2) and exceeding the requirements of AS2890.1-2004.

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- 90° Visitor car space dimensions are shown as 4.9m long and 2.8m wide with a minimum 6.2m wide access aisle in accordance with Clause 52.06-9 (Design Standard 2).
- Garage dimensions are in accordance with Planning Scheme requirements. We note that:
  - single garages are at least 6m long x 3.5m wide when measured inside the garage, meeting the Planning Scheme requirements;
  - single tandem garages are at generally 10.9m long x 3.5m wide when measured inside the garage, meeting the Planning Scheme requirements. In some cases, the rear tandem space is provided at 3.2m wide rather than 3.5m. We are satisfied that this is acceptable, as this width satisfies Diagram 1 of Clause 52.06-9 (Design Standard 2) and allows for the opening of car doors.
  - double garages are at least 6m long x 5.5m wide when measured inside the garage, meeting the Planning Scheme requirements;
- Open spaces provided in tandem to single garages are at least 5.4m long, which complies with Clause 52.06-8, providing a 4.9m long space with 0.5m offset (to the garage door) for tandem parking.
- Access has been checked to and from car spaces for the B85 design car presented in AS2890.1-2004 and is acceptable. Some car spaces may require an additional manoeuvre to access, however this is expressly permitted by AS2890.1-2004 for long term parking (i.e. resident parking) and is acceptable.

#### **Clause 52.06-9 Design Standard 3 – Gradients**

- Accessway grades across the site are naturally flat and accord with Clause 52.06-9, including maximum grades and transitions.

Based on the above, we are satisfied the proposed layout of car spaces is satisfactory and that the access arrangements for the site will provide for safe and efficient movements to and from the surrounding road network.

#### **Other Considerations**

Clause 52.06-9 specifies that before deciding on an application, the Responsible Authority must also consider:

*The relevant standards of Clauses 56.06-2, 56.06-4, 56.06-5, 56.06-7 and 56.06-8 for residential developments with accessways longer than 60m or serving 16 or more dwellings.*

A response to each of these requirements is set out in the following table.

**Table 6: Response to Clause 56.06 Requirements**

Planning Scheme Requirement	Development Response
Clause 56.06-2 – Walking and Cycling Network Objectives	The site has three street frontages and accordingly, the dwellings located around the east, south and west boundaries of the site have access to a footpath.
Clause 56.06-5 – Walking and Cycling Network Detail Objectives	The dwellings located within the centre of the site have access to footpaths which extend in a north-south direction through the site.

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Planning Scheme Requirement	Development Response
	<p>The dwellings located along the north boundary of the site also have access to the footpaths which extend in a north-south direction through the site.</p> <p>Further, the internal access roads will function as a low speed 'shared zone' and will be able to facilitate bicycle, pedestrian and vehicle movements within the site.</p> <p>Connections to the broader pedestrian and bicycle networks will be facilitated via the existing infrastructure on Golf Road and Beryl Avenue.</p> <p>Accordingly, we are satisfied that the development plans meets the objectives and standards of Clause 56.06-2 in regards to pedestrian and bicycle access.</p>
<p>Clause 56.06-4 – Neighbourhood and Street Network Objective</p> <p>Clause 56.06-7 – Neighbourhood Street Network Detail Objective</p>	<p>The proposed internal access road has a minimum carriageway width of 5.5m, which is akin to an 'Access Street – Level 1' under Clause 56.06-8 of the Planning Scheme. This road width is appropriate and will allow two-way traffic throughout the site.</p> <p>The accessway reduces to a width of 3.6m in one location which accords with the minimum carriageway width requirement as specified in Clause 52.06 of the Planning Scheme. This width only allows for one direction of traffic at a time.</p> <p>While the 'verge' requirements of Clause 56.06-8 are not met, the proposed road network within the site will be private roads under the control of the Owners' Corporation and will not be public 'Council' roads. Accordingly, these requirements are not applicable. Furthermore, we understand that the proposed "road reservation" widths are adequate to meet the servicing needs of the development.</p> <p>We are satisfied that the development meets the objectives of the Planning Scheme in regards to neighbourhood street network objectives.</p>
<p>Clause 56.06-8 – Lot Access Objective</p>	<p>Vehicle access to each garage and visitor spaces has been reviewed and is satisfactory.</p>

Based on the above, I am satisfied the proposed layout of car spaces is satisfactory and that the access arrangements for the site will provide for safe and efficient movements to and from the surrounding road network.

