

10 Alvina Street, Oakleigh South

Proposed Residential Development

Victorian Civil and Administrative Tribunal

VCAT Reference Number: P2171/2015

Date of Hearing: 4th September, 2017 (4 days)

Date of Statement: 16th August, 2017

Date of Inspection: 22nd March, 2017

Prepared For the Applicant: Spire Group Pty Ltd

Instructed By: Minter Ellison

IN THE MATTER OF AN APPLICATION FOR REVIEW BY THE PERMIT APPLICANT AGAINST MONASH CITY COUNCIL'S NOTICE OF REFUSAL TO GRANT A PERMIT FOR APPLICATION NO. TP426 FOR A RESIDENTIAL DEVELOPMENT AT 10 ALVINA STREET, OAKLEIGH SOUTH

STATEMENT TO THE VICTORIAN CIVIL AND ADMINISTRATIVE TRIBUNAL BY CHARMAINE DUNSTAN, TRAFFIC ENGINEER

VCAT Reference Number: P2171/2015

10 Alvina Street, Oakleigh South: Proposed Residential Development

Traffic Engineering Assessment

Proposed Residential Development

at

10 Alvina Street, Oakleigh South

Document Control

Issue No.	Type	Date	Prepared By	Approved By
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20245A#1

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1 Executive Summary

1.1 Proposal and Summary of Issues

This statement presents my traffic engineering assessment of a proposed residential development at 10 Alvina Street, Oakleigh South.

The development proposal considered by Monash City Council under Application No. TP426 was for 108 three-bedroom attached townhouse style dwellings, comprising:

- 62 x three storey, three-bedroom dwellings, and
- 46 x two storey, three-bedroom dwellings.

All dwellings were provided with 2 car spaces. A total of 22 shared visitor car parking spaces were provided on the site. No reduction for car parking was sought under Clause 52.06-5.

An Application for Review has been lodged by the permit application against Monash City Council's refusal to approve the Development Plan under Section 149 of the *Planning and Environmental Act 1987 (P&E Act)*. None of the grounds of refusal directly relate to traffic engineering matters.

A set of amended plans, prepared by Rothe Lowman (dated July, 2017), have been circulated for the VCAT hearing. These plans detail a 96 dwelling development, including the following breakdown of dwelling types and allocation of car parking:

- 2 x two-bedroom townhouses (1 car space per townhouse),
- 76 x three-bedroom townhouses (2 car spaces per townhouse),
- 18 x four-bedroom townhouses (2 car spaces per townhouse), and
- 22 shared visitor spaces, at a rate of 0.23 car spaces per townhouse.

The proposal includes a total of 212 car spaces, including 190 spaces for residents and 22 spaces for visitors.

I have visited the site, made various assessments, perused relevant documentation and plans, and report as follows.

The Statement Of Witness is provided in accordance with the VCAT Practice Note – PNVCAT2 – Expert Evidence is provided at Appendix A.

1.2 Summary of Opinion

Having undertaken a detailed traffic engineering assessment for the proposed residential development at 10 Alvina Street, Oakleigh South, I am of the opinion that:

- a) the development generates a statutory car parking requirement of 209 car spaces under Clause 52.06-5 of Planning Scheme, including 190 resident spaces and 19 visitor car spaces,
- b) the provision of 212 car spaces, including 190 resident car spaces and 22 visitor car spaces, exceeds the car parking requirements under Clause 52.06-5 of the Planning Scheme and a car parking reduction is not sought by the application,
- c) bicycle parking is not required under Clause 52.34 of the Planning Scheme as the development is less than 4 storeys in height. However, I am satisfied that any bicycle demands can be accommodated within the private garages of each dwelling,
- d) the proposed parking layout and vehicle access arrangements accord with the requirements of the Planning Scheme, AS2890.1:2004 (where relevant) and current practice, subject to the following recommendation included as a condition of permit:
 - i) a minimum headroom clearance of 2.1m provided beneath obstructions within the private garages,
- e) the proposed vehicle access to Alvina Street will facilitate safe and convenient access to the site,
- f) waste collection will be via Council's existing services for the dwellings accessed from Alvina Street and a private contractor for the dwellings which have access to the internal roads,
- g) the level of traffic generated as a result of this proposal will be modest, residential in nature, spread throughout the day and will be lower than the historical use of the development site as a primary school, and
- h) there are no traffic engineering reasons why the development plan for 10 Alvina Street, Oakleigh South, should be refused, subject to appropriate conditions.

2 The Proposal

My assessment is based on the development plans prepared by Rothe Lowman (dated July, 2017) which have been circulated for the VCAT hearing. A copy of the parking and access layout plan is attached at Appendix B.

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	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
<i>Resident Subtotal</i>	<i>96</i>	<i>190</i>	<i>1.98 spaces / townhouse</i>
Visitor Car Parking	96	22	0.23 spaces per townhouse
Total	-	212	-

The proposal includes a total of 212 car spaces, including 190 spaces for residents and 22 spaces for visitors. This provision exceeds the requirement for car parking under Clause 52.06-5 of the Planning Scheme and therefore does not seek a reduction for car parking.

Vehicle 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 car 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 will be retained on the eastern side of the site, providing pedestrian access to Scotsburn Avenue.

3 Application for Review

An Application for Review has been lodged by the permit application against Monash City Council's refusal to approve the Development Plan under Section 149 of the *Planning and Environmental Act 1987 (P&E Act)*. None of the grounds of refusal directly related to traffic engineering matters.

3.1 Statements of Grounds

I understand that no Statements of Grounds were received by third party objectors in relation to this appeal.

4 Existing Conditions

The subject site is located on the east side of Alvina Street in Oakleigh South. A locality plan, aerial photograph and photographs of the subject site are presented in Figure 1 to Figure 4, 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. Vehicle 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 5. 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.

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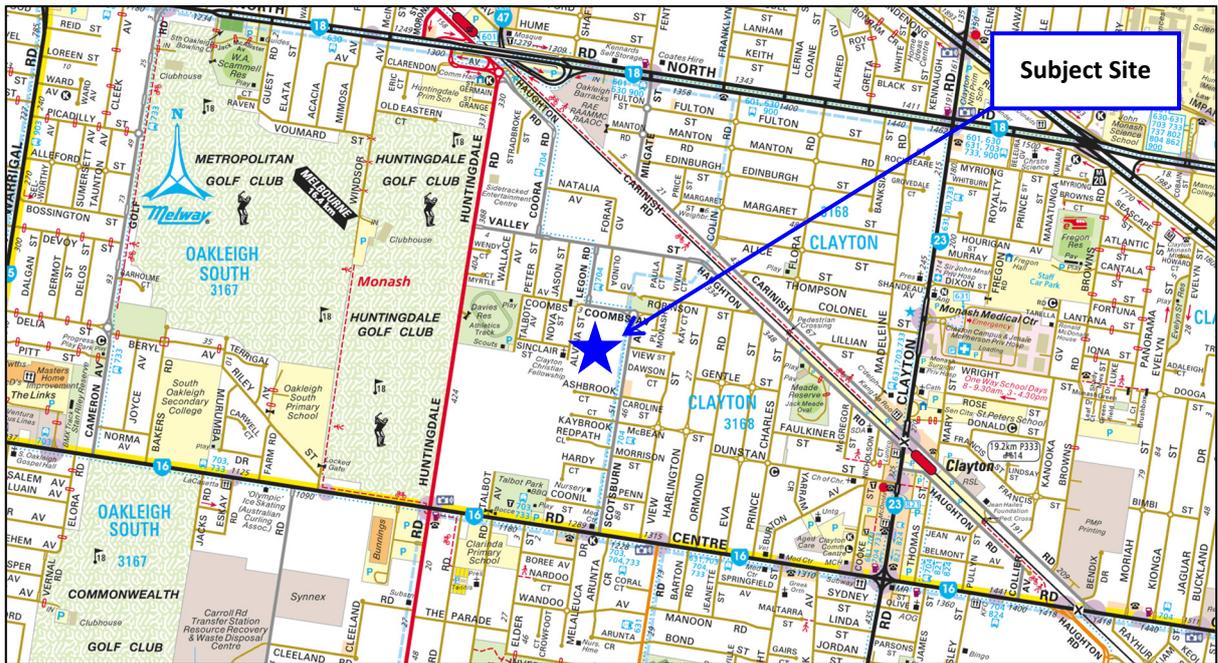


