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PROPOSED RESIDENTIAL DEVELOPMENT

ALVINA STREET, OAKLEIGH SOUTH

Traffic Engineering Assessment

Prepared for

POINT POLARIS


DECEMBER, 2014

OUR REFERENCE: 17657R9767

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ALVINA STREET, OAKLEIGH SOUTH

Traffic Engineering Assessment

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1 INTRODUCTION

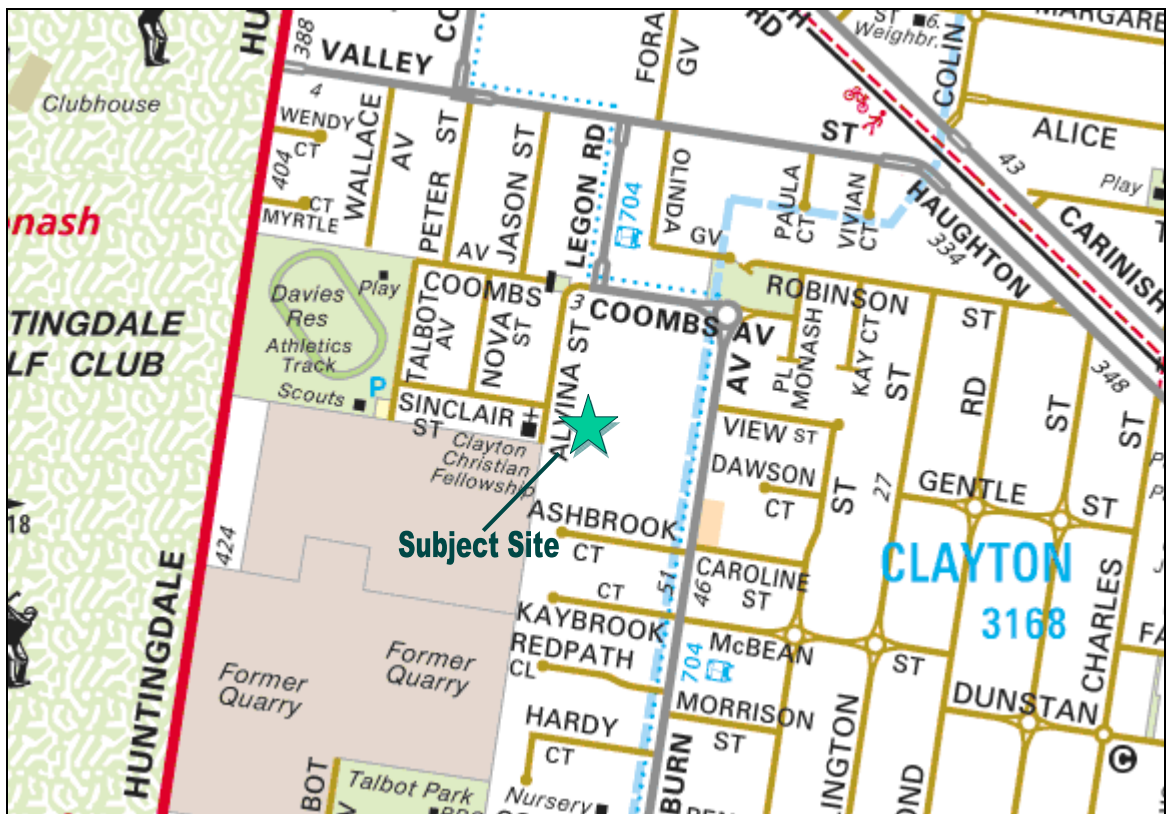
Traffix Group has been engaged by Point Polaris to undertake traffic engineering assessments and to prepare a report for the proposed residential development located at 10 Alvina Street in Oakleigh South.

This report provides a traffic engineering assessment of the proposal, with particular attention to car parking and traffic generation and impacts.

2 EXISTING CONDITIONS

2.1 Subject Site Locality

The subject site is located on the east side of Alvina Street in Oakleigh South as shown in Figure 1 below.