## 4.4 Traffic Generation & Impact

### 4.4.1 Traffic Generation

The RTA Guide to Traffic Generating Developments (2002) (RTA Guide) sets out traffic generation rates based on survey data collected in New South Wales for a range of land uses. This guide is referred to in the AustRoads Guide which is used by VicRoads, and is generally regarded as the standard for metropolitan development characteristics.

The RTA Guide sets out the following relevant traffic generation rates for medium density residential development:



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#### Smaller Units (one and two bedrooms):

- Daily vehicle trips = 4 – 5 per dwelling per day
- Weekday peak hour vehicle trips = 0.4 – 0.5 per dwelling per day

#### Larger Units (three or more bedrooms)

- Daily vehicle trips = 5 – 6.5 per dwelling per day
- Weekday peak hour vehicle trips = 0.5 – 0.65 per dwelling per day

For the purpose of providing a conservative analysis, we have applied a rate of 5 vehicle trip-ends per dwelling per day for each of the two-bedroom townhouse and a rate of 6.5 vehicle trip-ends per dwelling per day for each of the three and four bedroom townhouses, with 10% occurring during the road network peak hours.

This equates to a traffic generation rate of 555 vehicle trip-ends per day, with in the order of 56 vehicle trip-ends occurring during the road network peak hours.

This corresponds to one vehicle either entering or exiting the site every minute on average, during the peak hours (and less at other times).

#### 4.4.2 Traffic Distribution

The following sets out the adopted traffic distribution for the proposed development. This distribution has adopted the following key assumptions:

- 80% of vehicles will exit the site and 20% will enter the site during the AM peak hour, and
- 30% of vehicles will exit the site and 70% will enter the site during the PM peak hour.

Table 4 details the predicted entering and exiting traffic volumes associated with 56 vehicle trip ends for each peak hour, based on the key assumptions listed above.

**Table 4: Expected Development Peak Hour Traffic Volumes**

Peak Hour	Entry Movements	Exit Movements
AM Peak Hour	11 veh movement (1 car per 5-6 minutes)	45 veh movement (1 car per 1-2 minutes)
PM Peak Hour	39 veh movements (1 car per 1-2 minutes)	17 veh movements (1 car per 3-4 minutes)

We are satisfied that the surrounding road network has adequate capacity to accommodate traffic generated by the site, that the proposed access arrangements are satisfactory and that there will be no detrimental impacts on traffic conditions in the surrounding area as a result of the development.

#### 4.5 Service & Emergency Vehicle Access

We understand that waste will be collected via Council’s existing waste collection service on the site.

Bins will be stored in each individual garage and collection will occur along the internal road network from designated pick-up points within the site.

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We have assessed access to, from and throughout the subject site for a 12.5m (Heavy Rigid Vehicle), which we understand replicates the dimensions of Council waste collection vehicle. We are satisfied that the vehicle circulation and access arrangements will suitably accommodate Council's waste collection vehicle.

We are satisfied that all trucks and emergency service vehicles will be adequately accommodated on the site, as each of these vehicles will be smaller than the 12.5m long truck.

Accordingly, we are satisfied that the road network will adequately accommodate all waste collection, servicing and emergency service vehicle access required by the development.

## 5 Response to Council

The following table sets out our responses to Council's Traffic Engineering Internal Memo (dated 18<sup>th</sup> April, 2019).

**Table 5: Responses to Council**

Council Comment	Response
<i>Single width tandem garage - 3.5m wide by 11.4m long (The traffic report notes reduced width for rear spaces of 3.2m which is not acceptable).</i>	<p>We are satisfied that each of the tandem garages are designed appropriately. The tandem garages are provided at 10.9m long, with includes a 6.0m length of a standard garage and additional 4.9m to accommodate an additional space. We do not consider an additional 500mm (to extend to 11.4m) to be warranted, as significant clearances are provided within the original 6.0m garage length.</p> <p>The width of some second spaces at 3.2m, as opposed to 3.5m is acceptable, as it satisfies the requirement for clearances for car spaces under Diagram 1 of Clause 52.06-9 (Design Standard 2). The space allows for a 2.6m wide space, with 300mm clearance on both sides.</p> <p>We also note that this width exceeds the garage dimensions specified under AS2890.1-2004.</p>
<i>There is concern that storage areas proposed within the garages reduces the length of garage available for vehicles.</i>	All storage elements within the garages are located clear of the internal dimensions of the garages.
<i>The provision of a double crossing in the northwest corner of Baker Road appears to be awkward, may affect the existing golf course access and is not supported.</i>	This crossover has been removed from the plans.