Figure 1: Locality Plan

Source: Melway Publishing

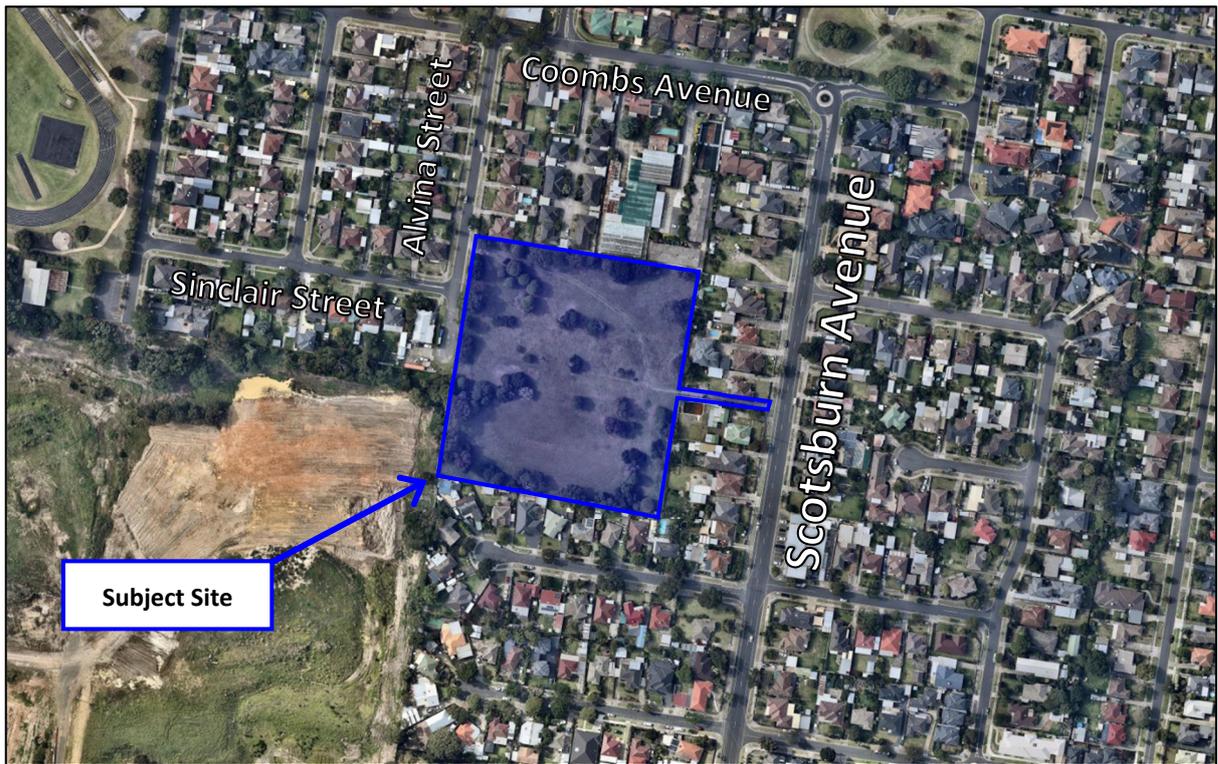


Figure 2: Aerial Photograph

Source: www.nearmap.com

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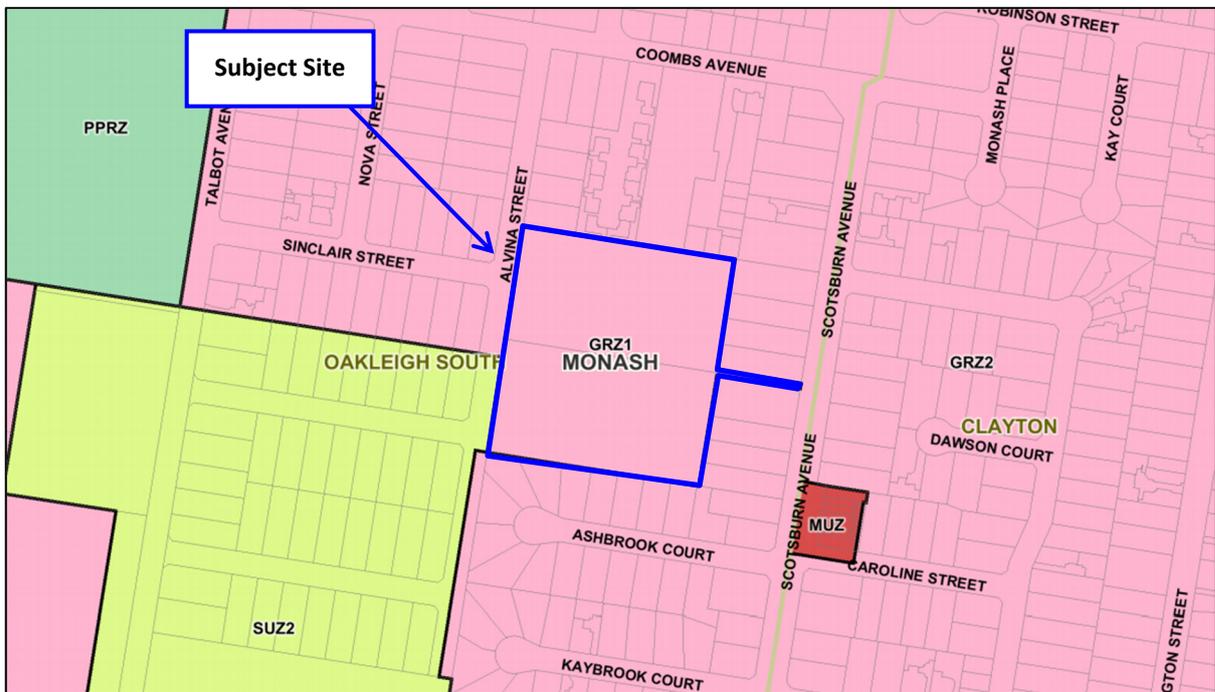
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Figure 3: Alvin Street frontage (view south-east)



Figure 4: Scotsburn Avenue frontage (view west)



Zones Legend

ACZ - Activity Centre	IN1Z - Industrial 1	R1Z - General Residential
B1Z - Commercial 1	IN2Z - Industrial 2	R2Z - General Residential
B2Z - Commercial 1	IN3Z - Industrial 3	R3Z - General Residential
B3Z - Commercial 2	LDRZ - Low Density Residential	RAZ - Rural Activity
B4Z - Commercial 2	MUZ - Mixed Use	RCZ - Rural Conservation
B5Z - Commercial 1	NRZ - Neighbourhood Residential	RDZ1 - Road - Category 1
C1Z - Commercial 1	PCRZ - Public Conservation & Resource	RDZ2 - Road - Category 2
C2Z - Commercial 2	PDZ - Priority Development	RGZ - Residential Growth
CA - Commonwealth Land	PPRZ - Public Park & Recreation	RLZ - Rural Living
CCZ - Capital City	PUZ1 - Public Use - Service & Utility	RUZ - Rural
CDZ - Comprehensive Development	PUZ2 - Public Use - Education	SUZ - Special Use
DZ - Dockland	PUZ3 - Public Use - Health Community	TZ - Township
ERZ - Environmental Rural	PUZ4 - Public Use - Transport	UFZ - Urban Floodway
FZ - Farming	PUZ5 - Public Use - Cemetery/Crematorium	UGZ - Urban Growth
GRZ - General Residential	PUZ6 - Public Use - Local Government	
GWAZ - Green Wedge A	PUZ7 - Public Use - Other Public Use	
GWZ - Green Wedge		

Source: Planning Schemes Online

Figure 5: Land Use Zoning Map

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4.1 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 quarry.

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 6.5m wide road width accommodates parking on one side only, with a shared lane for two-way through traffic. Alternatively, the road width can accommodate a lane for through traffic in each direction.

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 carriageway with footpaths on both sides, within a 15m road reservation.

The 7.6m wide road width accommodates parking on both sides with a shared lane for through traffic. Alternatively, the road width accommodates a parking lane on one side with a lane for through traffic in each direction.

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 6 to Figure 9.

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Figure 6: Alvina Street – view south



Figure 7: Alvina Street – view north from site



Figure 8: Coombs Avenue – view east



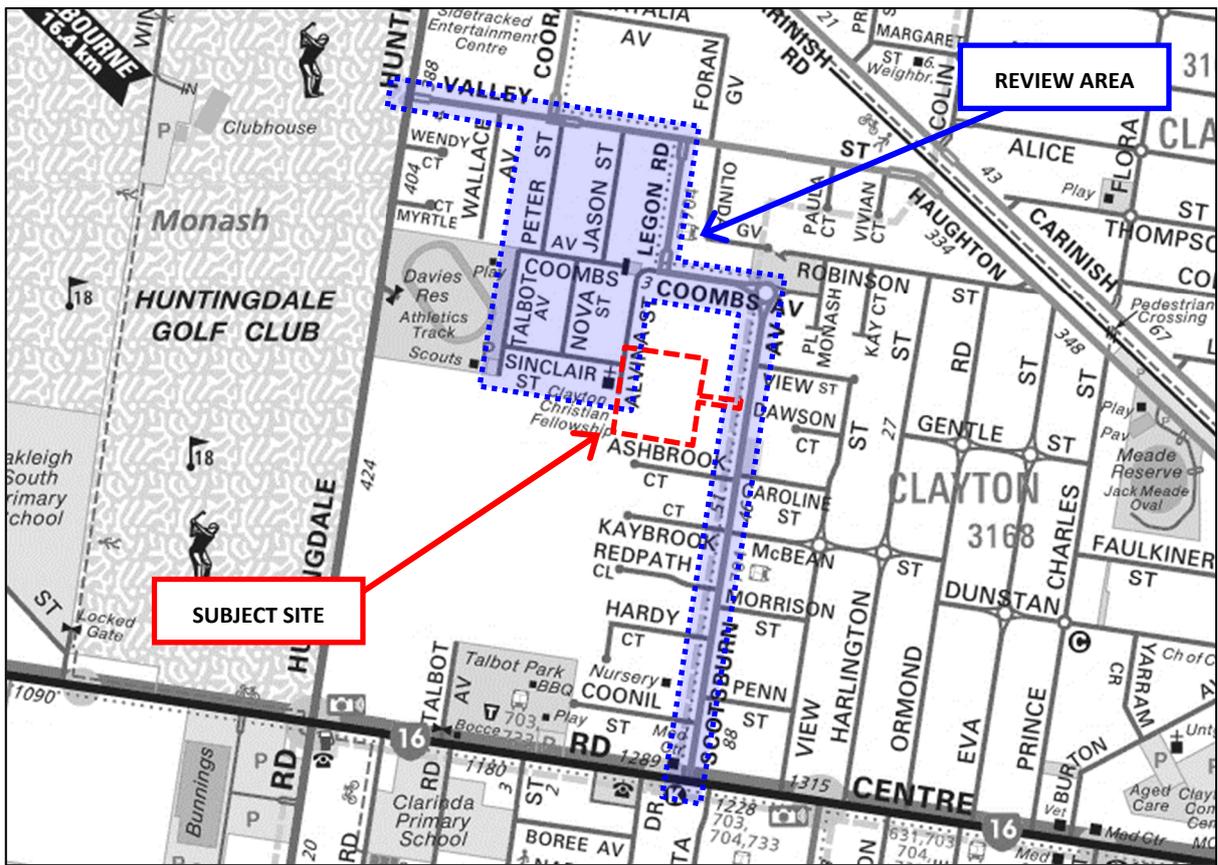
Figure 9: Coombs Avenue – view west

4.1.1 Road Safety Review

A review has been undertaken of road casualty crash statistics for the past 5 years of available data (1st January 2012 to 31st December, 2016). This data includes all casualty crashes (it does not include accidents that resulted in property damage only). The review included the area indicated in the figure below.

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Figure 10: Casualty Crash Review Area

The review indicates that there have been 3 casualty crashes reported within the review area over this period, as described in Table 2.

Table 2: Casualty Crash History

Location	Date	Time	Severity	Conditions	DCA code	Crash Type
Coombs Avenue at Peter Street	Sat 10/11/12	23:20	OI	Dark street lights on, Clear & Dry	174 (M)	Out of control on carriageway (on straight)
Kaybrook Court at McBean Street	Thu 13/06/13	05:40	OI	Dark street lights on, Raining & Wet	110	Cross traffic (intersections only)
Scotsburn Avenue at Hardy Court	Wed 24/04/13	19:00	SI	Dark no street lights, Clear & Wet	173	Right off carriageway into object/parked vehicle

LEGEND:

OI:	Other Injury	SI:	Serious Injury	F:	Fatality
(B):	Bicyclist	(M):	Motorcyclist	(P):	Pedestrian
(C):	Bus/Coach	(RT):	Rigid Truck	(ST):	Semi-trailer

Given that all three of the casualty crashes were isolated incidents, I am satisfied that there is not a discernible road safety issue along the local streets or arterial road network within the review area.