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Figure 1: Locality Plan

The subject site has a site area of approximately 2 hectares and has frontages to Alvina Street and Scotsburn Avenue of approximately 86 metres and 3.4 metres 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.

An aerial view of the site is shown in Figure 2.



Figure 2: Aerial View



Figure 3: Subject Site (Alvina Street Frontage)



Figure 4: Scotsburn Avenue Frontage

2.2 Land Use

The subject site is zoned General Residential Zone – Schedule 1 (GRZ1) as indicated in Figure 5 below.

Surrounding land uses are predominantly residential. Notable exceptions include:

- a Special Use Zone (SUZ2) located to the southwest 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.

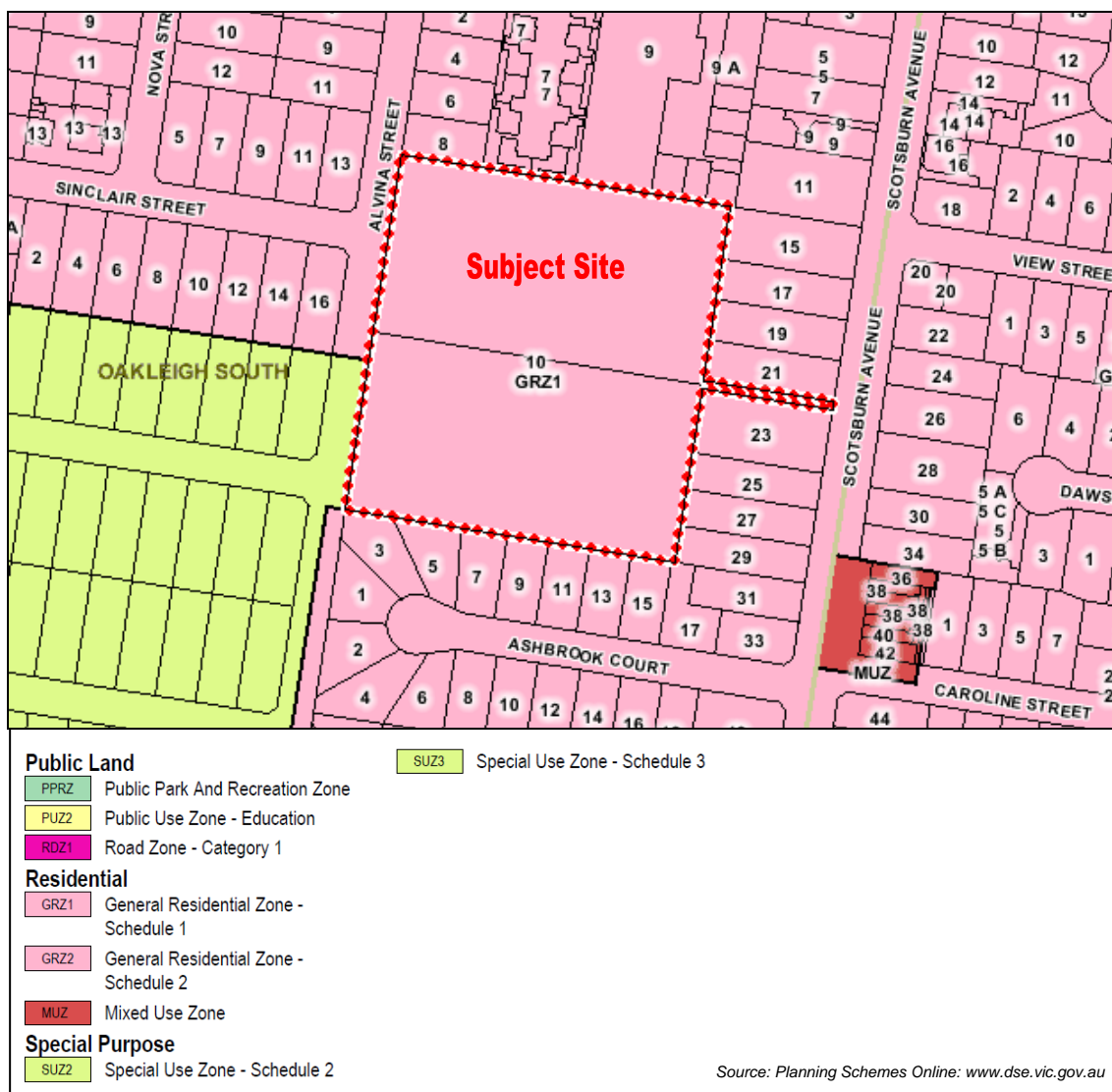


Figure 5: Land Use Zoning

The site is subject to the Development Plan Overlay - Schedule 5 of the Monash Planning Scheme. The scheme has the following traffic related information:

