

Proposed Residential Development at 10 Alvina Street, Oakleigh South

Prepared For Alvina Development Pty Ltd

July, 2017 20245R#1



10 Alvina Street, Oakleigh South: Proposed Residential Development

Traffic Engineering Assessment

Proposed Residential Development at 10 Alvina Street, Oakleigh South

Document Control

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1 Introduction

Traffix Group has been engaged by Alvina Development Pty Ltd to prepare a traffic engineering report for a proposed residential development at 10 Alvina Street, Oakleigh South.

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

2 Proposal

The proposal is for a residential development on the site, comprising 96 townhouses. The table below summarises the development and proposed car parking allocation.

Table 1: Development Summary

Use	Size/No.	Car Parking Allocation	Resultant Car Parking Rate
Two-bedroom Townhouse	2	2	1 space / townhouse
Three-bedroom Townhouse	76	152	2 spaces / townhouse
Four-bedroom Townhouse	18	36	2 spaces / townhouse
Subtotal	96	190	1.98 spaces / townhouse
Visitor Car Parking	96	22	0.23 spaces per townhouse
Total	-	212	-

Access is proposed to Alvina Street, via a 6m wide crossover. Four townhouses have access to Alvina Street along the western boundary of the site, with all other townhouses taking access via internal roads.

A total of 22 visitor parking spaces are provided throughout the site. Seven car spaces can be accommodated on-street along the site's frontage to Alvina Street, post development (representing a loss of 5 spaces).

A pedestrian path is proposed to be retained on the eastern side of the site, to provide pedestrian access to Scotsburn Avenue.

A copy of the proposed development site plan is attached at Appendix A.

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3 Existing Conditions

3.1 Subject Site

The subject site is located on the east side of Alvina Street in Oakleigh South. A locality plan, aerial photograph and photograph of the subject site are presented in Figure 1 to Figure 3, respectively.

The development site is irregular in shape with a total site area of 2.04 hectares with direct frontages to Alvina Street and Scotsburn Avenue of approximately 86m and 3.4m, respectively.

The site is currently vacant and was formerly occupied by Clayton West Primary School. Access to the site is currently provided via a crossover to Alvina Street, located at the northwest corner of the site. Pedestrian access only is provided via the Scotsburn Avenue frontage.

There is a total of 12 unrestricted car spaces located along the site's frontage to Alvina Street.

The site is located within a General Residential Zone – Schedule 1 (GRZ1) under the Planning Scheme as presented at Figure 4. The site is also subject to Development Plan Overlay – Schedule 5 (DPO5). Land surrounding the site is predominantly residential.

Significant nearby land uses and activity centres are detailed below:

- a Special Use Zone (SUZ2) located to the south-west of the site, which was a former quarry,
- Davies Reserve (athletics track) to the west of the site,
- Huntingdale Golf Course located further to the west (on the west side of Huntingdale Road), and
- a small pocket of Mixed Use Zone (MUZ) land located to the southeast of the site on Scotsburn Avenue, comprising seven commercial tenancies with 90-degree parking on the Scotsburn Avenue frontage.

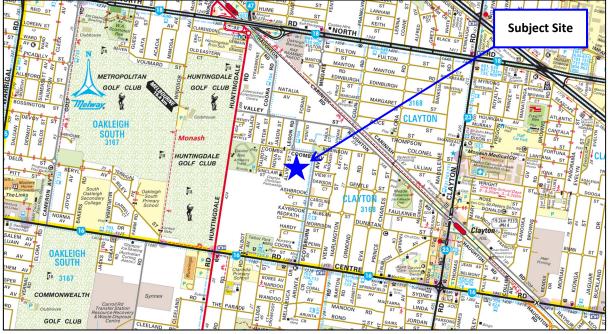


Figure 1: Locality Plan

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Source: Melway Publishing



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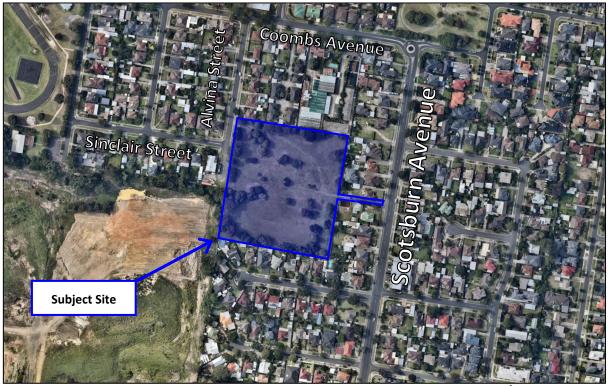