4.2 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. I 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 11 and the detailed results of the surveys are provided at Appendix C.

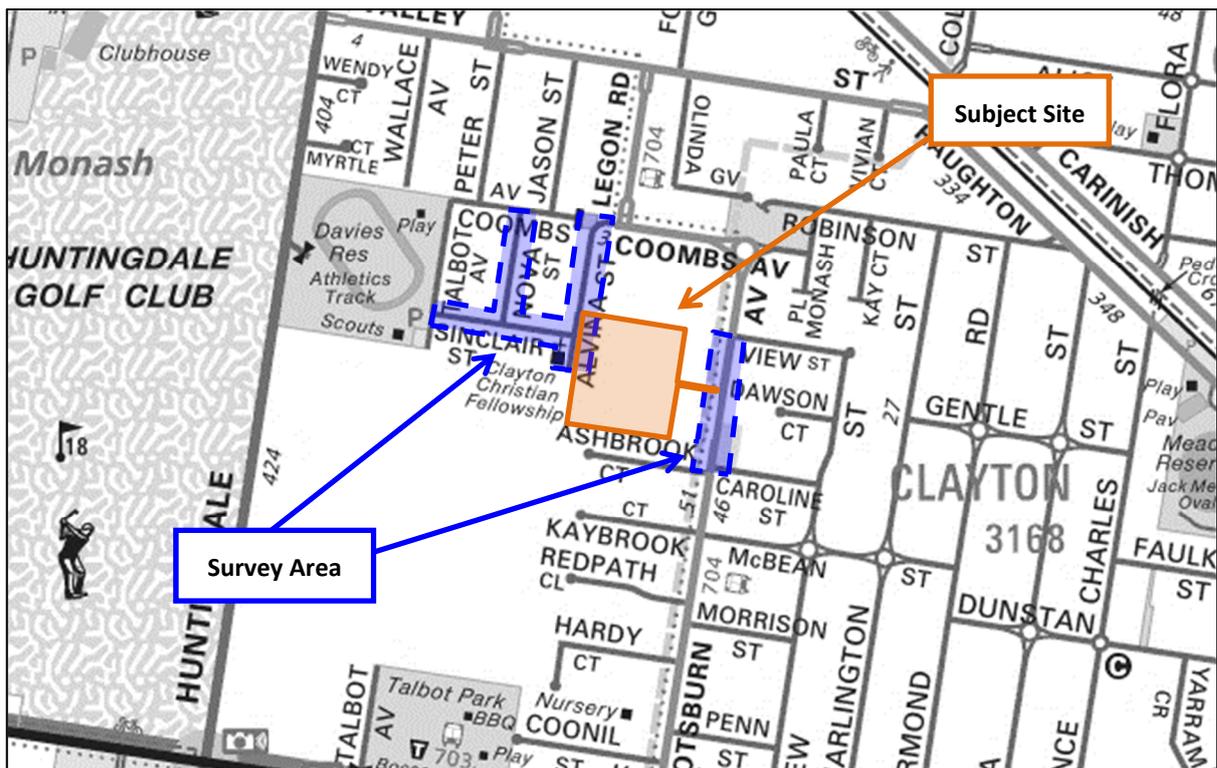


Figure 11: Parking Survey Area

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

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

A profile of on-street parking demand is provided at Figure 12.

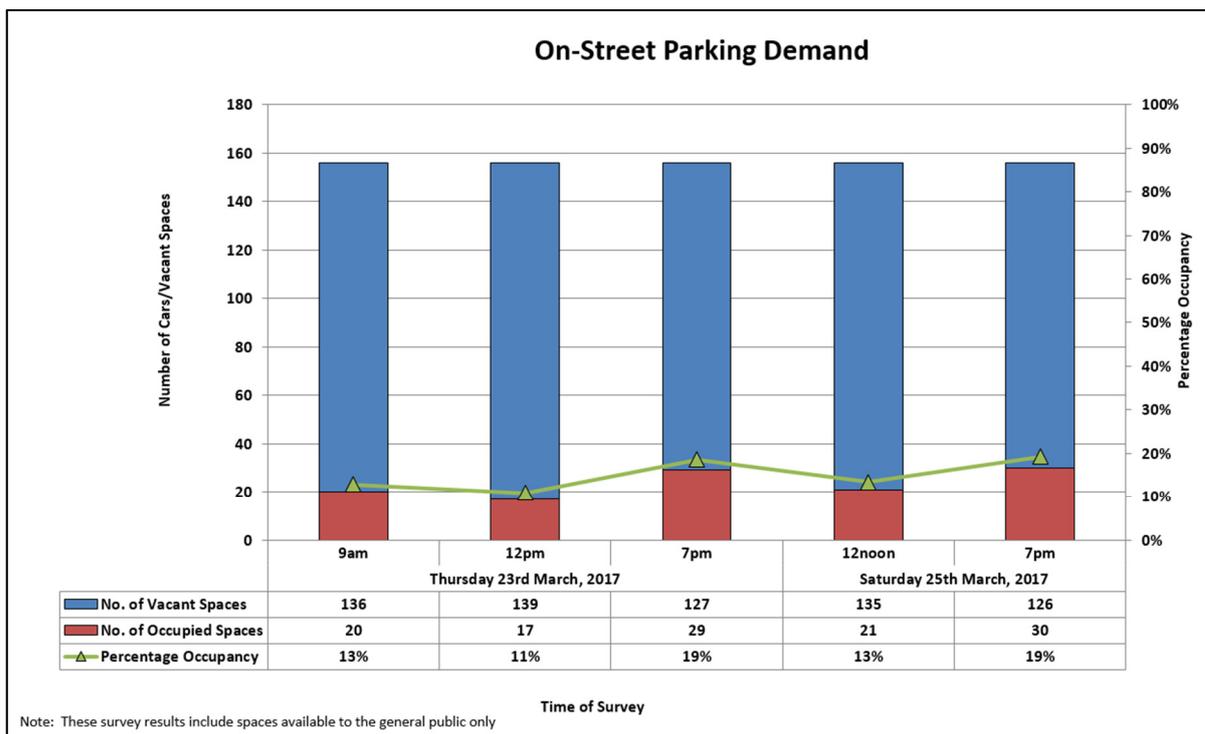


Figure 12: Profile of On-Street Parking Demand

The results of the surveys indicate that there is a low 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).

4.3 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 13. The key facilities located within the nearby area are detailed in the following table.

Table 3: Summary of Public Transport Services

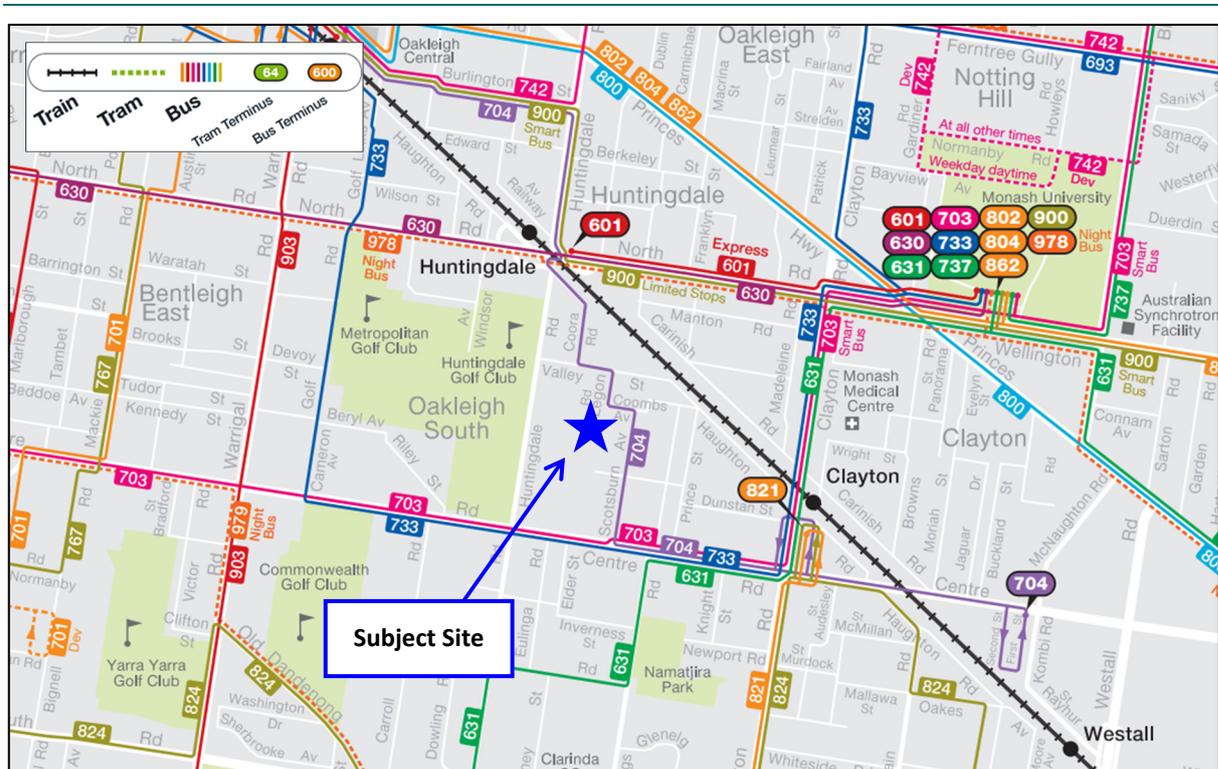
Service	Between	Via	Operating Times (Frequency) ⁽¹⁾		
			Monday-Friday	Saturday	Sunday
Scotsburn Avenue – past the subject site					
Bus Route 704	Clayton & Oakleigh	Clayton & Huntingdale	6:40am-6:45pm (30-120min)	Does Not Operate	Does Not Operate

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Service	Between	Via	Operating Times (Frequency) ⁽¹⁾		
			Monday-Friday	Saturday	Sunday
Centre Road – 600m walking distance south of the site					
Bus Route 703 (SMARTBUS)	Middle Brighton & Blackburn	Bentleigh, Clayton & Monash University	5:30am-10:25pm (10-60min)	6:10am-9:45pm (20-40min)	7:50am-9:45pm (35-60min)
Bus Route 733	Oakleigh Station & Box Hill Station	Clayton, Monash University & Mt Waverley	6:10am-9:45pm (10-45min)	6:10am-9:35pm (10-50min)	8:00am-9:40pm (55-60min)
Springs Road – 800m walking distance south-east of the site					
Bus Route 631	Southland SC & Waverley Gardens SC	Clayton & Monash University	6:15am-9:50pm (25-60min)	6:10am-9:55pm (30-60min)	8:15am-10:20pm (60-65min)
Clayton Railway Station – Cranbourne/Pakenham Line –1.3km walking distance east of the site					
Clayton Station ⁽²⁾	CBD & Cranbourne/Pakenham	Richmond, South Yarra, Caulfield, etc.	High frequencies for extended periods of the day		

- (1) Note: Frequencies provided should be used as a guide and are rounded to the nearest 5 minutes.
- (2) Huntingdale Railway Station also located 1.3km walking distance north-west of the site, located on the same train line.