“A traffic management report and car parking plan which includes:

- Identification of roads, pedestrians, cyclists and vehicle access locations, including parking areas, both internal and external of the site.
- Traffic management measures, where required.
- Location and linkages to public transport.
- Car parking rates for all users, including visitor parking.
- Provision for bicycle facilities.”

These issues have been addressed in this report.

2.3 Road Network

Alvina Street

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 (approx.) carriageway with barrier kerb and footpaths on both sides, within a 15 metre road reservation.

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

The default built-up area speed limit of 50 km/h applies to Alvina Street.



Figure 6: Alvina Street Looking North



Figure 7: Alvina Street Looking South

Coombs Avenue

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

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

The default built-up area speed limit of 50 km/h applies to Coombs Avenue.



Figure 8: Coombs Avenue Looking East



Figure 9: Coombs Avenue Looking West

2.4 Public Transport

The following public transport services operate nearby to the site:

- Bus route 704 operates along Scotsburn Avenue past the site and provides a connection between East Clayton and Oakleigh.
- Bus route 703 operates along Centre Road approximately 600 metres south of the site and provides a connection between Middle Brighton Railway Station and Blackburn Railway Station via Bentleigh, Clayton and Monash University.
- Bus route 733 operates along Centre Road approximately 600 metres south of the site and provides a connection between Oakleigh Railway Station and Box Hill Railway Station via Clayton, Monash University and Mt Waverley.
- Bus Route 631 operates along Centre Road east of Springs Road, approximately 830 metres walking distance to the southeast of the site and provides a connection between Southland Shopping Centre and Waverley Gardens Shopping Centre via Clayton and Monash University.
- Clayton Railway Station is approximately 1.3km walking distance to the east of the site, on the Cranbourne and Pakenham railway lines.

Figure 8 below shows the public transport services in proximity to the subject site.