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Council Comment	Response
<p><i>It is suggested that a minimum of 6.0m trafficable road width is required on the internal access roads to allow parked cars on one side and a garbage truck to be able to pass. Even if parking is not encouraged along the roadways, it is common practice that in this type of infill development residents will find any space they can to park any additional vehicle which may affect garbage truck movements.</i></p>	<p>We are satisfied that the current width of the road is appropriate to accommodate two-way traffic and the waste collection vehicle. Widening the road to this width will only serve to encourage this type of parking. This is something that should be actively limited is. Ensuring that vehicles do not park along the internal road is something that can be controlled by signage and can be enforced by the owners corporation.</p>
<p><i>There is concern that the swept path diagram for the waste vehicle relies on vehicle crossing areas (which may be blocked by overhanging vehicles) and affects proposed tree plantings.</i></p>	<p>The 500mm wide clearance lines of the swept paths slightly overhang some of the vehicle crossings. The body of the vehicle does not rely on these areas for the swept path to work.</p> <p>Regardless, none of the vehicle crossings are long enough that another vehicle would be parked in these areas.</p>

## 6 Conclusions

Having undertaken a detailed traffic engineering assessment for the proposed residential development at 52 Golf Road, Oakleigh South, we are of the opinion that:

- a) the proposed car parking provision accords with the statutory requirements for residents,
- b) this site is located within the PPTN area and accordingly, does not have a requirement to provide any residential visitor car parking on the site,
- c) some visitor car spaces (12 spaces) are provided on the site, with any overflow demands accommodate on-street as per the intention of the Column B car parking rates,
- d) accordingly, a reduction of the standard car parking requirements is not required under Clause 52.06-7,
- e) the proposed parking layout and vehicle arrangements accords with the relevant requirements of the Planning Scheme, AS2890.1:2004 (where relevant) and current practice,
- f) the site is adequately accessible for waste collection, service and emergency vehicles,
- g) traffic generated by the proposed development can be accommodated by the surrounding road network and intersections without any adverse impacts, and
- h) there are no traffic engineering reasons why a permit should not be granted for the proposed development located at 52 Golf Road in Oakleigh South.

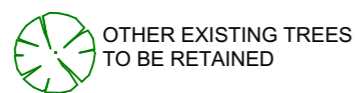
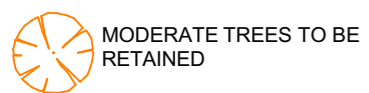
**Traffic Engineering Assessment**

52 Golf Road, Oakleigh South: Proposed Residential Development

# Appendix A Development Plans



LEGEND



**Traffic Engineering Assessment**

52 Golf Road, Oakleigh South: Proposed Residential Development

# Appendix B

## Car Parking Inventory

Surveyed By: Matthew Huynh

Survey Dates & Times: See below

Location	Restriction	Capacity Min - Max	Thursday 6th December, 2018
			10am
<b>ON-STREET CARPARKING</b>			
<b>GOLF ROAD</b>			
<b>East Side</b>			
No. 28 (NB) to Barholme Court	Unrestricted	7	3
	No Stopping	0	0
Barholme Court to No. 52 (WB)	No Stopping	0	0
	Bus Zone	-	0
	No Stopping	0	0
<b>No. 52 (WB) to Beryl Avenue (Subject Site)</b>	<b>No Stopping</b>	<b>0</b>	<b>0</b>
<b>West Side</b>			
Delia Street to No. 97 (NB)	No Stopping	0	0
	Unrestricted (Indented Parking)	1	0
	Bus Zone	-	0
	Unrestricted (Indented Parking)	2	1
	No Stopping	0	0
No. 97 (NB) to Deroy Street	No Stopping	0	0
	Bus Zone	-	0
<b>GOLF ROAD</b>	<b>Capacity</b>	<b>10 - 10</b>	<b>10</b>
	<b>Total Number of Cars Parked</b>		<b>4</b>
	<b>Total Number of Vacant Spaces</b>		<b>6</b>
	<b>Percentage Occupancy</b>		<b>40%</b>
<b>CAMERON AVENUE</b>			
<b>East Side</b>			
Beryl Avenue to No. 16 (SB)	No Stopping	0	0
	Bus Zone	-	0
	No Stopping 7-9am & 4-6pm Mon-Fri	11	0
<b>West Side</b>			
No. 17 (NB) to Pitt Street	Unrestricted	10	0
Pitt Street to Roundabout	Unrestricted	2	0
	Bus Zone	-	0
	No Stopping	0	0
<b>CAMERON AVENUE</b>	<b>Capacity</b>	<b>23</b>	<b>23</b>
	<b>Total Number of Cars Parked</b>		<b>0</b>
	<b>Total Number of Vacant Spaces</b>		<b>23</b>
	<b>Percentage Occupancy</b>		<b>0%</b>
<b>DELIA STREET</b>			
<b>North Side</b>			
Dermot Street to Delos Street	Unrestricted	7	0
Delos Street to Golf Road	Unrestricted	8	0
<b>South Side</b>			
Golf Road to No. 32 (WB)	Unrestricted	9	0
No. 32 (WB) to No. 18 (WB)	Unrestricted	13	5
<b>DELIA STREET</b>	<b>Capacity</b>	<b>37</b>	<b>37</b>
	<b>Total Number of Cars Parked</b>		<b>5</b>
	<b>Total Number of Vacant Spaces</b>		<b>32</b>
	<b>Percentage Occupancy</b>		<b>14%</b>