Source: ptv.vic.gov.au

Figure 13: Public Transport Map

5 Traffic Engineering Assessment

5.1 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 statutory car parking requirement is set out at the car parking table at Clause 52.06-5 of the Planning Scheme.

The statutory car parking assessment for the proposal is set out in Table 4.

Table 4: Statutory Car Parking Assessment – Clause 52.06

Use	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 three or more-bedroom dwelling	152	152	0
Four-bedroom Townhouse	18		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.

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Table 4 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 52.06-7.

Other Considerations – Availability of Alternative Car Parking

As detailed in Section 4.2, Traffix Group has undertaken a series of spot parking surveys of the surrounding area.

The results of these surveys highlight that there is a 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.

5.2 Bicycle Parking Assessment

Clause 52.34 of the Planning Scheme specifies bicycle parking requirements for new developments and changes in use. There is no statutory requirement for a residential development of less than 4 storeys in height. The development does not propose any townhouses above 3 storeys in height and accordingly, does not generate a bicycle parking requirement.

Each dwelling is provided with a private garage which would be suitable to accommodate bicycles owned by residents or their visitors. Residents could also easily install a bicycle rack/hook if needed.

Based on the above, I am satisfied with the provision of bicycle parking in this development.

5.3 Review of Car Parking Layout and Access Arrangements

A total of 212 formal on-site car spaces are provided.

Traffix Group has assessed the design against the following guidelines:

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

The key elements of the car parking and access layout are outlined as follows:

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

- Access to the development is provided via a 6.0m wide accessway to Alvina Street, which facilitates two-lanes for simultaneous two-way movements along its length and accords with AS2890.1-2004 and Clause 52.06-9 (Design Standard 1), which requires accessways to be at least 3m wide.

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- 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 simultaneous two-way movements, with the exception of a 3.0m wide accessway providing access to three dwellings within a dead end accessway.
- I recommend that a minimum height clearance of 2.1m is provided beneath overhead obstructions for the townhouse garages in accordance with the requirements set out in Clause 52.06-9. I am satisfied that this can be provided as a condition.
- Vehicles will be able to enter and exit the site in a forwards direction in accordance with Clause 52.06-9, with the exception of the 4 dwellings with direct access to Alvina Street.

I am satisfied that access to each of these 4 dwellings directly from Alvina Street is appropriate, noting that these are individual accessways serving a maximum of 2 car spaces each. The relevant design clause is Clause 52.06-8 (Design Standard 1), which states:

If the accessway serves four or more car spaces or connects to a road in a Road Zone, the accessway must be designed so that cars can exit the site in a forward direction.

- Whilst not explicitly detailed on the plans, a pedestrian sight triangle in accordance with the requirements of Clause 52.06-9 (Design Standard 1) is provided on the south side of the accessway. A sight triangle is not required on the northern side due to the width of the crossover.
- 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).
- 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 detailed as 6.7m long and 2.3m wide where the ends of the space are obstructed satisfying the requirements of Clause 52.06-9 (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 excess of Clause 52.06-9 (Design Standard 2).
- Garage dimensions are in accordance with Planning Scheme requirements as follows:
 - single garages are at least 6m long x 3.5m wide when measured inside the garage, meeting the Planning Scheme requirements;
 - double garages are at least 6m long x 5.5m wide when measured inside the garage, meeting the Planning Scheme requirements;
- The garage doors are provided at a minimum of 5.0m wide for double garages and 3.0m wide for single garages in accordance with AS2890.1-2004.
- Open spaces provided in tandem to single garages are at least 5.4m long, which complies with Clause 52.06-9, 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

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this is expressly permitted by AS2890.1-2004 for long term parking (i.e. resident parking) and is acceptable. A copy of these swept paths is attached at Appendix D.

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, 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, subject to the following recommendation being included as a condition of permit:

- A minimum headroom clearance of 2.1m provided beneath obstructions within the private garages.

Other Considerations

Whilst no subdivision has technically been applied for at this stage, I have used Clause 56.06 as a guide given the nature of the development.

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 Clause 56.06-5 – Walking and Cycling Network Detail Objectives	<p>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.</p> <p>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.</p> <p>Connections to the broader pedestrian and bicycle networks will be facilitated via the existing infrastructure on Alvina Street, which has footpaths on both sides of the road, and Scotsburn Avenue, which has footpaths on both sides accessed via a pedestrian path which extends from the internal accessway to Scotsburn Avenue.</p> <p>Accordingly, I am satisfied that the Development Plan meets the objectives and standards of the Planning Scheme in regards to pedestrian and bicycle access.</p>

Planning Scheme Requirement	Development Response
<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 considered appropriate and will allow two-way traffic throughout the site.</p> <p>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.</p> <p>While the ‘verge’ requirements of Clause 56.06-8 are not met, I 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, I understand that the proposed “road reservation” widths are adequate to meet the servicing needs of the development.</p> <p>I am 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.

Sight Distance Assessment

An assessment of the available sight distance for the proposed access point to Alvina Street has been undertaken.

The sight distance assessment has had consideration of the requirements of ‘Australian/New Zealand Standard for Off-street Car Parking’ (AS2890.1-2004) and ‘Austroads Guide to Road Design, Part 4A: Unsignalised and Signalised Intersections’ (AGRD04A/09)¹.

Alvina Street has a speed limit of 50km/h and the road environment is conducive to an “alerted” driver assessment in relation to the selection of reaction times.

The recommended sight distances as determined from Clause 3.2.4 of AS2890.1-2004 and Section 3.2 of AGRD04A/09 are provided in Table 2.

Whilst the requirements of the Austroads Guide strictly apply to intersections of public roads and not private driveways or accessways, it is appropriate to have some regard to the extent to which a private

¹ Note, ‘Austroads Guide to Road Design, Part 4A: Unsignalised and Signalised Intersections’ (AGRD04A/09) applies to intersections and not necessarily private accessways or driveways.

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accessway complies with these requirements in the context of the number of vehicle movements likely to use the accessway.

**Table 5: Recommended Sight Distances
(based on AS2890.1-2004 (Figure 3.2) and AGRD04A/09 (Section/Table 3.2))**

Speed Zone	Austroads AGRD04A/09	Figure 3.2, AS2890.1-2004		
	Safe Intersection Sight Distance (m) (1.1m to 1.25m)	Access driveways other than domestic property (m)		Domestic property access (m)
	Minimum Reaction Time 1.5 sec	Desirable 5 second critical gap acceptance time	Desirable Minimum Stopping Sight Distance (SSD)	Absolute Minimum Stopping Sight Distance (Reaction Time = 1.5 seconds)
50km/h speed zone	90	70	45	40

The field measurement of the available sight distance from the proposed accessway is 100m to the north of the proposed accessway and to the dead end of Alvina Street. Accordingly, the measured sight distance in both directions comfortably satisfies the SISD requirement of the Austroads Guide (AGRD04A/09) sight distance requirements (both domestic property and higher order private accessway requirements).

I am satisfied that the location of the proposed vehicle access to the site is appropriately located, with adequate sight distance provided from the access point.

5.4 Waste Collection

A Waste Management Plan was prepared by Leigh Design Pty Ltd (dated 16th April, 2015) at the town planning application stage which details the waste collection arrangements for the development.

Waste bins will be stored by residents within the private garages of each dwelling. Prior to collection, residents shall place their bins outside their townhouse for collection, with the exception of Lot 1, Lot 2, Lot 50 and Lot 51. Waste collection for these lots will be via Council's existing waste collection service along Alvina Street. A private contractor will be employed to collect waste from within the internal accessway using an 8.8m long waste collection vehicle. Residents will be responsible for transferring their bins for collection and removing bins after collection.

A swept path of this vehicle navigating the site is provided at Appendix D.

I am satisfied with these arrangements.

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5.4.1 Emergency Vehicle Access

The largest emergency services vehicle which can be reasonably expected to require access to the site is the standard MFB vehicle (Standard Pumper Tanker), which is 8.75m long and has a kerb-kerb turning circle of 19.8m. These dimensions are both lower than the 8.8m service vehicle which has been tested for the internal road network as described above.

5.5 Traffic Impacts

5.5.1 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:

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, I have applied a rate of 5 vehicle trip-ends per dwelling per day for each of the two-bedroom townhouses 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 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 approximately every minute on average, during the peak hours (and less at other times).

5.5.2 Traffic Distribution

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

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Table 6 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 6: 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)

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

5.5.3 Impacts to Local Roads

Alvina Street

All traffic from the proposed development will access the wider road network via Alvina Street. Accordingly, the proposed development is expected to generate a total of 621 vehicle trips per day to Alvina Street.

Under Clause 56.06 of the Planning Scheme, Alvina Street would be classified as an Access Street – Level 1 roads, with an indicative maximum traffic volume of up to 2,000 vehicles per day (which is known as the ‘environmental capacity’ of the road). Accordingly, a traffic volume of 621 vehicles per day represents 31% of the capacity of Alvina Street and is a moderate level of traffic in the context of the environmental capacity of Alvina Street.

Alvina Street connects to the arterial road network as follows, which includes my directional distribution assumptions:

- Access to Huntingdale Road via Legon Road/Valley Street (50% of traffic distributed to Huntingdale Road – 311 vehicles per day), and
- Access to Centre Road via Coombs Avenue/Scotsburn Avenue (50% of traffic distributed to Centre Road – 311 vehicles per day).

These connections are detailed in the map below.