Figure 2: Aerial Photograph







Alvina Street frontage view south-east

Scotsburn Avenue frontage view west

Figure 3: Subject Site



10 Alvina Street, Oakleigh South: Proposed Residential Development

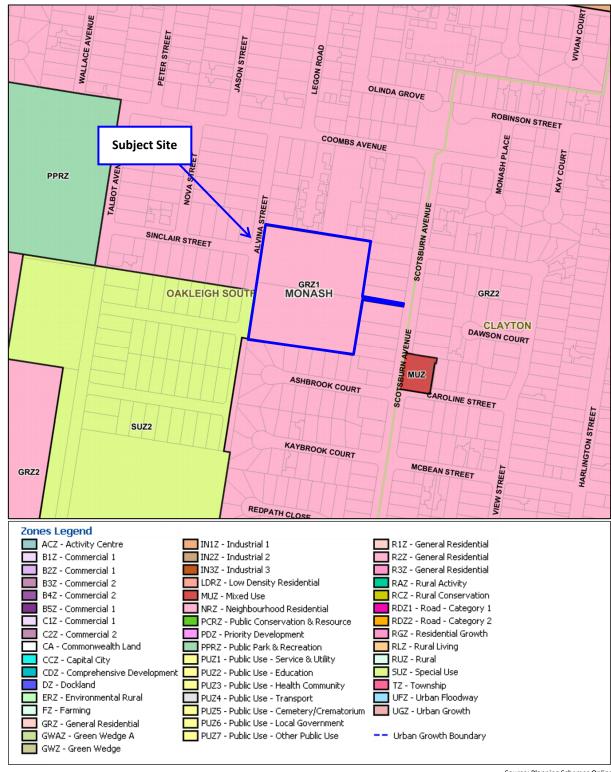


Figure 4: Land Use Zoning Map

Source: Planning Schemes Online



10 Alvina Street, Oakleigh South: Proposed Residential Development

3.2 Road Network

Alvina Street is a local dead-end access street which extends approximately 200m south from Coombs Avenue and terminates at the northern boundary of the former guarry.

The northern section of Alvina Street is constructed with a 6.5m carriageway with barrier kerb and footpaths on both sides, within a 15m road reservation.

The dead-end section south of Sinclair Street does not have kerb or channel, has not been maintained and is mostly gravel.

Coombs Avenue is a council collector road extending approximately 250m in an east-west direction between Monash Place and Legon Road.

In the vicinity of the subject site, Coombs Avenue is constructed with a 7.6m (approx.) carriageway carrying one traffic lane and a parallel parking lane in each direction with footpaths on both sides, within a 15m road reservation.

The default urban speed limit of 50 km/h applies to Alvina Street and Coombs Avenue.

Photographs depicting the surrounding road network are presented in Figure 5 to Figure 8.



Figure 5: Alvina Street - view south



Figure 6: Alvina Street - view north from site



Figure 7: Coombs Avenue – view east



Figure 8: Coombs Avenue - view west



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3.3 Car Parking Conditions

As the requisite 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. We do not expect there to be any overflow parking demands related to the proposed development. Visitors (and residents) are free to park on-street if they so choose as it is public parking, however the high level of car parking on the site minimises this possibility.

A series of spot parking occupancy surveys have been conducted by Traffix Group. These surveys were undertaken at various times to establish a parking profile for the area surrounding the site. The surveyed times included:

- 9am, 12noon & 7pm Thursday 23rd March, 2017, and
- 12noon & 7pm Saturday 25th March, 2017.

The survey times include the expected peak times for nearby residents (i.e. evenings and weekends).

The area surveyed is shown in Figure 9 and the detailed results of the surveys are provided at Appendix B.