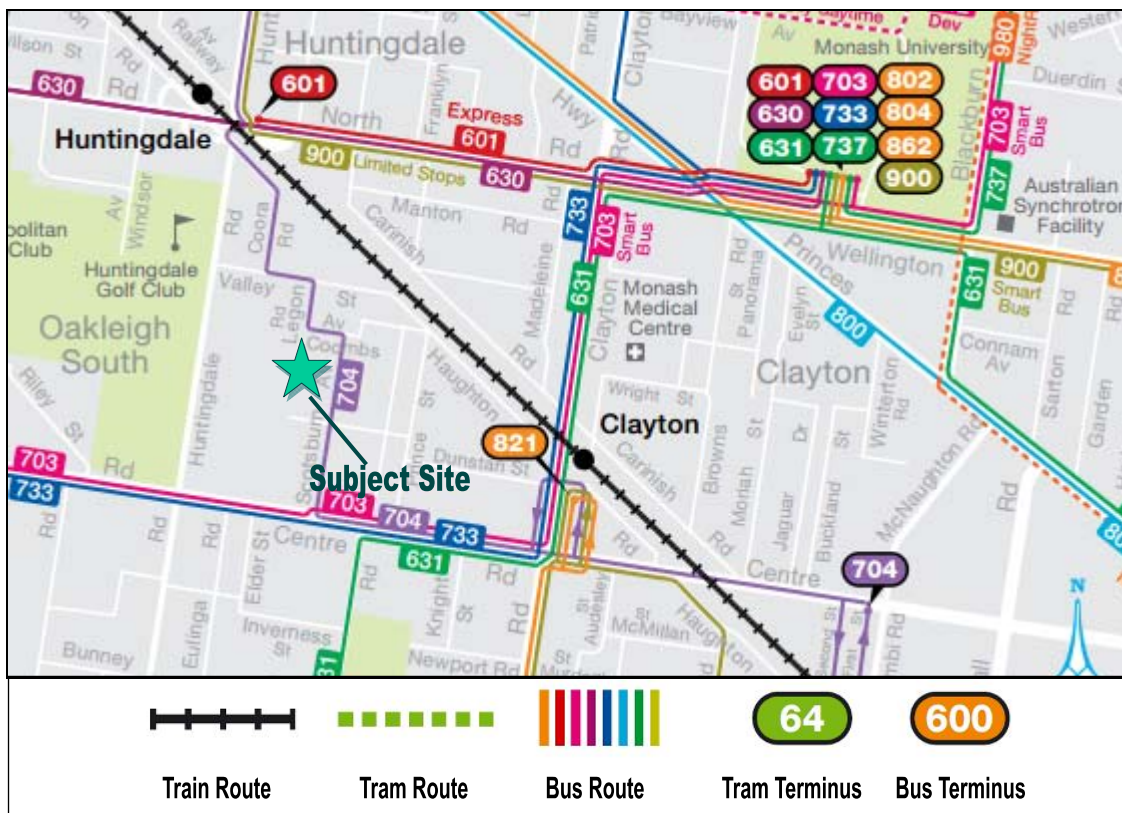


Figure 10: Public Transport Map

2.5 Existing Traffic Conditions

Traffix Group undertook AM and PM peak hour turning movement counts at the intersection of Alvina Street/Legon Road/Coombs Avenue as follows:

- Thursday 18th September 2014 between 7:30am and 9:30am, and
- Tuesday 16th September 2014 between 4:30pm and 6:30pm.

Figure 9 below shows the surveyed AM peak hour (7:45am – 8:45am) and PM peak hour (4:15pm – 5:15pm) intersection volumes.

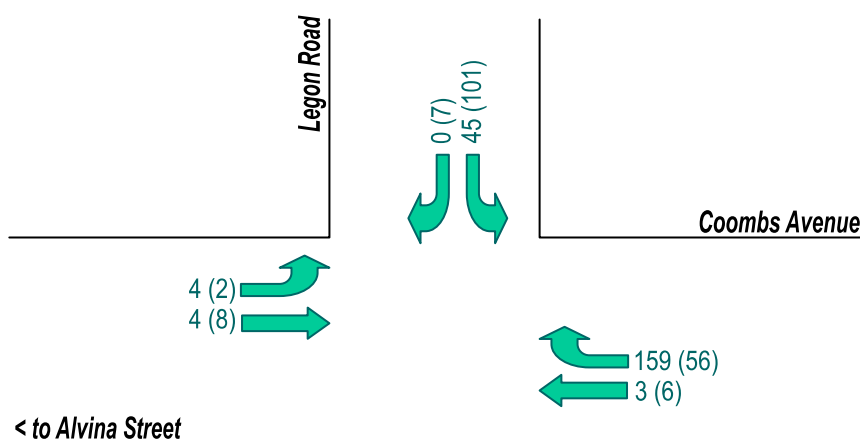


Figure 11: AM (PM) Peak Hour Turning Movement Counts – Coombs Avenue/Legon Road Intersection

Traffix Survey undertook 7-day tube counts on Alvina Street, Legon Road and Coombs Avenue in June 2009. The results are summarised in Table 1 below.

Table 1: Traffic Count Data – June 2009

	Alvina Street	Legon Road	Coombs Avenue
24-hour Weekday Average	136 vpd	1,818 vpd	1,851 vpd
AM Peak	20 vph	219 vph	215 vph
PM Peak	20 vph	185 vph	183 vph
% Commercial Vehicles	2.3%	2.5%	2.4%

We note that during the September 2014 traffic counts, the two-way traffic volume on Coombs Avenue was 211 vph and 171 vph during the AM and PM peak hours, which are generally consistent with the 2009 data. This indicates negligible traffic growth in the area over this five year period.