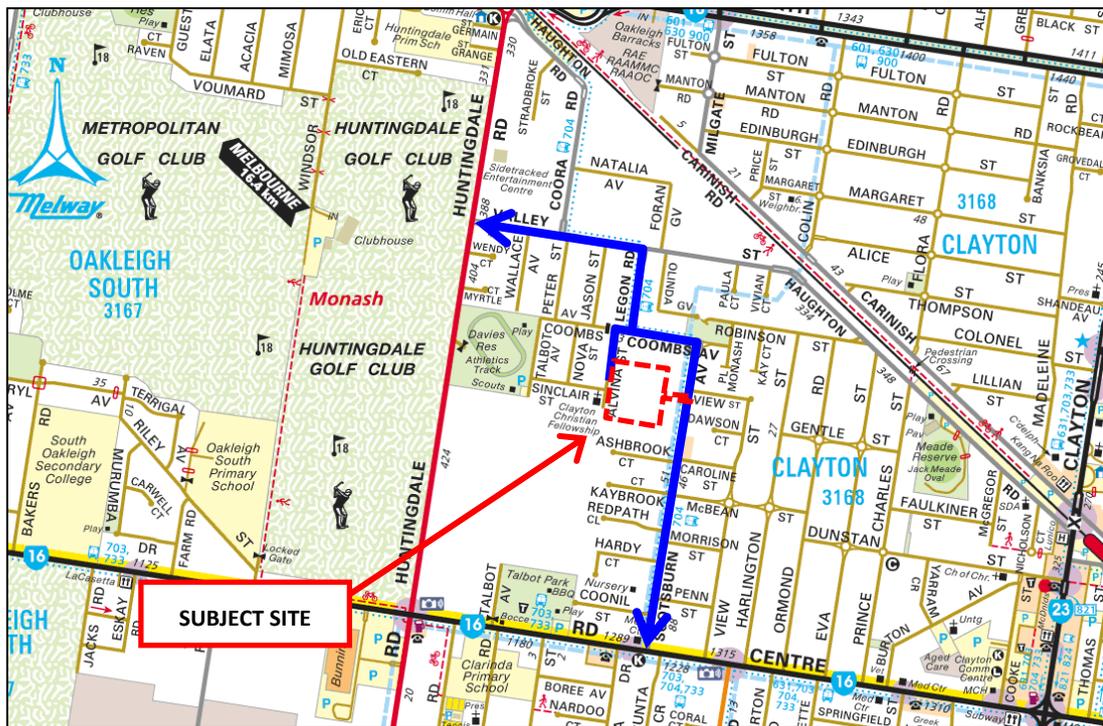


Figure 14: Local Access

Coombs Avenue and Legon Road

Under Clause 56.06 of the Planning Scheme, Coombs Avenue and Legon Road would be classified as Access Street – Level 2 roads, with a target traffic volume of up to 3,000 vehicles per day (which is known as the ‘environmental capacity’ of the road). Accordingly, a traffic volume of 311 vehicles per day generated by the proposed development represents 11% of the capacity of these roads and is a low level of traffic in the context of the environmental capacities of Coombs Avenue and Legon Road.

Scotsburn Avenue and Valley Street

Under Clause 56.06 of the Planning Scheme, Scotsburn Avenue and Valley Street would be classified as Connector Street – Level 1 roads, with a target traffic volume of up to 3,000 vehicles per day (which is known as the ‘environmental capacity’ of the road). Accordingly, a traffic volume of 311 vehicles per day generated by the proposed development represents 11% of the capacity of these roads and is a low level of traffic in the context of the environmental capacities of Scotsburn Avenue and Valley Street.

I am 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.

6 Conclusions

Having undertaken a detailed traffic engineering assessment for the proposed residential development at 10 Alvina Street, Oakleigh South, I am of the opinion that:

- i) the development generates a statutory car parking requirement of 209 car spaces under Clause 52.06-5 of Planning Scheme, including 190 resident spaces and 19 visitor car spaces,
- j) the provision of 212 car spaces, including 190 resident car spaces and 22 visitor car spaces, exceeds the car parking requirements under Clause 52.06-5 of the Planning Scheme and a car parking reduction is not sought by the application,
- k) bicycle parking is not required under Clause 52.34 of the Planning Scheme as the development is less than 4 storeys in height. However, I am satisfied that any bicycle demands can be accommodated within the private garages of each dwelling,
- l) the proposed parking layout and vehicle access arrangements accord with the requirements of the Planning Scheme, AS2890.1:2004 (where relevant) and current practice, subject to the following recommendation included as a condition of permit:
 - i) a minimum headroom clearance of 2.1m provided beneath obstructions within the private garages,
- m) the proposed vehicle access to Alvina Street will facilitate safe and convenient access to the site,
- n) waste collection will be via Council's existing services for the dwellings accessed from Alvina Street and a private contractor for the dwellings which have access to the internal roads,
- o) the level of traffic generated as a result of this proposal will be modest, residential in nature, spread throughout the day and will be lower than the historical use of the development site as a primary school, and
- p) there are no traffic engineering reasons why the development plan for 10 Alvina Street, Oakleigh South, should be refused, subject to appropriate conditions.

I have made all the inquiries that I believe are desirable and appropriate and that no matters of significance which I regard as relevant have to my knowledge been withheld from the Tribunal.



CHARMAINE CHALMERS DUNSTAN

B.E. (Civil) Hons., Masters of Traffic, M.IEAust., F.V.P.E.L.A

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10 Alvina Street, Oakleigh South: Proposed Residential Development

Appendix A: Practice Note – PNVCAT2 Expert Evidence

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10 Alvina Street, Oakleigh South: Proposed Residential Development

STATEMENT OF WITNESS

Name

Charmaine Chalmers Dunstan

Position

Director, Traffix Group

Address

Suite 8, 431 Burke Road

Glen Iris 3146

Qualifications and Experience

My qualifications and membership of professional associations are as follows:-

- Bachelor of Civil Engineering (honours), Monash University, Clayton
- Masters of Traffic, Monash University
- Masters of Transport (current), Monash University
- Member, Engineers Australia
- Fellow, Victorian Planning & Environmental Law Association

I have over 20 years' experience as a Traffic Engineering and Transport Planning consultant with Traffix Group Pty Ltd and formerly Turnbull Fenner Pty Ltd. My experience also includes a number of local government appointments which involved acting in the role of Council's Transport Co-ordinator or Senior Traffic Engineer. These appointments include the City of Moreland, City of Whittlesea and the City of Darebin.

Area of Expertise

I have experience and expertise in traffic management, road safety planning and engineering, parking management and strategy development, and development impact assessment of a range of land-use developments.

Disclosure of Interests

I disclose that I have no private relationship with the permit applicant. Traffix Group has worked with other companies involved in this application. These relationships have not impacted on my ability to provide impartial Expert Evidence to the Tribunal.

Traffix Group prepared a Traffic Report for this application (Ref: 17657R9767C, dated May, 2016). I am not the Director responsible for the team that prepared this report.

Traffix Group prepared a revised Traffic report for this application (Ref 20245R31, date July, 2017). Whilst I was the director in charge of this project, I did not have any direct involvement.

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10 Alvina Street, Oakleigh South: Proposed Residential Development

Engagement and Scope of Report

I was retained by Minter Ellison to provide expert evidence in relation to an appeal against Monash City Council's refusal to approve the Development Plan under Section 149 of the *Planning and Environmental Act 1987 (P&E Act)* for a residential development at 10 Alvina Street, Oakleigh South.

The scope of my engagement in relation to the Application for Review has included the following tasks:

- site inspection,
- review of Council policies and other relevant documents,
- collection and review of parking and traffic data,
- review of road accident statistics,
- review of parking and traffic generation impacts of the proposal,
- design review regarding amended plans,
- preparation of swept path diagrams, and
- preparation and giving of Expert Evidence in accordance with VCAT Practice Note No. 2 for Expert Evidence.

I have reviewed the following documents as part of my assessment:

- Amended Plans prepared by Rothe Lowman (dated July, 2017),
- Development plans prepared by Rothe Lowman (dated May, 2015),
- Council Decision (dated 30th September, 2015)
- Delegate Report (dated 29th September, 2015),
- Traffic Reports prepared by Traffix Group (17657R9767C dated May, 2016 and 20245R#1 dated July, 2017),
- Waste Management Plan prepared by Leigh Design Pty Ltd (dated April, 2015),
- Various documents and policies from Council's website,
- Monash City Council's Road Management Plan (Version 5.1, dated July, 2017),
- Australian Standards (AS2890.1-2004 'Parking Facilities, Part 1: Off-Street Car Parking'),
- VicRoads Crashstats database, and
- relevant sections of the Monash Planning Scheme.

Facts and Assumptions

As detailed in evidence.

Reference Documents

As detailed above and in evidence.

Experiments

I have visited the site to observe traffic and parking activity within the nearby area.

I have reviewed parking surveys conducted by Traffix Group of the surrounding area at the following times:

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

Summary of Opinions

Refer to evidence.

Provisional Opinions

Not applicable.

Other members of Traffix Group involved in the preparation of Evidence

Fiona Banh (Traffic Engineer) and Matthew Woollard (Senior Traffic Engineer) assisted with the site inspection, supervision of parking surveys, preparation of swept path diagrams and the preparation of this report.