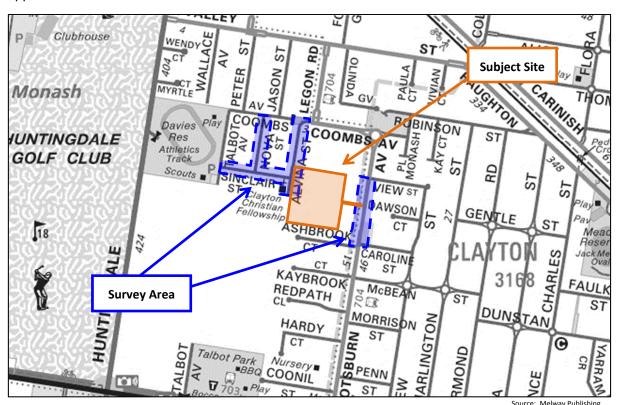


Figure 9: Parking Survey Area

A total of 156 publicly available on-street car parking spaces are located within the survey area.

On-street parking is unrestricted.

There is a total of 12 unrestricted car spaces located along the site's frontage to Alvina Street.

A profile of on-street parking demand is provided at Figure 10.



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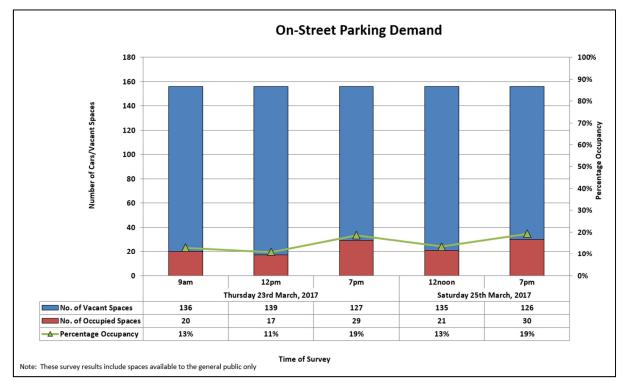


Figure 10: Profile of On-Street Parking Demand

The results of the surveys indicate that there is a very low level of demand for on-street parking throughout the whole survey period, with occupancy recorded between 11-19% (126-139 vacant car spaces).

The minimum number of vacant spaces recorded was 126 spaces at 7pm on Saturday 25th March, 2017 (30 parked cars, 19% occupancy).

3.4 Public Transport

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

The public transport network surrounding the site is shown in Figure 11. The key facilities located within the nearby area are detailed in the following table.



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Table 2: Summary of Public Transport Services

Service	Between	Via					
Scotsburn Avenue – past the subject site							
Bus Route 704	Clayton & Oakleigh	Clayton & Huntingdale					
Centre Road – approximately 600	m walking distance south of the site						
Bus Route 703 (SMARTBUS)	Bus Route 703 (SMARTBUS) Middle Brighton & Blackburn						
Bus Route 733	Oakleigh Station & Box Hill Station	Clayton, Monash University & Mt Waverley					
Springs Road – approximately 800	m walking distance south-east of the	e site					
Bus Route 631	Southland SC & Waverley Gardens SC	Clayton & Monash University					
Clayton Railway Station – Cranbourne and Pakenham Line – approximately 1.3km walking distance east of the site							
Clayton Park Station ⁽¹⁾	Richmond, South Yarra, Caulfield, etc.						

(1) Huntingdale Railway Station also located 1.3km walking distance north-west of the site, located on the same train line.

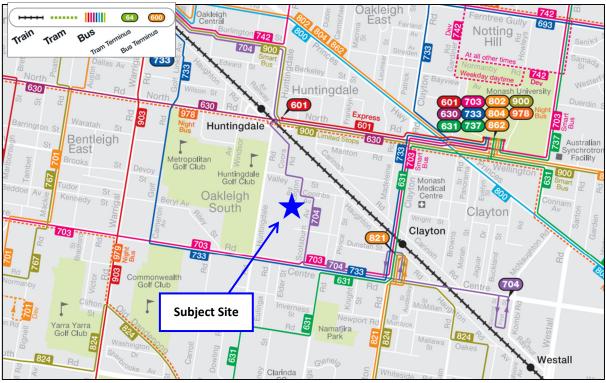


Figure 11: Public Transport Map

Source: ptv.vic.gov.au



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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.