Similarly, Legon Road experienced a slight reduction in traffic for the 2014 count compared to the 2009 count, with 208 vph during the AM peak and 166 vph during the PM peak.

We note that the 2009 counts identified the peak hours for Alvina Street in the middle of the day (11am-12noon and 12noon-1pm for the AM and PM peak hours respectively).

3 THE PROPOSAL

3.1 Development Proposal

The proposal is for a residential development comprising of 108 3-bedroom townhouses. The proposed development plans indicate that each townhouse will have two car spaces, either a double garage or tandem configuration.

Access is proposed via Alvina Street, with a 6m wide crossover. On the western boundary of the site, six townhouses take access via Alvina Street and all other townhouses take access via internal roads.

22 visitor parking are provided throughout the site.

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

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

4 CAR PARKING

4.1 Statutory Car Parking Requirements

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 relevant Clause 52.06 car parking rates for residential dwellings are as follows:

- *1 car space to each one or two bedroom dwelling, plus*
- *2 car spaces to each three or more bedroom dwelling (with studies or studios that are separate rooms counted as a bedroom), plus*
- *1 visitor car spaces to every 5 dwellings for developments of 5 or more dwellings.*

The car parking requirements are set out in Table 2 below.

Table 2: Statutory Clause 52.06 Car Parking Requirements

Use	Size/Number	Rate	Requirement
Three Bedroom Dwellings	108 units	Two spaces per dwelling	216 spaces
Visitors	(108 units)	One space per 5 dwellings	21 spaces ¹
TOTAL			237 spaces

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 2 indicates that the statutory car parking requirement for the development is 237 car spaces, including 216 spaces for residents and 22 spaces for residential visitors.

Each townhouse is provided with either a double garage or tandem garage configuration and are able to accommodate the resident parking requirement. The 22 visitor car spaces provided throughout the internal road network provide a surplus of spaces for the visitor parking requirement.

4.2 Car Parking Layout

The proposed car parking layout has been checked against the design standards for car parking listed under Clause 52.06-8 and AS2890.1:2004, as presented in Table 3 below.

Table 3: Clause 52.06-8 Car Parking Design Standards

Design Standard	Comments
Accessways	<ul style="list-style-type: none"> • Accessways are at least 5.5m wide allowing for two-way traffic flow at low speeds. • 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.
Car parking spaces	<ul style="list-style-type: none"> • Visitor parallel car spaces are shown as 6.3m long and 2.3m where the ends of the space are obstructed exceeding the requirements of the Australian Standard. • Visitor 90° spaces are all 3.0m wide and 4.9m long and accessed from a minimum 5.5m aisle, exceeding the requirements of Clause 52.06. • Garage dimensions are generally in accordance with Planning Scheme requirements. We note that: <ul style="list-style-type: none"> – double garages are 6m long x 5.55m wide when measured inside the garage, exceeding Planning Scheme requirements; – there are no requirements outlined in the Planning Scheme for tandem garages. We note that: <ul style="list-style-type: none"> – proposed tandem garages are 12.05m which exceeds the length requirements for standard parking spaces in tandem under the Planning Scheme (a total length of 10.3m) and two standard spaces under the Australian Standard (a total length of 10.8m) and is considered appropriate . – The width of the tandem garages is in excess of 3.5m for the front space (closest to the door) but reduces to 3.35 at the rear space. The width at the front space exceeds the requirements of both the Australian Standard and the Planning Scheme for a single garage and the additional width will provide additional ease of access to both space when accessing the garage from the carriageway. The 3.35m width falls short of Planning Scheme requirements for a single garage. However, it exceeds both the requirements of the Australian Standard for a single garage and adequate clearances for door opening as per Diagram 1 of Clause 52.06-8 (total width of 3.2m required). Accordingly, the tandem garage dimensions are

	<p>considered appropriate.</p> <ul style="list-style-type: none"> - Single garages in the 'Type F' buildings have an internal width of 3.35m which falls short of Planning Scheme requirements. However, as noted for the tandem garages this reduced width is considered appropriate given that it exceeds both the clearance requirements for door opening as specified under Clause 52.06-8 and the single garage dimension requirements outlined in the Australian Standard. The internal length of the garages is 6.1m, exceeding Planning Scheme requirements. - All other single garages exceed the requirements of Clause 52.06. - Open air spaces provided in tandem to single garages conform with Table 2 of Clause 52.06-8 and are considered appropriate.
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5 BICYCLE PARKING REQUIREMENTS

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, in-formal bicycle parking can be provided via parking bicycles within garages or elsewhere on the properties.