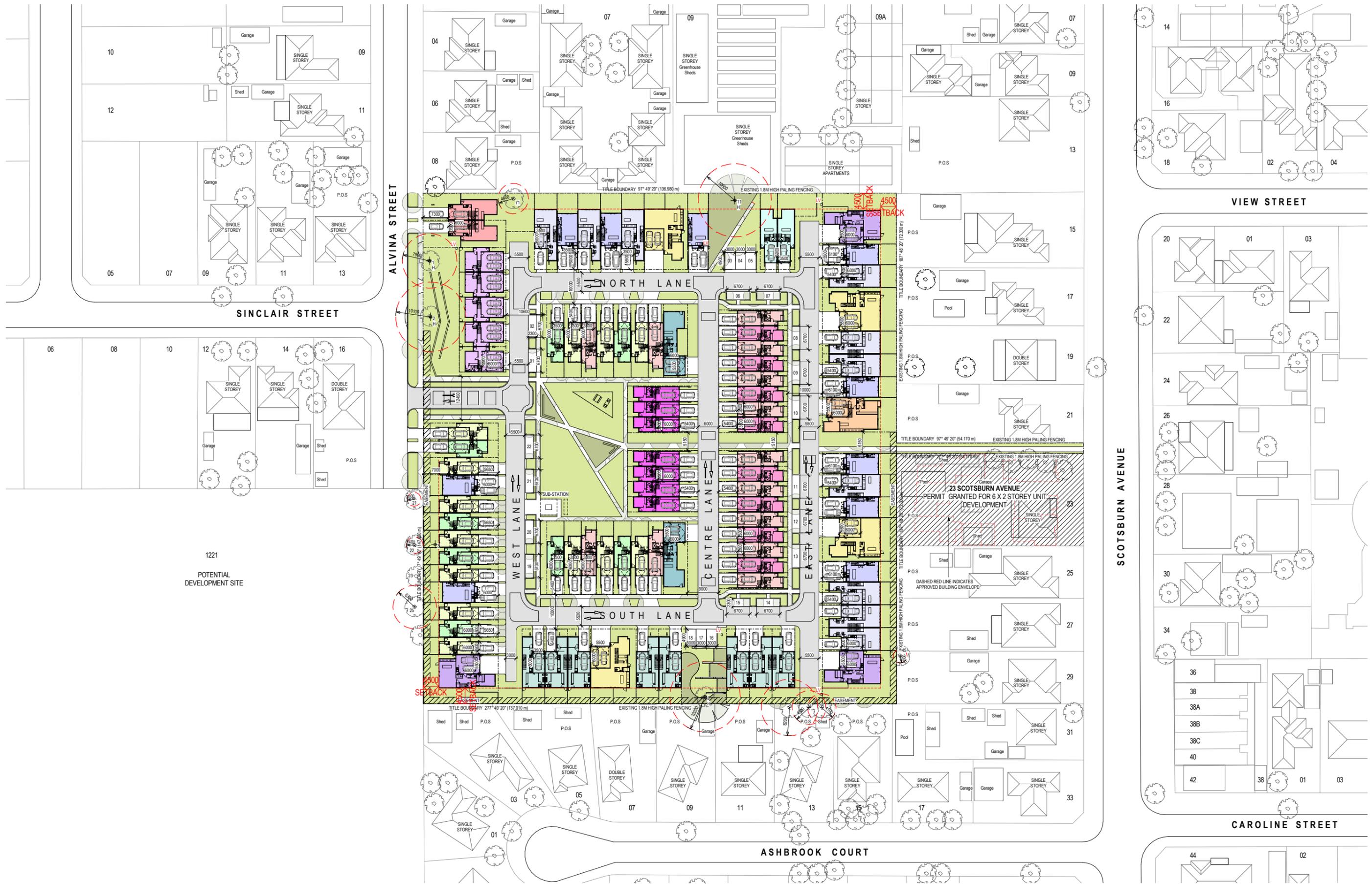
Report Completeness

Final report.

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10 Alvina Street, Oakleigh South: Proposed Residential Development

Appendix B: VCAT Amended Plans



PRELIMINARY

Revisions	Date	Description
15	10.07.17	REVISED MASTERPLAN
16	12.07.17	VCAT ISSUE
17	19.07.17	REVISED MASTERPLAN
18	20.07.17	VCAT DRAFT ISSUE
19	24.07.17	VCAT ISSUE

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Project / **RESIDENTIAL DEVELOPMENT**
10 ALVINA STREET
OAKLEIGH SOUTH, VIC

Drawing / **PROPOSED SITE PLAN - GROUND LEVEL**

Project No / **214174** Date / **24/07/17**

Author / **JW/CW** Scale: @ A1 / **1 : 500**

Drawing No. / **TP1.11**

rothelowman

Brisbane, Melbourne, Sydney
www.rothelowman.com.au

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Appendix C: 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	
			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
	Unrestricted	9	0	0	0	0	1
SB#7 to NB#1	Unrestricted	9	0	0	1	1	1
ALVINA STREET	Capacity	46 - 46	46	46	46	46	46
	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
	No Stopping (10m)	-	0	0	0	0	0
North Side							
Talbot Avenue to Nova Street	No Stopping (10m)	-	0	0	0	0	0
	Unrestricted	8	1	1	1	1	2
	No Stopping (10m)	-	0	0	0	0	0
Nova Street to Alvina Street	No Stopping (10m)	-	0	0	0	0	0
	Unrestricted	8	0	0	1	0	1
	No Stopping (20m)	-	0	0	0	0	0
SINCLAIR STREET	Capacity	34 - 34	34	34	34	34	34
	Total Number of Cars Parked		3	2	4	2	6
	Total Number of Vacant Spaces		31	32	30	32	28
	Percentage Occupancy		9%	6%	12%	6%	18%

Supervised By: Fiona Banh
Surveyed By: Rizwan

Survey Dates & Times: See below

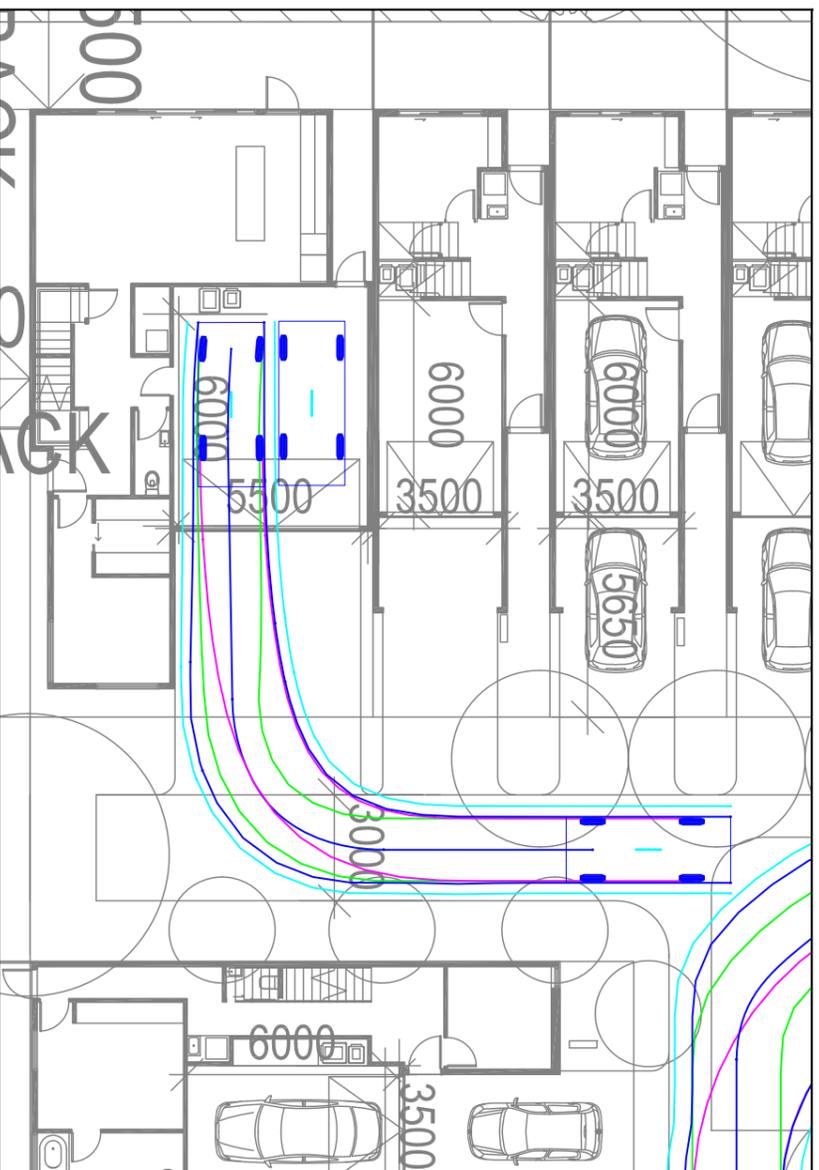
Location	Restriction	Capacity Min - Max	Thursday 23rd March, 2017			Saturday 25th March, 2017	
			9am	12pm	7pm	12noon	7pm
NOVA STREET							
West Side							
Sinclair Street to SB#7	No Stopping (10m)	-	0	0	0	0	0
	Unrestricted	7	0	1	0	0	1
SB#7 to Coombs Avenue	Unrestricted	8	0	0	0	0	1
	No Stopping (10m)	-	0	0	0	0	0
East Side							
Coombs Avenue to NB#10	No Stopping (10m)	-	0	0	0	0	0
	Unrestricted	9	2	2	2	1	1
NB#10 to Sinclair Street	Unrestricted	7	0	0	0	0	2
	No Stopping (10m)	-	0	0	0	0	0
NOVA STREET	Capacity	31 - 31	31	31	31	31	31
	Total Number of Cars Parked		2	3	2	1	5
	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
	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
	Unrestricted	9	2	1	2	2	2
NB#25 to NB#15	Unrestricted	11	4	2	3	4	3
SCOTSBURN AVENUE	Capacity	45 - 45	45	45	45	45	45
	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%
<p>Note: Public parking includes spaces that are available to the general public and excludes 'No Stopping' areas, etc., during the relevant enforcement periods</p> <p>LEGEND: Public Parking </p> <p>Not available to the general public </p> <p>Not Available, illegally parked cars included in analysis </p> <p>No Stopping/ Other No Parking </p>							