Surveyed By: Matthew Huynh

Survey Dates & Times: See below

Location	Restriction	Capacity Min - Max	Thursday 6th December, 2018
			10am
<b>BERYL AVENUE</b>			
<b>North Side</b>			
Cameron Avenue to Bakers Road (Subject Site)	Unrestricted	24	0
	Unrestricted	2	0
Bakers Road to Riley Street	Unrestricted	21	3
<b>West Side</b>			
Riley Street to Bakers Road	Unrestricted	19	1
Bakers Road to Joyce Avenue	Unrestricted	8	0
Joyce Avenue to Cameron Avenue	Unrestricted	7	1
<b>BERYL AVENUE</b>	<b>Capacity</b>	<b>66</b>	<b>66</b>
	<b>Total Number of Cars Parked</b>		<b>5</b>
	<b>Total Number of Vacant Spaces</b>		<b>61</b>
	<b>Percentage Occupancy</b>		<b>8%</b>
<b>Note:</b> Due to width of carriageway, parking can only be legally accommodated on one side of the road. Accordingly, we have only considered the capacity on one side.			
<b>BAKERS ROAD</b>			
<b>East Side</b>			
END to Beryl Avenue	Unrestricted	2	1
Beryl Avenue to opposite No. 17 (NB)	No Stopping	0	0
	Permit Zone	4	0
	P 2minute 8am-9am & 3-4pm School Days	6	0
	Bus Zone	-	0
	No stopping	0	0
<b>West Side</b>			
No. 17 (NB) to Beryl Avenue	Permit zone	14	3
	No Stopping	0	0
Beryl Avenue to END	Unrestricted	3	1
<b>BAKERS ROAD</b>	<b>Capacity</b>	<b>3</b>	<b>3</b>
	<b>Total Number of Cars Parked</b>		<b>2</b>
	<b>Total Number of Vacant Spaces</b>		<b>1</b>
	<b>Percentage Occupancy</b>		<b>67%</b>
<b>Note:</b> Due to width of carriageway, parking can only be legally accommodated on one side of the road. Accordingly, we have only considered the capacity on one side.			

Surveyed By: Matthew Huynh

Survey Dates & Times: See below

Location	Restriction	Capacity Min - Max	Thursday 6th December, 2018
			10am
<b>JOYCE AVENUE</b>			
<b>West Side</b>			
No. 15 (SB) to Beryl Avenue	Unrestricted	19	5
	No Stopping	0	0
<b>East Side</b>			
Beryl Avenue to No. 14 (SB)	No Stopping	0	0
	Unrestricted	17	4
<b>JOYCE AVENUE</b>	<b>Capacity</b>	<b>19</b>	<b>19</b>
	<b>Total Number of Cars Parked</b>		<b>9</b>
	<b>Total Number of Vacant Spaces</b>		<b>10</b>
	<b>Percentage Occupancy</b>		<b>47%</b>
<b>Note:</b> Due to width of carriageway, parking can only be legally accommodated on one side of the road. Accordingly, we have only considered the capacity on one side.			
<b>SUMMARY =&gt; ON-STREET CARPARKING</b>			
<b>Car Parking Supply</b>		<b>158 - 158</b>	<b>158</b>
<b>Total Number of Cars Parked</b>			<b>25</b>
<b>Total Number of Vacant Spaces</b>			<b>133</b>
<b>Percentage Occupancy</b>			<b>16%</b>

Note: Public parking includes spaces that are available to the general public and excludes 'No Stopping', 'Loading Zones' and 'No Parking' areas, etc., during the relevant enforcement periods