6 ACCESS AND MOBILITY MANAGEMENT

Clause 56.06 of the Planning Scheme sets out access and mobility objectives and standards for residential subdivisions. We understand that 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.

6.1 Walking and Cycling Network

Pedestrian paths are proposed along one side of the internal access road, 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.

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.

6.2 Public Transport Network

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

6.3 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 3m which meets 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.

6.4 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.

The internal access road will function as a low speed 'shared zone' and accordingly we recommend that 'Shared Zone – 10kmh' signage is installed on the internal access road near the Alvina Street entrance.

7 TRAFFIC GENERATION & IMPACT

7.1 Traffic Generation – Residential

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, we have applied a rate of 6.5 vehicle trip-ends per dwelling per day for each of the townhouses, with 10% occurring during the road network peak hours.

This equates to a traffic generation rate of 702 vehicle trip-ends per day, with in the order of 70 vehicle trip-ends occurring during the road network peak hours.

This corresponds to one vehicle either entering or exiting the site every 51 seconds on average, during the peak hours (and less at other times).

7.2 Traffic Impacts

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

Based on the AM and PM peak hour survey undertaken at Coombs Avenue/Legon Road it is estimated that Coombs Avenue and Legon Road currently carry daily traffic volumes of 2,110 vehicles and 2,080 vehicles respectively. Based on the cross-section of Coombs Road and aerial photography of Legon Road both these roads have been designed to an 'Access Street – Level 2' standard under Clause 56.06-8. An 'Access Street – Level 2' has an environmental capacity of up 3,000vpd. Accordingly, both Coombs Road and Legon Road have sufficient spare capacity to accommodate the additional traffic from the subject site (noting that it would be distributed across both these roads and not concentrated onto one).

Based on its cross-section we would expect that Alvina Street is operating at a minimum 'Access Street – Level 1' standard under Clause 56.06-8 and therefore has an environmental capacity of up to 2,000vpd. As it is currently carrying in the order of only 261 vehicles per day, there is ample spare capacity to accommodate the subject site's anticipated traffic.

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.

8 WASTE COLLECTION

We understand that the developer of the subject site is to enter into a Section 173 agreement with Council for waste collection and that therefore these arrangements will "be subject to the satisfaction of the responsible authority".

9 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 accommodates the residential demand for parking and also provides a surplus of visitor parking on-site,
- b) the proposed car parking layout and dimensions are generally in accordance with the statutory requirements and will work well,
- c) waste collection details are understood to be subject to a Section 173 agreement allowing for Council collection,
- d) traffic generated by the proposed development can be accommodated on the surrounding road network and intersections during peak times without any adverse impacts; and
- e) 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.



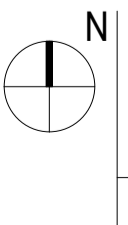
LEGEND:

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	TOWNHOUSE D 2 STOREY
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	TOWNHOUSE G 2 STOREY
	TOWNHOUSE H 3 STOREY
	TOWNHOUSE K 2 STOREY
	TOWNHOUSE M 3 STOREY

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P2	15.12.14	MASTERPLAN UPDATE
P3	17.12.14	TH TYPE K FOOTPRINT
P4	19.12.14	NW DRIVEWAY UPDATE



PROJECT TITLE
RESIDENTIAL DEVELOPMENT

10 ALVENA STREET
 OAKLEIGH SOUTH, VIC

DRAWING TITLE
GROUND FLOOR

SCALE: @ A1
1 : 500

DATE:
 11/21/14

DWG No:
SK1.01

PROJECT No:
214174

DRAWN BY:
 JW/CW

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