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	Car Parking Requirement (Note 1)	Car Parking Provision	Shortfall(-)/ Surplus(+)
Two-bedroom Townhouse	2	1 car space per one or two- bedroom dwelling	2	2	0
Three-bedroom Townhouse	76	2 spaces per 3 or more	152	152	0
Four-bedroom Townhouse	18	bedroom dwelling	36	36	0
Residential visitors	96	1 car space per 5 dwellings, for developments of 5 or more dwellings	19	22	+3
TOTAL			209	212	+3

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 209 car spaces, including 190 spaces for residents and 19 spaces for residential visitors.

The proposed car parking provision of 212 car spaces meets the resident requirement and exceeds the visitor requirement by three (3) spaces.

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

Other Considerations – Availability of Alternative Car Parking

As detailed in Section 3.3, Traffix Group has undertaken a series of spot parking surveys 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 throughout the whole survey period, with vacancies varying between 126-139 vacant spaces (11-19% occupancy) in the survey area.

Post-development, a total of 7 car spaces will be available along the site's frontage to Alvina Street (net loss of 5 spaces), which could accommodate any overflow in the unlikely event that it occurs.



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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 provided via parking bicycles 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 6.0m wide crossover to Alvina Street, which
 facilitates two-lanes accommodating simultaneous two-way movements along its length and
 accords with Clause 52.06-9 (Design Standard 1), which requires accessways to be at least 3m
 wide.
- Internal accessways are at least 5.5m wide allowing for two-way traffic flow at low speeds with landscaping on both sides in order to facilitate two-way flow, with an exception of a 3.0m wide accessway providing access to three dwellings within a dead end accessway.
- We recommend that a minimum height clearance of 2.1m in accordance with the requirements set out in Clause 52.06-8 is provided beneath overhead obstructions for the townhouse garages.
- Vehicles will be able to enter and exit the site in a forwards direction in accordance with Clause 52.06-9.
- Pedestrian sight triangles are not shown on the plans, however full pedestrian sight triangles can
 be achieved on both sides of the accessway. The indication of pedestrian sight triangles can be
 included as a condition of permit.
- The width of the accessways do not exceed 33% of the site's frontage to Alvina Street (23% only) in accordance with Standard B14 (Clause 55.03-9).



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 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 where the ends of the space are obstructed satisfying the requirements of Clause 52.06-8 (Design Standard 2) and exceeding the requirements of AS2890.1-2004.
- 90° Visitor car space dimensions are shown as 4.9m long and 3.0m wide with a 5.5m 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:
 - o single garages are at least 6m long x 3.5m wide when measured inside the garage, meeting the Planning Scheme requirements;
 - o 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 5.4mlong, 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 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.

4.4 Access and Mobility Management

Clause 56.06 of the Planning Scheme sets out access and mobility objectives and standards for residential subdivisions. The proposed roads within the site will be private roads under the control of an Owners' Corporation and will not be public Council roads. Accordingly, some objectives and standards of Clause 56.06 are not applicable to the proposed development plan.

4.4.1 Walking and Cycling Network

Pedestrian paths are proposed along one side of the internal access roads, with the footpath provided on the western internal road to connect with Alvina Street. The proposed footpaths will facilitate pedestrian movements of residents and their visitors between Alvina Street and Scotsburn Avenue.



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The internal access road will function as a low speed 'shared zone' and will be able to facilitate bicycle movements without the need for a dedicated bicycle path.

Connections to the broader pedestrian and bicycle networks will be facilitated via the existing infrastructure on Alvina Street and Scotsburn Avenue.

The Development Plan meets the objectives and standards of Clause 56.06-2 walking and cycling network.

4.4.2 Public Transport Network

The subject site is within walking distance of a bus stop on Bus Route 704 which provides a service between East Clayton and Oakleigh via Clayton and Huntingdale. The bus stop for this route is accessed via the pedestrian crossover to Scotsburn Avenue from the site, approximately 50m walking distance from the site.