VCAT Reference Number: P2171/2015

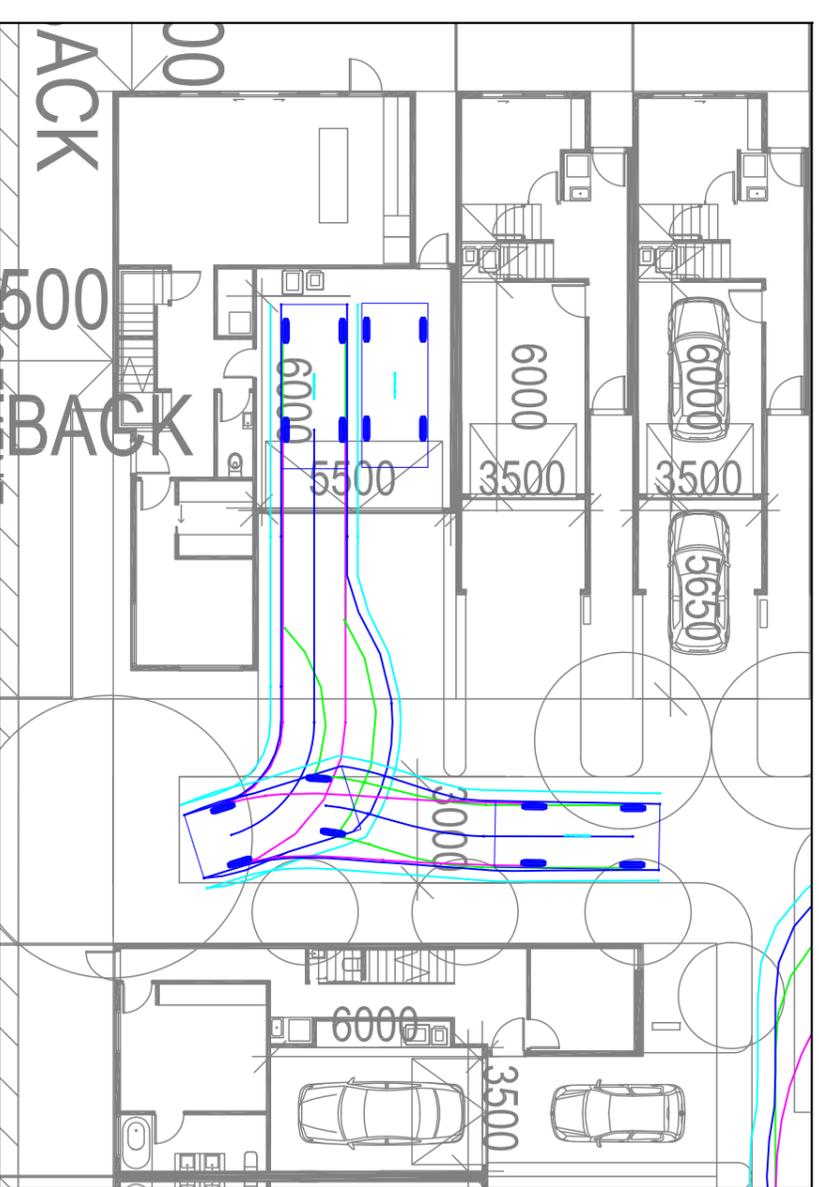
10 Alvina Street, Oakleigh South: Proposed Residential Development

Appendix D: Swept Path Diagrams

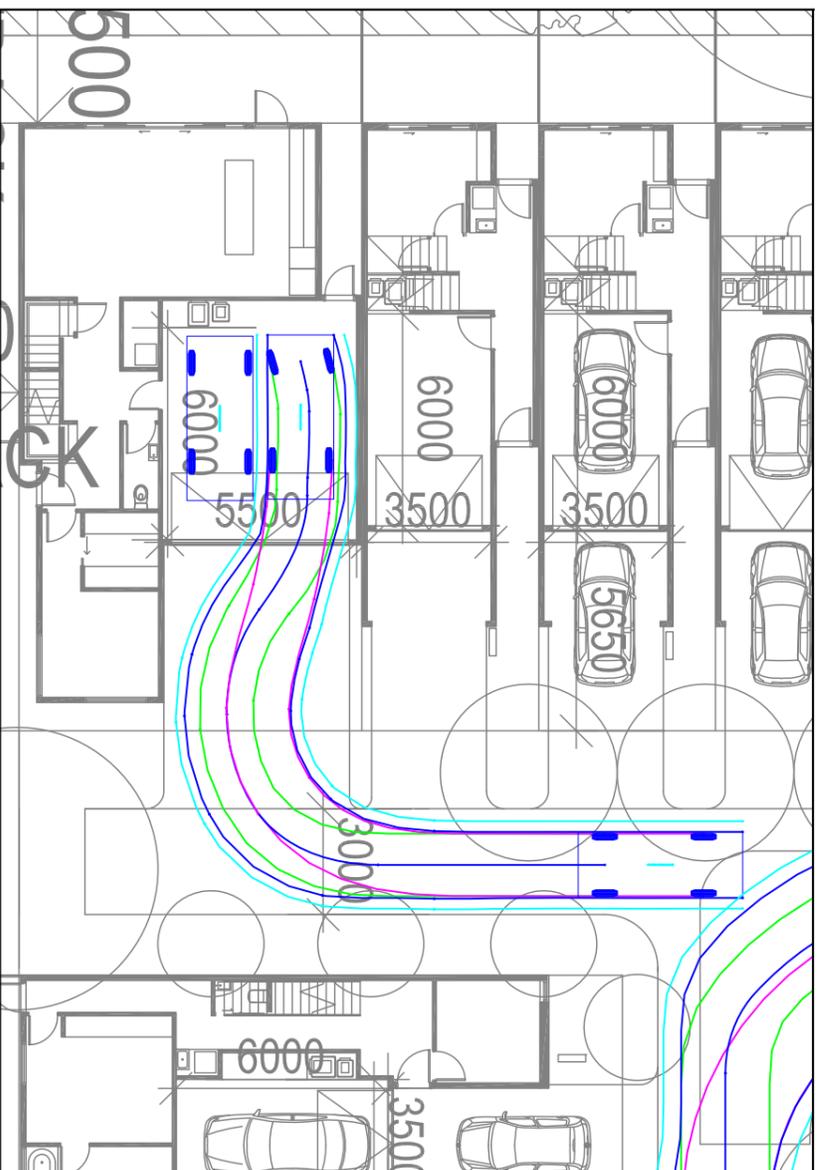
LOT 14 SOUTH CAR SPACE - INGRESS



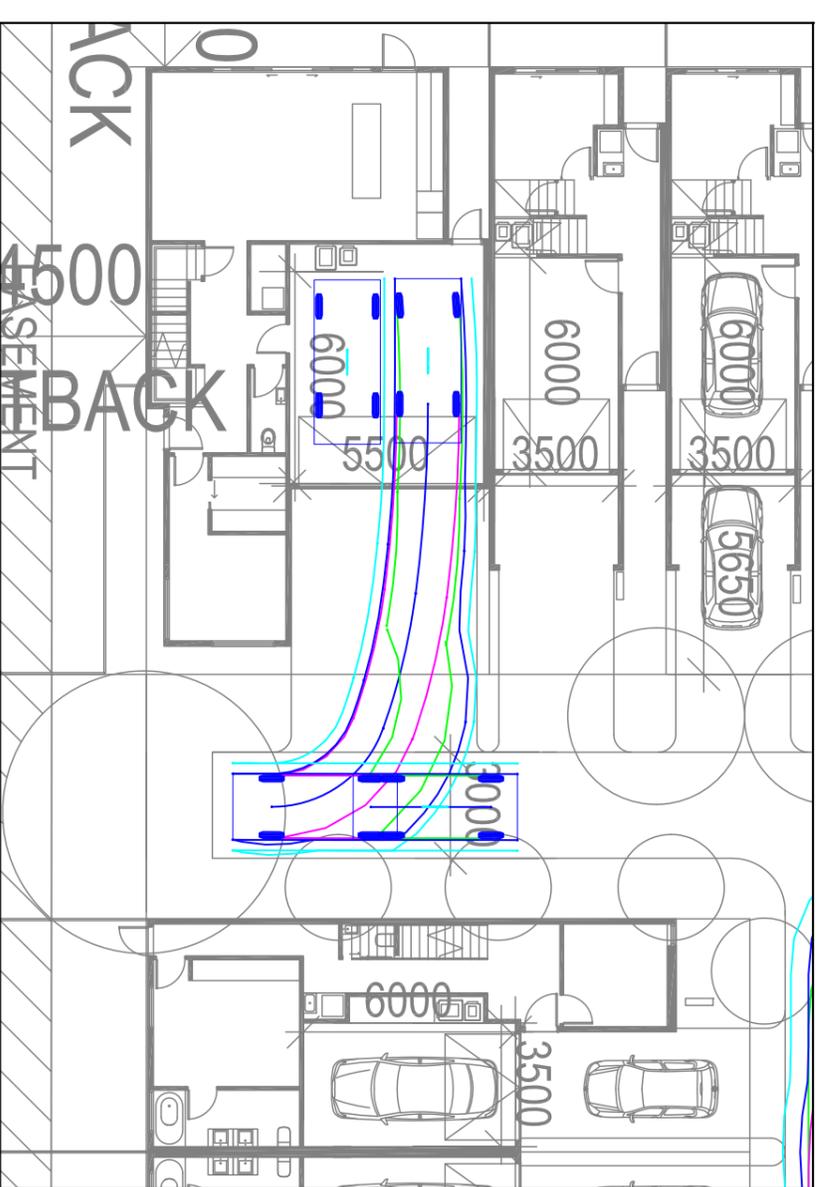
LOT 14 SOUTH CAR SPACE - EGRESS



LOT 14 NORTH CAR SPACE - INGRESS



LOT 14 NORTH CAR SPACE - EGRESS



VEHICLE USED IN SIMULATION
(VEHICLE SPEED - 5KM/H)

85th Percentile
(AS/NZS 2890.1:2004)

Width : 1.87m
Track : 1.77m
Kerb to Kerb Radius : 11.5m

* actual template based on relevant longitudinal dimensions as set out in Section B21 of AS/NZS 2890.1:2004

LEGEND

- REAR WHEELS
- FRONT WHEELS
- VEHICLE BODY
- BODY CLEARANCE

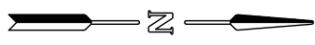
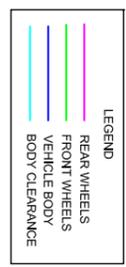
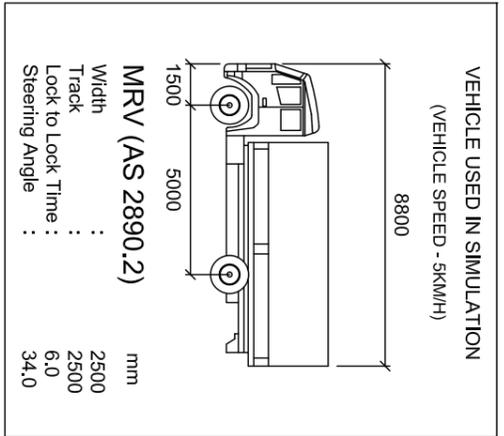