**LEGEND: Public Parking**

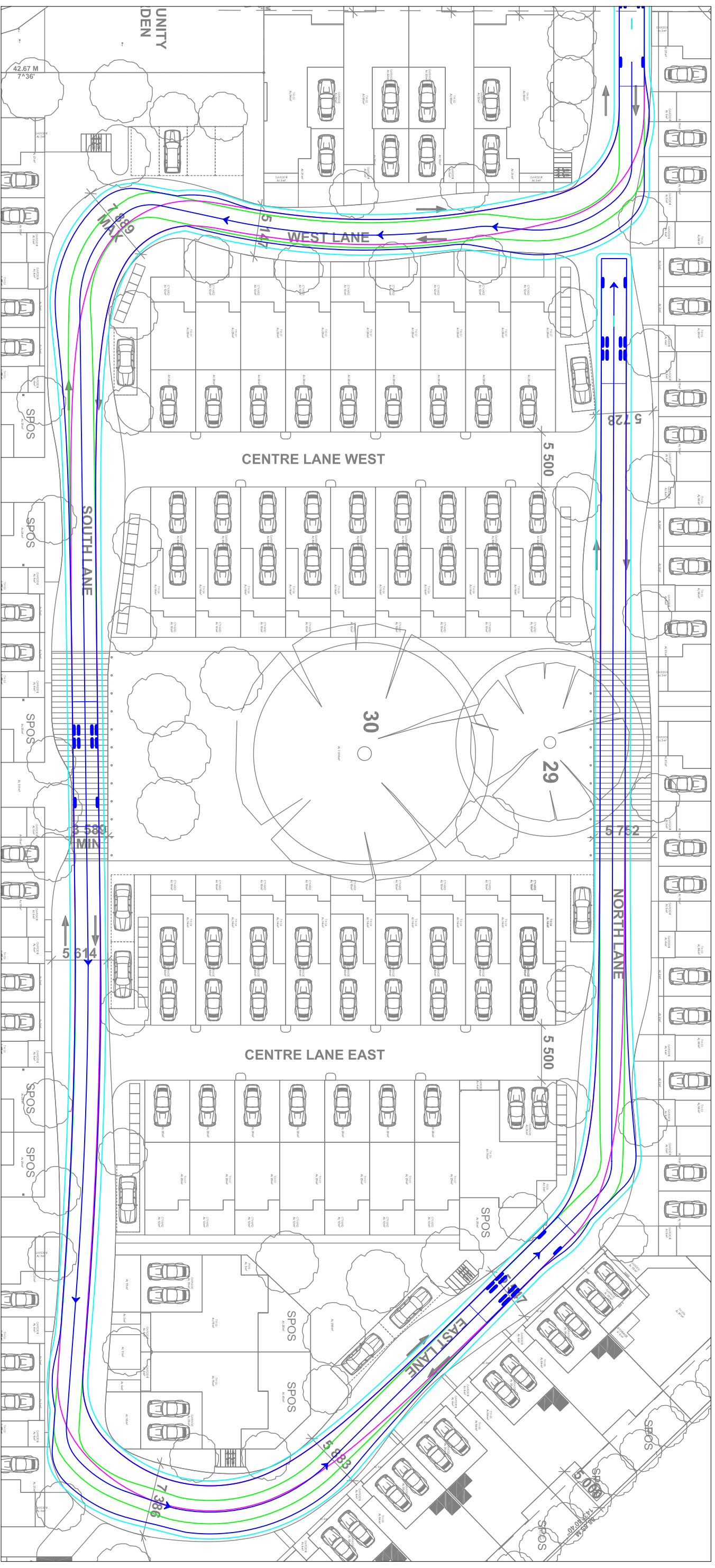
Not available to the general public

Not Available, illegally parked cars included in analysis  
 No Stopping/  
 Other No Parking


# Appendix C

## Swept Path Diagram





**PRELIMINARY ONLY  
NOT FOR CONSTRUCTION**



REV.	REVISION NOTES	REVISION DATE	DESIGNED BY:	24 MAY 2019	<p>Traffic Engineers and Transport Planners Suite 8/431 Bunn Road GLENNIE VIC 3168 TEL: (03) 9625-2888 FAX: (03) 9625-7444</p>	<p><b>52 GOLF ROAD, OAKLEIGH SOUTH</b> 12.5m HRV DESIGN SWEEP PATHS PROPOSED RESIDENTIAL DEVELOPMENT</p>
GENERAL NOTES:	<p>BASE INFORMATION FROM: 4.01 MASTER PLAN - GROUND FLOOR.dwg PREPARED BY Plus Architecture - received - 24.05.2019</p>		CHECKED BY:	24 MAY 2019		
			F. BANH			1:200 (A3)
			M. WOOLLARD			SHEET NO.: 01/01
			FILE NAME:	ISSUE:		JOB NO.: 25977
			25977-02.DWG	A		