4.4.3 Road Network

The proposed internal access road has a 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 considered appropriate and will allow two-way traffic throughout the site.

The laneway in the south-west corner of the site has a reduced carriageway width of 3.0m 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 however given the small number of dwellings this lane services and its short length it is considered an appropriate arrangement.

While the 'verge' requirements of Clause 56.06-8 are not met, we understand that 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.

4.4.4 Traffic Management

Generally, traffic management devices to control traffic speed are only required on sections of road that exceed 240m in length. None of the proposed roads exceed this length and accordingly, the provision of traffic management devices (speed humps, slow points, etc.) is unnecessary.

4.5 Traffic Generation & Impact

4.5.1 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

<u>Larger Units (three or more bedrooms)</u>

- 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 621 vehicle trip-ends per day, with in the order of 62 vehicle trip-ends occurring during the road network peak hours.

This corresponds to one vehicle either entering or exiting the site every 58 seconds on average, during the peak hours (and less at other times).

4.5.2 Traffic Distribution

Trips generated by the proposed development will travel along Alvina Street and further along onto Coombs Avenue and Legon Road.

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 62 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	12 veh movement (1 car per 5 minutes)	50 veh movement (1 car per 1-2 minutes)
PM Peak Hour	43 veh movements (1 car per 1-2 minutes)	19 veh movements (1 car per 3-4 minutes)

We also note that the subject site was formerly a primary school, which would have generated more than 62 vehicle trip-ends during the peak hour and accordingly the proposed use is less intensive and is likely to generate less impact on the surrounding road network and intersections compared to the former use of the site.

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.



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4.6 Service & Emergency Vehicle Access

We have checked access to, from and throughout the subject site for an 8.8m medium rigid vehicle. We are satisfied that the site is adequately accessible for service and emergency vehicles (including waste collection vehicles and fire trucks).

We understand that waste collection will be undertaken privately and can be done so with the use of a waste collection vehicle up to 8.8m long.

5 Conclusions

Having inspected the site, perused relevant documents and plans, provided design advice and undertaken an assessment of car parking and traffic generation and impacts, we are of the opinion that:

- a) the proposed car parking provision exceeds the statutory requirements for residents and exceeds the visitor requirement by three spaces,
- accordingly, a reduction of the standard car parking requirements is not required under Clause 52.06-7,
- c) the proposed parking layout and vehicle arrangements accords with the requirements of the Planning Scheme, AS2890.1:2004 (where relevant) and current practice,
- d) the site is adequately accessible for waste collection and emergency vehicles,
- e) traffic generated by the proposed development can be accommodated by the surrounding road network and intersections without any adverse impacts; and
- f) there are no traffic engineering reasons why a permit should not be granted for the proposed development located at 10 Alvina Street in Oakleigh South.