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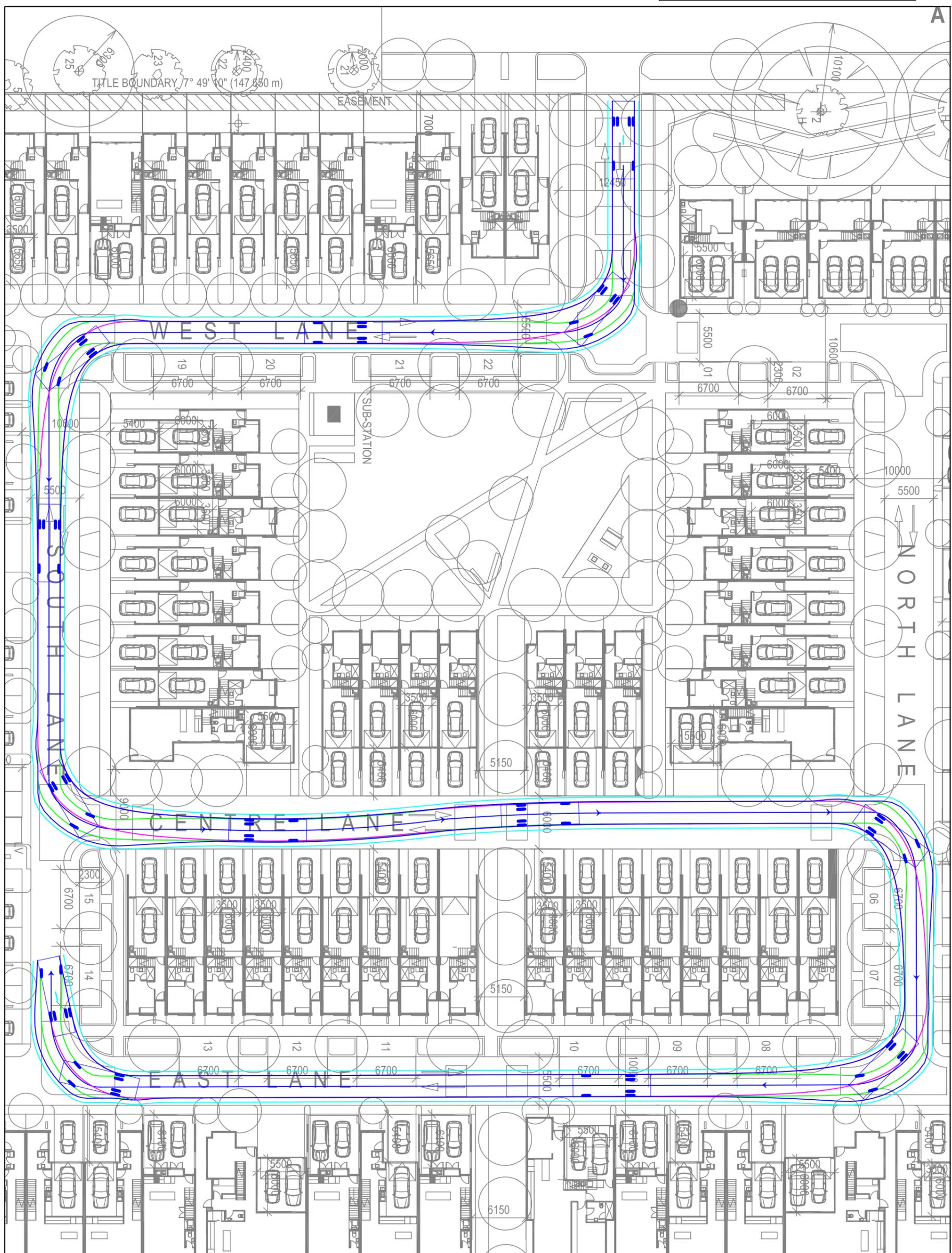
REV.	REVISION NOTES	REVISION DATE	DESIGNED BY:	16 AUG 2017
			F. BANH	
			CHECKED BY:	
			M. WOOLLARD	16 AUG 2017
			FILE NAME:	ISSUE:
			20245-01.DWG	A

<p>GENERAL NOTES: BASE INFORMATION FROM: 214174 SITE PLAN - GROUND LEVEL.DWG PREPARED BY Robie Lowman - received - 14-08-17</p>	<p>10 ALVINA STREET, OAKLEIGH SOUTH B85 DESIGN CAR SWEEP PATHS PROPOSED RESIDENTIAL DEVELOPMENT</p>
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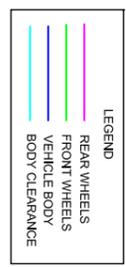
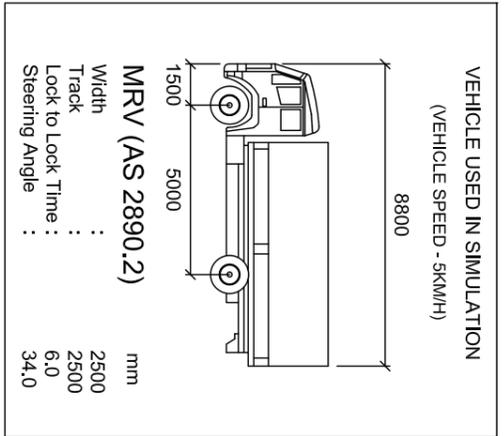
<p>Traffic Engineers and Transport Planners Suite 8143 Bura Road GLENBIRIE VICTORIA 3146 TEL: (03) 9822-2888 FAX: (03) 9822-7444</p>	<p>SCALE: 0 2 4 SHEET NO.: 01/09 JOB NO.: 20245-01</p>
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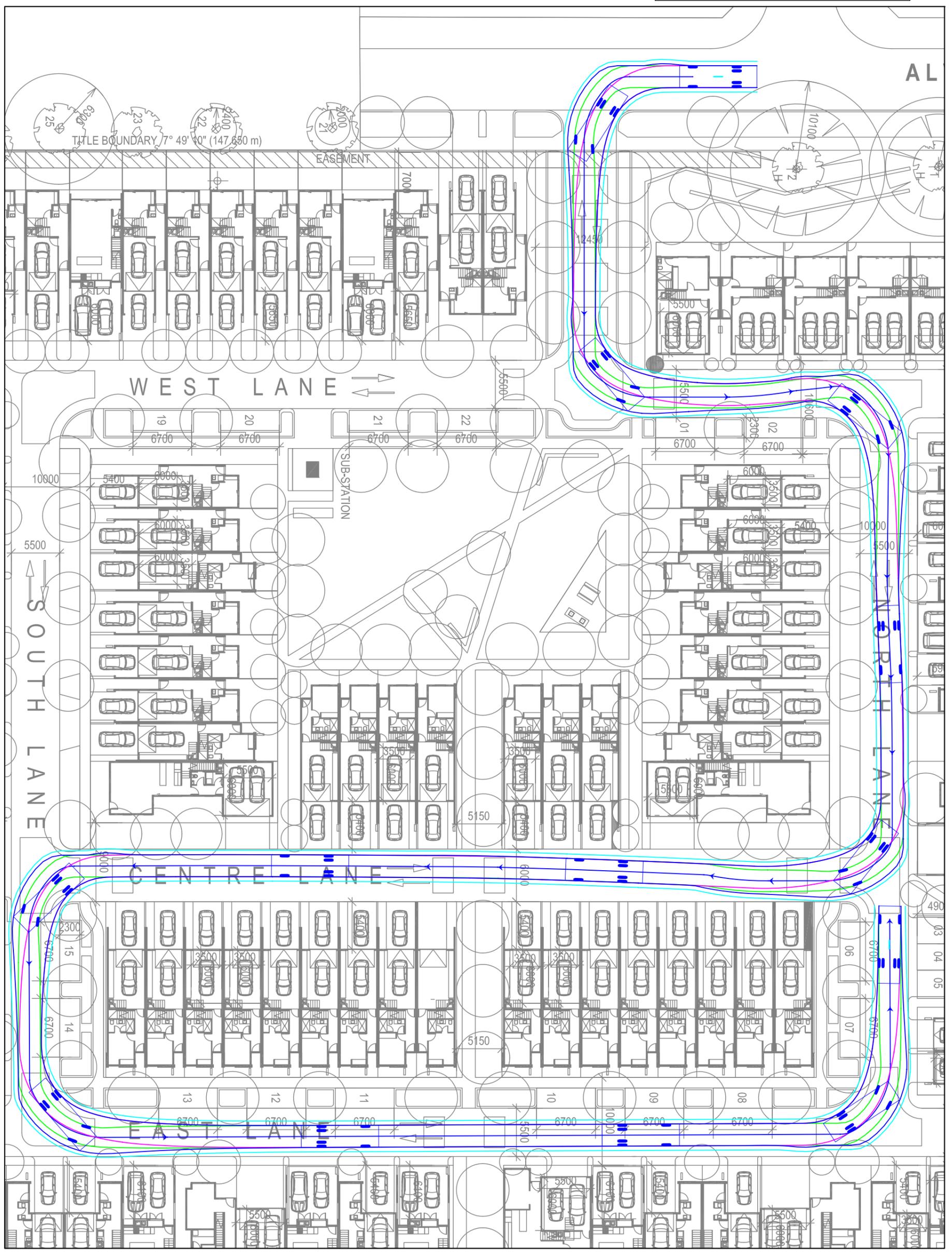
PRELIMINARY ONLY
NOT FOR CONSTRUCTION



REV.	REVISION NOTES	REVISION DATE	DESIGNED BY:	16 AUG 2017	<p>Traffic Engineers and Transport Planners Suite 8141 Bunn Road GLENBIRN VICTORIA 3146 TEL: (03) 9822-2888 FAX: (03) 9822-7444</p>	<p>10 ALVINA STREET, OAKLEIGH SOUTH 8.8m MRV DESIGN VEHICLE SWPT PATHS PROPOSED RESIDENTIAL DEVELOPMENT</p>
			F. BANH			
			CHECKED BY:	16 AUG 2017		
			M. WOOLLARD			
			FILE NAME:	ISSUE:		
			20245-01.DWG	A		
			GENERAL NOTES:			
			BASE INFORMATION FROM: 214174 SITE PLAN - GROUND LEVEL.DWG			
			PREPARED BY: Robbe Lowman - received - 14-08-17			
			SCALE:	0 4 8		
			SHEET NO.:	06/09		
			JOB NO.:	20245-01		



PRELIMINARY ONLY
NOT FOR CONSTRUCTION



REV.	REVISION NOTES	REVISION DATE

GENERAL NOTES:
 BASE INFORMATION FROM: 214174 SITE PLAN - GROUND LEVEL.DWG
 PREPARED BY: Robie Lowman - received - 14-08-17

DESIGNED BY:	16 AUG 2017
F. BANH	
CHECKED BY:	16 AUG 2017
M. WOOLLARD	
FILE NAME:	ISSUE:
20245-01.DWG	A



10 ALVINA STREET, OAKLEIGH SOUTH
8.8m MRV DESIGN VEHICLE SWEPT PATHS
PROPOSED RESIDENTIAL DEVELOPMENT

SCALE: 0 4 8
 SHEET NO.: 0809
 JOB NO.: 20245-01