10 Alvina Street, Oakleigh South: Proposed Residential Development

Appendix A: Development Plans





10 Alvina Street, Oakleigh South: Proposed Residential Development

Appendix B: Parking Survey Results

Supervised By: Fiona Banh Surveyed By: Rizwan

Survey Dates & Times: See below



Location	Restriction	Capacity Min - Max	Thursday 23rd March, 2017			Saturday 25th March, 2017	
	Restriction		9am	12pm	7pm	12noon	7pm
ON-STREET CARPARKING							
ALVINA STREET							
East Side							
Coombs Avenue to NB#10	No Stopping (10m)	-	0	0	0	0	0
	Unrestricted	13	3	3	4	3	4
NB#10 to Dead End (Subject Site)	Unrestricted	12	0	0	1	1	0
West Side							
Dead End to Sinclair Street	Unrestricted	3	0	0	0	0	0
	No Stopping (10m)	-	0	0	1	0	0
Sinclair Street to SB#7	No Stopping (10m)	-	0	0	0	0	0
Silician Street to 35#7	Unrestricted	9	0	0	0	0	1
SB#7 to NB#1	Unrestricted	9	0	0	1	1	1
	Capacity	46 - 46	46	46	46	46	46
ALVINA STREET	Total Number of Cars Parked		3	3	7	5	6
	Total Number of Vacant Spaces		43	43	39	41	40
	Percentage Occupancy		7%	7%	15%	11%	13%
SINCLAIR STREET							
South Side							
Alvina Street to EB#6	No Stopping (20m)	-	0	0	0	0	0
	Unrestricted	7	2	0	2	1	2
EB#6 to Talbot Avenue	Unrestricted	11	0	1	0	0	1
EB#0 to Taibot Avenue	No Stopping (10m)	-	0	0	0	0	0
North Side							
	No Stopping (10m)	-	0	0	0	0	0
Talbot Avenue to Nova Street	Unrestricted	8	1	1	1	1	2
	No Stopping (10m)	-	0	0	0	0	0
	No Stopping (10m)	-	0	0	0	0	0
Nova Street to Alvina Street	Unrestricted	8	0	0	1	0	1
	om estricted						
	No Stopping (20m)	-	0	0	0	0	0
		- 34 - 34	0 34	0 34	0 34	0	0 34
SINCLAID STREET	No Stopping (20m)	34 - 34					
SINCLAIR STREET	No Stopping (20m) Capacity	34 - 34	34	34	34	34	34

Supervised By: Fiona Banh
Surveyed By: Rizwan

Survey Dates & Times: See below



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Location	Restriction	Capacity	Thursda	Thursday 23rd March, 2017			Saturday 25th March, 2017	
Location	Restriction	Min - Max	9am	12pm	7pm	12noon	7pm	
NOVA STREET						1		
West Side								
Study Study SDIZ	No Stopping (10m)	-	0	0	0	0	0	
Sinclair Street to SB#7	Unrestricted	7	0	1	0	0	1	
	Unrestricted	8	0	0	0	0	1	
SB#7 to Coombs Avenue	No Stopping (10m)	-	0	0	0	0	0	
East Side								
S and a second MBHO	No Stopping (10m)	-	0	0	0	0	0	
Coombs Avenue to NB#10	Unrestricted	9	2	2	2	1	1	
	Unrestricted	7	0	0	0	0	2	
NB#10 to Sinclair Street	No Stopping (10m)	-	0	0	0	0	0	
	Capacity	31 - 31	31	31	31	31	31	
NOVA STREET	Total Number of Cars Parked		2	3	2	1	5	
NOVA STREET	Total Number of Vacant Spaces		29	28	29	30	26	
	Percentage Occupancy		6%	10%	6%	3%	16%	
SCOTSBURN AVENUE								
East Side								
View Street to SB#34	No Stopping (10m)	-	0	0	0	0	0	
view street to se#54	Unrestricted	13	1	1	3	3	3	
SB#34 to Caroline Street	Unrestricted (90° angle)	12	5	5	8	4	5	
West Side								
Ashbrook Court to NB#25	No Stopping (10m)	-	0	0	0	0	0	
ASTIDITOR COURT to NB#25	Unrestricted	9	2	1	2	2	2	
NB#25 to NB#15	Unrestricted	11	4	2	3	4	3	
	Capacity	45 - 45	45	45	45	45	45	
SCOTSBURN AVENUE	Total Number of Cars Parked		12	9	16	13	13	
	Total Number of Vacant Spaces		33	36	29	32	32	
	Percentage Occupancy		27%	20%	36%	29%	29%	
SUMMARY => ON-STREET CARPARKING								
Car Parking Supply		156 - 156	156	156	156	156	156	
Total Number of Cars Parked			20	17	29	21	30	
Total Number of Vacant Spaces			136	139	127	135	126	
Percentage Occupancy			13%	11%	19%	13%	19%	
Note: Public parking includes spaces that are available to the genera	I public and excludes 'No Stopping' areas, etc.,	during the relev	ant enforcem	ent periods				
	Public Parking							
	Not available to the general public							
	Not Available, illegally parked cars included in analysis							
	No Stopping/							
	Other No Parking							

Nb/Sb - Northern/Southern Property Boundary Eb/Wb - Eastern/Western Property Boundary Mid pt - Mid point ROW - Right of Way

- Right of Way

Prepared by Traffix Group Pty Ltd